EBA REPORT

ON MANAGEMENT AND SUPERVISION OF ESG RISKS FOR CREDIT INSTITUTIONS AND INVESTMENT FIRMS

EBA/REP/2021/18

EBA EUROPEAN BANKING AUTHORITY

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Glossary

Climate-related risks	Climate-related risks are the financial risks posed by the exposure of institutions to counterparties that may potentially contribute to or be affected by climate change.
Climate sensitivity analysis	An exercise without scenarios, assessing changes in portfolios' risk attributes by changing some of the inputs in financial models based on shading and classification of exposures into 'green' versus 'non-green' (which determines an exposure's vulnerability to climate-related events and policies).
Climate stress test	Assessment featuring fully fledged scenarios that map out possible future development paths of transition variables (e.g. carbon prices), physical variables (e.g. temperature increases) and the related changes in macro variables (e.g. output in different sectors, GDP, unemployment) and financial variables (e.g. interest rates). These scenarios are then translated into changes in portfolio (risk) attributes.
Environmental factors	Environmental matters that may have a positive or negative impact on the financial performance or solvency of an entity, sovereign or individual.
Environmental risks	The risks of any negative financial impact on the institution stemming from the current or prospective impacts of environmental factors on its counterparties or invested assets.
ESG factors	Environmental, social or governance matters that may have a positive or negative impact on the financial performance or solvency of an entity, sovereign or individual.
ESG-related investment benchmarks	Benchmarks which incorporate specific sustainability-related objectives and help to assess and compare the performance of sustainable investments over time.
ESG risks	ESG risks are the risks of any negative financial impact on the institution stemming from the current or prospective impacts of ESG factors on its counterparties or invested assets.
ESG risk-related strategic objectives and/or limits	Determinations which aim at managing an institution's exposure to ESG risks, over the short-, medium- and long-term time horizons.
Exposure method	Methodological approach for the assessment of ESG risk which focuses on how individual exposures and counterparties perform on ESG factors.
Governance factors	Governance matters that may have a positive or negative impact on the financial performance or solvency of an entity, sovereign or individual.
Governance risks	The risks of any negative financial impact on the institution stemming from the current or prospective impacts of governance factors on its counterparties or invested assets.

Physical risks	The risks of any negative financial impact on the institution stemming from the current or prospective impacts of the physical effects of environmental factors on its counterparties or invested assets.
Portfolio alignment method	Methodological approach for the assessment of ESG risk which focuses on how aligned an institution's portfolio is with global sustainability targets.
Risk drivers	Avenues through which ESG factors can lead to negative financial impacts
Risk framework method	Methodological approach for the assessment of ESG risk which focuses on how sustainability-related issues affect the risk profile of a bank's portfolio and its standard risk indicators.
Social factors	Social matters that may have a positive or negative impact on the financial performance or solvency of an entity, sovereign or individual.
Social risks	The risks of any negative financial impact on the institution stemming from the current or prospective impacts of social factors on its counterparties or invested assets.
Taxonomies	Frameworks which classify different elements within a given set (e.g. economic activities, social practices or conventions) by defining them and linking them to different categories based on certain criteria.
Transition risks	The risks of any negative financial impact on the institution stemming from the current or prospective impacts of the transition to an environmentally sustainable economy on its counterparties or invested assets.
Transmission channels	The causal chains that explain how these risk drivers impact institutions through their counterparties and invested assets.

Abbreviations

CET 1	Common Equity Tier 1
CO_2	Scientific code for carbon dioxide
CRR	Capital Requirements Regulation
CRD	Capital Requirement Directive
CSR	Corporate Social Responsibility
CSRD	Corporate Sustainability Reporting Directive
EAD	Exposures at Default
EBA	European Banking Authority
ERM	Enterprise Risk Management
ESAP	European Single Access Point
ESG	Environmental, Social and Governance
ESMA	European Securities and Markets Authority
EU	European Union
GAR	Green Asset Ratio
GDP	Gross Domestic Product
GHG	Green House Gases
ICAAP	Internal Capital Adequacy Assessment Process
IFD	Investment Firm Directive
ILAAP	Internal Liquidity Adequacy Assessment Process
ILO	International Labour Organization
IPSF	International Platform on Sustainable Finance
ISO	International Standards Organization
ITS	Implementing Technical Standards
IEA	International Energy Agency
KPI	Key Performance Indicator
LGD	Loss Given Default
NFRD	Non-Financial Reporting Directive
NGFS	Network for Greening the Financial System
NGO	Non-Governmental Organisation
OECD	Organisation of Economic Co-operation and Development
PACTA	Paris Agreement Capital Transition Assessment
PCAF	Platform for Carbon Accounting Financials
PD	Probability of Default
RAF	Risk Appetite Framework
SASB	Sustainability Accounting Standards Board

SFDR	Sustainable Finance Disclosure Regulation
SREP	Supervisory Review and Evaluation Process
SDG	Sustainable Development Goals
TCFD	Task Force on Climate-related Financial Disclosures
UN	United Nations
UNEP FI	United Nations Environment Programme Finance Initiative
USD	US dollar

Executive summary

The EBA has received several mandates to assess how to include Environmental, Social and Governance (ESG) risks into the three pillars of the banking prudential framework. This report assesses their potential inclusion in Pillar 2 by providing common definitions of ESG risks, elaborating on the arrangements, processes, mechanisms and strategies to be implemented by credit institutions and investment firms (institutions) to identify, assess and manage ESG risks, and recommending how ESG risks should be included in the supervisory review and evaluation performed by competent authorities. The report focuses on the resilience of institutions to the potential financial impact of ESG risks across different time horizons, which needs to be carefully assessed and ensured by institutions and supervisors by taking a comprehensive and forward-looking view, as well as early, proactive actions.

Definitions and assessment methodologies

ESG risks to institutions are defined as risks that stem from the current or prospective impacts of ESG factors on their counterparties or invested assets, i.e. the risks arising from the core activities of institutions. ESG risks materialise through the traditional categories of financial risks (credit risk, market risk, operational and reputational risks, liquidity and funding risks).

Various methods for the assessment of ESG risks exist in the market and these are rapidly evolving. The EBA has identified three different approaches: (i) portfolio alignment method, (ii) risk framework method (including scenario analysis) and (iii) exposure method. These approaches serve the objectives of assessing the alignment of institutions' portfolios with global or regional sustainability goals or of offering insights into the risk caused by exposures to (including investments in) certain activities. The EBA does not prescribe the use of one particular approach and sees merit in the application of a combination of approaches.

Management of ESG risks

The EBA sees a need to enhance, in a risk-based and proportionate manner, the incorporation of ESG risks into institutions' business strategies, internal governance arrangements and risk management frameworks.

Business strategies

Whilst institutions are, and should remain, responsible for setting their strategies, the impacts of ESG risks should be appropriately taken into account in order to ensure the resilience of business models over the short-, medium- and long-term time horizons. The EBA recommends that institutions achieve this by:

- incorporating ESG risk-related considerations when setting business strategies, in particular by extending the time horizon for strategic planning to at least 10 years, at least qualitatively, and by testing their resilience to different scenarios;
- setting, disclosing and implementing ESG risk-related strategic objectives and/or limits, including related key performance indicators, in accordance with the institution's risk appetite;
- engaging with borrowers, investee companies and other stakeholders;
- assessing the potential need to develop sustainable products or to adjust features of existing products, as a way to contribute to and ensure alignment with strategic objectives and/or limits.

Governance

The EBA recommends that institutions integrate ESG risks in governance structures, establishing clear working procedures and responsibilities for business lines, internal control functions, the relevant committee(s) and management body, with a view to ensuring a sound and comprehensive approach to the incorporation of ESG risks into business strategy, business processes and risk management. This should cover the management body and its 'tone from the top', allocation of tasks and responsibilities related to ESG risks as drivers of financial risk categories in the decision-making process, adequate internal capabilities and arrangements for an effective management of ESG risks, and remuneration policies that are aligned with the institution's long-term interests, business strategy and objectives.

Risk management

The EBA recommends that institutions incorporate ESG risks into their risk management framework, taking into account an assessment of their materiality over different time horizons, by:

- embedding material ESG risks in the risk appetite framework;
- managing ESG risks as drivers of financial risks, in a manner consistent with the risk appetite, and as reflected in both the ICAAP and ILAAP frameworks;
- identifying the gaps they are facing in terms of data and methodologies and take remedial action;
- setting out appropriate policies taking ESG risks into account for the assessment of the financial robustness of counterparties;
- developing risk monitoring metrics at exposure, counterparty and portfolio level;
- developing methodologies to test their resilience to ESG risks, with a view to improving understanding on the robustness of their business model and investment strategies.

Supervision of ESG risks

The EBA sees a need to reflect ESG risks in the supervisory evaluation of institutions falling under the scope of the CRR/CRD. ESG risks should be proportionately incorporated into the business model analysis, in particular with regard to the analysis of the business environment, the current business model, the strategy analysis and the assessment of the viability and sustainability of the

business model. However, the existing assessment under the Supervisory Review and Evaluation Process (SREP) may not enable supervisors to sufficiently understand the longer-term impact of ESG risks. In this context, the EBA sees a need to introduce a new aspect of analysis in the supervisory assessment, in the form of an evaluation of whether credit institutions sufficiently test the long-term resilience of their business models against the time horizon of the relevant public policies or broader transition trends, applying at least a 10 year horizon.

The supervisory review should also proportionately incorporate ESG risks into the assessment of the credit institution's internal governance and wide controls. In addition, it should proportionately incorporate ESG risks as drivers of financial risks, in particular risks to capital and risks to liquidity and funding. The assessment of these ESG risks should progressively and proportionally be incorporated into the supervisory capital assessment.

The supervisory framework applicable to investment firms is still being developed and the EBA does not include specific recommendations for the supervision of ESG risks for these firms at this stage.

Taking into account the legislative and regulatory initiatives and the progress achieved by institutions and supervisors over the recent years[1], the management of ESG risks by institutions, in addition to the incorporation of ESG risks in supervision should, in an initial stage, give particular prominence to climate-related and broader environmental risks. Institutions and supervisors should continue to develop their understanding and advance their identification and assessment processes related to social and governance factors, and gradually integrate related risks into the management and supervision of ESG risks.

Next steps

This report outlines the EBA's views and recommendations on the management and supervision of ESG risks. It should be considered in conjunction with the EBA and ESA disclosure publications under the CRR (the EBA will publish Pillar 3 disclosure requirements on ESG risks, transition risks and physical risks as defined in this report later this year)[2], the Taxonomy Regulation[3] and the SFDR[4], which provide key metrics to support strategies and risk management. The report leverages on work conducted by the EU as part of the regulatory agenda on sustainable finance, international forums providing analysis, best practices and recommendations to contribute to the development of environmental and climate risk management, such as the Network for Greening the Financial System (NGFS) and the Basel Committee on Banking Supervision (BCBS), and other stakeholders[5].

[1] This is also in accordance with the sequential approach described in the EBA's action plan on sustainable finance.

[2] EBA Consultation paper on draft ITS on Pillar 3 disclosures on ESG risks.pdf (europa.eu).

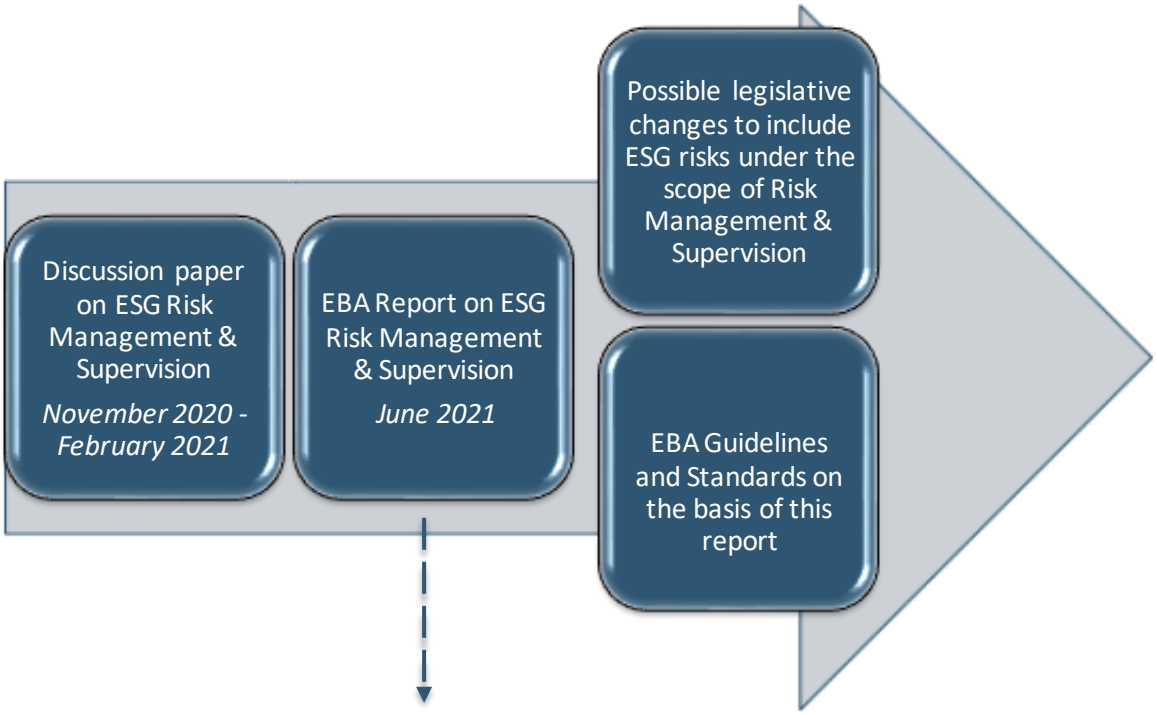
[3] See the EBA opinion and full report and the ESAs consultation paper.

[4] See ESA final report.

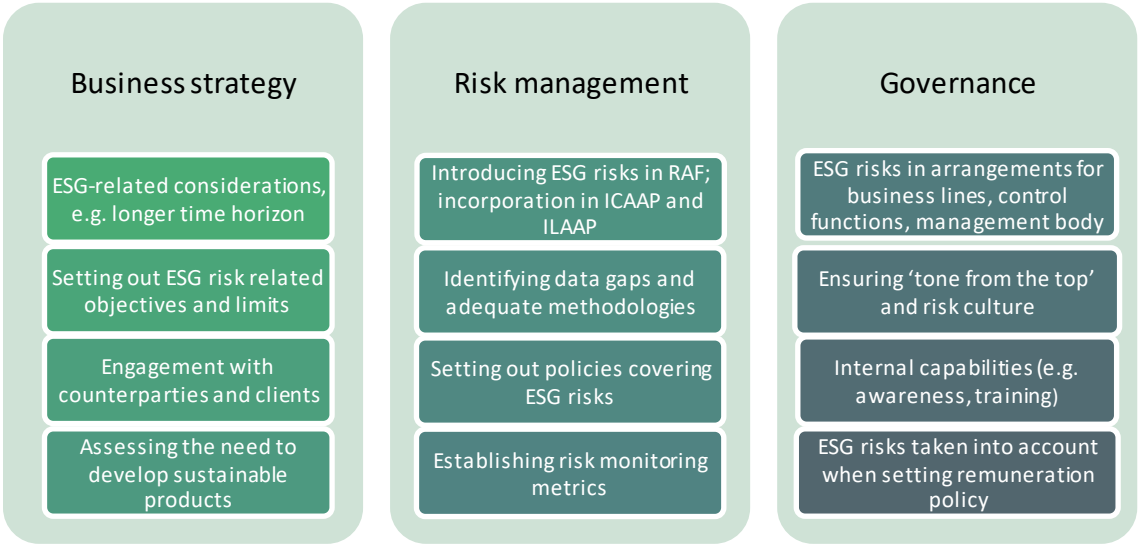
[5] The work in the area of ESG risks is expanding fast. While this report includes a number of references to ESG-related know-how providers and initiatives, it is not the EBA's intention to promote these in any particular way. In other words, the references and examples provided are non-exhaustive and for illustrative purposes only.

The report is based on the feedback received from the consultation organised by the EBA on its discussion paper on the management and supervision of ESG risks for credit institutions and investment firms[6].

This report has been transmitted to the EU Parliament, the Council and the Commission, and will be used by the EBA as a basis for the development of Guidelines on the management of ESG risks by institutions and the supervision of ESG risks by EU competent authorities. Institutions are invited to actively reflect on the content of the report and its recommendations.



Recommendations to institutions – need for early and proactive actions to ensure preparedness for ESG-related challenges and regulatory developments



[6] Click here for the discussion paper. A summary of the feedback received and main changes in the report compared to the discussion paper is included in Annex of this report.

1. Background and rationale

1. In 2015, more than 190 governments around the world adopted the UN 2030 Agenda for Sustainable Development, aiming to support further progress on a wide range of interconnected and cross-cutting economic, social and environmental objectives. These objectives aimed at strengthening the global response to the eradication of poverty, the threat of climate change and access to equitable and universal health, food security, nutrition, education and decent work in more peaceful and inclusive societies. The agenda included seventeen Sustainable Development Goals (SDGs) and 169 associated targets to be reached by 2030. Achieving the SDGs requires major societal transformations and will depend on the mobilisation of significant financial resources from the public and private sectors, with an SDG financing gap currently estimated at an incremental USD 2-3 trillion per year for all countries.[7]

2. Also in 2015, signatories to the Paris Agreement committed to undertake ambitious efforts to limit the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above these levels.[8] This implies a need for early action to reduce greenhouse gas emissions as soon as possible.[9] In the long term, an unabated warming pathway would lead to significant declines in global GDP by 2100.[10]

3. Indeed, economies and societies are increasingly facing the complex and severe consequences of biodiversity loss and climate change, resource depletion, income inequality, migration and other environmental and social concerns.[11] Against this background, legislators in the European Union (EU) and around the world are taking actions to change economic activities that have significant adverse impacts on ESG factors and to alleviate the worst consequences. While these policies will be gradually introduced and take full effect for financial market participants over a longer time period, it is crucial to develop strategies to be able to cope with such changes.

4. In the EU, the European Green Deal announced in December 2019[12] is a plan to make the EU's economy sustainable, containing a package of measures ranging from cutting greenhouse gas emissions, to investing in research and innovation and preserving Europe's natural environment.

[7] See Sustainable Development Solutions Network: see http://www.unsdsn.org.

[8] Art. 2 and 3 of the Paris Agreement.

[9] NGFS, 'A Call for Action', par. 1.3.2.

[10] See, for instance, 'Long-Term Macroeconomic Effects of Climate Change: A Cross-Country Analysis' (IMF Working Paper, 2019), Chief Risk Officers Forum, 'The heat is on' (2019).

[11] Cf. e.g.: IPBES (2019), 'Global Assessment Report on Biodiversity and Ecosystem Services', the 'five reasons for concern' in the IPCC (2018), 'Global Warming of 1.5°C - Summary for Policymakers' and OECD (2014), 'Migration Policy Debates - Is migration good for the economy?'

[12] https://ec.europa.eu/info/files/communication-european-green-deal_en.

Specifically for climate, EU targets set in 2015 included a commitment to a binding target of at least a 40% domestic reduction in greenhouse gas emissions by 2030, compared to 1990.[13] In September 2020, the Commission proposed to raise this target to at least 55%.[14] In addition, the EU has designed a long-term strategy aiming to become climate neutral - an economy with net-zero greenhouse gas emissions - by 2050.[15] In April 2021, co-legislators reached a provisional agreement on the European Climate Law which enshrines the EU's commitment to reaching climate neutrality by 2050 and the intermediate target of reducing net greenhouse gas emissions by at least 55% by 2030.[16]

5. In the area of financial regulation, a number of actions are being taken following the Report of the European Commission's High-Level Expert Group on Sustainable Finance[17], published in January 2018, and the 'Action Plan: Financing Sustainable Growth'[18] published in March 2018 which sets an EU strategy on sustainable finance and a roadmap for work across the financial system. In addition, the European Commission is expected to present its Renewed Strategy on Sustainable Finance mid-2021, building on the 2018 Action Plan, with new actions to increase private investment in sustainable projects and activities to support the different actions set out in the European Green Deal and to manage and integrate climate and environmental risks in the financial system.

6. The European Commission's 2018 Action Plan has the following three main objectives:

    a. reorienting capital flows towards sustainable investment in order to achieve sustainable and inclusive growth;

    b. managing financial risks stemming from climate change, resource depletion, environmental degradation and social issues;

    c. fostering transparency and long-termism in financial and economic activity.

    It is complemented with broader legislative efforts to support the transition to a more sustainable economy.

7. The financial sector is expected to play a key role in financing the transition to a greener and more sustainable economy in accordance with the Action Plan. Reorienting private capital to

[13] Intended Nationally Determined Contribution of the EU and its Member States, submitted by the Latvian Presidency and the European Commission on 6 March 2015.

[14] https://ec.europa.eu/clima/policies/strategies/2030_en.

[15] The EU submitted its long-term strategy to the United Nations Framework Convention on Climate Change (UNFCCC) in March 2020. https://ec.europa.eu/clima/policies/strategies/2050_en.

[16] https://ec.europa.eu/clima/news/commission-welcomes-provisional-agreement-european-climate-law_en.

[17] https://ec.europa.eu/info/publications/180131-sustainable-finance-report_en.

[18] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0097&from=EN.

more sustainable investments requires a comprehensive shift in how the financial system works. This transformation will certainly spur new business opportunities, but the financial sector will also be exposed to the financial risks stemming from the transformation of the economy and worsening physical conditions. **The determination of the EU legislators to fundamentally change the way in which EU economies work should also encourage institutions to approach ESG risks from a strategic perspective.**

8. To reflect all of the above, the banking regulatory framework (CRR2/CRD5) has been revised and several mandates have been extended to the EBA to assess how to include ESG risks into the three pillars of the banking prudential framework. The first mandate (Article 98(8) of the CRD5) relates to Pillar 2 and calls on the EBA to develop a report assessing the potential inclusion of ESG risks in the supervisory review and evaluation process (SREP) performed by competent authorities. The second mandate (Article 434a and Article 449a[19] of the CRR2) relates to Pillar 3 and requires the EBA to develop a technical standard for including ESG risks in the Pillar 3 disclosure requirements in Part Eight of the CRR2. Earlier this year, the EBA published draft technical standards for public consultation and will publish the final standard later in 2021.[20] The EBA has developed the consultation paper in parallel and in accordance with its advice to the EU Commission on disclosures under the EU taxonomy, including a proposal for a Green Asset Ratio (GAR).[21] Lastly, the third mandate (Article 501c of the CRR2) relates to Pillar 1 and requires the EBA to assess whether a dedicated prudential treatment of exposures related to assets or activities that are substantially associated with environmental and/or social objectives would be justified.

9. More specifically, regarding the first mandate (Article 98(8) of the CRD5), the EBA's assessment shall include at least the following:

    a. development of a uniform definition of ESG risks, including physical risks and transition risks where the latter shall include the risks related to the depreciation of assets due to regulatory changes;

    b. development of appropriate qualitative and quantitative criteria for the assessment of the impact of ESG risks on the financial stability of institutions in the short, medium and long term where criteria shall include stress testing processes and scenario analyses to assess the impact of ESG risks under scenarios of different severity;

[19] Article 449a of the CRR2 requires large institutions with publicly listed issuances to disclose information on ESG risks, physical risks and transition risks as defined in the EBA report produced under Article 98(8).

[20] Consultation paper on draft ITS on Pillar 3 disclosures on ESG risks.pdf (europa.eu).

[21] See the EBA opinion and full report.

c. the arrangements, processes, mechanisms and strategies to be implemented by the institutions to identify, assess and manage ESG risks;

d. the analysis, methods and tools to assess the impact of ESG risks on lending and financial intermediation activities of institutions.

10. The EBA shall submit a report on its findings to the European Parliament, the Council and the Commission by 28 June 2021. On the basis of the outcome of its report, the EBA may, if appropriate, issue guidelines, in accordance with Article 16 of Regulation (EU) No 1093/2010, regarding the uniform inclusion of ESG risks in the SREP performed by competent authorities.

11. Similarly, in accordance with Article 35 of Directive (EU) 2019/2034 on the prudential supervision of investment firms (IFD), the EBA shall prepare a report on the introduction of technical criteria related to exposures to activities that are substantially associated with ESG objectives for the supervisory review and evaluation process, with a view to assessing the possible sources and effects of risks on investment firms, taking into account applicable legal acts of the Union in the field of ESG taxonomy. The EBA report shall contain at least the following:

a. a definition of ESG risks, including physical risks, risks related to the transition to a more sustainable economy, and with regard to transition risks, including risks related to the depreciation of assets due to regulatory change, qualitative and quantitative criteria and metrics relevant for assessing such risks, as well as a methodology for assessing the possibility of such risks arising in the short, medium, or long term and the possibility of such risks having a material financial impact on investment firms;

b. an assessment of the possibility of significant concentrations of specific assets that increase ESG risks, including physical risks and transition risks for investment firms;

c. a description of the processes by means of which investment firms can identify, assess and manage ESG risks, including physical risks and transition risks;

d. the criteria, parameters and metrics by means of which supervisors and investment firms can assess the impact of short-, medium- and long-term ESG risks for the purposes of the supervisory review and evaluation process.

12. The EBA shall submit the report on its findings to the European Parliament, the Council and the Commission by 26 December 2021. On the basis of that report, the EBA may, if appropriate, adopt guidelines to introduce criteria related to ESG risks for the supervisory review and evaluation process.

13. In November 2020 the EBA published a discussion paper as a step towards fulfilling the mandates stipulated under Article 98(8) of the CRD5 and Article 35 of the IFD, in order to receive stakeholders' feedback on the proposed approach for incorporating ESG risks into the risk management of institutions and the supervisory review. The feedback received from 54 respondents, has been assessed by the EBA and has informed the finalisation of this report. A summary of the feedback received and the main changes introduced in the report compared to the discussion paper are included in Annex 2.

14. The reasoning and arguments presented in this report can be applied to investment firms that are similar to credit institutions in terms of their business models and risk profile, which fall under the framework of the CRR and the CRD. These investment firms have characteristics of credit institutions and are expected to be subject to ESG risks in a similar manner.

15. Investment firms may be different from credit institutions in terms of their economic activities because they do not have large portfolios of retail and corporate loans. Therefore, the risks faced by investment firms, especially from an ESG standpoint, may show some differences compared to those faced by credit institutions. For investment firms that deal in financial instruments on their own account, ESG risks may manifest on their balance sheets through investment activities. In this case, ESG risks may materialise in a number of different risk metrics monitored under the IFD such as net position risk or daily trading flows. For investment firm services and activities other than dealing on own account, e.g. portfolio management and investment advice, ESG factors may affect the risk profile of the investment firms through the financial performance of their clients' portfolios. In this case, this impact would come from fees and commissions and other monetary gains that the investment firms may generate from the provision of these investment services and activities. Similarly, the materialisation of ESG risks would manifest in different risk metrics that are monitored, for example, assets under management. This report covers all of these services and activities carried out by investment firms[22] to the extent that they are subject to ESG factors and risks.

16. Institutions have an impact on and are impacted by ESG factors as companies, for example, through their Scope 1 and Scope 2 CO_2 emissions, the physical effects of climate change on their premises and/or reputational impacts related to environmental and social factors (e.g. poor working conditions). These risks need to be covered by the related management arrangements. However, the main focus of this report is the risks to which the institutions are exposed via the impact of ESG factors on their counterparties or invested assets, i.e. the risks arising from their core activities.

17. While this report deals with ESG risks, it gives particular consideration to risks stemming from environmental factors, especially climate change, reflecting ongoing initiatives and progress

[22] Investment services and activities as listed in Section A of Annex I of Directive 2014/65/EU.

achieved by institutions and supervisors on this particular topic over recent years. Social and governance factors are included in the analysis, in accordance with the EBA's legal mandates, and the report explores why and how these factors can also be sources of risk for institutions. The EBA acknowledges that qualitative and quantitative indicators, metrics and methods that are currently available to institutions for the assessment of risks may be more advanced for environmental risks than for social and governance risks. Therefore, the management of ESG risks by institutions, in addition to the incorporation of ESG risks in supervision should, at an initial stage, give particular prominence to environmental risks. Nevertheless, the progress in this policy field, including the further development of the EU taxonomy, will gradually allow institutions and supervisors to advance in their identification and assessment processes related to social and governance factors, integrating related risks into the management and supervision of ESG risks.

18. This report should be considered in conjunction with other relevant publications and initiatives which impact the regulatory framework for institutions with respect to ESG factors. This includes, in particular, the EU initiatives contributing to the development of a more enabling ESG data framework and more consistent ESG disclosure framework, including the EU taxonomy, the Sustainable Finance Disclosure Regulation (SFDR), ESG risks disclosure requirements under the Capital Requirement Regulation (CRR)[23], the European Single Access Point (ESAP) for financial and non-financial information, the review of the Non-Financial Reporting Directive (NFRD)[24] and proposal for a Corporate Sustainability Reporting Directive (CSRD)[25].

1.1 Structure of the report

19. This report focuses on the issues that fall within the scope of the abovementioned mandates extended to the EBA under the CRD and IFD. In particular, it includes a comprehensive elaboration of what ESG factors and risks are, how and through which transmission channels they materialise, why they matter from a financial point of view and what can be done to support their full incorporation by institutions and supervisors in order to enhance the resilience of the financial sector in the short, medium and long run (see Figure 1).

20. This report is organised as follows:

21. Chapter 2 elaborates on the relevance of ESG risks for the financial sector and provides uniform definitions of ESG factors and risks, including definitions of physical risks and transition risks as the main drivers of environmental risks. The definition of transition risks comprises the risks related to the depreciation of assets due to policy, technological and/or behavioural changes.

[23] Consultation paper on draft ITS on Pillar 3 disclosures on ESG risks.pdf (europa.eu).

[24] See EBA answer to the public consultation on the review of the NFRD.

[25] Sustainable finance package | European Commission (europa.eu).

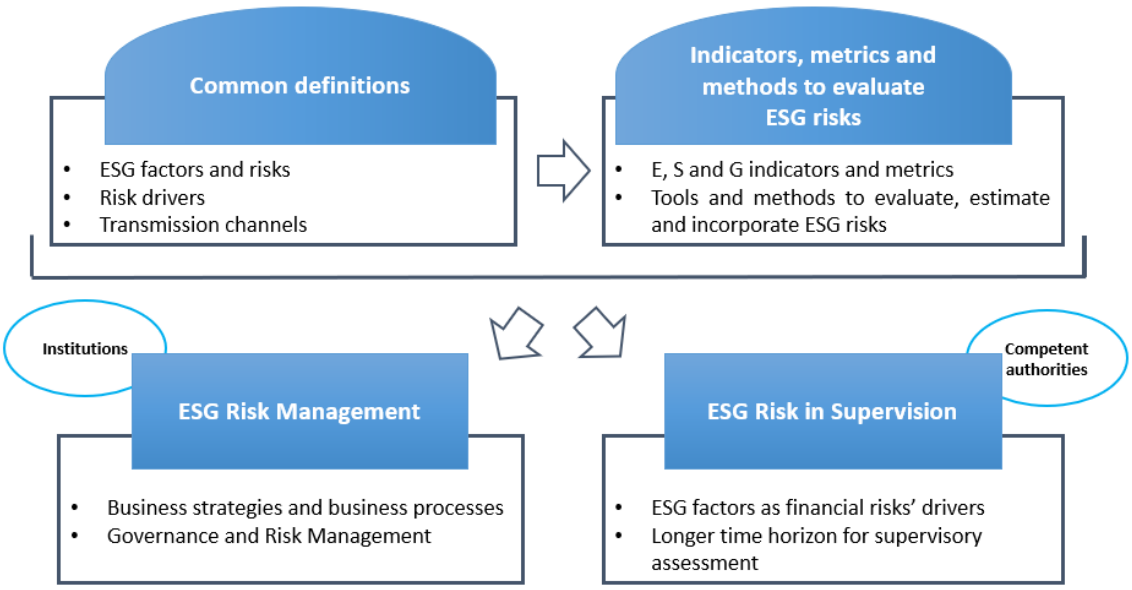
The report also defines, elaborates and presents examples to substantiate the relevance of ESG risks for the financial sector.

22. Chapter 3 presents quantitative and qualitative indicators and metrics, with a non-exhaustive list of ESG indicators together with a description of several tools and methodologies to support the identification, evaluation and assessment of ESG risks, namely: (i) the alignment method, (ii) the risk framework method and (iii) the exposure method. These methodologies are based on research of existing tools. They are presented in a neutral way (i.e. without any prioritisation or preference) and can complement each other. The methods may be used to better understand and compare the interaction of ESG risks in given exposures and portfolios. Together with the progress made in the definition of common taxonomies (such as the EU Taxonomy Regulation), these analytical tools can help address some of the challenges in the assessment of ESG risks.

23. The report argues that the impact of ESG risks materialises in the form of existing financial risks (e.g. credit risk, market risk and operational risk). Chapter 4 presents the rationale for the incorporation of ESG risks in an institution's business strategy and business processes, internal governance and risk management frameworks, and includes several policy recommendations on the way in which institutions can embed ESG risks in these processes in a proportionate manner. Finally, Chapter 5 elaborates on the effective way to proportionally reflect ESG risks in the supervisory review for credit institutions and makes several policy recommendations in this respect. The final chapter does not apply to investment firms under the scope of IFR/IFD as the supervisory framework of these investment firms is currently being developed.

24. This report has been transmitted to the European Commission, which is invited to take it into consideration in the context of the Renewed Sustainable Finance Strategy and review of the CRR/CRD. The report and its recommendations will be used by the EBA as a basis for the development of EBA Guidelines on the management of ESG risks by institutions and an update of the Supervisory Review and Evaluation Process (SREP) Guidelines to include ESG risks in the supervision of credit institutions. As explained in the EBA Roadmap on Investment Firms, the EBA will also take a sequential approach and leverage on the output of this report to further enrich, in due course, the SREP Guidelines for investment firms under Article 35 of the IFD.

Figure 1 Main content of this report



2. Common definitions of ESG factors, ESG risks and their drivers and transmission channels

25. A fundamental part of evaluating and measuring ESG risks in a comparable manner is to establish common definitions of ESG factors and to understand how these factors translate into financial risks that may impact institutions individually and the financial system as a whole.

26. As part of the policy context described in Chapter 1, at the European Union level initiatives have been, or are being, undertaken to define ESG factors. The EU Taxonomy Regulation (2020/852) on the establishment of a framework to facilitate sustainable investment is a key milestone in the definition of legally sustainable activities. The taxonomy is being implemented via a set of granular criteria for economic activities that are considered to be sustainable (see Chapter 3 for more details).

27. Also at the European level, a main legal reference for framing ESG factors is the 'Regulation on sustainability-related disclosures in the financial services sector' (SFDR) (2019/2088).[26] The SDFR aims at enhancing transparency and informing investors about sustainability-related aspects, particularly the 'principal adverse impacts' that investment decisions have on sustainability factors and the sustainability characteristics or objectives of financial products. The SDFR defines sustainability factors as 'environmental, social and employee matters, respect for human rights, anti-corruption and anti-bribery matters'. The EBA, EIOPA and ESMA (collectively, the 'ESAs') have developed, through their Joint Committee, draft regulatory technical standards to further specify the content, methodologies and presentation of disclosures related to these sustainability factors.[27]

28. Additionally, in April 2021, the European Commission published a proposal for a new Corporate Sustainability Reporting Directive (CSRD), which revises and strengthens rules introduced by the Non-Financial Reporting Directive (NFRD), extends the NFRD's scope and aims to ensure that companies report reliable and comparable sustainability information.

29. Despite these developments at the EU level, the current policy framework still lacks common definitions of ESG factors and hence current market practices vary across

[26] The EU Regulation on sustainability-related disclosures in the financial services sector (2019/2088) needs to be read in conjunction with the EU Taxonomy Regulation (2020/852), which introduces several amendments to the former.

[27] For further details see https://www.eba.europa.eu/regulation-and-policy/transparency-and-pillar-3/joint-rts-esg-disclosure-standards-financial-market-participants.

institutions. An EBA market survey conducted in May-June 2019[28] and the responses received to the consultation on the EBA Discussion Paper on 'Management and supervision of ESG risks for credit institutions and investment firms' between November 2020 and February 2021[29] show that institutions rely on various international frameworks and standards defining ESG factors, while some of them use their own definitions. The following existing frameworks are currently used by institutions.

a. Frameworks addressing ESG factors

i. The United Nations Sustainable Development Goals (SDGs) are a collection of 17 interlinked global goals designed to be a blueprint to achieve a better and more sustainable future for all and are intended to be achieved by 2030.

ii. The Principles for Responsible Investment (PRI) aim at supporting signatories - asset owners/institutional investors, investment managers and service providers (including consultancy, information and data) - to incorporate ESG factors into their investment and ownership decisions.

iii. The United Nations Environment Programme Finance Initiative (UNEP FI) Principles for Responsible Banking aim at aligning banks' business strategies with the objectives of the SDGs and the Paris Agreement.

iv. The Global Sustainability Standards Board Global Reporting Initiative (GRI) aims at helping organisations to better understand, manage and communicate their impacts on sustainability-related issues.

v. The Equator Principles aim to provide a common baseline and framework to identify, assess and manage environmental and social risks when financing projects.

vi. The World Economic Forum (WEF) report on 'Measuring Stakeholder Capitalism' provides for a core set of common metrics and disclosures on non-financial factors which can be used by companies to align their mainstream reporting on performance against ESG indicators and track their contributions to the SDGs.

vii. The International Integrated Reporting Council (IIRC) Integrated Reporting Framework provides a framework for integrated reporting along the lines

[28] See Annex in EBA staff Paper, N. 6 – January 2020, 'Sustainable Finance – Market Practices'.

[29] See https://www.eba.europa.eu/financial-innovation-and-fintech/sustainable-finance/discussion-paper-management-and-supervision-esg-risks-credit-institutions-and-investment-firms-0.

of six capitals (financial, manufactured, intellectual, human, social and relationship and natural) with the aim of making companies report a more complete picture of the way in which they creates value.

viii. The International Finance Corporation Environmental and Social Performance Standards (IFC Performance Standards) define IFC clients' responsibilities for managing environmental and social risks.

ix. The OECD Due Diligence Guidance for Responsible Business Conduct provides practical support to enterprises, by giving due diligence recommendations on the implementation of the OECD Guidelines for Multinational Enterprises. These Guidelines cover non-binding principles and standards for responsible business conduct in a global context consistent with applicable laws and internationally recognised standards.

x. The Committee of Sponsoring Organizations of the Treadway Commission (COSO) and the World Business Council for Sustainable Development (WBCSD) Guidance for Applying Enterprise Risk Management to ESG-related risks proposes approaches to overcome ESG-related risk challenges across the ERM process and provides methods for managing both upside and downside ESG-related risks.

xi. The Sustainability Accounting Standards Board (SASB) Standards identify the subset of ESG issues most relevant to financial performance in each of 77 industries and are designed to help companies disclose financially-material sustainability information to investors.

b. Frameworks specifically addressing environmental factors

i. The Natural Capital Protocol + Supplement (Finance) provides a standardised framework for organisations to identify, measure, and value their impacts and dependencies on natural capital.

ii. The recommendations of the Financial Stability Board Taskforce on Climate-related Financial Disclosures (TCFD) provide a framework to help public companies and other organisations more effectively disclose climate-related risks and opportunities through their existing reporting processes.

iii. The Climate Bond Initiative Climate Bonds Standard provides sector-specific eligibility criteria for assets and projects that can be labelled as green investments.

iv. The International Capital Market Association Green Bond Principles are process guidelines that clarify the approach for issuance of a green bond.

v. The Partnership for Carbon Accounting Financials Global GHG Accounting and Reporting Standard for the Financial Industry provides methodological guidance to measure and disclose greenhouse gas emissions associated with six asset classes (listed equity and corporate bonds, business loans and unlisted equity, project finance, commercial real estate, mortgages and motor vehicle loans).

vi. The Climate Disclosure Project (CDP), UN Global Compact (UNGC), World Resources Institute (WRI) and World Wildlife Fund (WWF) Science-Based Targets initiative (SBTi) provides targets that are in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement, through which companies can define their path to reduce greenhouse gas emissions in line with the agreement.

c. Frameworks specifically addressing social factors

i. The UN Guiding Principles on Business and Human Rights are a set of guidelines for states and companies to prevent, address and remedy human rights abuses committed in business operations.

ii. The eight fundamental Conventions of the International Labour Organization (ILO) cover subjects that are considered to be fundamental principles and rights at work: freedom of association and the effective recognition of the right to collective bargaining, the elimination of all forms of forced or compulsory labour, the effective abolition of child labour, and the elimination of discrimination in respect of employment and occupation.

iii. The United Nations Global Compact is a non-binding pact to encourage businesses worldwide to adopt sustainable and socially responsible policies and to report on their implementation. It provides for a principle-based framework for businesses, stating ten principles in the areas of human rights, labour, the environment and anti-corruption.

30. Examples of ESG factors that are common across the provided frameworks are listed in Table 1. It should be noted that depending on their materiality ESG factors which are not common across the provided frameworks could be equally important for institutions to take into account.

Table 1 Examples of ESG factors (positive and negative) included in the most commonly used frameworks

Source	Environmental	Social	Governance
International frameworks[1)]	▪ GHG emissions ▪ Energy consumption and efficiency ▪ Air pollutants ▪ Water usage and recycling ▪ Waste production and management (water, solid, hazardous) ▪ Impact and dependence on biodiversity ▪ Impact and dependence on ecosystems ▪ Innovation in environmentally-friendly products and services	▪ Workforce freedom of association ▪ Child labour ▪ Forced and compulsory labour ▪ Workplace health and safety ▪ Customer health and safety ▪ Discrimination, diversity and equal opportunity ▪ Poverty and community impact ▪ Supply chain management ▪ Training and education ▪ Customer privacy ▪ Community impacts	▪ Codes of conduct and business principles ▪ Accountability ▪ Transparency and disclosure ▪ Executive pay ▪ Board diversity and structure ▪ Bribery and corruption ▪ Stakeholder engagement ▪ Shareholder rights
European frameworks[2)]	▪ GHG emissions ▪ Energy consumption and efficiency ▪ Exposure to fossil fuels ▪ Water, air, soil pollutants ▪ Water usage, recycling and management ▪ Land degradation, desertification, soil sealing ▪ Waste production and management (hazardous, non-recycled) ▪ Raw materials consumption ▪ Biodiversity and protection of healthy ecosystems ▪ Deforestation	▪ Implementation of fundamental ILO Conventions ▪ Violation of UN Global Compact Principles ▪ Inclusiveness/Inequality ▪ Exposure to controversial weapons ▪ Discrimination ▪ Insufficient whistle-blower protection ▪ Rate of accidents and number of days lost to injuries, accidents, fatalities or illness ▪ Human rights policy ▪ Investment in human capital and communities ▪ Trafficking in human beings	▪ Anti-corruption and anti-bribery policies ▪ Excessive CEO pay ▪ Diversity (unadjusted gender pay gap and board gender diversity)

Industry[3)]	▪ Consumption of materials, energy and water ▪ Production of GHG emissions, other emissions to air and water ▪ Production and management of waste and wastewater ▪ Protection of biodiversity ▪ Research and development in low-carbon and other environmental technologies	▪ Quality and innovation in customer relations, rights of customers to gain information about environmental issues ▪ Human rights ▪ Labour practices: human resource management and employee relations, diversity issues, gender equality, workplace health and safety considerations ▪ Access to credit and financial inclusion ▪ Personal data security	▪ Set of rules or principles defining rights, responsibilities and expectations between different stakeholders in the governance of the entity/sovereign ▪ Executive pay ▪ Board of Directors independence ▪ Board composition and structure ▪ Shareholder rights ▪ Internal audit ▪ Compensation ▪ Bribery and corruption ▪ Integrity in corporate conduct/conduct frameworks
Common areas[4)]	▪ Water usage and consumption ▪ Waste management and production ▪ Energy consumption ▪ Pollution ▪ Biodiversity ▪ GHG emissions	▪ Labour and workforce considerations ▪ Human rights ▪ Inequality ▪ Discrimination ▪ Gender equality	▪ Rights and responsibilities of directors ▪ Remuneration ▪ Bribery and corruption

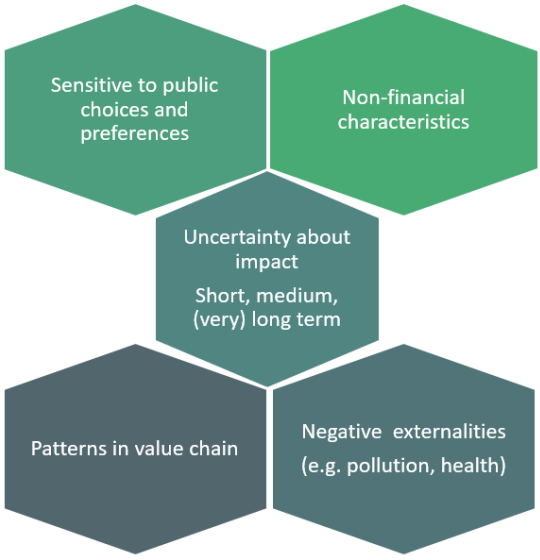
Sources: EBA staff based on: 1) the frameworks listed in paragraph 29 of this report, 2) Regulation EU 2020/852 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 and Draft RTS under SFDR on sustainability-related disclosures in the financial services sector; 3) EBA Market Practices Survey on Sustainable Finance and 4) EBA staff.

2.1 Definition and general features of ESG factors

31. Most international frameworks and standards refrain from establishing a single definition of ESG factors. While there is general agreement that ESG factors represent the main three pillars of sustainability, the lack of a single definition of ESG factors complicates their consistent understanding and management.

32. Based on the commonalities of the available frameworks that refer to ESG factors, an ESG factor displays one or more of the following intrinsic features, which may potentially interconnect with each other and which are presented in non-hierarchical order in Figure 2.

Figure 2 Commonalities of ESG factors



- Factors traditionally considered as non-financial: reflecting characteristics such as greenhouse gas emissions, environmental footprint, social welfare, poverty, equal rights and ethics, in addition to those factors that have been traditionally considered financial, such as profits, capital and costs.[30]

- Uncertainty about impact: refers to uncertainty over the timing of the impacts of these factors, as these impacts may occur at any time (short, medium and/or long term) and trigger effects over very different timespans. It is important to avoid any misunderstanding that ESG factors are only relevant in the medium and/or longer term, as they also create risks in the short term, such as acute environmental hazards and the abrupt implementation of environmental policies.

- Negative economic externalities: some ESG factors, such as greenhouse gas emissions, pollution, the welfare of society as a whole and poverty, are of particular concern to the wider public. While they reflect the impact of a sum of individual activities, they are not captured in the financial statements, meaning that the costs of those activities are borne by third parties or by society at large and are not fully captured by market mechanisms. For example, consider the 'collective' cost of greenhouse gas emissions generated by an entity. In the absence of carbon pricing

[30] These characteristics are treated separately in corporate reporting, see Directive 2014/95/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups.

that adequately captures climate-related externalities, financial markets are unable to fully reflect the associated risk in prices.[31][32]

- Patterns arising from the value chain: refers to the impacts of an entity's activities and its interactions with different stakeholders within its upstream and downstream value chains. In the context of these activities, an entity may be faced indirectly, through its debtors and creditors, with different ESG factors.

- Increased sensitivity to changes in public policies: signatories of the Paris Agreement and UN member states subject to the SDGs have committed to undertake ambitious efforts to meet the established goals and targets, which imply major changes in public policies and regulatory frameworks. Specifically, efforts to limit climate change and mitigate the effects of other environmental issues could imply significant regulatory shifts and lead to wider structural changes that are difficult to predict (see Box 1).

Box 1: Example of public policies designed to mitigate climate change

At the European level, the EU's Emissions Trading System (EU ETS) is a cornerstone of its policy efforts to tackle climate change and its key tool for reducing emissions of carbon dioxide (CO_2) and other greenhouse gases (GHG) in the power, aviation and industrial sectors in a cost-effective way. It was launched in 2005 and is the first - and still the largest - international system for trading emission allowances, covering over three-quarters of the allowances traded on the international carbon market and around 40% of the EU's GHG emissions.[33]

Another example is presented at national level in Germany, where a law was passed introducing a national emissions scheme for trading heating oil, natural gas, petrol and diesel.

The purpose of these mechanisms is to prompt increases in the price of fossil fuels which could ultimately strain the profitability of emission-intensive industries.

33. Institutions can be *impacted by* or have an *impact on* ESG factors. As companies, institutions can be impacted by ESG factors (*outside-in perspective*), for example through the physical effects of climate change on their premises, or have an impact on ESG factors (*inside-out*

[31] This poses also a challenge for disclosures that tend to be incomplete (selection bias in firm reporting), inconsistent (lack of accepted methodology for defining sustainability-oriented assets, although this challenge should, at least to some extent, be progressively overcome with the EU taxonomy) and insufficient (virtually no reporting on downstream emission intensity of portfolio products).

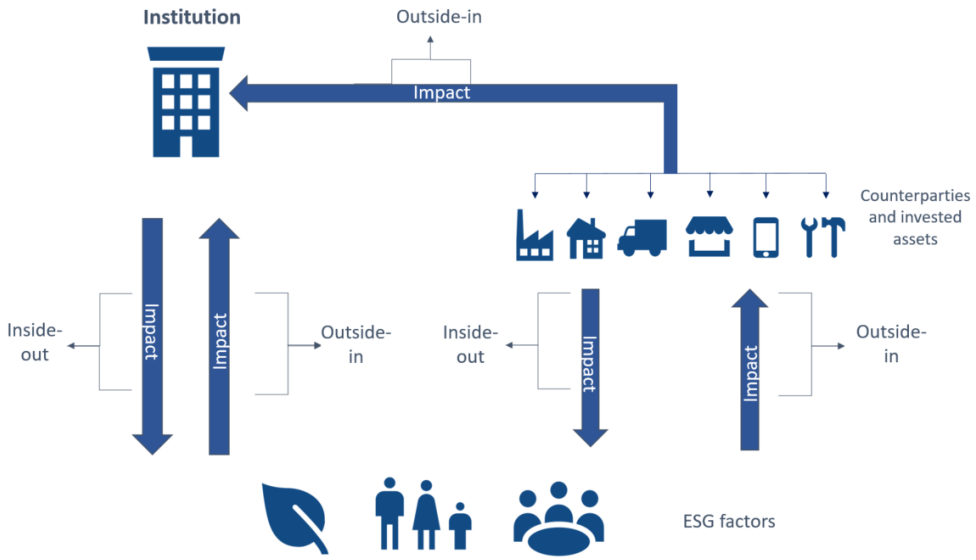
[32] https://www.esrb.europa.eu/pub/pdf/reports/esrb.report200608_on_Positively_green_-_Measuring_climate_change_risks_to_financial_stability~d903a83690.en.pdf?c5d033aa3c648ca0623f5a2306931e26.

[33] https://www.emissions-euets.com/carbon-market-glossary/872-european-union-emissions-trading-system-eu-ets.

perspective), for example through their Scope 1 and Scope 2 CO_2 emissions.[34] Although relevant and potentially impactful for institutions from a financial perspective, these impacts stem from the institution's own fully-controlled activities and related management arrangements. They are expected to be taken into account in its existing risk management and internal governance frameworks (e.g. location of premises, ICT systems used, employee working conditions, etc.) and are therefore not the focus of this report, except for a reference made in the context of operational risk management in Chapter 4.

34. Further, institutions can be impacted by ESG factors through their core business activities (*outside-in perspective*), for example by providing a loan to a counterparty with an energy-intensive business model which is affected by the implementation of policies aimed at promoting the transition to an environmentally-sustainable economy (in which case the counterparty is *impacted by* ESG factors - outside-in perspective), which could in turn have an effect on the counterparty's risk profile and thereby the institution's balance sheet. Alternatively, by providing a loan to a counterparty with business activities that are polluting the environment (in which case the counterparty has an *impact on* ESG factors - inside-out perspective), which could indirectly also affect the counterparty's risk profile and thereby the institution's balance sheet. This report focuses on the impacts that institutions are exposed to through their counterparties and invested assets, as these relate to the institution's core business activities and could thereby have a more significant impact on its financial performance and solvency.

Figure 3 Visualisation of the relationship between institutions and ESG factors through the outside-in and inside-out perspectives



[34] See definitions of these concepts in Annex 1.

35. For the purpose of this report, ESG factors can be defined in the following way: **'ESG factors are environmental, social or governance matters that may have a positive or negative impact on the financial performance or solvency of an entity, sovereign or individual.'**

36. As stated in the above definition, ESG factors can have negative or positive impacts. From this perspective, ESG factors can be used also when evaluating opportunities for financial or non-financial entities related to the transition to a more sustainable economy. This is in line with the need for institutions to take a comprehensive, long-term and strategic approach to ESG factors. This approach was used for the EU Taxonomy Regulation, which defines specific characteristics and criteria for environmentally sustainable economic activities.

37. The relevance of ESG factors for institutions depends not only on their business activities (e.g. asset type, sector, size, geographic location and liabilities) but also on their governance and strategy for managing them. In this regard, institutions may be impacted to a varying degree by policy changes in light of the transition to an environmentally sustainable economy (see Box 2).

Box 2: Example of policy changes in light of the transition to an environmentally sustainable economy which could affect institutions through their core business activities

The Renewable Energy Directive[35] requires the EU to meet at least 20% of its total energy demand with energy from renewable sources by 2020 via the attainment of individual national targets. The revised Renewable Energy Directive[36] establishes a new binding target for the EU of at least 32% of renewable energy by 2030,[37] with a clause for a possible upward revision by 2023.[38] The envisaged importance of renewable energy could have implications for those counterparties that are unable to catch up on the use or production of energy from renewable sources. In a similar vein, the Energy Performance of Buildings Directive[39] requires all new buildings to be nearly zero-energy by the end of 2020, Regulation (EC) 443/2009 significantly reduces the permissible fleet-wide CO_2 emissions of new cars and vans from 2021 onwards and Regulation (EU) 2019/631 introduces CO_2 emission performance standards for new passenger cars and new vans for 2025 and 2030. These regulations could also have implications for counterparties that are unable to meet the established requirements.

38. Annex 1 presents a non-exhaustive list of ESG factors, including indicators and metrics to define and measure them, based on international frameworks and initiatives. This list should be considered as a dynamic list to support the evaluations made by institutions and competent

[35] Directive 2009/28/EC.

[36] Directive 2018/2001/EU.

[37] Intended Nationally Determined Contribution of the EU and its Member States, submitted by the Latvian Presidency and the European Commission on 6 March 2015.

[38] More ambitiously, the European Commission's proposal for 'EU Climate Law' envisages climate-neutrality by 2050 (see https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020PC0080&from=EN).

[39] Directive 2010/31/EU, as amended by Directive 2018/844/EU.

authorities of ESG factors and assist them in identifying the most relevant factors to be monitored, considering the nature of the institution's activities. As policy makers, supervisors, financial market participants and the scientific community constantly gain a deeper, more granular understanding of ESG factors, the identified ESG factors are likely to evolve over time. Any policy framework implemented should be flexible enough to adequately address emerging sustainability-related developments and issues.

2.2 Definition of ESG risks

39. While ESG factors can have positive or negative impacts on institutions through their core business activities, this report focuses more on the latter, in line with the prudential approach to risk management. On the negative side, ESG factors may impact institutions' financial performance by materialising through financial risk categories, such as credit, market, operational, liquidity and funding risks, which are primarily affected by an institution's exposure to its counterparties and invested assets.

40. From a prudential perspective, ESG risks for institutions can thus be defined as the negative materialisation of ESG factors through their counterparties or invested assets. As we can see in Figure 3, institutions can be *impacted by* (outside-in perspective) ESG risks through their counterparties and invested assets, as these may be *impacted by* (outside-in perspective) or have an *impact on* (inside-out perspective) ESG factors. Both of these perspectives should be taken into account when evaluating ESG risks, but the latter only to the extent that its related impacts further aggravate the impacts from the outside-in perspective, as in that case they would have a negative impact on the counterparty or invested assets. For example, a counterparty's environmentally harmful business activities (negative inside-out impact on environmental factors) might make it more vulnerable to the implementation of transition policies targeting environmental degradation (negative outside-in impact of environmental factors).

41. A useful concept for distinguishing inside-out and outside-in perspectives and how the former can affect the latter, is that of 'double materiality', which includes:

    a. financial materiality (outside-in), which may arise from the impact of ESG factors on a company's economic and financial activities throughout their entire value chain (both upstream and downstream), affecting the value (returns) of such activities; and

    b. environmental and social materiality (inside-out), which may arise from the impact of a company's economic and financial activities on ESG factors, which could in turn become financially material when this impact affects the value (returns) of the company's activities.

42. Therefore, in the context of this report, **ESG risks are the risks of any negative financial impact on the institution stemming from the current or prospective impacts of ESG factors on its counterparties or invested assets.**

43. Depending on the business activities, the counterparty may be understood to be a borrower, a client (e.g. an entity, individual) or an issuer (e.g. sovereign, entity). In the case of investment firms, counterparties are the investee companies in which investments are made, both investment firms dealing on own account and the activities and services of investment firms that do not than deal on own account. The clients of the investment firms are the corporates or private individuals to which they provide investment services.

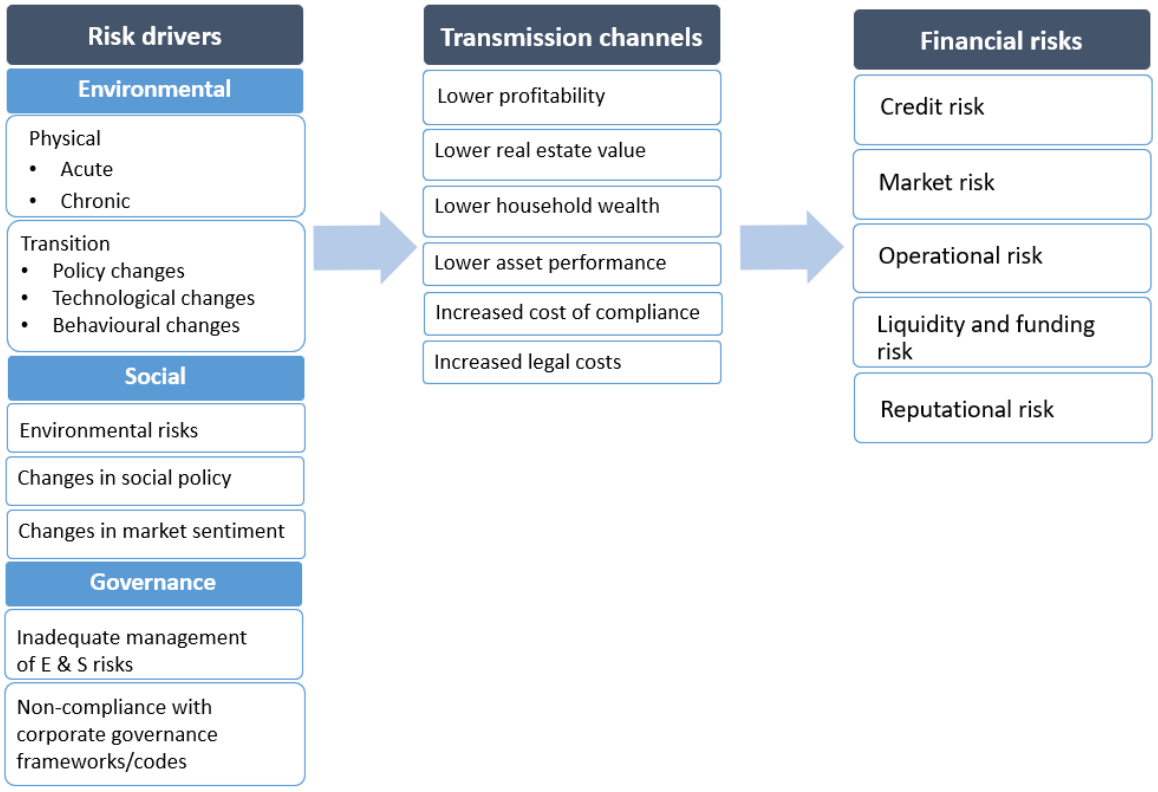
44. Although not in the focus of this report, it should be noted that the negative impact institutions have on ESG factors and ESG factors have on institutions as companies could also lead to financial risks, e.g. when maltreatment of staff causes negative media exposure, which causes reputation loss or even results in legal claims, or when physical risks affect the institution's office buildings.

45. In addition to negatively impacting institutions through their impacts on counterparties, ESG risks can also impact the financial system and economy as a whole, with potential systemic consequences. Negative impacts of ESG factors could affect macroeconomic factors, such as labour productivity, economic growth, government debt, gross domestic product and socio-economic changes. These, in turn, could have an impact on institutions by affecting the economy in which they operate, thereby affecting overall credit risk and market risk, for instance, which could then impact their financial performance or solvency. Specifically, in relation to environmental risks, it has been suggested that because of their scale, breadth and complexity, the impact of such risks could be systemic. These risks could interact with each other, amplifying shocks and stresses, the latter of which could lead to spill overs that could simultaneously disrupt multiple parts of the financial system, which could in turn have an impact on the institutions' financial performance and solvency. [40]

46. ESG factors can lead to negative financial impacts through a variety of **risk drivers.** The causal chains that explain how these risk drivers impact institutions through their counterparties and invested assets are called **transmission channels.** The next sections present definitions of ESG risks separately and go into the drivers and transmission channels of each one. For ease of reference, the content of these sections is summarised in Figure 4.

[40] See e.g. Managing_Climate Risk in the U.S. Financial System (cftc.gov), IMF 'Climate change and financial risk' (December 2019) https://www.imf.org/external/pubs/ft/fandd/2019/12/pdf/climate-change-central-banks-and-financial-risk-grippa.pdf and NGFS. https://www.ngfs.net/sites/default/files/medias/documents/ngfs_research_priorities_final.pdf.

Figure 4 Summary of ESG risk drivers, their transmission channels and how these can impact financial risk categories



2.3 Environmental factors and environmental risks

2.3.1 Environmental factors and environmental risks

47. Environmental factors are related to the quality and functioning of the natural environment and of natural systems, and include factors such as climate change, biodiversity, energy consumption, pollution and waste management. In the context of this report, they can be defined as **environmental matters that may have a positive or negative impact on the financial performance or solvency of an entity, sovereign or individual.**

48. Environmental risks should be understood as the financial risks posed by an institution's exposures to counterparties or invested assets that may potentially be affected by or contribute to the negative impacts of environmental factors, such as climate change and other forms of environmental degradation (e.g. air pollution, water pollution, scarcity of fresh water, land contamination, biodiversity loss and deforestation), in addition to corrective policy actions aimed at addressing such factors.

49. Environmental risks can materialise in two ways, reflecting their potential double materiality. On the financial materiality side (outside-in perspective), the financial performance of a counterparty (or the invested assets) can be affected by environmental factors. For example, the introduction of a carbon tax may decrease the profitability of carbon-intensive businesses or decrease the competitiveness of their products. On the environmental materiality side (inside-out perspective), the activities of the counterparties (or the invested assets) may have a negative impact on the environment, e.g. by emitting large volumes of CO_2 into the atmosphere, which may in turn become financially material for these counterparties through triggering or reinforcing a negative outside-in impact.

50. The type of environmental risk that has been most widely researched and recognised is climate-related risk. Climate-related risks are the financial risks posed by the exposure of institutions to counterparties that may potentially contribute to or be affected by climate change. This could, for example, take the form of physical damage caused by extreme weather events or a decline in the asset value of a counterparty that operates in carbon-intensive sectors subject to taxation on CO_2.

51. Climate change is both a subcategory of environmental risks and heavily interlinked with other environmental risk types. Climate change and other environmental risk types reinforce each other given that climate change contributes to the degradation of the environment and vice versa. For example, an increase of 1.5°C is expected to have a significant impact on biodiversity and ecosystems on land and in the sea.[41] At the same time, healthy ecosystems contribute to resilience and adaptation to conditions caused by climate change, such as higher temperatures, rising sea levels, fiercer storms, more unpredictable rainfall and acidification of ocean water. Not all environmental degradation is necessarily a result of climate change, as it can stem from other sources. For example, clearing land for farming can lead to habitat destruction, which in turn results in biodiversity loss, and using pesticides on crops can lead to biodiversity loss, groundwater contamination and air and water pollution.

52. Therefore, the scope of the analysis presented in this report includes a definition of environmental risks that encompasses the impact of climate change and other environmental factors. For the purpose of this report '**environmental risks are the risks of any negative financial impact on the institution stemming from the current or prospective impacts of environmental factors on its counterparties or invested assets'.**

53. Environmental factors can give rise to negative financial impacts through a variety of risk drivers that can be categorised as **physical risks** and **transition risks**. Physical and transition risks and examples of their transmission channels will be discussed in the subsequent sections.

[41] IPCC (2019), 'Global warming of 1.5°C'.

2.3.2 Physical risk

54. Although the definitions of physical risks vary marginally among international organisations, central banks, supervisors, policymakers and researchers, they are typically defined as risks which arise from the physical effects of climate change and environmental degradation. They can be categorised either as **acute** - if they arise from climate and weather-related events and an acute destruction of the environment, or **chronic** - if they arise from progressive shifts in climate and weather patterns or a gradual loss of ecosystem services.[42]

55. So far, physical risk drivers have mainly been defined in relation to climate risk. However, there are environmental risks other than climate change for which physical risks are also relevant, such as environmental degradation in the form of water stress, biodiversity loss and pollution (see Box 3).

Box 3: Examples of physical risk drivers in the context of environmental risks

Water stress can be defined as the lack of sufficient available freshwater resources to meet water usage demand. As demand for fresh water is projected to increase above certain levels in the future, risks related to water stress are expected to grow.[43] The drivers of water stress may vary, ranging from other environmental factors, such as prolonged drought, to social factors, such as increasing prosperity and a growing world population, if not matched by appropriate technological developments. Irrespective of the drivers, water stress is a physical risk with a potential impact on society at large and the economy. According to the World Bank, some regions could see growth rates decline by as much as 6% of GDP by 2050 as a result of water-related losses affecting agriculture, health, income and prosperity.[44]

Biodiversity loss is the ever-increasing extinction of animal and plant species in a territory. It may be driven by climate change, exploitation of land and water, direct exploitation of organisms, pollution, a growing population and deforestation.[45] Deterioration of biodiversity affects a number of ecosystem services (e.g. fresh water, land, habitats and food) as well as economic activities (e.g. agriculture and pharmaceutical industries). In this regard, biodiversity loss could have a financial

[42] The distinction between acute and chronic physical risks is to a large extent based on the Task Force on Climate-related Financial Disclosures final recommendations (2017) and appears in many other reference papers assessing the financial impacts of climate-related risks, such as the NGFS (2020), 'Guide for supervisors – Integrating climate-related and environmental risks into prudential supervision', available at: ngfs_guide_for_supervisors.pdf and the BIS report 'Climate-related risk drivers and their transmission channels', available at: https://www.bis.org/bcbs/publ/d517.htm, and is used in the European Commission 'Guidelines on non-financial reporting: Supplement on reporting climate-related information' (OJ C 209, 20.06.2019, p. 1-30).

[43] DNB, Values at risk? Sustainability risks and goals in the Dutch financial sector (2019).

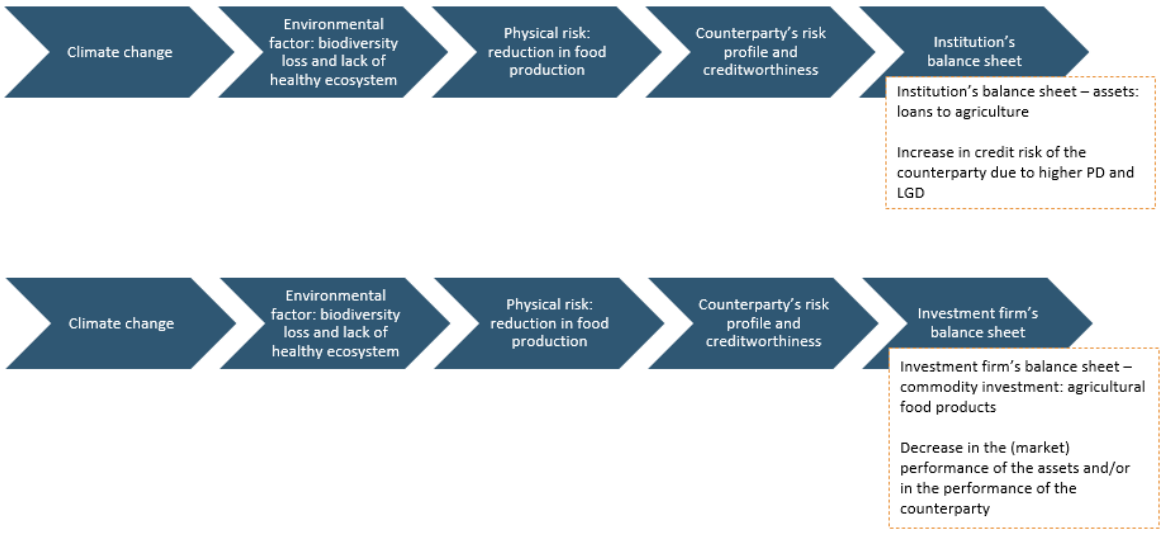
[44] https://www.worldbank.org/en/topic/water/overview.

[45] Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.

impact that is similar to climate change; for example, scientific estimates suggest that the risk to agriculture from the loss of pollinators could amount to USD 577 billion annually.[46]

56. Figure 5 illustrates a cycle showing how environmental factors can give rise to physical risk drivers, impacting institutions' balance sheets and revenues through a number of transmission channels.[47]

Figure 5 Theoretical example of the ESG cycle: impact of environmental factors through physical risk on the balance sheets of credit institutions and investment firms



57. In this example, biodiversity loss, driven by climate change, impacts the risk profile of an institution's counterparty, by causing farmland to become worn down over time due to a lack of biodiversity and proper functioning of a healthy ecosystem, leading eventually to a reduction in agricultural activities and food production. The physical impact is transmitted to the balance sheet of the institution through its effect on the counterparty's profitability, which increases its credit risk.

58. In the case of investment firms dealing on own account, a poor financial performance of the asset in the markets due to the impact of biodiversity loss would manifest on their balance sheets through market risk, e.g. due to price volatility. For investment firms which perform investment services and activities other than dealing on own account, for example, investment advice or portfolio management services, the performance of the invested asset would be

[46] Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (2019), 'Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services'.

[47] See also a study from De Nederlandsche Bank 'Indebted to nature' on the exposure of the Dutch financial sector to biodiversity loss: https://www.dnb.nl/en/news/news-and-archive/dnbulletin-2020/dnb389169.jsp.

affected by biodiversity loss and manifest on the balance sheet of the investment firm indirectly through risks to their clients and/or dissatisfied clients.

59. Physical risks can also impact individuals, for example, when flooding affects individuals' properties, and sovereigns, for example, when an environmental hazard affects a country's infrastructure, leading to increased public spending. They can also lower the value of collateral that is affected by environmental hazards or weather events related to climate change.

60. Considering the existing definitions of physical risks in the context of climate change, the EBA would extend this to environmental risks, defined as follows: 'p**hysical risks are the risks of any negative financial impact on the institution stemming from the current or prospective impacts of the physical effects of environmental factors on its counterparties or invested assets'.**

61. Such physical effects include**:**

    a. acute physical effects, which arise from particular events, especially weather-related events such as storms, floods, fires or heatwaves or other environmental hazards that may damage production facilities and disrupt value chains; and

    b. chronic physical effects, which arise from longer-term trends, such as temperature changes, rising sea levels, reduced water availability, biodiversity loss and changes in land and soil productivity.

2.3.3 Transition risk

62. Transition risks are the other main category of risk drivers of environmental risks. Although definitions vary across different sources, transition risks generally refer to the uncertainty related to the timing and speed of the process of adjustment to an environmentally sustainable economy.

63. This process may be affected by three drivers: policy, technology and consumer preferences. First, climate-related policy action or potentially disordered mitigation strategies could have an impact on asset prices in carbon-intensive sectors.[48] [49] Second, technological changes may, for instance, make existing technologies obsolete or uncompetitive, changing their affordability and affecting the relative pricing of alternative products. Such technological changes might trigger a repricing of assets. Third, changes in the preferences and behaviour of consumers and investors could affect institutions, for example through increasing litigation against counterparties on certain environmental issues, culminating in increased costs and reputational

[48] See seminal speech by Carney, Mark (2015), 'Breaking the Tragedy of the Horizon – Climate Change and Financial Stability' and ECB Financial Stability Review, May 2019.

[49] See BIS (2020) 'The Green Swan - Central banking and financial stability'.

risks and avoidance of investing in non-sustainable assets, impacting institutions' investment product offerings.[50]

64. The European Commission's 'Guidelines on non-financial reporting: Supplement on reporting climate-related information',[51] which give a definition of **transition risks** in the context of climate risk, refer to a number of underlying risk drivers:

    a. *policy risks, for example as a result of energy efficiency requirements, carbon-pricing mechanisms which increase the price of fossil fuels, or policies to encourage sustainable land use;*

    b. *legal risks, for example the risk of litigation for failing to avoid or minimise adverse impacts on the climate, or failing to adapt to climate change;*

    c. *technology risks, for example if a technology with a less damaging impact on the climate replaces a technology that is more damaging to the climate;*

    d. *market risks, for example if the choices of consumers and business customers shift towards products and services that are less damaging to the climate;*

    e. *reputational risks, for example the difficulty of attracting and retaining customers, employees, business partners and investors if a company has reputation for damaging the climate.*

65. Another definition has been used by the Task-Force on Climate-Related Financial Disclosures[52] in the context of climate risk, which identifies similar risk drivers but these are grouped into four different categories: i) policy and legal risk, ii) technology risk, iii) market risk and iv) reputational risk.

66. Legal risks - also referred to as liability risks or litigation risks - are sometimes considered either physical or transition risks.[53] They could, however, also be considered a separate risk category as they may not only arise from climate-related and other environmental risks but also from social and governance risks. Liability risk in the context of ESG factors relates to the risk stemming from people or businesses seeking compensation for losses they may have incurred due to ESG factors, e.g. when institutions' counterparties are held accountable for the negative

[50] The three underlying drivers of transition risks are covered in a variety of studies, such as the NGFS (2020), 'Guide for supervisors – Integrating climate-related and environmental risks into prudential supervision', available at: ngfs_guide_for_supervisors.pdf and the BIS (2021), Report 'Climate-related risk drivers and their transmission channels' [https://www.bis.org/bcbs/publ/d517.htm].

[51] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52019XC0620%2801%29.

[52] See Final Report on Recommendation Task-Force on Climate-Related Disclosures (2017).

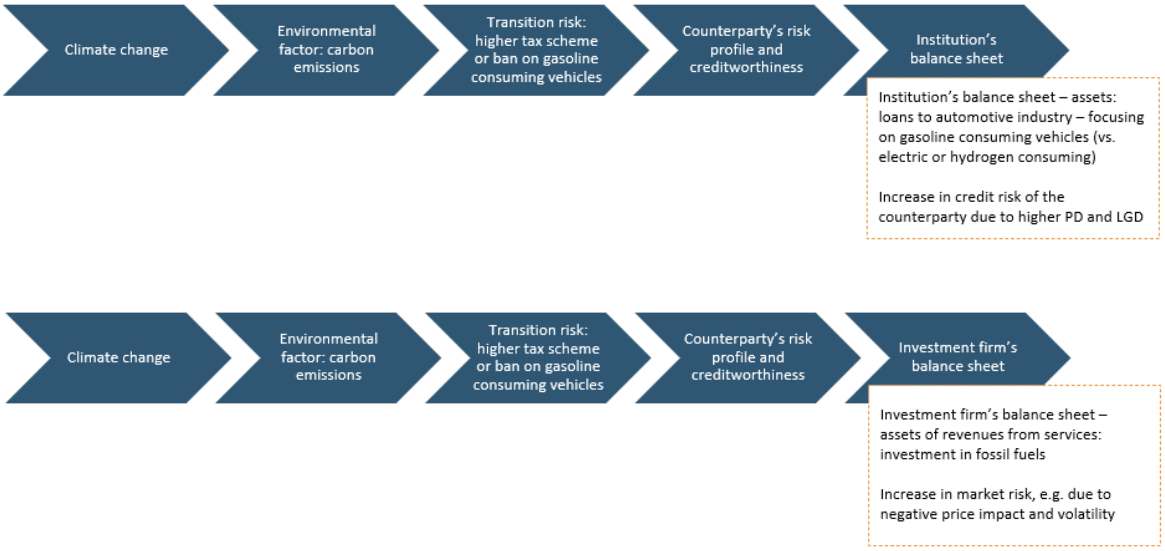
[53] See NGFS 'Guide for Supervisors: Integrating climate-related and environmental risks into prudential supervision' (May 2020), in which potential liabilities to the financial sector can stem from the impact of physical or transition risks.

impact they have on ESG factors through their activities. In the context of environmental risks, changes in preferences may imply that business activities and forms of conduct considered acceptable today may be challenged in the future based on principle-agent or manufacturer-consumer asymmetry of information regarding possible environmental risks, or claims of failure related to appropriately dealing with climate adaptation and mitigation measures, for instance. In the context of social and governance risks, claims could be made following complaints of discriminatory behaviour, poor labour conditions or acts of corruption.

67. Transition risks can also impact individuals, for example, when they are owners of a property that becomes subject to stricter energy-efficiency requirements, and sovereigns[54], for example, when the transition causes mass unemployment in carbon-intensive sectors and therefore a deterioration of tax income, or when there needs to be increased public spending, for example to facilitate the transition of the domestic economy. Transition risks can also lower the value of collateral that does not meet the latest environmental standards or market expectations.

68. Figure 6 illustrates how environmental factors can give rise to transition risk drivers by describing how regulatory intervention with the aim of decreasing carbon emissions can impact institutions' counterparties or asset performance, through increased tax expenses or the need to reshape business models in order to bring them into line with the new regulatory requirements, which in turn will have an impact on the institution's balance sheet and revenues due to its effect on credit or market risk.

Figure 6 Theoretical example of the ESG cycle: impact of environmental factors through transition risk on the balance sheets of institutions and investment firms



[54] IMF, 'Feeling the Heat: Climate Shocks and Credit Ratings', Dec. 2020.

69. Similar to the definition of physical risks, the existing definitions of transition risks are used primarily in the context of climate change. However, they can be easily expanded beyond climate change to cover other environmental risks such as water stress and biodiversity loss (see Box 4).

Box 4: Examples of environmental factors giving rise to transition risks

Regulatory changes affecting water stress may incentivise the re-channelling of water use from less to more essential sectors and business activities, affecting the ongoing business operations of companies. Similarly, consumer behaviour and preferences, as well as technological development, may shift towards more water efficient practices.

Biodiversity loss can drive transition risks when governments introduce measures to counter the causes of this loss, for example, deforestation, use of fertilisers[55] or excessive land use, which would then impact the value of businesses relying on those lands or practices. Alternatively, strict regulation in agriculture and fisheries to curb biodiversity loss caused by activities carried out in these sectors, might affect their yields. Similarly, changes in consumer dynamics and technology could shift practices towards more sustainable pathways to safeguard biodiversity.

70. Considering the existing definitions and main drivers of transition risks, the following definition, extended to overall environmental risks, is proposed. **Transition risks are the risks of any negative financial impact on the institution stemming from the current or prospective impacts of the transition to an environmentally sustainable economy on its counterparties or invested assets.**

71. This includes:

- climate and environment related policy changes, for example, as a result of energy efficiency requirements, carbon-pricing mechanisms that increase the price of fossil fuels, or policies to encourage a sustainable use of environmental resources;

- technological changes, for example, if a technology with a less damaging impact on the climate or the environment replaces a technology that is more damaging, hence making it obsolete or uncompetitive;

- behavioural changes, for example, if the choices of consumers and investors shift towards products and services that are more sustainable; or if it becomes more difficult

[55] See for example Regulation (EU) 2019/1009 laying down rules on the making available on the market of EU fertilising products. This Regulation includes obligatory maximum contaminant levels, the use of defined component material categories and labelling requirements.

to attract and retain customers, employees, business partners and investors when a counterparty has a reputation for damaging the climate and the environment.

2.3.4 Interaction between physical and transition risks

72. Physical and transition risks interact closely with each other. The persistent emissions of greenhouse gases and the continuation of unsustainable economic practices are two of the drivers of physical risks, potentially exacerbating the likelihood of environmental hazards and their socio-economic impacts. As a response to the impact of physical risks, policy makers are likely to introduce, where not already in place, mitigation policies and regulation. Consumers' preferences may also change to more sustainable products and services. As a result, physical and transition risks are more likely to materialise. For institutions, this could mean that they are exposed to counterparties that go bankrupt due to the introduction of climate mitigation policies, while at the same time assets they hold as collateral are damaged during a flood incident.

73. Moreover, a trade-off between physical and transition risks exists, depending on how and when policies are implemented to facilitate the transition to an environmentally sustainable economy. All other things being equal, physical risks are expected to decrease when transition policies are implemented. At the same time, abrupt transition-related changes can increase transition risks due to the related disruption that such changes may pose to existing technologies, policies and preferences. The opposite occurs when no action is taken and when transition risk is low - the longer the implementation of transition-related policies takes, the more physical risks will increase.

74. In addition, depending on their scale, physical and transition risks have the potential to trigger significant impacts on the real economy and the financial system as a whole. As an illustrative example, continued environmental deterioration will impact aggregate output levels as well as potential growth rates, as some economic activities become unviable or labour conditions deteriorate due to health issues. This could be the case, for instance, when rising temperatures and changing patterns of precipitation directly impact industries, such as agriculture and fisheries, energy, tourism and construction, among others. For example, increasing temperatures could lead to a significant decrease in workforce productivity[56] or affect a farmer's ability to grow crops. The relative adjustment of prices in the economy that will need to take place may create additional disruptive effects and further exacerbate the level of uncertainty, potentially increasing social unrest, as the impact of physical and transition risks is likely to be unevenly distributed across populations. Ultimately, further global warming could impact the solvency of sovereigns whose economies are heavily dependent on sectors

[56] The Lancet. 'The 2018 report of the Lancet Countdown on health and climate change: shaping the health of nations for centuries to come', Nov. 2018.

vulnerable to climate change, such as agriculture or tourism. While some of these significant macroeconomic impacts may occur in the more distant future, others are already evident.[57]

2.4 Social factors and social risks

75. Social factors are related to the rights, well-being and interests of people and communities, and include factors such as (in)equality, health, inclusiveness, labour relations, workplace health and safety, human capital and communities. These factors are increasingly being considered in the business strategies and operating frameworks of institutions and their counterparties. In the context of this report, social factors can be defined as **social matters that may have a positive or negative impact on the financial performance or solvency of an entity, sovereign or individual.**

76. The European Commission's 'European Pillar of Social Rights' provides a definition of social factors by outlining 20 principles that relate to equal opportunities and access to the labour market (among which, gender equality), fair working conditions (among which, wages and work-life balance) and social protection and inclusion (among which, childcare, unemployment benefits, healthcare, access to essential services and minimum income). In March 2021, the Commission published its 'European Pillar of Social Rights Action Plan', which outlines concrete actions to further implement these 20 principles. Also at the European Commission level, the Commission's Platform on Sustainable Finance is currently looking into a possible extension of the existing environmental taxonomy to social objectives, such as respect for human rights and promoting adequate living conditions and will provide advice to the Commission on this in 2021.

77. Despite these efforts towards defining social factors at the European level, references to definitions of social factors are generally more difficult to identify than for environmental factors. Investors, asset managers or rating agencies normally refer to social criteria such as human rights violations, relationships with employees, labour practices, customer interactions and poverty, which they consider for the 'S' part of their ESG-analysis. An analysis of these criteria seeks to answer the question of how the company under analysis manages its relationship with its workforce and the communities and societies in which it operates.

78. Various drivers of social risks can be identified. First, they can be driven by environmental risks. The continuous deterioration of environmental conditions implies heightened social risks, such as when climate-related physical change or water stress affect (deprived parts of) a geographical area and (already disadvantaged) populations. Environmental degradation can exacerbate migration and social and political unrest in the most affected regions, with

[57] See the IMF's 'Climate change and financial risk" (December 2019) https://www.imf.org/external/pubs/ft/fandd/2019/12/pdf/climate-change-central-banks-and-financial-risk-grippa.pdf and the ECB's Climate Change and Financial Stability report (May 2019) https://www.ecb.europa.eu/pub/financial-stability/fsr/special/html/ecb.fsrart201905_1~47cf778cc1.en.html.

potentially more devastating repercussions and contagion across the globe.[58] According to the Internal Displacement Monitoring Centre,[59] between 2008 and 2018 natural disasters displaced as many as 265 million people. While global warming should not be regarded as the sole factor on which migration decisions are based, it may amplify existing motivations such as income inequality, lack of human rights or civil wars. Another example of how environmental risks can drive social risks is the potential impact that envisaged technological and regulatory changes to combat climate change may have on labour markets, amplifying social risks, for instance in (non-green) industries (e.g. the coal mining industry).

Box 5: Examples of the social risks caused by the COVID-19 pandemic

The outbreak of the COVID-19 pandemic provides a good example of the interaction between environmental and social factors. On the environmental side, the importance of biodiversity loss in the origin and spread of new diseases with health and social impacts has been highlighted[60] and several studies have been published estimating the reduction in CO_2 emissions during the COVID-19 confinement,[61] driven by, among other factors, reduced transport use. From a social perspective, the widespread containment measures introduced to limit the spread of the disease have severely impacted our way of life and caused economic disruption and associated unemployment. Several studies have highlighted the social consequences of containment measures, for instance, their impact on low-income and high-income individuals,[62] social norms and accepted behaviours,[63] gender balance[64], and, disproportionately, on minority groups.[65] The management of the COVID-19 crisis has also brought to the fore questions related to the future of democracy and human rights and freedoms (e.g. education) as well as the impact of potentially privacy-intrusive measures (e.g. geo tracking, facial recognition). Moreover, the COVID-19 crisis has revealed important differences among countries reflecting, inter alia, different levels of economic development (e.g. ability of people to work from home), different cultural patterns (e.g. relative importance

[58] See McKinseyGlobal Institute 'Climate Risk and Response – Physical hazards and socioeconomic impacts' (January 2020).

[59] Sylvain Ponserre and Justin Ginnetti, Disaster displacement: A global review, 2008–2018, Internal Displacement Monitoring Centre, May 2019.

[60] EU Commission, 'Consultation on the Renewed Sustainable Finance Strategy', April 2020, Introductory section; speech of German Ministry for the Environment, Svenja Schulze, on the connections between biodiversity loss and spread of epidemics: https://www.bmu.de/rede/rede-von-svenja-schulze-zu-biodiversitaet-und-pandemie/.

[61] Le Quéré, C., Jackson, R.B., Jones, M.W. et al. Temporary reduction in daily global CO_2 emissions during the COVID-19 forced confinement. Nat. Clim. Chang. (2020). https://doi.org/10.1038/s41558-020-0797-x.

[62] Covid: Not a great equalizer, Galasso, V, Covid Economics 19, 18 May 2020: 241-255.

[63] Goldberg, Matthew & Gustafson, Abel & Maibach, Edward & van der Linden, Sander & Ballew, Matthew & Bergquist, Parrish & Kotcher, John & Marlon, Jennifer & Rosenthal, Seth & Leiserowitz, Anthony. (2020). Social norms motivate COVID-19 preventive behaviors. 10.31234/osf.io/9whp4.

[64] Titan Alon & Matthias Doepke & Jane Olmstead-Rumsey & Michèle Tertilt, 2020. 'The Impact of COVID-19 on Gender Equality', CRC TR 224 Discussion Paper Series crctr224_2020_163, University of Bonn and University of Mannheim, Germany.

[65] https://www.globalcitizen.org/en/content/covid-19-impact-people-of-color-un-rights-chief/.

of social gatherings) or different common values (e.g. tolerance and compliance with new, relatively stringent norms), which have affected the ability of governments to introduce crisis management measures.

The financial impact of the pandemic has been visible on the balance sheets of institutions and has been widely associated with the increased credit risk of counterparties that saw a suppression of economic activity during the confinement and higher levels of unemployment. Even in cases where confinement measures have been (temporarily) lifted, several companies continued to suffer from below average turnover, pointing to the role of social dynamics on economic behaviours. Broader trends were also observed that could have a negative financial impact on institutions. The move to smart working might impact the demand for office space and commercial real estate in general. Such a drop in demand could affect prices and the value of institutions' collateral[66] as well as the construction, office furniture and catering sectors, which could see a reduction in demand for their products. Conversely, the reorganisation of office space to comply with social distancing measures could have the opposite effect, leading to an increase in demand. Institutions could want to assess the impacts on their counterparties, in order to decouple short term losses due to the lockdown from long term impacts due to the changes in processes. Such an assessment might help them to better understand the business strategies of their counterparties and their viability under different social distancing scenarios. Similarly, by identifying sectors that are most likely to be affected by the reorganisation of processes, institutions can estimate the changes in employment levels across these sectors and include this information in their strategies.

Moreover, the pandemic can also bring financial benefits, such as savings on costs associated with the physical presence of employees (e.g. discounts on canteens, electricity consumption) in the short term and savings related to structural changes to the organisation of office space (e.g. rent, office equipment and logistics) in the long term. The potential increase in the productivity of companies that successfully migrate to smart working, coupled with the lower costs, has the potential to unlock additional profits and investments for counterparties, which institutions could want to assess in order to build fruitful business relationships.

In conclusion, the COVID-19 crisis provides a learning opportunity to better understand and realise the extent - as well the speed and form - with which environmental and social risks interact and how this may impact institutions.

79. The second driver of social risks is the change in policies and market sentiment linked to the social transformation towards a more inclusive, equitable society. For instance, labour rights - which relate to a wide range of core values that should be guaranteed for all individuals, including working hours, minimum wage and health and safety in the workplace - are an

[66] According to Green Street Advisors (April 2020), 'REITs amid a pandemic', the unlevered enterprise value of real estate assets had fallen 25 percent or more in most sectors.

important social factor that may impact institutions' counterparties. Counterparties that do not respect labour rights could be affected by social changes that demand new policies on, for instance, safer and healthier conditions at the workplace. Counterparties that apply a lower standard of labour rights (or other social standards) or operate a business in or are dependent on suppliers that operate in a country with poor labour rights and protection, may face increased costs of compliance in the future, which could have a potential impact on their financial position.[67]

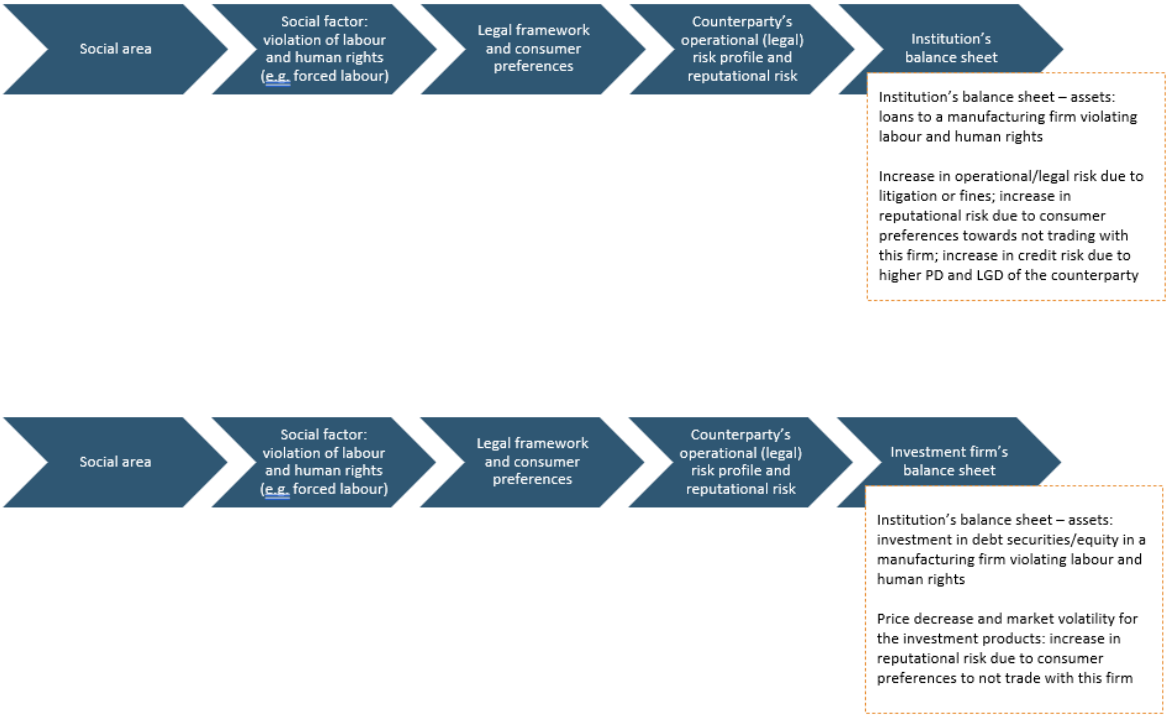
80. Finally, a number of policy actions have been taken in response to social movements demanding equal pay or equal representation, in addition to workforce diversity. Additional policy actions are expected to be taken over the coming years to meet the social goals and targets set by the SDGs for 2030. Such policy actions may constitute a risk for companies that are not prepared or willing to adapt. These companies might become the target of complaints and could be affected by lawsuits, market pressure and/or reputational damage.

81. Social risks can thus be driven by environmental risks, changes in social policy and changes in market sentiment regarding social factors. Unlike environmental risks, it is not conceptually straightforward to categorise the drivers of social risks as physical and transition risks. This is because social risks are not driven by risks that can be labelled as physical and because, compared to environmental issues, the evolution of social norms, preferences and policies is more difficult to foresee and cannot be labelled a 'transition'.

82. Figure 7 illustrates how counterparty violations of social factors can lead to legal and reputational risks for themselves and how such risks can, in turn, affect the balance sheets of the institutions financing these counterparties' business activities. In this example, the social factors of violations of labour rights and human rights can create counterparty credit risk for institutions. At a later stage, if the institutions involved in financing these activities through their counterparties do not take necessary actions, they may risk facing reputational damage themselves, for instance, when clients sensitive to such violations decide to change institutions.

[69] This is the case of many companies operating in the 'gig-economy'. Since 2014, when social pressure started to build on the operating model of such companies, workers have raised awareness of their working conditions (e.g. self-employed status). These claims resulted in vibrant academic and political debate. In the European Union, the debates ultimately led to the publication of Directive 2019/1152 on transparent and predictable working conditions. Once transposed into national law, the Directive will largely constrain companies in the 'gig-economy' from using certain contractual relationships, e.g. limiting the use of self-employed workers.

Figure 7 Theoretical example of the ESG cycle: impact of social factors on institutions' balance sheets



83. For the purpose of this report, **social risks are the risks of any negative financial impact on the institution stemming from the current or prospective impacts of social factors on its counterparties or invested assets.**

2.5 Governance factors and governance risks

84. Governance factors cover governance practices, including executive leadership, executive pay, audits, internal controls, tax avoidance, board independence, shareholder rights, corruption and bribery, and also the way in which companies or entities include environmental and social factors in their policies and procedures. For the purpose of this report, governance factors can be defined as **governance matters that may have a positive or negative impact on the financial performance or solvency of an entity, sovereign or individual.** It should be noted that governance factors in the context of ESG factors do not refer to the governance arrangements of supervised institutions, but instead to governance factors that have an impact on or are impacted by institutions' counterparties or invested assets, including governance arrangements for the environmental and social factors in counterparty policies and procedures.

85. No universal frameworks have been identified in Section 2 on governance factors specifically that are currently being used by the market. Instead, governance factors are often part of national legislations, such as corporate governance codes. At the European Commission level,

a public consultation closed in February 2021 on the 'Sustainable corporate governance' initiative, which aims to improve the EU regulatory framework on company law and corporate governance, enabling companies to focus on long-term sustainable value creation rather than short-term benefits and to better manage sustainability-related matters in their own operations and value chains as regards social and human rights, climate change and environmental factors. A proposal for a directive is expected to be published later in 2021.

86. Similar to social risks, categorising the drivers of governance risks as physical and transition risks is not conceptually straightforward, given that they cannot be labelled as physical and given that the evolution of corporate governance frameworks or codes cannot be deemed a 'transition'. However, governance risks can be driven by a variety of risk drivers, such as the inadequate management of environmental and social issues, as well as non-compliance with corporate governance frameworks or codes. For instance, a poor code of conduct or a lack of action on anti-money laundering in a given company can hamper its (financial and non-financial) resources, thus affecting its potential to perform and generate returns. Moreover, if the poor code of conduct becomes public, customers and investors may lose faith in the company, potentially leading to penalties and legal fees and affecting its ability to conduct business over the longer term. This could impact the institution's balance sheet due to the effect on the counterparty's profitability and in turn increase credit risk.

87. Governance plays also a fundamental role in ensuring the inclusion of environmental and social considerations by a given counterparty. Recognition of the potential impact of climate and environmental changes and related physical and transition risks is understood as a sign of good governance. On the contrary, neglecting these potential impacts in the strategic planning of a counterparty may create additional governance risks (see Box 6).

Box 6: Examples of governance risks and how they could impact institutions

Poor governance by counterparties could pose a risk for institutions. For instance, a counterparty involved in bribery scandals could be affected by market pressure and suffer large reputational damage.[68] [69] There may also be a correlation between poor environmental performance and poor governance, as evidenced by the diesel emissions scandal. A number of car manufacturers had for years declared lower-than-real nitrogen oxide emissions to the licensing authorities and their customers. The low values were made possible by a setup in the engines that could distinguish between test mode and normal operations. In test mode, the engines were electronically manipulated so that they only produced emissions that were below the accepted thresholds. The scandal was disclosed by a Notice of Violation by the US Environmental Protection Agency and cost

[68] For example, construction company Odebrecht, which admitted to spending nearly USD 800 million to bribe officials across Latin America, filed for bankruptcy.

[69] Italian company Finmeccanica, involved in a controversial bribery scandal in India, is being threatened with being blacklisted by the Indian government.

the German car manufacturer Volkswagen USD 2.8 billion in fines and up to USD 17 billion in damages in the US alone.[70] The diesel emissions scandal reflects the interrelation between environmental and governance factors and the consequences of poor management of environmental risks. Additionally, the practice of deceiving the authorities, customers and the public for years revealed alarming shortcomings in the internal control structures of the car manufacturers involved, a culture of non-compliance at the management level, as well as incorrect company reporting.

88. For the purpose of this report, **governance risks are the risks of any negative financial impact on the institution stemming from the current or prospective impacts of governance factors on its counterparties or invested assets.**

[70] https://www.manager-magazin.de/unternehmen/artikel/volkswagen-us-justiz-ermittelt-gegen-sechs-vw-manager-a-1129620-2.html.

3. Quantitative and qualitative indicators, metrics and methods to assess ESG risks

89. In order to address ESG risks in a consistent manner, it is essential not only to agree on common definitions of ESG factors and ESG risks but also on the qualitative and quantitative indicators and methodological tools to assess their financial impact. Commonly agreed ESG indicators and methods are important to support the incorporation of sustainability-related aspects into financial decision-making and supervision, and to ensure a level playing field, prevent the risks of 'green washing' and enhance transparency, consumer protection and disclosures.

90. Whilst many institutions and supervisors have started incorporating ESG factors into their respective frameworks, the practice of assessing ESG risks is still at an early stage. Several institutions and supervisors have started developing in-house approaches for assessing ESG risks, are working with data on ESG risks provided by dedicated ESG data providers, or are partnering with public initiatives, notably the NGFS, think tanks and academics.

91. There are a number of challenges facing the integration of ESG risks into institutions' management processes and their supervision (see Figure 8). The following are the most often cited.

    a. **Level of uncertainty**: the timing and effect of policies and related regulatory interventions, whose specific implementation is largely the responsibility of the EU Member States, are hard to predict, as are the timing and effect of physical risks.

    b. **Insufficient data**: the scarcity of relevant, comparable, reliable and user-friendly data, is another major challenge that limits the understanding of the potential impacts of ESG risks on the performance of financial assets. Whereas ESG data for large corporates are considered to be increasingly available, such data for counterparties such as SMEs, local and regional governments, and companies from developing or emerging markets, are scarcer. Further, it remains challenging to translate the available ESG data into expectations for the financial performance of a counterparty. The fact that ESG data are currently mostly only available on an annual basis (i.e. through companies' annual sustainability reporting), can further complicate an accurate assessment of ESG risks, as such risks could significantly increase or decrease over a one-year time horizon. More consistent and coherent ESG-related reporting by companies could help to enhance the quality and availability of ESG data. Some initiatives are contributing to

this. Notably, the Commission has published its proposal for a Corporate Sustainability Reporting Directive[71], which now requires more granular ESG-related disclosures from a wider range of companies. On the side of institutions, the EBA's upcoming implementing technical standards on Pillar 3 disclosures on ESG risks will help towards standardisation of ESG risk related disclosures.

c. **Methodological constraints**: most of the risk management models are based on the use of historical data (i.e. historical experience) to estimate current or future risks. ESG factors are frequently not reflected in these data. For example, it is difficult to take ESG risks into account when calculating risk parameters such as the probability of default (PD) of borrowers or loss given default (LGD) using the existing methodologies (see Section 3.1.2). Other methodological constraints include translating ESG risks into financial risks, understanding their impact on the resilience of business models and the lack of a harmonised definition of the full range of sustainability-oriented activities.

d. **Time-horizon mismatch** between 'traditional' management tools and the timeframe for the materialisation of ESG risks: particularly, the full impact of environmental factors often develops over decades. As an example, climate scenarios usually analyse possible climate pathways until the end of the 21st century. The transition to a carbon-neutral economy is scheduled to happen gradually over the next 30 years. In contrast, the strategic planning horizons of institutions and risk management frameworks are traditionally much shorter, as they largely reflect shareholder pressure or macroeconomic factors.[72]

e. **Multi-point impact of ESG risks on institutions**: given that ESG risks can impact different financial risk categories, they can impact the financial position of institutions in multiple ways. For instance, the physical deterioration of areas in which some economic activities (e.g. agriculture, construction) operate may lead to higher credit losses, if an institution is exposed to those activities via loans or bonds,[73] or losses in market value, where the exposure is in the form of financial instruments. The necessary and politically agreed transition towards a more sustainable economy in general, and a carbon-neutral economy in particular, may also negatively affect existing business models.[74] Credit and market losses translate into impacts on the capital adequacy and, thus, prudential soundness of an institution. Moreover, when credit rating agencies

[71] See https://ec.europa.eu/commission/presscorner/detail/en/QANDA_21_1806

[72] See the EBA report on undue short-term pressure from the financial sector on corporations.

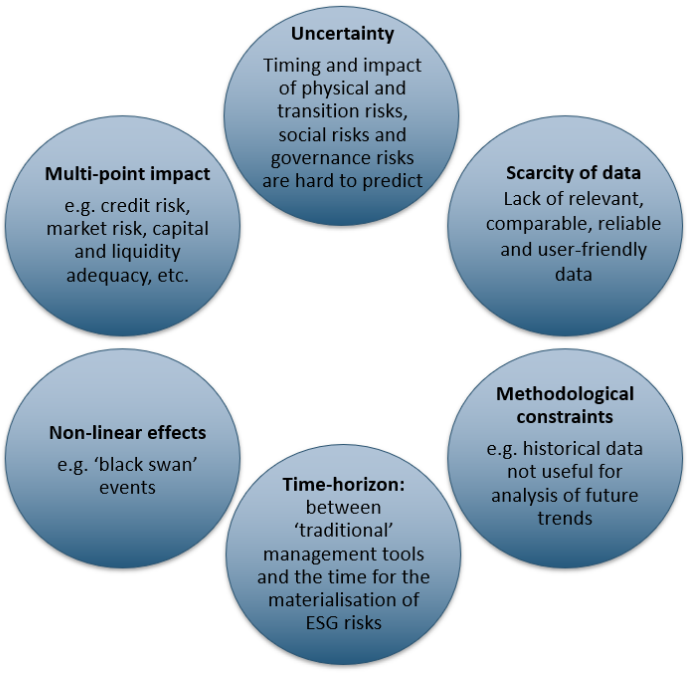
[73] Barclays & acclimatise 'Credit risk impacts of a changing climate', https://www.longfinance.net/media/documents/d1.pdf.

[74] For example, Germany introduced a national emissions trading scheme on heating and motor fuels with a fixed CO_2 price starting at 25 €/tCO_2 in 2021 and gradually increasing to 55 €/tCO_2 in 2025, followed by a market mechanism: https://www.cleanenergywire.org/factsheets/germanys-planned-carbon-pricing-system-transport-and-buildings.

include ESG risks, the credit ratings of vulnerable corporates could be downgraded[75] resulting in higher risk weights of affected exposures under the standardised approach. In addition, when ESG risks impair the valuation of collateral, this can increase the LGD. ESG risks can also cause an outflow of capital, for example, after a natural disaster.[76] With regard to the costs of capital and funding, investors and depositors are likely to discriminate increasingly against institutions that disregard the negative effects of ESG factors. The impacts should therefore be assessed as elements inside each of the financial risk categories, as well as across these categories.

f. **Non-linearity**: most ESG risks, especially those related to environmental risks, are non-linear in nature. Both physical and transition risks can create complex chain reactions and cascade effects, which in turn could generate unpredictable environmental, geopolitical, social and economic dynamics.[77] This means that, for example, when (detrimental) events such as increases in local or global temperature occur, their impact is greater in relation to the instantaneous magnitude of the event itself and over time.

Figure 8 Challenges of incorporating ESG risks



[75] PRI (2017-19), 'ESG, credit risk and ratings, parts 1-3", see in particular "part 3 – from disconnects to action areas, section on 'CRA examples'.

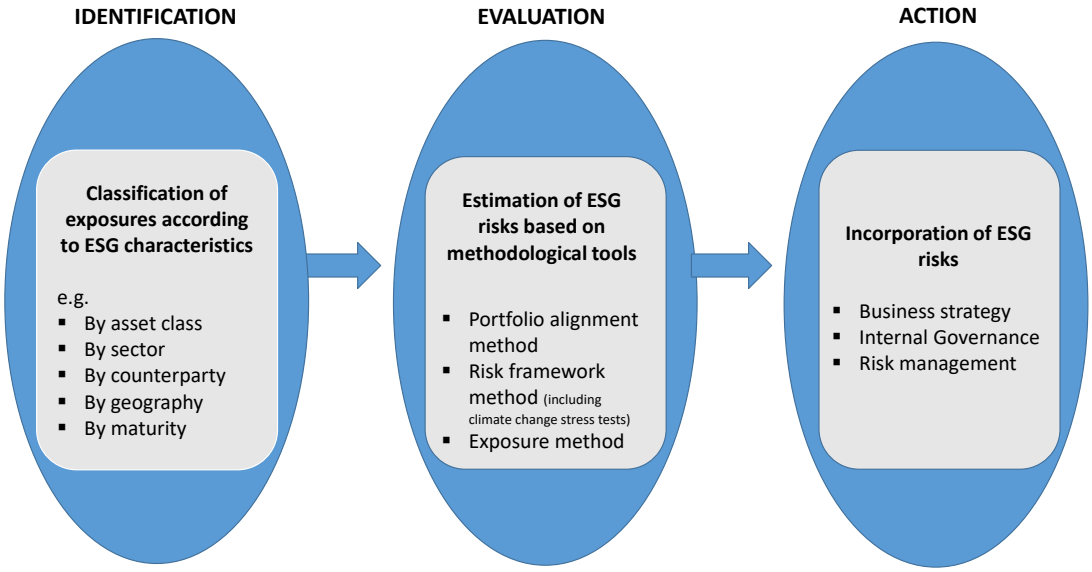
[76] Brei, M, Mohan, P, Strobl, E (2019), 'The Impact of Natural Disasters on the Banking Sector: Evidence from Hurricane Strikes in the Caribbean'.

[77] https://www.bis.org/publ/othp31.pdf.

92. With regard to climate risks specifically, the Second Annual Global Survey of Climate Risk Management at Financial Firms conducted by the Global Association of Risk Professionals (GARP) found that the vast majority of institutions believe that such risks are either only partially included in pricing or completely omitted.[78] The publications of the ECB's final guide on climate-related and environmental risks for banks,[79] the NGFS 'Status Report on Financial Institutions – Experiences from working with green, non-green and brown financial assets and a potential risk differential' [80] and the EBA Staff Paper on ESG Market Practices [81] further highlight the importance and urgency of enhancing the tools and methods for assessing and measuring climate risks and broader ESG risks.

93. In order to help address the aforementioned challenges, the remainder of Chapter 3 presents specific aspects that are relevant for the assessment of ESG risks by institutions and supervisors. It focuses on two aspects of the risk management framework, namely the *identification* and *evaluation* of ESG risks, as needed for the *incorporation* of these risks into institutions' decision-making, which will be presented in Chapter 4. Specifically, the three elements can be depicted as follows:

Figure 9 Approach to the assessment of ESG risks



[78] GARP's Second Annual Global Survey of Climate Risk Management at Financial Firms.

[79] ECB (November 2020), Final Guide on climate-related and environmental risks for banks, available at: https://www.bankingsupervision.europa.eu/press/pr/date/2020/html/ssm.pr201127~5642b6e68d.en.html.

[80] https://www.ngfs.net/sites/default/files/medias/documents/ngfs_status_report.pdf.

[81] EBA Staff Paper No. 6 – Sustainable Finance: ESG Market Practices (January 2020).

a. **Identification**: this implies classifying assets according to their ESG characteristics in order to support the identification of ESG risks based on specific qualitative and quantitative indicators. It can be done, for example, through the categorisation of exposures (if applicable, combined) across asset classes, sectors, counterparties, geographies or on the basis of their length of maturity or position in the life cycle of the asset. For instance, a *geographic* classification would help to identify the proportion of assets that are particularly vulnerable to the impact of physical risks in the form of higher sea levels, droughts or other climate-related hazards in given regions, while a *sector* classification could be used to enhance understanding of the share of exposures vulnerable to transition risks, for instance, in the form of regulatory changes and technological progress affecting those specific sectors.[82] This classification process allows the main potential drivers of ESG risks to be identified, which then justifies a more granular analysis on the most relevant categories of exposures (e.g. a given geography, sector), if needed.

b. **Evaluation**: once exposures have been classified, methodological tools would need to be applied and possibly combined to measure or assess the potential impact of ESG risks on the institution's exposures. Given that methodologies to quantify ESG risks and the underlying data that are used as inputs to these methodologies are evolving, a dynamic, flexible approach would be needed. The outcome of an evaluation of classified exposures through the use of methodological tools would be a deeper understanding of the financial vulnerability of the institution to ESG risks.

c. **Action:** following on from the evaluation, subsequent action to incorporate ESG risks into risk management could be taken, through the adoption of a business strategy and risk management approach that support the monitoring and control of ESG risks, including targets and limits, as well as changes to the organisational set-up of the institution when appropriate. These aspects will be further discussed in Chapter 4 of this report.

94. Although the steps described above are clearly distinct, in order to support an adequate assessment of ESG risks, it is important to establish formal feedback loops between them, inter alia, to detect any potential errors or inconsistencies in the classification cycle and/or room for improvement (e.g. more granularity) in terms of the data collection and documentation processes, and on the methodologies applied.

[82] An example of this regulatory change can be found in the transport sector, where Regulation (EU) 2019/631 introduces CO_2 emission performance standards for new passenger cars and new vans for 2025 and 2030, as well as a mechanism to incentivise the uptake of zero- and low-emission vehicles, in a technology-neutral manner.

95. While ESG risks materialise through their impact on financial risk categories, it is important that institutions and supervisors are able to distinguish between different ESG risks and form a view on their relevance. Like in any risk assessment, a risk-based approach that takes into account the likelihood and the severity of the materialisation of the risks should be followed. The materiality of ESG risks will depend on the characteristics of the different exposures, since exposures are unlikely to be equally affected by such risks.

3.1. Quantitative and qualitative indicators for the identification of ESG risks

96. Notwithstanding the challenges, in recent years increasing efforts have been made to develop indicators to capture ESG factors and/or ESG risks in one way or another. As a result, some ESG indicators, particularly those applicable to climate-related and environmental factors, are well-known and are potentially relatively straightforward to calculate and apply. For instance, in the context of climate change, indicators for the production of greenhouse gas emissions are well-defined and can be measured, reported and verified with a high level of accuracy based on existing standards, e.g. the International Organization for Standardization (ISO) 14064-1:2018 standard which applies a GHG Protocol methodology [83] and the European Commission Recommendation 2013/179 on the use of common methods to measure and communicate the life cycle environmental performance of products and organisations[84], which provides guidance on the use of environmental footprint methods.

97. Also with regard to environmental factors, the European Commission 'Guidelines on non-financial reporting: supplement on reporting climate-related information'[85] from June 2019, which integrate the recommendations of the Financial Stability Board Taskforce on Climate-related Financial Disclosures (TCFD), provide a starting-point for some climate-related indicators. Moreover, the EU Taxonomy Regulation classifies environmentally sustainable economic activities based on uniform criteria. For an economic activity to be taxonomy-aligned, the activity should be also carried out within the boundaries of social safeguards, by being 'in alignment with the OECD Guidelines for Multinational Enterprises and UN Guiding Principles on Business and Human Rights, including the International Labour Organization ('ILO') declaration on Fundamental Rights and Principles at Work, the eight ILO core conventions and the International Bill of Human Rights'.[86]

[83] https://ghgprotocol.org/.

[84] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013H0179&from=EN.

[85] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52019XC0620(01)&from=EN.

[86] https://data.consilium.europa.eu/doc/document/ST-14970-2019-ADD-1/en/pdf.

98. The use of ESG indicators has been supported by the development of **taxonomies** and **standards/principles.** They are often provided by third parties, such as international institutions, non-governmental organisations (NGOs), rating agencies and data vendors.

    a. ESG **taxonomies** classify different elements within a given set (e.g. economic activities, social practices or conventions) by defining them and linking them to different categories based on certain criteria. By doing so, taxonomies can allow distinctions to be made between assets, counterparties and economic activities based on their ESG characteristics. The EU taxonomy provides a starting point for the uniform identification and classification of economic activities that are conducive to a low-carbon, resilient and resource-efficient economy. The Taxonomy Regulation provides a harmonised set of criteria to identify environmentally sustainable economic activities, including enabling and transition activities (see Box 7). An explicit objective behind the establishment of the EU taxonomy is to support the reorientation of capital flows towards sustainable investments. This objective is in line with the EU Commission's first Sustainable Finance Action Plan and Article 2(1)(c) of the Paris Agreement.

Box 7: The EU Taxonomy Regulation

In accordance with Article 3 of the Taxonomy Regulation ((EU) 2020/852), an economic activity qualifies as environmentally sustainable where it contributes substantially to one or more of the predefined environmental objectives, does not significantly harm any of the (other) environmental objectives, is carried out in compliance with certain minimum safeguards (e.g. OECD Guidelines on Multinational Enterprises and the UN Guiding Principles on Business and Human Rights), and complies with all technical screening criteria that have been specified in delegated legislation.[87]

The six environmental objectives covered by the Taxonomy Regulation are (1) climate change mitigation, (2) climate change adaptation, (3) sustainable use and protection of water and marine resources, (4) transition to a circular economy, (5) pollution prevention and control, and (6) protection and restoration of biodiversity and ecosystems.

On the one hand, the taxonomy encompasses economic activities that make a substantial contribution to one of those environmental objectives based on their own performance, i.e. straightforward sustainable activities. On the other hand, the taxonomy also recognises 'enabling activities'. These include the provision of products or services to other economic activities, which then make a substantial contribution, e.g. the production of parts for a carbon-neutral power plant.

[87] https://ec.europa.eu/info/publications/210421-sustainable-finance-communication_en.

In addition to those categories and only within the sphere of climate change mitigation, the taxonomy encompasses certain transition-friendly activities that are not fully sustainable, but currently lack a technologically and economically feasible low-carbon alternative. Moreover, the financing of improvement measures (capex and, if relevant, opex) for activities that are not yet sustainable can be counted as taxonomy-aligned, if the expenditures are part of an implementation plan to meet the relevant activity threshold over a defined time period.[88]

In this context, the Commission has been mandated to develop granular and calibrated technical screening criteria for the different economic activities on the basis of technical input from a multi-stakeholder platform on sustainable finance.[89] The development of the delegated acts containing technical screening criteria consists of two phases: the first technical screening criteria, for activities which substantially contribute to climate change mitigation or adaptation, was adopted in June 2021 and will enter into force on 1 January 2022. The second set of technical screening criteria, which cover economic activities that substantially contribute to the other four environmental objectives, will be published in 2022.

The EU taxonomy does not directly apply to the core business of institutions (see Article 1(2)(b) of Regulation (EU) 2020/852), i.e. their lending activities. Further, institutions only need to report on the alignment of their activities with the taxonomy if they are required to publish a non-financial statement or consolidated non-financial statement according to Article 19a or Article 29a of Directive 2013/34/EU of the European Parliament and of the Council, respectively. In its advice that was issued to the European Commission in March 2021, the EBA developed recommendations on KPIs and methodologies that these financial institutions could use to report on their taxonomy alignment.[90]

The taxonomy is also activity-centred: investors need to assess the extent to which a company's aggregated activities (based on turnover or capital expenditure, for example) are taxonomy-aligned. This may be based on contributions of individual activities to the turnover of a company or its capital expenditure.[91]

As the taxonomy focuses on labelling environmentally sustainable economic activities and does not provide for a full view of these activities' broader ESG risk profile, it cannot necessarily be used as an ESG risk management tool in itself. The taxonomy could, however, be used for classification purposes, including using the different categories within it - e.g. enabling and

[88] See ESMA, Final Report - Advice on Article 8 of the Taxonomy Regulation, Annex I.

[89] See Regulation (EU) 2020/852 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088.

[90] EBA (2021), 'Advice to the Commission on KPIs and methodology for disclosure by credit institutions and investment firms under the NFRD on how and to what extent their activities qualify as environmentally sustainable according to the EU Taxonomy Regulation'.

[91] For example, where a company conducts only one sustainable activity that contributes 30% to its total turnover, the company itself can be counted as 30%-aligned with the taxonomy. See Technical Expert Group on Sustainable Finance (2020) 'Final Report', Table 3.

transitional - and the technical screening criteria it uses - e.g. with regard to CO_2 emissions and other climate-related indicators. Applying this classification can help to identify activities that are more vulnerable to transition risks and to assess the possible riskiness of such assets compared to assets that are less vulnerable to transition risks. The taxonomy also provides for a common language which could facilitate institutions' engagement efforts and target-setting, and lead to increased business opportunities (which include increased demand for sustainable products). Finally, the taxonomy is expected to bring consistency, transparency and comparability, and therefore provides a mitigating factor against possible green washing. As a cornerstone of EU initiatives on sustainable finance, the taxonomy therefore represents a key tool for institutions to use when setting their strategy and building a business model that is resilient to ESG risks with appropriate mitigants (see also Sections 4.1 and 4.3.4 below).

b. Other ESG indicators are based on **standards/principles** that provide certain generally well-accepted, measures or norms that allow comparative evaluations to be made. For instance, the ISO, involving a global network of 165 national standards bodies, develops voluntary, consensus-based standards that are internationally recognised and that, based on independent validation and verification, provide accreditations for public and private organisations. These market-relevant certifications are mandatory in some countries and include standards, inter alia, in the field of climate change,[92] environmental management, energy management, social responsibility, occupational health and safety and anti-bribery management systems. Therefore, counterparties that can show compliance with such standards may, in principle, be considered to be aiming to take ESG indicators into account. Additionally, global standards such as the UN Global Compact principles are being used to exclude counterparties/organisations from financial investments when they are found to be in violation of these principles. For countries, the Financial Action Task Force (FTAF) country list is being used for exclusion purposes.

99. Taxonomies and standards have supported the development of **labels**, which consist of certified accreditations that formally recognise compliance of financial products with given taxonomies and standards (for instance, for the issuance of a 'green bond', for the granting of an 'energy efficiency mortgage', etc.). In order to promote the integration of markets for green financial products globally, the EU has launched, together with seven non-EU countries, the International Platform on Sustainable Finance (IPSF) with the aim of ensuring the global coordination of efforts on initiatives and approaches to sustainable finance, in particular regarding labels for sustainable financial assets, including green bonds.

[92] The standards in climate change include a framework with principles and requirements for assessing and reporting investments and financing activities related to climate change, which is currently under development. See https://www.iso.org/standard/72433.html and https://2degrees-investing.org/wp-content/uploads/2017/11/ISO14097_scoping_report.pdf.

100. Some companies and institutions have developed their own taxonomies or standards, often based on existing taxonomies, standards, labels and sustainability-related frameworks, as tools to support the identification of ESG risks. However, some authors (e.g. NGFS) note that not all such tools can be labelled taxonomies or standards, as only classifications that are both mandatory and widely recognised can be labelled as such.[93]

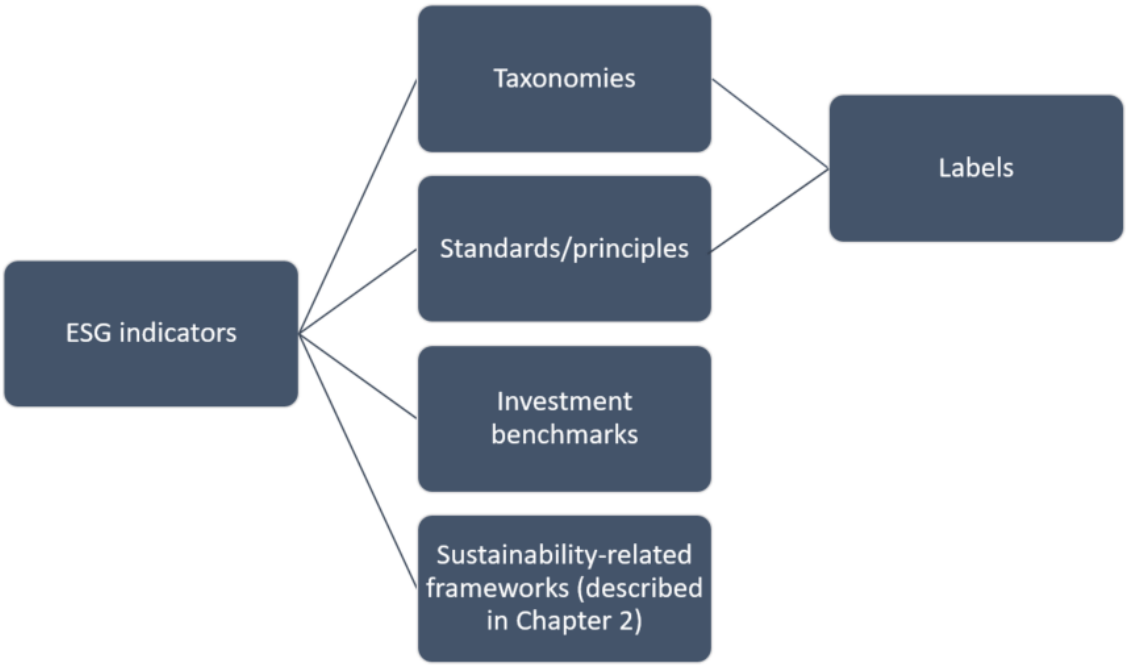
101. Another important piece of information that needs to be taken into account when identifying and prioritising ESG risks is the qualitative information about the evolution of these risks over time. When assessing the relevance of ESG factors for a given exposure, institutions and supervisors need to take into account not just the conditions at the current moment in time but also information on future developments. This could refer, for instance, to information about whether the counterparty intends to support the transition through the adoption of climate adaptation or climate mitigation measures, or whether the counterparty is exposed to transition risk drivers such as technological progress, changes in market sentiment or policy implementation, which may affect the impact of ESG factors on institutions' counterparties.

102. In addition to taxonomies, standards and labels, ESG-related **investment benchmarks** are increasingly being used, which incorporate specific sustainability-related objectives and help to assess and compare the performance of sustainable investments over time. In the context of climate-related factors, on 17 July 2020, the European Commission adopted new rules setting out minimum technical requirements for the methodology of EU climate benchmarks. The new rules increase the level of transparency and comparability of the products developed by benchmark administrators, including the criteria for benchmarks to be labelled EU Climate Transition Benchmarks or EU Paris-aligned Benchmarks.[94]

[93] See, for instance, https://www.ngfs.net/sites/default/files/medias/documents/ngfs_status_report.pdf.

[94] See https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-climate-benchmarks-and-benchmarks-esg-disclosures_en.

Figure 10 Sources that refer to ESG indicators



103. Based on the above, the list of ESG factors identified in Chapter 2 may be complemented by specific indicators deriving from existing taxonomies, standards/principles, labels and benchmarks, which could support the assessment of ESG factors and ESG risks (see Annex 1). The list of ESG indicators and metrics is not meant to be exhaustive and should be revised going forward to reflect the increasing understanding of relevant sustainability concepts and potential changes in the regulatory framework and societal preferences. Moreover, it should be noted that some indicators are more relevant or material to certain industries or economic activities than others and that an outperformance of a counterparty on some specific ESG factors does not mean that the overall ESG risks posed by this counterparty are necessarily low. As an example, an indicator on CO_2 emissions would be more material for counterparties with activities that generally require higher levels of energy consumption than for counterparties with less energy-intensive activities. Also, while a counterparty's consideration of employee rights (e.g. professional development, employment contracts or diversity) may be very satisfactory, its observance of environmental principles (e.g. CO_2 emission reductions) may not be. This should be taken into account when using the indicators for risk management purposes.

104. While some ESG indicators and metrics are well-accepted within a given jurisdiction, i.e. at national level, others are more widely recognised and can be applied at international level as well. In the illustrative examples shown in Annex 1, the most well-known ESG indicators

deriving from the aforementioned frameworks, taxonomies, standards, labels and benchmarks, have been chosen, which may be applicable at asset or portfolio level. They may also support the definition of Key Performance Indicators in line with the risk appetite of the institution (see Chapter 4).

3.2 Methodological approaches for assessing and evaluating ESG risks

105. While providing the starting point for their identification, taxonomies and indicators by themselves are not sufficient for the estimation and evaluation of ESG risks. Various approaches exist which use these taxonomies and indicators as a basis and translate them into an assessment of ESG risks. Ultimately, all approaches serve the objectives of offering insights into the risk caused by exposures to (including investments in) certain sectors (e.g. climate relevant sectors) and/or assessing the alignment of institutions' portfolios with global or regional sustainability goals. However, there are different ways of achieving these objectives. Each approach is different in terms of what it measures and how the outcome can be used by institutions.[95] To date, methodologies have mostly been developed in the area of climate risk, whilst other ESG factors are in many cases not yet included.

106. The decision on which methodological approach to choose will also depend on the size, complexity, risk profile and business model of the respective institution and consequently the approach taken by a small, non-complex institution[96] will likely differ from the one taken by a large institution.

107. Recognising these proportionality considerations, the methodological approaches presented here are expected to be applicable to credit institutions, e.g. loans to their counterparties, and to investment firms, e.g. assets invested (such as equity, debt securities and commodities) in investee companies.[97] This is regardless of whether investment firms invest in these assets on their own account or manage them on behalf of their clients, taking into account the characteristics of the product and/or the clients' preferences. An investment firm dealing on own account and an investment firm dealing on behalf of clients (such as portfolio managers qualifying as investment firms) will be affected by ESG risks differently. In the case of the former the balance sheet will be affected directly, in the case of the latter the performance of the client portfolio will be impacted. Nevertheless, this should not affect the

[95] Amongst the three ESG risk categories, assessment methods for the 'E' category, environmental risk, and more specifically climate risk, can generally be said to be the most advanced and to currently feature most prominently in discussions. Therefore, some parts of this section have a particular focus on current practices of climate risk assessment, but ways of how to assess social and governance risk are examined throughout.

[96] For instance, small and non-complex institutions as defined under Article 4(1)(145) CRR.

[97] This view is supported by several respondents to the EBA Discussion Paper on ESG risk management and supervision. Only some institutions view certain methods as applicable only to investment firms (mixed views exist, however, in regard to which of the three methods are applicable).

relevance of the different methods for assessing ESG risks. Further, for a portfolio manager qualifying as an investment firm, the performance of individual counterparties may be of interest (e.g. exposure method) when assessing portfolio targets, for instance. [98]

108. In what follows, three different methods for assessing ESG risks are established:

a. portfolio alignment method;

b. risk framework method (including climate-stress test);

c. exposure method.

109. The rest of the section describes each approach and provides some examples that are already applied in practice. The examples provided are by no means exhaustive and should not be understood as best practices or advice by the EBA to prefer certain methods over others. The section is a stocktake of existing practices, it describes what is observed in the market, but does not create any obligation to use of any of the methods. It does not present a requirement to use all three methods at the same time and does not prevent institutions from using other methods. Rather, the examples presented aim to make the discussion of methods more practicable and understandable.

110. The methods are listed in no particular order and no ranking of preference is intended. The sequencing of the discussions should not be understood as placing higher importance or credibility on any of the three methods. [99] Methodologies are at early stages of development and institutions, organisations and supervisors are still piloting and exploring various methods, approaches and providers. Trials, observations, monitoring and dialogue will be crucial to better assess usability and feasibility. Flexibility on methods hence remains important for the time being.

111. This flexibility at the same time implies heterogeneity within approaches. Applications and tools in the three methods are different and hence outcomes cannot necessarily be compared on a one-to-one basis. Further, for all methods described, the well-known issue of data gaps and often a lack of reliable and comparable data, applies and has to be kept in mind. [100]

3.2.1 Portfolio alignment method

How aligned is an institution's portfolio with global sustainability targets?

[98] One respondent noted the relevance of market research on investor preferences for determining and establishing the sustainability goals to be achieved for a portfolio in the context of investment firms.

[99] For a more in depth discussion of existing risk analysis methods on the environmental aspect also see 'Case Study of Environmental Risk Analysis Methods', NGFS Occasional Paper (September 2020).

[100] The Corporate Sustainability Reporting Directive (CSRD) could alleviate some of these data challenges.

112. At the core of this methodological approach lies the concept of alignment. The key principle behind this approach is for institutions, investors and supervisors to understand how far portfolios are aligned with globally agreed (climate) targets.

113. Looking specifically at climate, this approach outlines in how far an institution would need to change its portfolio and activities in order to align with the Paris Agreement 2˚C scenario. It looks directly at the ultimate goal of global efforts on climate change and explicitly defines the portfolio changes that would be required by institutions to contribute to this.[101] Assessing the alignment of the portfolio with global targets in turn presents a way to measure ESG risks for the institution itself.

114. Two examples are described in more detail in Box 8 and Box 9.[102]

Box 8: Example – 2DII PACTA Tool[103]

A well-known tool falling under this approach is the Paris Agreement Capital Transition Assessment (PACTA) tool developed by the 2 Degrees Investing Initiative (2DII), which looks at alignment in terms of climate change goals. The tool combines institution level portfolio information on corporate exposures, a database on the technology mix and production plans of individual companies, and technology mix scenarios developed by the International Energy Agency (IEA) in order to assess an institution's alignment with the Paris Agreement Targets (bringing the rise in temperature to well below 2 degrees).[104]

The technology mix scenarios define pathways for CO_2 emissions for certain technologies and industries under various climate target scenarios, implying certain required technology mixes in the energy sector. The 2DII database holds information on the production plans of individual companies for the period 2019-2024 for climate relevant sectors[105]. Production plans made by individual companies together with the envisaged scenario pathways for different sectors are combined to assess the alignment of each firm's production plan to the scenarios developed by the IEA.

At the institution level, each counterparty exposure is matched with the 2DII database on companies, and their forward-looking production profiles are created.[106] Individual institutions

[101] In the context of the European Union, the incentive to align is driven by ongoing policy action, including the set-up of specific taxes and subsidies aligned to the taxonomy.

[102] Another example is MSCI 'Warning potential methodology' which translates a company's contribution to global warming into a specific temperature, offering an assessment of the warming scenario a company is currently aligned with. This is translated into a portfolio aggregate that can be compared to the Paris temperature targets.

[103] PACTA Investor Briefing and PACTA general website.

[104] The tool covers listed equities, corporate bonds and a pilot on corporate loans was launched in 2019 with 25 banks.

[105] Power, automotive, oil and gas, coal mining, aviation, shipping, cement and steel – representing 75% of global CO_2 emissions.

[106] When more than 80% of the clients can be matched, an analysis to the Paris Agreement can be conducted.

can then be assessed according to how far the counterparties they finance are aligned to the IEA targets (based on the scenario-implied trajectory required to reach the target).

The output of PACTA provides institutions with the following information: i) how much of their portfolio consists of counterparties in transition-relevant sectors, showing the share of the portfolio and the technology mix of the portfolio; ii) a comparison of step i) to peers and the market (i.e. exposure of the global universe of assets in the relevant asset class); and iii) the alignment of the institution's portfolio to the scenarios over a 5 year horizon, based on the production plans of counterparties in its exposure. This tool is used both as a strategic and a risk management tool.

The EBA has considered the value of the alignment metrics in gauging transition risks and has included a template on alignment metrics in its Consultation paper on draft ITS on Pillar 3 disclosures on ESG risks.[107]

Box 9: Example – UNEP FI Principles for Responsible Banking

Another framework that takes the alignment approach is the United Nations Environmental Program Finance Initiative (UNEP FI) Principles for Responsible Banking (PRB), launched in September 2019 by 130 banks from 49 countries. The aim of this framework is to align banks' business strategies with the goals expressed in the SDGs and the Paris Agreement. A key difference in this framework compared to the PACTA approach is that it takes into account all three components of ESG, not only the environmental component. Twenty-two 'impact areas' are defined, in line with the UNEP FI Positive Impact Initiative 2018 on ESG pillars, as well as the economic pillar. Each impact area can be mapped to at least one of the 17 SDGs.

The tool allows a mapping to be made of participating banks' exposures (by type, country and sector) to the different impact areas. The outcome is an overview for each bank of how far its exposures are positively or negatively affecting each impact area. Importantly, it builds a specific list of the most significant impact areas per bank. This is based on country needs in each impact area for the bank's countries of operation, as well as impact areas related to sectors and countries where the bank is a market leader. Combined with an assessment of the bank's (relative) performance in these most significant impact areas, the tool allows banks to set targets for each individual impact area.

[107] See Template 4 of the EBA Consultation paper on draft ITS on Pillar 3 disclosures on ESG risks. Final disclosure requirements will be published in the form of final technical standards later in 2021.

The PRB tool is not based on quantitative scenarios like the PACTA tool. Rather it provides a more qualitative mapping of the abovementioned 'impact areas' to sectors and individual countries' levels of need. It involves subjective judgement both on the side of banks (when mapping the performance in the most significant impact areas) and UNEP FI (when linking sectors with impact areas). Its all-encompassing scope of ESG and differentiation across countries and banks' own potential in the various impact areas, allows for a holistic analysis of banks' portfolios.

PRB signatory banks are required to publish their targets, report publicly on their impacts and progress, and engage with key stakeholder on these impacts, fostering transparency and accountability.

115. Another tool prominently used by institutions is the Partnership for Carbon Accounting Financials (PCAF). This is a tool to measure and disclose institutions' direct and indirect emissions, based on a set of overarching accounting principles and covering nine different asset classes, from sovereign bonds to corporate and SME loan portfolios. It does not provide for an explicit emission target per sector or portfolio, according to which an alignment as such could be measured. The PCAF tool provides transparency on emissions attributable to institutions' counterparties, and since climate transition commands reduced emissions by definition, disclosures under the PCAF tool can be viewed as an implicit way of measuring alignment in a broader sense. The EBA also considers the disclosure of GHG emissions as part of the templates in its consultation paper on draft ITS on Pillar 3 disclosures on ESG risks.[108]

116. Frameworks under the alignment method can be said to be very results-oriented. Providing analyses of institutions' portfolio positioning relative to global targets and goals enables them to understand the priorities and direct implications of their portfolio allocation. The approach looks at portfolio attributes and their contributions to sustainability and climate targets, and its outcomes provide direct guidance on portfolio alignment and allocation.

117. Whilst this approach allows for the identification of risks related to sustainable development (i.e. the sectors and exposures which are not aligned), it does not make an explicit link between sustainability targets and the portfolios' (changing) risk characteristics (in the form of PDs, LGDs or volatility in risk on investment, for instance), it does not take into account the relative transition abilities of industries[109], and is sometimes found to be disconnected from

[108] The EBA public consultation on draft technical standards on Pillar 3 disclosures of ESG risks also proposes various templates that would imply disclosures related to physical and transition risk, including information on emissions, EPC labels and taxonomy alignment. Final disclosure requirements will be published in the form of final technical standards later in 2021.

[109] Some industries may be able to transition their technologies better than others. However, this is not reflected when assessing the alignment since it is based on current technologies, current potential plans to change technologies, or a one point in time assessment of a sector and how it relates to certain impact areas. This is something that also holds true for the risk framework method, if exposures are classified based on current emissions or technologies.

institutions' actual strategies and risk management procedures. Further, the assessment of alignment with the 2˚C scenario, for instance, is an assessment of the portfolio as a whole and the portfolio may well contain a diverse mix of exposures, presenting different levels of alignment and hence climate risk. Some institutions indicate that they use this method for strategic purposes rather than risk management purposes (or only as a qualitative input for the latter).

118. Several institutions are using or piloting this method, mostly through external providers (such as PACTA). At the same time, many are not yet using this method or are at an exploratory phase only. In particular, the application of this method by smaller or less complex institutions will depend on the underlying structure and size of their balance sheet.

3.2.2 Risk framework method

How will sustainability-related issues affect the risk profile of a bank's portfolio and its standard risk indicators?

119. Modelling the impact of ESG risks on institutions' risk profiles has seen most progress in the form of climate stress testing. This may, inter alia, be attributed to the fact that climate risk is by nature forward-looking. Stress testing over a future time horizon is therefore a useful tool for modelling climate risk impacts, whilst other ESG risk considerations tend to be predominantly more backward-looking (although they also take into account companies' future ESG strategies and plans). This section will therefore focus on risk management in the context of climate risk.

120. In contrast to the alignment method discussed in the previous section, the risk framework method focuses on the sensitivity of portfolios and the impact climate change has on the real risk of the exposures. It does not make any statements on how the portfolio composition is positioned relative to global climate targets and as such does not provide an explicit guide for institutions on how they would have to shift their portfolios to align. Rather, it is a purely risk-driven approach. Managerial actions would reflect the level of measured sensitivity or direct risk of losses considering the current level of environmental factors (or climate factors, more specifically) and the possible developments under the selected scenario. Applying this approach should lead to a risk-based adjustment or shift of portfolios, at least in the medium to long term.

121. This approach may not ensure alignment with global targets of the market as a whole, or in the short run. It is a tool that enables institutions to manage their risks internally and allocate their portfolios in the most risk-effective way, taking into account climate risk. It is about resilience, rather than explicit alignment - both of which in the long run, should in theory lead

to the same results in terms of how aligned portfolios are with global policy targets, but in the short run arguably may not.[110]

122. The most developed risk framework methods in the context of climate risk can be split into two approaches[111]:

a. *Climate stress tests* - assessment featuring fully fledged scenarios that map out possible future development paths of transition variables (e.g. carbon prices), physical variables (e.g. temperature increases) and the related changes in macro variables (e.g. output in different sectors, GDP, unemployment) and financial variables (e.g. interest rates). These scenarios are then translated into changes in portfolio (risk) attributes.

b. *Climate sensitivity analysis* - a simpler exercise without scenarios, assessing changes in portfolio risk attributes by changing some of the inputs in financial models based on shading and classification of exposures into 'green' versus 'non-green' (which determines an exposure's vulnerability to climate-related events and policies).

a. Climate stress testing[112]

123. Several climate stress testing methodologies have been proposed and applied. Stress testing can take place at portfolio, industry or counterparty level and may be conducted by national competent authorities, institutions themselves or external providers.[113] In most cases to date, stress tests are run in the form of pilot exercises, since experience is lacking and the design of climate stress tests is very complex and faces several issues. Challenges include assumptions made about the different climate scenarios, uncertainties about climate developments themselves (tipping points), environmental policies adopted by national and international governments/bodies and the actual implication for financial and economic factors and how these are modelled, choosing appropriate time horizons (which are longer for climate stress tests than for normal stress tests), taking into account transition or physical risk, accounting for changes in technology and consumer preferences, and, importantly, data availability.

[110] Due to the well-known timing issue: some of the risks may only materialise in the long run and accordingly can potentially slow down financial institutions' actions.

[111] Asset-based evidence such as the performance analysis of energy efficient mortgages would be another method under development. (See for instance the EeMAP's Final Report on the correlation between energy efficiency of mortgages and the probability if default.) Direct evidence of the historical performance of assets, if available, is an extremely valuable tool to assess a portfolio's risk.

[112] This section focuses on transition scenario analysis, but also physical climate scenarios, for instance events such as flooding and droughts caused by GHG emissions.

[113] Examples of external providers of stress testing methodologies include 2DII, MSCI Carbon Delta and Mercer.

124. Climate stress tests remain a work in progress and should not be expected to provide the same level of precision as currently applied standard stress tests.[114] To date, they are less comprehensive than traditional stress tests - they are an assessment of certain portfolios but do not make any conclusions about potential capital implications. Climate stress tests based on scenario analysis are a useful and important tool, however, given their complexities and many uncertainties, they also need to be assessed and interpreted with caution.[115]

125. A broad overview of some of the stress testing exercises already performed in practice or in the pipeline is provided in Box 10 below. Section 4 will provide a more detailed discussion on stress testing methods and their limitations.

Box 10: Examples of stress testing exercises performed or planned[116]

Example 1 – De Nederlandsche Bank (DNB) Stress test on energy transition risk for the financial system 2018

The DNB's stress test on energy transition risk for the financial system was the first climate stress test conducted by a competent authority. It looked at equity and bond exposures of banks, insurers and pension funds, as well as banks' loan exposures. The stress test develops transition risk scenarios, combining policy and technological shocks, which are translated into macroeconomic variables using the NiGEM model. Industries are classified by an energy transition vulnerability factor, which is based on CO_2 emissions of both inputs and final products (weighted by an industry GDP contribution) and differs according to the scenario (based on an industry's ability to adapt to technological progress, for instance). Outputs from the NiGEM model on GDP, bond and equity returns are combined with the 56 industry-specific vulnerability factors to arrive at industry-specific impacts for bond and equity price changes and loan portfolio impairment charges.[117]

Example 2 – Bank of England (BoE) Biennial exploratory scenario on the financial risks from climate change 2021

The discussion paper published in December 2019[118] invites participating institutions to conduct an assessment at counterparty level. Pathways for temperature, emissions, and

[114] Lehmann, A. (2020), 'Climate risks to European banks: a new era of stress tests', Bruegel Blog, 5 February, available at https://www.bruegel.org/2020/02/climate-stress-test.

[115] A more detailed discussion of the challenges of scenario analysis in 'The Green Swan - Central banking and financial stability', BIS (2020).

[116] For further discussion of the different types of modelling approaches see 'Overview of Environmental Risk Analysis by Financial Institutions', NGFS Technical Document (September 2020).

[117] An energy transition risk stress test for the financial system of the Netherlands, DNB 2018. An acknowledged caveat of the model is the fact that sector-specific impacts are derived from the outputs of the macro model (by applying the relevant transition vulnerability factor). The microeconomic foundations of the stress test could be improved by first calculating industry returns in each scenario and then aggregating this into a macroeconomic impact.

[118] The 2021 biennial exploratory scenario on the financial risks from climate change.

climate policies, as well as macroeconomic variables (including aggregate GDP and sector-level GDP figures) and financial variables as provided by the Bank under various scenarios (over a 30-year horizon) are to be translated by institutions into financial impacts on their counterparties and changes in asset values as a result. Changes are to be provided at every 5 year point along the scenario timeframe, assuming unchanged balance sheets. Institutions are expected to build on the scenarios and inputs provided by the Bank in order to be able to model all the information they need. The exercise is to incorporate both physical and transition risk and applies to the largest banks and insurers.

In a second step, the exercise encourages participating institutions to indicate how they would adjust their business model in response to the scenario (reducing certain exposures and redirecting capital), providing an overview of the overall resilience of the system in the years ahead.

As a result of COVID-19 and the response received to the public consultation, the Bank of England has postponed the launch of the exercise to June 2021.

Example 3 – L'Autorité de contrôle prudentiel et de Résolution (ACPR) Pilot exercise on climate-related risks

The ACPR published the modalities of its pilot and voluntary exercise on climate-related risks on 17 July 2020. The objectives of this bottom-up analysis implemented over the 2019-2050 timeframe are threefold: i) encouraging banks to develop methodologies to assess climate-related risks, in particular credit risk parameters (with a focus on transition risks); ii) understanding their strategic reactions in the face of these risks through a dynamic balance-sheet hypothesis; and iii) assessing the potential for spillovers across the financial sectors (banks will have to consider implications of the results of the stress on insurance undertakings in their final results).

The three scenarios studied are consistent with those developed and recently published by the NGFS. The exercise considers an orderly transition as a reference scenario and two adverse scenarios combining a carbon tax and a technology shock in the most adverse ones. Macroeconomic outputs projected with NiGEM are then mapped into 55 sector-specific shocks on turnovers and added value (corresponding to a 'sudden and late transition' scenario). These sector-specific shocks are then used to project financial variables (equity and bond prices) as well as benchmark PDs, the latter relying on the Banque de France rating model. Based on available scenarios, banks will then project credit and market risk parameters selected by the ACPR. The main results of this exercise have been published in May 2021.

Example 4 – European Central Bank (ECB) Economy-wide climate stress test[119]

The ECB is currently conducting an economy-wide climate stress test, covering approximately 4 million companies worldwide and 2,000 banks in the euro area, over a period of 30 years into the future. The stress test covers both transition and physical risk and the interaction between the two. The ECB uses an in-house data set established on firms' financial and climate information, including past and future emission data (targets) and physical risk scores. Individual firm level data are compared to the trajectories envisaged under specific NGFS scenarios, allowing the impact on a firm's costs and PD to be assessed under the different scenarios ('orderly transition', 'hot house world', 'disorderly transition'). The various scenarios enable the trade-off between (timely) transition and no transition to be assessed. The exercise is planned to take place over the course of 2021 (preliminary results were published in March 2021, the full set of results is expected by mid-2021, and the incorporation of second round effects from institutions adjusting their portfolio composition in the second half of 2021).

126. Stress tests have also been developed for environmental stress such as pollution. An example of this is the stress test developed by the Industrial and Commerce Bank of China (ICBC) in 2015, where higher emission levies were modelled on the cement and thermal power industries, inducing higher costs and impacting PDs.[120] Other stress tests have been developed explicitly for the real estate sector, given its crucial contribution to climate change and also its exposure to physical risk.[121]

127. Most of the stress tests described in Box 10 predominantly assess transition risk. Several tools have also been developed to assess physical risk. Examples of this include the exercise run by Acclimatise and 16 participating UNEP FI banks.[122] Physical risk in the form of climate events (temperature and precipitation) or extreme weather events and their impact (production/crop loss) is modelled for the agricultural, energy and real estate sectors. Stress in the first two sectors appears in the form of changes in prices, revenues and costs, which translate into changes in PDs. Similarly, for the real estate sector, the likelihood of extreme weather events and mortgage terms are combined to derive revised LTVs. [123] Another tool developed by a

[119] Shining a light on climate risks: the ECB's economy-wide climate stress test.

[120] Industrial and Commercial Bank of China (ICBC). Impact of Environmental Factors on Credit Risk of Commercial Banks.

March 2016.

[121] See for example MSCI ESG Research Scenario analysis for commercial and residential real estate.

[122] Navigating a New Climate: Assessing credit risk and opportunity in a changing climate: Outputs of a working group of 16 banks piloting the TCFD Recommendations, Part 2: Physical Risks and Opportunities - UNEP FI and Acclimatise (July 2018).

[123] Another analytical example for the real estate sector is PWC's Carbon Value Analyser, which allows a quantitative assessment to be made of the effects of climate change policy on property values.

number of public institutions simulates water shadow prices (in the case of droughts), which are translated into changes in profitability and credit ratings.[124] BlackRock[125] assesses physical risks such as flooding and hurricanes across different US regions and their impact on three asset types (municipal bonds, commercial mortgage-backed securities, electric utility equities) - which have large physical collateral and for which the physical location is known. Based on a heat map that reflects climate event impacts on the economy across the regions (GDP pathways based on direct costs such as destruction and indirect costs such as labour productivity), the study assesses whether investors in the three types of securities are pricing in physical climate risk appropriately.

b. Climate sensitivity analysis

128. Sensitivity analysis is a simpler form of integrating climate risk into financial risk modelling. It does not apply complex scenarios based on assumptions on time horizons and interlinkages between climate factors and the real economy, but instead integrates climate risk directly into financial risk indicators by stressing certain inputs, based on classifying exposures according to their positive or negative climate contributions (i.e. classifying them into 'green' or 'environmentally harmful' exposures).[126]

129. Not requiring complex scenario-based modelling can be seen as an advantage as it makes this approach simpler and more accessible. What it cannot provide, however, is a more dynamic and complex assessment of climate impacts. By definition, sensitivity analysis ignores many aspects, including the dynamics and interactions between different sectors, additional macroeconomic impacts resulting from climate change, and importantly it ignores negative feedback loops and the aspect of time (it is a one point in time assessment).

130. Given the infancy of climate risk modelling and the uncertainties involved, this simpler approach can provide an insightful indication of the relative performance of 'green' versus 'environmentally harmful' exposures and institutions' exposures to climate-relevant sectors. The EBA's 2020 pilot sensitivity exercise will be discussed in more detail in Chapter 4.

3.2.3 Exposure Method

How do individual exposures and counterparties perform on ESG factors?

[124] See the Drought Stress Testing Tool developed by the Natural Capital Financial Alliance (NCFA) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

[125] Getting physical: Scenario analysis for assessing climate-related risks – Black Rock GLOBAL INSIGHTS APRIL 2019.

[126] Exposures can be classified based on relative emission levels of various NACE codes or application of the EU green taxonomy, for example.

131. The third approach is a tool that institutions can apply directly to the assessment of individual counterparties and individual exposures, even in isolation. The basic principle of this approach is to directly evaluate the performance of an exposure in terms of its ESG attributes. This can then be used to complement the standard assessment of financial risk categories. Indicators used for this assessment are typically calibrated at company level, taking into account granular sector level characteristics to capture the specific sensitivities to ESG factors of different segments and sub-segments of economic activity. Notably, this method covers all three aspects of ESGs, whilst many of the other approaches and tools tend to focus predominantly on climate risk to date.

132. The exposure method can possibly be described as the most practical method and the most straightforward to implement of the three approaches. It does not involve complex scenario analysis based on many assumptions but, as a result, relies mainly on backward-looking metrics. It can be applied to individual exposures and is a systematic approach for classifying exposures according to their specific ESG attributes. It provides institutions and investors with a tool to better understand their individual counterparties and to better understand the ESG performance of their existing portfolios, or potential future portfolios, before making an investment decision. While an ESG score provides insights into the ESG performance of a counterparty, it may not necessarily be translated automatically into financial risk, which is why a holistic use in the assessment process might be more appropriate[127]. An ESG score should not be confused with a credit risk score.

133. Importantly, in addition to providing the crucial complementary information for standard risk monitoring by institutions and investors, the evaluation of ESG risks using scorings or ratings also allows signalling to and dialogue with counterparties and investors. Performed directly at the counterparty level in most cases and also relative to peers, and providing detailed information and rationale on performance for all three elements, ESG scoring provides inputs and food for thought for counterparties as to how they can improve their strategies and business models and the key areas they should look at. Alongside pricing, dialogue with counterparties on this subject can be an important tool for making their business models more sustainable and thereby contributing to a more sustainable economy.

134. Whilst crucial for both the assessment of and signalling to counterparties, and hence an important component for creating a more sustainable economy, ESG evaluations need to be applied with care. A high level of awareness and a thorough understanding of the rationale and reasoning behind the rating outcomes is of the utmost importance to ensure an effective and appropriate application of ESG evaluations.

[127] There is not necessarily a systematic relationship between ESG scores and financial risk, not least given the low correlation between some of the ESG scores provided for the same company by different ESG rating providers (see below).

135. Several methodologies have been developed under this approach. They can be broadly classified as follows:

a. ESG ratings provided by specialised rating agencies (e.g. Sustainalytics, MSCI, ISS ESG, RobecoSam);

b. ESG evaluations provided by credit rating agencies (e.g. S&P ESG evaluation);

c. ESG evaluation models developed by banks in-house for their own assessment;

d. ESG scoring models developed by asset managers and data providers, which are publicly available (e.g. State Street's R-Factor, Refinitiv).

136. ESG ratings provided by specialised rating agencies are direct, stand-alone ratings on ESG factors, taking into account risk exposure to ESG factors, as well as the management's ability to deal with risks or opportunities. These ratings can be either relative to industry peers (see MSCI ESG Ratings [128]) or absolute company ratings (see ratings by Sustainalytics [129]). The methodologies generally build on a quantitative analysis of key issues identified for each industry (and hence company), as well as qualitative information collected by analysts from public information and engagement with companies.

137. ESG evaluations performed on companies by credit rating agencies can come in the form of an incorporation of ESG factors into the standard credit analysis. They evaluate how ESG factors affect certain scorecard components such as cash flows and leverage, but also elements outside of the scorecard.[130] Additionally, S&P for example, through its ESG Evaluation, has also created a separate assessment specifically for ESG risks, combining sector and country assessment with company-specific factors and a qualitative assessment of the company's preparedness.[131]

138. All ESG evaluations aim to provide needed additional input to the existing financial risk assessment. However, developing and interpreting the outcomes brings up several challenges since the different approaches taken can have crucial implications for their comparability. For instance, ESG ratings often lead to very different outcomes for the same company. This is due, inter alia, to the fact that the importance of the same ESG factor for the same company is often assessed very differently across methodologies. Other factors contributing to difficulties in comparing ESG ratings by different providers include the different weightings applied to the

[128] See, for instance, MSCI ESG Ratings Methodology

[129] For more information, see Sustainalytics website.

[130] See Moody's General Principles for Assessing Environmental, Social and Governance Risks.

[131] See S&P's Environmental, Social and Governance Evaluation Analytical Approach.

individual elements 'E', 'S' and 'G', for instance, when looking at scope 1, 2 or 3 emissions for the E factor, or at the different treatment of lack of disclosure of information by companies.

139. Other challenges[132] in the context of ESG ratings sometimes include a lack of climate aspects in the ratings, over-reliance on external providers (market power), a lack of transparency with regard to methodologies, the fact that ratings often exist for listed companies only but not for smaller companies or other types of counterparties, such as (sub-) sovereigns or supranationals, and a lack of regulatory approval. ESMA, in a letter to the European Commission, has highlighted the need to match the growth in demand for ESG ratings with appropriate regulatory requirements to ensure their quality and reliability. [133]

140. A key step towards making ESG ratings and evaluations more comparable, transparent and hence more effective, is a standardisation of the relevance and importance of different ESG factors for the various industries and companies. This is the direction that has been taken by the Sustainability Accounting Standards Board (SASB), which has made a crucial contribution to laying the basis for achieving consistency in ESG assessments (see Box 11).

141. An example of the application of SASB is State Street's R-Factor, a tool aimed at building on existing ESG ratings whilst at the same time overcoming some of their short-comings. The R-Factor combines data provided by several ESG rating providers with information on the relevance of the various ESG factors for different industries, as provided by the SASB. [134] It uses raw data by ESG rating providers only for those ESG factors deemed financially material by the SASB for each company. Thereby, it removes any subjective judgement on the importance of the various ESG factors for each industry and company, and provides a transparent assessment of what is included in and driving a company's rating.[135]

[132] See also the BCBS paper on 'Climate-related financial risks - measurement methodologies' (April 2020) https://www.bis.org/bcbs/publ/d518.htm.

[133] See ESMA's letter to the European Commission from January 2021.

[134] It also includes a 4th component, corporate governance as provided by ISS Governance.

[135] R-Factor is the scoring system that powers Bloomberg's ESG related equity and fixed income indices launched in September 2019. The indices are constructed by re-weighting the parent indices relative to the performance of the R-Factor (see Bloomberg SASB indices).

Box 11 - Enabling tools provided by the Sustainability Accounting Standards Board (SASB)[136]

The SASB has developed a publicly available Materiality Map, identifying financially material ESG issues for 11 sectors and 77 industries. Financially material factors are those that are likely to have a substantial impact on a company's financial and operational performance. By nature, the ESG factors that are material for a company depend on the sector. The aim of the materiality map is to foster a common understanding of the relative importance of different ESG factors across various industries, thereby facilitating a consistent assessment of ESG risk.

The materiality map is complemented by Sustainable Accounting Standards. The latter identify which factors should be reported and assessed to evaluate ESG performance. It provides as list of indicators that are relevant for a certain industry (such as the percentage of the active workforce covered by collective bargaining agreements to assess labour force practices) and the rationale for this.

Whilst the SASB tools do not provide a direct ESG rating or scoring, they have the potential to play an important role in developing these. Providing a list of standardised ESG issues across industries and sectors permits consistent application by institutions and investors in their ESG assessments of counterparties and portfolios, and at the same time can be a signalling tool for companies to identify the areas they should focus on in order to improve their sustainability performance.

142. Many institutions are using this method already, either through external providers or some are establishing their own internal scorings. There are mixed views on the suitability of the method for small compared to large institutions, and it has also been questioned whether to use this method directly for counterparties (issuers) or proceeds (e.g. products, in the case of a green bond).

143. Given the challenges stated in paragraphs 137-138, ESG ratings also seem to be used in conjunction with the institution's own client knowledge and expertise. Alternatives, for example in the case of smaller clients where no rating exists, have been proposed by the industry, for instance in the form of an aggregate portfolio rating by sector and industry to be used together with lending strategies and which would allow for more automation, or the application of ESG ratings at portfolio level by collateral type.

3.2.4 Comparison of methods and their application

144. Two things are crucial in order for institutions to be able to assess and manage ESG risk and align risk management with sustainability considerations:

[136] The tools are publicly available on the SASB website.

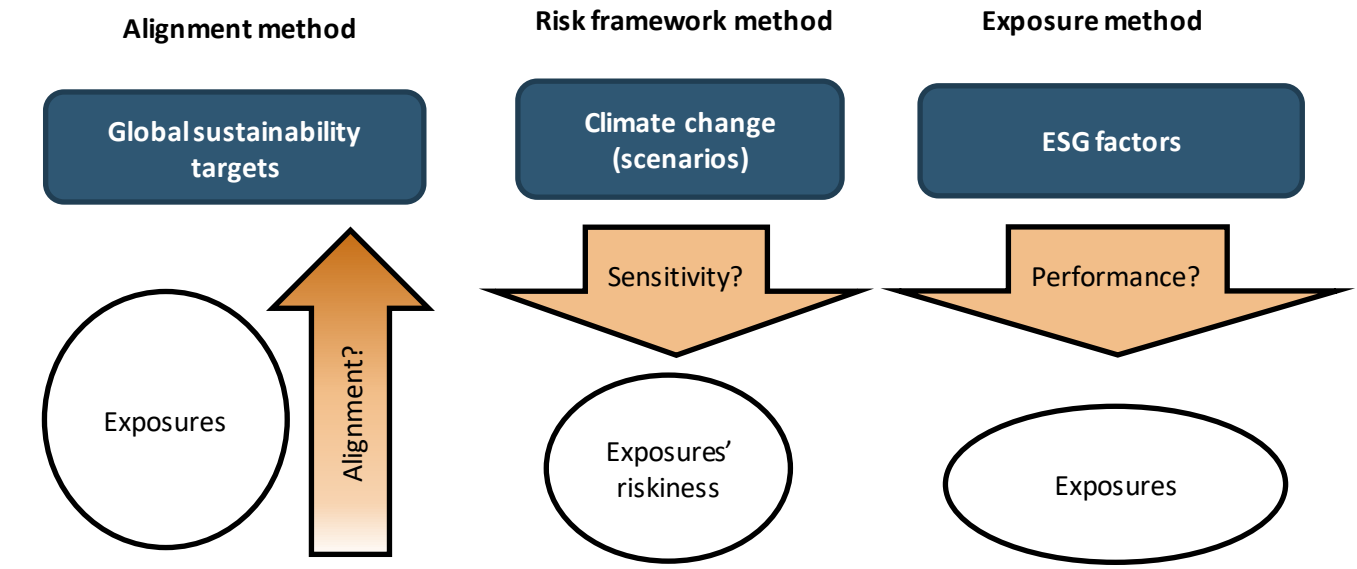
a. factors considered and decisions taken at the time of exposure origination;

b. observations made and subsequent decisions taken during the monitoring of existing portfolios.[137]

144. Exposure origination is important as it steers the future composition of an institution's portfolio and also signals to counterparties, investors and wider market participants which investments are no longer sustainable and supported by the financial sector. The EBA Guidelines on Loan Origination and Monitoring[138] specify that ESG factors should be taken into account in banks' credit risk appetite, policies and procedures. In particular, the guidelines outline specific processes and procedures banks should have in place when providing environmentally sustainable lending, including processes for assessing the credibility and business objectives of counterparties.

145. Portfolio screening and monitoring in the context of ESG factors and risks in turn is crucial as it allows institutions to identify difficulties and areas for concern, take necessary actions early on and allocate capital accordingly. In particular, it enables an institution to gain experience and build historical data on ESG and the relative performance of portfolios, which is again critical for its future policies and strategies.

Figure 11 Overview of the three methodological approaches



[137] The two aspects have also been identified as key in the ECB's supervisory expectations on credit risk management as part of its Guide on climate-related and environment risk: 'Institutions are expected to consider climate-related and environmental risks at all stages of the credit-granting process and to monitor the risks in their portfolios.'

[138] EBA Guidelines on Loan Origination and Monitoring (Sections 4.3.5 and 4.3.6).

146. All three methods described above (see Figure 10) lend themselves to exposure origination and existing portfolio monitoring, albeit to varying degrees. The exposure method for example may provide a tool for both the origination and the monitoring of existing portfolios in that it makes direct reference to ESG factors. Some methods might be a more natural fit for exposure origination rather than for portfolio monitoring, or vice versa. **Error! Reference source not found.** below explores how each approach may be used in exposure origination versus portfolio monitoring.

Table 2 The three methodological approaches in the context of exposure origination and portfolio management

	Exposure origination	Portfolio monitoring
Alignment method	▪ Understanding the state of alignment and potential for changes in the portfolio provides direction and allows for better-guided decisions on investment and sectoral focus at the time of origination. The method focuses more on assessing the exposure in the context of the entire portfolio composition.	▪ Understanding the positioning of a portfolio (or individual exposure) relative to targets allows the identification of which parts of the portfolio are most likely to encounter difficulties in the future and hence require more attention and which parts of the portfolio may even need to be divested. ▪ Some methodologies can guide dialogue with counterparties and investors (through insights into individual companies' investment and production plans).
Risk framework method	▪ Stress testing or sensitivity analysis can provide insights into vulnerabilities of sectors for future investment or credit decisions. It can help to establish appropriate pricing and term structure of a loan and make portfolio allocation decisions.	▪ Understanding the impacts of climate on the portfolio's risk parameters is a crucial input for portfolio monitoring and capital allocation.

Exposure method	▪ By providing a detailed view of ESG issues by counterparty, the exposure method seems appropriate for the screening conducted during the loan origination process. In particular, because ESG evaluation can be available at company level, it allows for a detailed and customised assessment of counterparties.	▪ It requires a substantial amount of evaluation in retrospect (applying ESG ratings to the existing portfolio), but can be a useful tool for banks to understand in detail how their portfolio performs on ESG factors ('shading of the portfolio'), it can guide dialogue with counterparties and direct the latter on how and where improvements need to occur. This allows for a highly customised tool.

147. Earlier discussions have demonstrated that the three methods are different in regard to the questions they intend to answer, the conclusions that can be drawn from them and the messages they convey to their users, but they are also different in regard to their applicability and practicability. Different approaches can also respond to risk management needs across different time horizons (the portfolio alignment method, for instance, can be helpful for forming a long-term strategic view, whilst the exposure method can be particularly useful for making an ad-hoc assessment of a counterparty). Therefore, the different approaches should not necessarily be seen as substitutes, but can be used alongside each other. Indeed, many institutions have stated that they use several methods simultaneously, or intend to do so.

148. Features are different across the three methods, however, they can also vary across the practical applications within each method (the PACTA tool for instance uses scenarios, whilst the UNEP FI PRB tool does not). Similarly, the time horizons used vary. In some cases, time horizons of up to 30 years are used for some risk framework methods, whilst the ESG evaluations under the exposure method tend to be more static [139] and largely reliant on backward-looking data. The applications used under the risk framework method and alignment method currently seem to be mainly focused on climate risk, whereas the exposure method assesses all three categories ('E', 'S' and 'G'). Assessments can be made at the portfolio level (the alignment method), sector level (often observed in the risk framework method) or at the counterparty level (in the case of ESG ratings). All methods are subject to a substantial degree of subjective judgement (be it in the form of scenario choice and calibration or in the form of the choice of indicator materiality and the assessment of management's preparedness in the case of ESG ratings).

149. In addition, some of the approaches are closely interlinked. The alignment and exposure methods, for instance, are linked in that they can both look at the ESG performance of a

[139] 'Static' in the sense that no forward-looking scenarios as in the case of climate stress tests are involved.

counterparty, but the alignment method introduces specific targets. **Error! Reference source not found.** aims to set out some of the key conceptual advantages and disadvantages of each approach.

Table 3 The three methodological approaches: pros and cons

	PROs	CONs
Alignment method	▪ Introduces explicit targets: **direct guidance**, highly **executable** ▪ **Results-oriented** ▪ Aligned portfolios are conducive to **reduced reputational risk**	▪ Takes more of a **portfolio view** (not much focus on individual exposures - individual exposures may well be mis-aligned) ▪ Related to the above: focus is not on individual counterparty dialogue (hence a potential obstacle to counterparty transition) ▪ Can be **complex** (in the case of scenarios), **data challenges**
Risk framework method	▪ **Risk-based**: looks directly at risk, hence **integrates well** with banks' 'way of doing things' ▪ **Dynamic** nature of scenarios allows interactions of sectors and variables to be reflected, as well as climate dynamics	▪ **Complex, data issues, uncertainty**, etc. (see Section 4) ▪ Linking ESG risk to the actual financial risk indicators can be a '**black box**'
Exposure method	▪ **Transparent, simple,** can be done in **isolation** ▪ **Established** methodology (ESG ratings) ▪ Links to **Key Performance Indicators (KPI) systems** ▪ **Dialogue** with firms	▪ **Comparability** issues with some ratings ▪ **Data** challenges ▪ The outcome is generally of **qualitative** nature ▪ Of a rather static nature - ratings/scores need to be reviewed regularly

4. Management of ESG risks by institutions

150. Building on the definitions of ESG factors, ESG risks, their transmission channels and risk drivers provided in Chapter 2, this chapter addresses how institutions can embed ESG risks into their governance and risk management. This chapter is structured around the three main elements where the incorporation of the ESG risks is seen as essential:

a. business strategies and business processes (Section 4.1);

b. internal governance (Section 4.2);

c. risk management (Section 4.3).

151. While reviewing these areas, this chapter describes and takes into account the practices already in place, notably in European institutions, acknowledging that these practices are rapidly evolving. It also identifies some of the main areas where further progress is needed for a deeper understanding, measurement and mitigation of institutions' exposures to ESG risks.

152. The measures identified and the recommendations made are subject to the principle of proportionality, meaning that they are to be applied in a manner that is appropriate, taking into account the institution's individual risk profile, business model, size, internal organisation and the nature and complexity of its activities.

153. As set out in the EBA Guidelines on internal governance, with regard to internal governance and risk management arrangements, institutions should consider a principle of proportionality that is based on, inter alia, their size, nature and complexity[140]. This general principle of proportionality applies with regard to the ESG risk management framework. At the same time, the application of the principle of proportionality in the context of ESG risks also means that any specificities of ESG risk should be duly taken into account, with a view to ensuring that risk management arrangements are proportionate to institutions' risk profiles. In particular, it should be noted that smaller institutions are not immune to ESG risks and could in some cases be even more exposed to them, for instance, if they are particularly concentrated in a vulnerable sector or geography, or if they lack the resources and expertise needed to implement ESG risk management frameworks. Factors such as types of clients, products and portfolios, business areas in which the institution is most active, sectoral exposures and level of

[140] In addition to other criteria set out for the purposes of the principle of proportionality. See EBA Guidelines on internal governance e.g. Title 1 (EBA/GL/2017/11).

concentration risk (in sectors or geographies) are important criteria to consider when determining institutions' vulnerability to ESG risks.

154. The management of ESG risks by institutions should more generally reflect the evaluation of the materiality of these risks for their business model and risk profile. The materiality assessment is primarily an institution-specific assessment which should take into account the specificities of the business model, operating environment and risk profile. When conducting this assessment, it is essential that institutions take into account the transmission channels and characteristics of ESG factors and ESG risks as described in the previous chapters, including the breadth and scope of their potentially far-reaching impact, and their uncertain and multiple time horizons. Institutions should also consider any concentrations in and between the risks that may arise from pursuing their strategies. Institutions should not prematurely consider that ESG risks are immaterial owing to their longer-term nature but should consider their implications over the short, medium and longer-term time horizons.

155. All institutions should ensure that their ESG risk management approaches remain comprehensive and proportionate to the nature, scale and complexity of their activities. All institutions should effectively identify and monitor the ESG risks to which they might be exposed in the short, medium and long run, and implement adequate measures to address them. Institutions with material exposures to ESG risks should have more sophisticated governance and risk management arrangements, while institutions with less material exposures to ESG risks may implement simpler arrangements.

156. As mentioned earlier in this report, the EBA acknowledges that indicators, metrics and broader understanding may be more advanced for climate and environmental risks compared to social and governance risks. Accordingly, risk management practices are expected to reflect the differing levels of advancement in the identification and measurement of ESG risks. Some of the challenges encountered for climate and environmental risks may be even more acute for social and governance risks, such as the lack of standardised and easily accessible information, limitations of sector-based approaches and quantification issues. Whilst the EBA gives particular prominence to climate and environmental risks in the development of the ESG risk-related banking regulatory framework, it is nonetheless essential that institutions also take measures to advance their identification and management processes for social and governance risks, in light of their potential significant impact (see Chapter 2). These measures should aim at ensuring a robust and forward-looking management of social and governance risks, building where appropriate on existing arrangements already implemented by institutions e.g. through the integration of governance factors of counterparties in credit risk and operational risk assessments or the integration of social factors in client-related processes.

4.1. Business strategies and business processes

157. From a prudential point of view, there are sound reasons for institutions to take ESG risks into account when assessing, designing or modifying their business strategy and processes. Notwithstanding the negative impacts of ESG risks that already occur in the short and medium term, it is likely that the full impact of ESG risks will unfold over a longer time horizon. Therefore, if ESG risks are not duly taken into account in their business strategies, institutions might fail to modify their business models in a timely manner to avoid or mitigate the longer-term impacts of ESG risks. Furthermore, as changes to the business model need some time to become operational, early and prompt action may be needed even in cases where vulnerabilities are identified only in the medium to long term.

158. Considering the relevance and potential impact of ESG risks, including them in institutions' business strategies and processes could be seen as inevitable for their longer-term economic resilience. Institutions are, and should remain, responsible for designing their business strategies, including their approach to supporting sustainability policy objectives. However, the extent to which an institution's overall exposures diverge from those objectives could serve as an indicator of the scale of its transition risk. On the other hand, by steering business in a direction that is consistent with the expected environmental and social transformation, institutions are more likely to avoid the negative financial impacts from ESG risks.[141] As stated above in this report, institutions may also seek to benefit from the opportunities associated with transition, which might also influence their profitability. These potential opportunities are not the focus of this report.

159. The UN 2030 Agenda for Sustainable Development and the Paris Agreement[142] could be considered the main global reference documents outlining the commitments and vision for transforming the current global economy into a more sustainable one. Governments that signed up to the objectives of these documents report on policies and targets to be implemented. In the EU context, the communication on the European Green Deal in December 2019 and the European Commission's proposal for 'European Climate Law' set the direction of travel for EU policy, together with more specific action plans on sustainable finance (2018 'Action Plan: Financing Sustainable Growth' and 2021 'Renewed Sustainable Finance Strategy'), establishing an EU strategy and a roadmap for future work across the financial system. All these initiatives indicate significant changes in the business environment in the upcoming years.

160. At the same time, while the re-direction of socio-economic trends towards more sustainable paths is taking place, environmental conditions continue to deteriorate across the

[141] See also studies from Bank of England/PRA (2018), 'Transition in thinking: The impact of climate change on the UK baking sector' and Banque de France/ACPR (2019), 'French banking groups facing climate change-related risk'.

[142] Moreover, in 2021 the 168 member states of the UN Convention on Biological Diversity are likely to set more stringent global targets on the conservation and sustainable use of biodiversity.

world and reflection on the impacts of these physical and environmental risks more generally in business strategies is equally important. The outbreak of the COVID-19 pandemic, with its unprecedented negative economic consequences, provides a good example that environmental hazards linked to ongoing biodiversity losses are an actual threat. From a financial perspective, more frequent and more severe natural disasters will be associated with bigger, potentially non-insured, losses that may rapidly threaten the solvency of households, businesses and governments, and therefore also affect institutions.[143]

161. This section describes the current status of the incorporation of ESG risks into business strategies. It then analyses the following areas (see Figure 11), which are identified as the most relevant for reflecting ESG risks in the institutions' business strategies and processes:[144]

a. monitoring the changing business environment and evaluating long-term resilience;

b. setting ESG risk-related strategic objectives and/or limits;

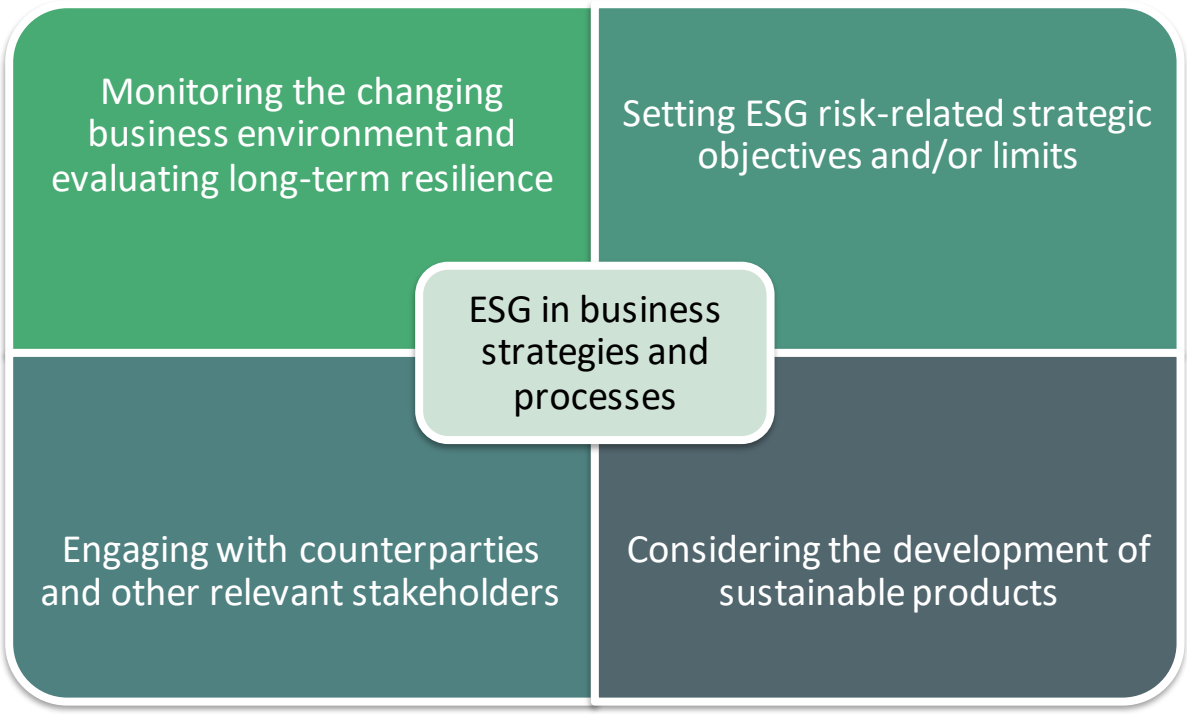
c. engaging with counterparties and other relevant stakeholders;

d. considering the development of sustainable products.

[143] According to a report from the International Association of Insurance Supervisors, 70% of weather-related losses are non-insurable losses (July 2018).
See https://naic-cms.org/sites/default/files/inline-files/cmte_c_climate_related_iais_sif_issues_ppr.pdf. Moreover, overall, only 35% of the total losses caused by extreme weather and climate-related events across Europe are currently insured. This leaves an insurance protection gap, i.e. the difference between the level of insurance (measured by insured losses) and the amount of economic losses, of65%. See https://www.eiopa.europa.eu/content/discussion-paper-protection-gap-natural-catastrophes.

[144] This classification builds on, inter alia, EBA (2020) 'Staff Paper Series: Sustainable Finance – Market Practices', and the results of other supervisory surveys.

Figure 12 ESG in business strategies and processes



4.1.1 Current practices

162. In recent years, some institutions have taken steps to account for ESG factors in their business strategies. However, much more progress is still needed. For example, the EBA's voluntary survey of 39 credit institutions in 2019 found that, while the overwhelming majority of respondents had already integrated sustainability considerations into their business strategies,[145] a variety of very different approaches were observed. Although the survey was voluntary and the participating credit institutions may not be fully representative of the EU banking sector, the input provided an informative overview of the need for further advancement, particularly in terms of the translation of institutions' business strategies into concrete ESG risk-related objectives and/or limits.

163. ESG factors often appear to be integrated into business strategies mostly from a Corporate Social Responsibility (CSR) perspective. Many of the actions taken by the respondents to the EBA survey could be associated with this objective, for example participating in external sustainable finance networks, supporting sustainable finance principles based on international standards or defining ESG objectives for the organisation. This is in line with other findings. A survey conducted in 2018 by the Prudential Regulatory Authority found 30% of respondents

[145] EBA (2020) Staff Paper Series 'Sustainable Finance Market Practices' (https://eba.europa.eu/sites/default/documents/files/document_library/Sustainable%20finance%20Market%20practices.pdf).

following this type of approach labelled 'responsible'[146] and an analysis conducted by the ACPR in 2019 identified a similar group of 'wait-and-see institutions'.[147] This approach could be helpful for reducing reputational risks and the resulting negative financial implications for the institution, but is unlikely to sufficiently cater for the various impacts of ESG risks on business models and strategies.

164. A study made by BlackRock Financial Markets Advisory (BlackRock FMA) on 42 banks[148] found that the majority of interviewed banks (83%) have strategies in place for the integration of ESG into lending and investments. However, the strategies set are usually at a high level and there are seldom comprehensive KPIs or processes in place to monitor their implementation at an in-depth level. While ambition levels, detailed priorities and underlying initiatives vary in nature, these strategies are typically applied only to parts of the portfolio. To this end, while some banks state that they tend to align their ESG strategy with international agreements, such as the UN Sustainable Development Goals or the Paris Agreement, few banks have publicly specified concrete action plans to achieve those aims and disclose the progress they have made towards them. Many banks lack a holistic and granular approach to measure and monitor the ESG business profile of their lending and investment activity. While most interviewed banks (84%) have policies in place which set assessment criteria for socially and environmentally sensitive industries, these usually apply to a limited set of prioritised sectors only. Despite most interviewed banks having begun the integration of ESG considerations into their client screening and credit approval process, few of them cascade sectoral policies further into origination guidelines/criteria and procedures to actively steer the commercial planning process. Moreover, approximately half of interviewed banks (52%) stated that they did not have an internal framework in place for relationship managers to capture ESG-related information from clients.

165. On a more positive note, the EBA survey and other analyses revealed that some credit institutions are also accounting for ESG risks as more immediate financial risks in their business strategies and have decided to adapt their risk management frameworks accordingly. Practical steps taken to achieve this objective include, among others:

a. Establishing **sectoral policies** for sectors subject to increased transition risk, developing **scenario analyses** to assess the impact of climate change on the credit institution's portfolio or specifying **exclusion criteria**. Similarly, DNB's good practices publication in

[146] PRA (2018), 'Transition in thinking the impact of climate change on the UK banking sector' (https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/report/transition-in-thinking-the-impact-of-climate-change-on-the-uk-banking-sector.pdf).

[147] ACPR (2019), 'French banking groups facing climate change-related risks' (https://acpr.banque-france.fr/sites/default/files/medias/documents/as_101_climate_risk_banks_en.pdf).

[148] BlackRock FMA (2020), 'Interim study on the Development of Tools and Mechanisms for the Integration of ESG Factors into the EU Banking Prudential Framework and into Banks' Business Strategies and Investment Policies' (link). The study looks into practices of 29 institutions from EU Member States (of which, 7 G-SIBs and 22 non-G-SIBs), 13 institutions from Non-EU Member States (of which, 11 G-SIBs and 2 non-G-SIBs).

2020 provides insight into how such a strategic approach to climate-related risks was adopted by one credit institution. In this case, an **internal change programme** was introduced to understand the risks from climate change arising for the institution, the strategy was reviewed for necessary adaptions and the decisions subsequently implemented.[149] In addition, partly combining CSR and financial risk focuses, some credit institutions reported in the EBA survey that they **evaluate the impact** of their lending, **engage with counterparties** about ESG risks, **set objectives** for the share of investments that would need to meet positive ESG criteria or **offer products** such as green bonds or loans. Lastly, selected credit institutions have focused their **business model** on sustainability, declaring a significant importance of ESG considerations in their business strategy.

b. According to the above-mentioned PRA survey, around 60% of the respondents had adopted the approach of considering climate-related risks as more immediate financial risks, albeit mostly in a rather narrow and short-term fashion. Another 10% were found to have chosen a more comprehensive, 'strategic' approach, including a more **long-term, forward-looking perspective**, developing **asset classifications** for climate-related risk analysis and increased **board engagement** as well as **engagement with academia** or hiring of specialists. The study conducted by ACPR also confirms progress with regard to the integration of climate-related risk into institutions' strategies and observes 'advanced institutions' that have increased their efforts in terms of **quantifying climate-related risks, reviewing sectoral policies** or **aligning portfolios** with climate change mitigation scenarios to reduce exposure to transition risks. BlackRock FMA finds that despite banks having prioritised reputational risk, they have also more recently expanded their focus on **credit risk**, in particular climate-related risk.

166. The EBA report on short-termism[150] shows that the average time horizon for business planning and strategy setting considered by EU banks is currently three to five years, which is also in line with the time horizon in some supervisory requirements. However, this time horizon is not likely to reflect the often long-term impacts of climate change nor the trend of transitioning to a more sustainable economy, e.g. in line with the objectives of international agreements and the EU Green Deal, and may distort the assessment of the relevance of ESG factors for institutions. Accordingly, the report concluded with a recommendation to foster the adoption of longer term perspectives by institutions e.g. through the integration of

[149] DNB (2020), Good Practice Paper, Integration of climate-related risk considerations into banks' risk management (https://www.dnb.nl/en/news/dnb-nieuwsbrieven/nieuwsbrief-banken/nieuwsbrief-banken-april-2020/dnb388145.jsp#).

[150] EBA (2019), Report on undue short-term pressure from the financial sector on corporations (https://eba.europa.eu/sites/default/documents/files/document_library/Final%20EBA%20report%20on%20undue%20short-term%20pressures%20from%20the%20financial%20sector%20v2_0.pdf).

'requirements to implement long-term resilient business strategies' into the EU-level provisions, such as the CRD, for the banking sector.

4.1.2 Monitoring the changing business environment and evaluating long-term resilience

167. Expected changes in the business environment in which institutions operate are typically monitored and reflected in their business strategies. In this context, the effect of ESG factors on the **business environment** can be seen as relevant for the definition of institutions' business strategies. This implies developing an understanding of and monitoring how ESG factors can affect macroeconomic conditions, as well as relevant sectoral business environments, for instance through decreases in output, changes in customer preferences or shifts in technology, and how this could in turn have negative financial implications for the institutions.

168. Consequently, the assessment of the business environment would need to take into consideration how and to what extent ESG factors may change the risks to which the institution is exposed with a view to adapting its business strategy accordingly. Given the inherent uncertainty of ESG risks and the lack or irrelevance of historical data[151], **scenario analyses** appear to be a useful tool for sketching the (potential) business environment(s) in which the institution might be operating in the future. Taking into account that the outcome of such an analysis depends greatly on the chosen scenario, the underlying assumptions and models used[152], institutions are advised to apply a range of different plausible scenarios for informing their business strategies. By way of example, institutions could base themselves on the three representative scenarios developed by the Network for Greening the Financial System (NGFS) which are the 'orderly', 'disorderly' and 'hot house world' scenarios[153], but would necessarily have to break them down from the global and macroeconomic to the microeconomic level. In the EU context, institutions could consider a scenario representative of EU environmental objectives and assess the implications for their business strategies of the actions planned under the European Green Deal and of the realisation of CO_2 emissions reductions targets set for 2030 and 2050. Institutions could draw strategic conclusions from the outcome of such analyses depending on the estimated impacts and the likelihood they associate with each scenario. However, from a prudential perspective, institutions should also prepare for less likely, adverse scenarios.

169. When applying scenario analysis, the specific characteristics and risks of the institution's business model need to be taken into account. Different risks may arise depending, among others, on the **geographical location, counterparties' strategies and the economic sectors** of the exposures. For example, an institution lending to SMEs located in a flood-prone area would

[151] See Chapter 3 for more details.

[152] NGFS (June 2020), 'Guide to climate scenario analysis for central banks and supervisors'.

[153] NGFS (June 2020), 'Climate Scenarios for central banks and supervisors'.

face different impacts from ESG factors than an institution in a coal-intensive region that is heavily involved in the funding of coal-fired power plants. Similarly, from the standpoint of ESG risk, an institution investing in the shares and debt securities of carbon-intensive corporates (or derivatives for which the underlying is a carbon-intensive commodity) which lack a transition strategy or low-carbon technology deployment would face a riskier return than investing in similar financial products issued by less carbon-intensive corporates or corporates developing low-carbon strategies and technologies.

170. When assessing the potential impact and materiality of ESG risks and determining the resulting implications for the business strategy, it is essential to **extend the planning horizons**, which usually consist of 3-5 years, and equally consider risks to the business model in the longer run. This extension could be aligned with relevant public policies such as, for example, the emission reduction targets set for 2030 and further down the road.[154] ESG risks and especially climate-related and environmental risks pose the challenge of manifesting not only in the short to medium term, for example, due to an abruptly announced policy measure, but also over the following decades because the physical impact of environmental change will affect economies and societies more permanently and severely, or because previously insufficient political action forces a sudden and comprehensive transition. This makes it reasonable to extend the planning horizon up to **at least 10 years**, which would allow (EU) public policy targets to be reflected. This could also be beneficial to identify the sectors, products and counterparties with which the institutions wish to build long term relationships.

171. Acknowledging that the precision of quantitative forecasts decreases with a prolonged planning horizon, it may be particularly challenging for institutions to carry out fully-fledged financial planning for more than 5 years. Therefore, where quantitative forecasts over a period longer than 5 years cannot be performed, institutions should at least conduct **qualitative analyses** at a level of granularity that allows informed business decisions to be made on that longer planning horizon.

172. From a strategic point of view, institutions with a substantial proportion of their business in non-sustainable activities may face, in addition to potential financial impacts from exposures to sectors under pressure from stricter environmental or social regulation, **reputational issues** that affect their customers or investor base. The same could apply for institutions that lack commitment to sustainability objectives.

173. Based on the above considerations, institutions would benefit from implementing at least a minimum set of longer-term **key performance indicators** (KPIs) that would allow them to monitor the development of their portfolios, with a view to evaluating and ensuring their long-term resilience as well as supporting the setting of strategic objectives. Institutions can build

[154] https://ec.europa.eu/clima/policies/strategies/2030_en.

these longer-term KPIs on the basis of their internal ESG risk assessment methodologies, e.g. considering insights gathered from portfolio alignment or risk framework methods. In addition, they should duly consider the developing regulatory framework for ESG disclosures. This includes the EBA's proposal for obliged institutions to disclose their GAR as part of disclosure requirements under the Taxonomy Regulation and as part of their Pillar 3 disclosures[155], other indicators proposed by the EBA for Pillar 3 disclosures such as the carbon footprint and scope 3 emissions of institutions' portfolios (e.g. corporate loan portfolios), or the principal adverse impact indicators set out in the annex to the delegated regulation supplementing the SFDR. Annex 1 of this report also proposes, for illustrative purposes, a non-exhaustive list of ESG factors and corresponding indicators.

4.1.3 Setting strategic ESG risk-related objectives and/or limits

174. Designing (or re-designing) business strategies in order to take into account ESG risks can be based on the institutions' existing internal processes used to translate the analysis of trends and business environments into strategic objectives and/or limits. As referred to in Chapter 3, some institutions have implemented portfolio alignment methods supported, for example, by adhering to **market-based principles** for sustainable banking (e.g. Principles for Responsible Banking, Equator principles). As outlined above, scenario analysis is a useful tool when setting such strategies.

175. Institutions that want to align their portfolios define strategic objectives and/or limits as part of these strategies. These are in many cases disclosed and, within some international frameworks, the path to the fulfilment of the set targets is also monitored (e.g. Principles for Responsible Banking).

176. For the purposes of this report, **ESG risk-related strategic objectives and/or limits** are understood as determinations which aim at managing an institution's exposure to ESG risks, over the short-, medium- and long-term time horizons. For example, institutions could set strategic objectives and/or limits with regard to the proportion of their exposures to certain economic activities or sectors. In contrast, objectives or limits which do not relate to the resilience of the business model and whose purpose is not to effectively enhance the institution's management of ESG risks are not considered ESG risk-related strategic objectives and/or limits. Further, institutions should bear in mind that setting strategic objectives will be likely to alter their overall risk profile, resulting in a need to review their risk appetite (for more details on risk appetite see the risk management section below).

177. ESG risks are likely to affect **different regions, economic (sub-)sectors and assets** differently. In light of this, the institutions' overall objectives and targets may need to be

[155] https://www.eba.europa.eu/eba-launches-public-consultation-draft-technical-standards-pillar-3-disclosures-esg-risks.

translated into more specific targets (or limits), including exclusion policies for certain regions, sub-sectors or activities (e.g. specific sectors or types of counterparties due to highly polluting production, or very low social or governance standards). For example, institutions could analyse the technological pathway for one specific economic sector[156] and translate the results into changes in the turnover and income statements of affected corporates. Depending on the results, institutions could amend their sectoral policies.

178. In a similar fashion, institutions could **use the Sustainable Development Goals** (SDGs) to mitigate physical and transition risks, e.g. SDG 6-aligned investments in projects or firms providing sustainable water supply, water storage, water-efficiency improvements or water treatment or SDG 11 to formulate a strategic objective for financing public access to safe, affordable, accessible and sustainable transport systems, notably by expanding public transport.

179. Strategic objectives and limits can also be formulated based on a level of alignment with the **EU taxonomy** in the form of a GAR target. Taking into account the political endeavour to make the economy more sustainable and the fact that taxonomy criteria have been designed bearing in mind the overall EU climate and energy targets, activities that are eligible under the Taxonomy - whose centerpiece is a classification system for economic activities that qualify as environmentally sustainable – could, prima facie, be assumed to carry less transition risks than others. Although this link may not be systematic, institutions should take into account the role of the Taxonomy as a cornerstone of EU initiatives on sustainable finance and reflect on how to develop their approach considering their strategic objectives and regulatory (disclosure) requirements. Institutions in the scope of the NFRD should take into account the fact that they will have to disclose how and to what extent their activities are aligned with the taxonomy, which will inform stakeholders about their positioning and strategies[157]. Institutions that wish to align more closely with the EU taxonomy could, for example, set targets on the proportion of their overall credit or investment portfolios to be associated with activities that qualify as environmentally sustainable under the taxonomy (GAR). In this regard, institutions could find it useful that the taxonomy captures different types of activities considered sustainable, including transitional and enabling activities, as well as some expenditures aimed at meeting the applicable criteria. Institutions could also use the EU taxonomy as a benchmark for their funding side, e.g. through taxonomy-aligned deposits. Having such taxonomy-based targets can support institutions to better monitor the development of their balance sheets on a basis consistent with the disclosure framework.

180. ESG risk-related strategic objectives and/or limits will in many cases be new for institutions and trigger far-reaching changes, including but not limited to amendments to their credit and

[156] See for example EU Commission, ASSET Study on Technology pathways in decarbonisation scenarios.

[157] Opinion of the European Banking Authority on the disclosure requirement on environmentally sustainable activities in accordance with Article 8 of the Taxonomy Regulation - EBA BS 2021 093.

investment policies, risk appetite and risk strategy, risk management processes and borrower due diligence. In order to successfully manage the implementation, institutions should consider prompt action and clarify internal responsibilities and milestones. For example, where an institution aims to obtain a certain GAR in its non-financial corporates credit portfolio, it could immediately modify its credit policy for new loans and set interim targets for the stock of loans, including the implementation of engagement measures with borrowers to make their businesses more taxonomy-aligned.

181. As explained in further detail below, the implementation of the business strategy and related strategic objective and/or limit can be accompanied by a number of actions, including adjustments in the remuneration policy - this would ensure that ESG risk-related objectives and limits receive proper management attention (for further details on remuneration policies, see Section 4.2.3) - and the development of adequate internal resources and expertise related to identifying, assessing and managing ESG risks (see section on internal governance).

4.1.4 Engaging with counterparties and other relevant stakeholders

182. Another important aspect when considering the integration of ESG risks into the institution's business processes relates to enhancing the institution's direct and indirect engagement with borrowers, investee companies and other stakeholders. Direct engagement could involve entering into dialogue with the stakeholder's management, exercising voting rights at its general meeting, or active ownership to influence the activities or behaviour of investee companies. Indirect engagement could take place via the publication of an institution's ESG risk-related strategies and expectations or through dialogue with industry associations.

183. The **engagement policy** should consider at least two perspectives that complement each other: first, the *internal* perspective, i.e. the capacities and expertise an institution needs to build up in order to understand the business models of its counterparties and the impact of ESG factors on these. Second, the *external* perspective, i.e. how an institution can interact with borrowers, investee companies and possibly other stakeholders (e.g. academia) to mitigate ESG risks for the institution that originate from these stakeholders. With regard to the internal perspective, institutions should make efforts that are **proportionate** to the size, nature and complexity of their activities. For example, an institution with a concentration of exposures to high climate-impact sectors may have to invest more in ESG capacity building than an institution that is more exposed to sectors that are neutral in terms of climate impact. With regard to the external perspective, institutions should determine which counterparties or group of counterparties they want to focus on as part of their engagement measures.

184. An institution may aim at aligning its activities with sustainability goals to reduce ESG risks in its financial exposures. Accordingly, institutions can seek to address these risks, at least to some extent, **by starting a dialogue** with their counterparties in regard to their adaptation to

the transition to a more sustainable economy. Especially with regard to corporate counterparties, the specific sectoral challenges which are likely to increase the PD or LGD of companies in the medium to long run can be discussed in order to increase awareness and potentially trigger actions by the management that reduce the credit risk inherent to these exposures. Assessing the specific vulnerabilities of corporates, e.g. their future adaptation costs or ability to generate revenue, would be a good starting point for the dialogue. Institutions may build on their current relationships with counterparties and adapt them accordingly. In any case, whilst business decisions ultimately lie with corporate clients themselves, institutions need to manage the risks stemming from corporates that are unwilling or unable to adapt to a changing economy. The EU taxonomy criteria and thresholds could usefully support the engagement policies with counterparties, enabling the institutions to understand the transition financing needs of their counterparties and the likelihood of transition to sustainable activities.

185. On a broader scale, institutions could consider engaging with **sectoral organisations** in order to promote a mutual understanding of how ESG risks may be addressed by counterparties in the context of a specific industry and certainly in line with the relevant laws, e.g. competition laws. [158] Engaging with sectoral organisations could overcome difficulties which would otherwise arise if institutions had to address multiple companies separately, but it is left to the discretion of institutions whether, and in which form, they want to follow this approach.

186. If deemed necessary, and provided that this is consistent with their strategic orientation, institutions could assist **counterparties** with the development of an action plan to gradually reduce their exposures to ESG risks and provide the necessary funding to implement the plan.[159]

187. With regard to **retail borrowers** of credit institutions, ESG risk-related engagement could, for example, address the energy efficiency of residential homes and the effect on the future value of the property. This could have a positive effect both on their ability to repay loans and the value of the collateral in case of default.

188. Where relevant, institutions could also define an engagement policy for their **market exposures**. This could include high level actions such as a public communication from the institution setting out the measures it expects from investee companies to mitigate ESG risks or exerting a more direct interaction with investee companies. [160]

189. Where institutions hold equity investments providing them with **voting rights**, they should assess how to use these rights in order to mitigate ESG risks stemming from investee

[158] BaFin (2019), 'Guidance Notice on Dealing with Sustainability Risks'.

[159] EBA Staff Paper Series, Sustainable Finance – Market Practices, Jan. 2020.

[160] In this context, note that shareholder rights have been reinforced by the Shareholder Rights Directive II ('SRD II'). See Directive (EU) 2017/828 of the European Parliament and of the Council of 17 May 2017 amending Directive 2007/36/EC as regards the encouragement of long-term shareholder engagement. However, the Directive only applies to listed companies and does not provide any additional rights in unlisted companies.

companies. If the institution has adopted ESG risk-related objectives and/or limits, it may benefit from aligning its policy on the exercise of voting rights with such objectives and/or limits, considering any potential limitations arising from 'acting-in-concert'.[161]

4.1.5 Considering the development of sustainable products

190. Another tool used by institutions to offer products and services that meet customers' expectations, on one side, and to adapt their portfolio in a timely manner to reduce ESG risks, on the other, is the strategic assessment of whether to develop **sustainable products** that are considered to be more resilient to ESG risks. These include products typically marked as 'green' or 'social'. Institutions can use such products as a tool to implement their ESG risk-related objectives and adjust their business models and portfolio composition. As set out in the EBA Guidelines on loan origination and monitoring[162], institutions that originate or plan to originate environmentally sustainable credit facilities should develop, as part of their credit risk policies and procedures, specific details of their environmentally sustainable lending policies and procedures, covering the granting and monitoring of such credit facilities. Institutions should position their environmentally sustainable lending policies and procedures within the context of their overarching objectives, strategy and policy related to sustainable finance, and assess the extent to which the development of their environmentally sustainable lending activity is in line with, or is contributing to, their overall ESG risk-related objectives and/or limits.

191. The EBA market practices survey found that 83% of participating institutions had already entered or were planning to enter the green finance space[163]. In the survey, 29% of institutions were originating or developing green and energy-efficient mortgage loans, while 23% were granting or developing green commercial building loans. In the sample, 15% of responding institutions were looking into green automotive loans with high fuel efficiency and 10% into green credit or debit cards, and 15% of responding banks indicated that they were considering other types of green loans for retail customers.[164]

192. Institutions that offer **'green' bonds** use one of the existing market standards to structure their issuance. For example, the Green Bond Principles developed by the International Capital Market Association or the Climate Bonds Standard developed by the Climate Bonds Initiative were the standards mostly used at the time of the EBA market practices survey. In the EU, a proposal for an EU Green Bond Standard has been developed by the Technical Expert Group on sustainable finance of the European Commission (see Box 12). This standard is aligned with the

[161] For example, an institution that has decided to align its trading portfolio with the EU taxonomy could try to use its voting rights in a way that the investee company's remuneration policy includes variable remuneration components, which incentivise the growth of turnover stemming from activities that are eligible under the EU taxonomy.

[162] See Section 4.3.6 of the Guidelines.

[163] In the context of this EBA survey, 'green does not refer to a regulatory definition (e.g. EU taxonomy) but to internal standards developed by institutions.

[164] EBA Staff Paper Series, Sustainable Finance – Market Practices, Jan. 2020, p. 38.

EU taxonomy. A European Commission's proposal to establish an EU Green Bond Standard is expected to be issued in the context of the Renewed Sustainable Finance Strategy mid-2021.

Box 12: Green bond standards

The Green Bond Principles build around four key components: (1) use of proceeds, (2) process for project evaluation and selection, (3) management of proceeds, and (4) reporting. However, the GBP do not provide criteria for eligible projects. The Climate Bonds Standard provides sector-specific eligibility criteria for assets and projects.

The TEG proposal for the EU Green Bond standard comprises four key elements.[165]

a. Alignment with the EU taxonomy, as proceeds from EU Green Bonds should be used to finance or refinance activities that contribute substantially to at least one of the six environmental objectives, do not significantly harm any of the other objectives and comply with the minimum social safeguards. Where technical screening criteria have been developed, these should also be met, although the standard allows for deviations in specific cases.

b. Publication of a green bond framework, which confirms the voluntary alignment of the green bonds issued with the EU Green Bonds Standard, explains how the issuer's strategy aligns with the environmental objectives and provides details on all key aspects of the proposed use of proceeds, processes and reporting of the green bonds.

c. Mandatory reporting on use of proceeds (allocation report) and on environmental impact (impact report).

d. Mandatory verification of the green bond framework and final allocation report by an external reviewer.

193. With regard to retail banking products[166], several institutions offer **'green' loans** to corporates, households or sovereigns. These institutions have developed either internal standards or use established market standards, for example, the Green Loans Principles from the Loan Market Association or the Energy Efficient Mortgages Action Plan (EeMAP) for residential mortgages developed by the European Mortgage Federation/European Covered Bonds Council (see Box 13).

Box 13: Green loan standards

Comparable to the Green Bond Principles, the Green Loan Principles establish four key components: (1) the use of loan amounts for verifiable environmental benefits that must be quantifiable by the borrower, (2) the process of evaluation and selection of projects, (3) the management of funds including tracking, and (4) reporting.

[165] https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/190618-sustainable-finance-teg-report-overview-green-bond-standard_en.pdf.

[166] The EBA has issued Guidelines on product oversight and governance arrangements for retail banking products, see EBA GL 2015 18.

EeMAP is a market-led initiative that wants to create a standardised energy-efficient mortgage label in order to incentivise building owners to improve the energy efficiency of their buildings or acquire an already energy-efficient building through preferential financing conditions. The initiative follows two fundamental assumptions: (1) that improving the energy efficiency of a property has a positive impact on its value, and (2) that borrowers financing energy efficient buildings have a lower PD because they have more disposable income in the household due to lower energy bills.[167]

194. Institutions that have set portfolio alignment with ESG international or EU objectives as a strategic ESG risk-related objective could increase their share of **sustainability-linked loans or bonds** linked to sustainability standards, such as the EU taxonomy. Instead of determining specific uses of proceeds, sustainability linked loans look to improve the borrower's sustainability profile by aligning loan terms to the borrower's performance against the relevant predetermined sustainability performance targets. Sustainability-linked loans can be used to steer the credit portfolio towards a more sustainable composition, whilst building on current business relationships.

195. Another product that could be used by institutions to implement their ESG risk-related objectives is **securitisation**. This could take the form of collateralising 'green' exposures on the balance sheet of the institution, or collateralising any exposures on the balance sheet in order to use the proceeds or freed-up capital for investments in 'green' assets. Sustainable securitisation could help to make sustainable lending more attractive as institutions could more easily refinance such assets[168].

196. **Social products** are generally less developed compared to green products. Social products aim to finance activities with positive social outcomes. On the side of financial instruments, the 'social bonds' issued to raise funds for projects with positive social outcomes are one example. There are some marked standards, such as the Social Bond Principles developed by the International Capital Market Association[169] or ASEAN Social Bond Standards developed by the ASEAN Capital Markets Forum.[170] Institutions also offer products labelled 'social loans' aimed at supporting social objectives.

Conclusions and policy recommendations

Based on the analysis presented, the EBA sees the need to enhance the incorporation of ESG risks into institutions' business strategies and processes. Whilst institutions are, and should remain, responsible for setting their strategies, the impacts of ESG risks should be appropriately taken

[167] https://eemap.energyefficientmortgages.eu/services/.

[168] The EBA will issue a report on a green securitisation framework in November 2021.

[169] https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Social-Bond-PrinciplesJune-2020-090620.pdf.

[170] https://www.theacmf.org/images/downloads/pdf/ASBS2018.pdf.

into account in order to ensure the resilience of their business models over the short-, medium- and long-term time horizons. To achieve this, the EBA recommends that institutions carry out the actions described below.

- **Incorporating ESG risk-related considerations when setting their business strategies, in particular by extending the time horizon for strategic planning[171] to at least 10 years and by including a number of different environmental and social scenarios into the planning process based on the institutions' monitoring and understanding of long-term trends in the business environment. In the absence of quantitative forecasts for more than 5 years, institutions should at least conduct qualitative analyses at a sufficient level of granularity.**

- **Setting, disclosing and implementing specific ESG risk-related strategic objectives and/or limits, including related key performance indicators, in accordance with the institution's risk appetite and taking into account the size, nature and complexity of their activities (e.g. using the SDGs or the EU taxonomy as a reference). Institutions should seek to complement qualitative ESG-risk related objectives and/or limits with quantitative ones, developing their capacity to quantify these risks and taking advantage of the progress in the availability of data, e.g. on the taxonomy-alignment of non-financial corporates.**

- **Adjusting the institution's relevant business processes to reflect its ESG risk-related strategic objectives and/or limits in its engagement with borrowers, investee companies and other stakeholders.**

- **Assessing the potential need to develop sustainable products or to adjust features of existing products as a way of contributing to and ensuring alignment with ESG risk-related strategic objectives and/or limits. When developing these products, they would ideally be aligned with available standards and labels, notably the EU Taxonomy Regulation and the EU Green Bond Standard, or other relevant standards.**

In order to facilitate the integration of ESG risks into the business strategies and business models of institutions, the EBA intends to reflect ESG risks more explicitly in its regulatory products, on the basis of the outcome of this report. The EBA recommends that EU legislators adapt level-one provisions in directives and regulations applicable to the banking sector (e.g. CRD and CRR) to incorporate ESG risk-related considerations and enable the implementation of the recommendations outlined above. In particular, the provisions on governance and risk management[172] should be extended by including requirements to establish, test and implement long-term resilient business strategies, and the incorporation of ESG risks into requirements for

[171] See EBA (2019), 'Report on undue short-term pressure from the financial sector on corporations', p. 19 et. seq. on the time horizon of credit institutions and the mismatch with longer-term sustainability considerations.

[172] There are currently no specific provisions in the CRD on setting business strategies.

risk management. Such provisions would contribute to a better strategic management of the short-, medium- and long-term potential impact of ESG risks.

4.2 Internal governance

197. Institutions' internal governance arrangements, including the involvement of the management body in establishing a risk culture and setting the risk appetite and the implementation of a robust internal control framework, are key aspects for a successful implementation of ESG considerations and managing ESG risks.

198. This section describes the current status of incorporating ESG risks into the internal governance of institutions and, building on the current framework[173], elaborates on specific aspects that are important for ensuring an internal governance framework that allows institutions to manage ESG risks, in particular related to:

a. management body and committees;

b. internal control framework;

c. remuneration.

4.2.1 Current practices

199. By the same token, a number of shortcomings in the incorporation of ESG risks into institutions' governance practices have been identified. Despite relatively strong governance processes and strategies on climate change from a CSR perspective, climate-related risks are not adequately managed as financial risks. As far as large European credit institutions are concerned, in most cases their governance structures are insufficient to ensure an adequate response to the climate crisis.[174]

200. The majority of banks interviewed by BlackRock FMA mentioned that they had refined their governance set-up to define ESG risk responsibilities at top management and board level. The most common form of integration is the discussion of ESG risks within existing committees at board (50%) and executive (38%) level. Globally, the involvement of the management body[175] has improved over recent years,[176] however, in some cases the management body is still not

[173] See, in particular, the EBA Guidelines on Internal Governance EBA/GL/2017/11.

[174] Banking on a Low-Carbon Future II – A ranking of the 20 largest European bank's responses to climate change, April 2020.

[175] As defined in point 7 of Article 3(1) of the CRD.

[176] Second Annual Global Survey of Climate Change Management at Financial Firms, 2020.

involved in managing climate-related risks or the management body merely approves climate-related policies and targets and does not play a driving role in their development.[177]

201. In terms of organisational structure, some banks have set up dedicated ESG risk teams, while others have dedicated resources to the topic within existing structures. According to the EBA survey, many institutions indicated that they have already established a sustainable finance network within their organisations to, among other things, (i) transfer strategy and policies to all relevant departments, (ii) participate in external networks that support sustainable finance, and (iii) define the institution's sustainability strategy. While banks often state that they have initiatives in place to enhance the integration of ESG risks, the majority of banks reviewed by BlackRock FMA have not formalised an ESG risk integration strategy with clear timelines and responsibilities. With respect to smaller banks, it has been found that many have not yet started the integration of climate risks into risk management[178].

202. Based on the available public and supervisory information and assessments, institutions' internal governance arrangements currently often lack the inclusion of ESG factors and the risks they may create. Given current market practices, the following common shortcomings in internal governance arrangements in relation to ESG risks exist.

a. Lack of strategic ownership: ESG risk management responsibility is not defined adequately in the institution.

b. Shortage of knowledge and skills: there is a shortage of knowledge and skills specific to ESG factors and risks across the institution, and this is not addressed with a suitable training programme.

c. Lack of effective third-party risk management: institutions do not or cannot collect sufficient and/or accurate data on their customers and counterparties in respect of ESG factors to duly assess the ESG risks.

d. ESG factors are not sufficiently integrated into company culture.

    i. Most large international institutions have environmental and social governance programmes, but these are mostly not core features of undertakings, management and business strategy.

    ii. Processes and mechanisms for the management body and other senior functions to minimise conflicts of interest are insufficient.

[177] Banking on a Low-Carbon Future II – A ranking of the 20 largest European bank's responses to climate change, April 2020.

[178] BlackRock (2020), 'Interim Study on the Development of Tools and Mechanisms for the Integration of ESG Factors into the EU Banking Prudential Framework and into Banks' Business Strategies and Investment Policies' (link).

iii. Remuneration policies are not integrated into the institution's business strategy, core values and long-term interests to account for ESG risks, ensure sound risk management and mitigate excessive risk taking in this area.

4.2.2 Management body and committees

203. The management body is responsible for setting, overseeing and monitoring the implementation of the institution's strategic objectives, risk strategy and the governance arrangements.[179]

204. The role of the management body applies also in the context of ESG considerations, where the management body plays a key role in **addressing existing gaps** in the institutions' business, e.g. profile and strategy. Gaps can also arise from the uncertainties surrounding the impact of ESG risks on the institutions' business activities and the implications of the transition to a more sustainable economy.

205. The management body in its management function plays a key role in identifying and assessing the impact, risks and opportunities of changes to the economic, environmental and social environment. To this end, the management body in its management function is responsible for ensuring that there is an appropriate **monitoring of such risks and developments** that currently affect, or that may in the future affect, the institutions and the achievement of their objectives in this context.

206. The management body's involvement in **setting and overseeing the progress against the institution's ESG risk-related objectives and/or limits** (see Section 4.1), coupled with an understanding of the distinct elements of ESG risks and a sufficiently long-term view of the financial risks that can arise beyond standard business planning horizons, is necessary for the integration of these risks into the institutions' business models and strategies. The supervisory role of the management body is crucial for ensuring that sound and well-informed decisions are taken by the management body in its management function.

207. The management body needs to **understand the potential impact** of ESG factors and related ESG risks on the business model. Management and mitigation of the impact of ESG risks and anticipation of the possible changes in the 'market sentiment' of investors and the future choices of customers on a forward-looking perspective will increasingly impact the long-term resilience of the business model, and thus the role of the management body here is essential.

208. Building on the institution-specific identification and materiality assessment of the relevant ESG factors and risks, the management body should set and oversee the implementation of **near- and long-term goals and strategies.** While recognising existing uncertainties and data

[179] Article 88(1) of Directive 2013/36/EU as further specified by the EBA Guidelines on internal governance , see Section 1-5 Title II.

gaps, these should not justify inaction in setting respective objectives or limits. As described in the previous chapter, some methodologies such as portfolio alignment methodologies can usefully inform managerial thinking and the setting of strategic objectives.

209. While setting, approving and overseeing the business strategy, it is crucial that the management body considers the short-, medium- and long-term effects of ESG factors.

210. The management body should ensure that responsibilities with regard to ESG risks are clearly integrated into the **organisational structure**, both in business lines and internal control functions.

211. An appropriate integration of measures to manage ESG risks in the institution's internal governance arrangements would ensure that ESG risks are effectively overseen by the management body, can be discussed by the management body and that appropriate responses to such risks are developed.

212. It is equally important that the members of the management body and key function holders are, respectively, collectively and individually **suitable,** that they possess sufficient knowledge and skills, and, where not the case already, develop their experience and understanding[180] with regard to ESG factors, in particular their transmission channels and their prudential and strategic impacts on institutions. To this end, the integration of ESG factors and ESG risks in the induction and training policies and programmes of institutions can help ensure that adequate expertise is being built up, including - but not limited to - at the level of the management body. In general, it would also be beneficial for the institution's approach to managing ESG risks that all members of the management body, on an individual basis, possess a minimum level of knowledge and understanding of ESG factors and risks.

213. The incorporation of ESG factors and risks into the **governance arrangements** of institutions can be implemented in different ways. For example, institutions may embed tasks and responsibilities related to ESG risks within their current structures, or decide to set up a specialised committee overseeing ESG risks with suitable powers and members[181]. Institutions may wish, but are not required, to establish a specialised ESG risks committee. Whilst the setup of specialised committees in addition to existing committees is optional, institutions should ensure that ESG risks are integrated across all relevant risk types. The relevant committee(s) should meet regularly to follow up on implications from an ESG risk perspective and review whether there is an adverse impact in relation to the relevant ESG limits of the institution. Irrespective of the governance arrangements decided upon by institutions, responsibilities

[180] In accordance with Article 91 CRD, as further specified by the joint EBA and ESMA guidelines on the assessment of the suitability of members of the management body and key function holders.

[181] Articles 76(3), 88(2), and 95(1) of Directive 2013/36/EU, and EBA guidelines on internal governance and EBA guidelines on sound remuneration policies set the framework for institutions to set up committees.

attached to ESG risks should not be isolated in certain parts of the institution, and a sound and comprehensive approach to the incorporation of ESG factors into its business strategy, business processes and risk management should be ensured.

214. By the same token, a clear allocation and distribution of duties and tasks related to ESG risks between specialised **committees** of the management body in its supervisory function, where applicable, is also key. Existing or newly established committees should facilitate the development and implementation of a sound internal governance framework with regard to ESG risks and assist the management body in its supervisory function with regard to the extent to which institutions' activities are exposed to ESG risks. Specialised committees, where established, should have members who have sufficient knowledge and experience with regard to ESG risks. Their composition should be in line with the framework applicable to other committees[182]. In addition, a clear working procedure for the interaction of such specialised committees, where established, with other committees (e.g. risk committee) and internal control functions should be set up.

215. Management bodies should ensure that the organisational structure of institutions considers the potential **interaction between ESG risks and financial risks**, and that the former can drive the latter, including in the long run. In general, neither ESG risks nor existing financial risks should be managed or monitored on an isolated basis, but jointly.

216. Management bodies should also ensure that a sound and consistent **risk culture** accounting for ESG risks is implemented within the institution. This includes clear communication from the management body ('tone from the top'), appropriate measures to promote ESG-risk awareness, including knowledge of institutions' ESG strategic objectives and corporate values, and a proper accountability framework. Given the relative novelty of ESG risks, institutions should ensure, as part of their training policy, that staff are adequately trained to improve the understanding and practical handling of these risks.

4.2.3 Internal control framework

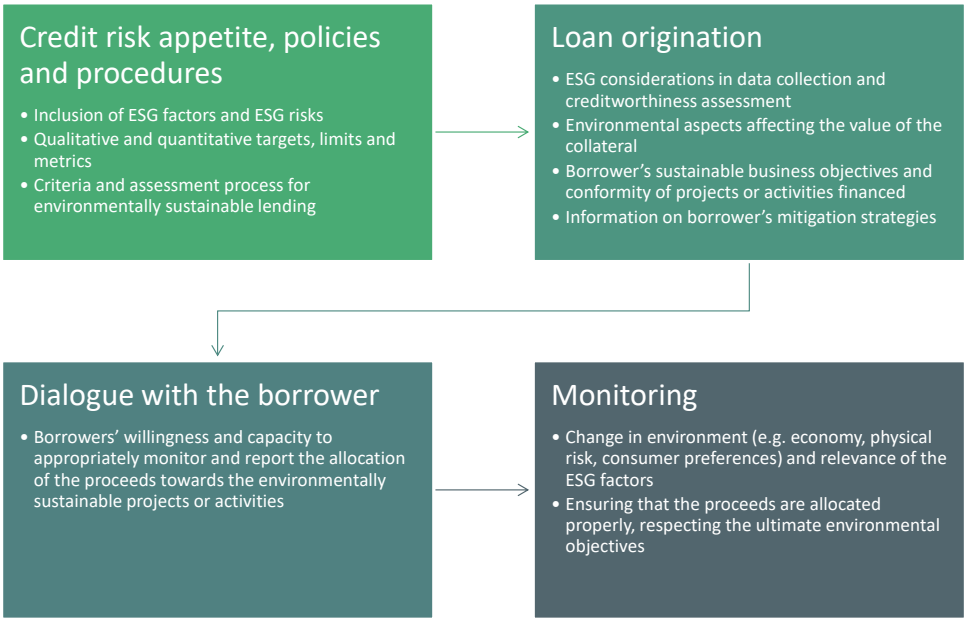
217. The management body is responsible for the implementation of an adequate **internal control framework** and the approval of internal control policies, mechanisms and procedures. It is crucial that organisational structures, implemented by institutions e.g. based on the 'three lines of defence' model, support and promote effective and prudent decision-making.

218. **The business lines and units taking on risk** have the primary responsibility for managing the risk generated by their activities throughout the lifetime of that activity. This general principle is equally applicable for the integration of ESG risks in the risk management and control framework. In this context, it is important to translate the ESG-related aspects of the

[182] See EBA Guidelines on internal governance (EBA GL 2017 11) e.g. Section 5.2.

business strategy into adequate internal processes and procedures in line with the institution's risk appetite and risk management policies, credit risk and procedures, adopting a holistic approach. For example, the incorporation of ESG risks in the assessment of borrower repayment capacity at the point of loan origination, building on the exposure method presented in Chapter 3 and the collection of relevant data for this purpose may provide necessary tools for the first line of defence to carry out its tasks effectively (see Figure 12 and EBA Guidelines on loan origination and monitoring). Similarly, institutions that originate or plan to originate environmentally sustainable credit facilities should introduce policies and procedures, given the various characteristics of the assets and the counterparties, so that the staff members originating such credit facilities can account for ESG factors and risks in their activities.

Figure 13 Incorporation of ESG risks at the point of loan origination



219. Business lines and units are also adequately placed to enhance the **dialogue** with counterparties and clients, and to enhance **due diligence** in relation to ESG considerations as part of the credit or investment decision-making process. To this end, the integration of ESG risks in internal processes, e.g. due diligence processes, as well as the involvement of ESG risk experts or referents within the business units, can be considered by institutions. In particular, business lines and units can inform counterparties about the ways in which their respective investments may be aligned with the institution's risk appetite and strategic objectives in the context of ESG risks (see also section 4.1.2), for example, as part of the implementation of portfolio alignment approaches.

220. Institutions set and operate **risk management functions** that are responsible for ensuring the proper risk controls. The incorporation of ESG risks and in particular the specifics of ESG transmission channels (as described in Chapter 2) into financial risk categories, in these

functions that are independent from the business lines and units, would ensure that the long-term impact of ESG risks is accounted for in the decision-making process and, overall, minimise the institutions' exposure to ESG risks. The risk management function should also evaluate the benefits and potential applicability of the various ESG risk assessment methodologies (see Chapter 3) to ensure sound risk management processes. It is also important that the risk management function is involved at an early stage when integrating ESG risks into the risk appetite of the institution (see risk management section below).

221. The **compliance function** [183] also complements the risk management framework and monitors the alignment of institutions' activities with applicable laws, rules, regulations and standards, including ESG regulatory aspects. The compliance function and the risk management function play a key role in the approval of new products, e.g. environmentally sustainable credit facilities, if relevant, or significant changes to existing products, processes and systems.

222. The independent **internal audit function**, among other tasks, reviews the internal governance arrangements, processes and mechanisms to ascertain that they are sound and effective, that they are implemented and that they are being consistently applied throughout the organisation. Assuming that all relevant aspects of ESG factors and ESG risks are incorporated into the institution's governance and organisational arrangements, the internal audit function would capture these under the existing processes, including by effectively communicating with all parties involved in the integration of ESG risks into its activities.

223. It is important that members of staff involved in the internal control functions have the adequate skills and tools, including with regard to ESG risks, to perform their functions.

4.2.4 Remuneration

224. In line with Article 92 of Directive 2013/36/EU and as further specified in the guidelines on sound remuneration policies for credit institutions, and in line with Article 26 and Articles 30-33 of Directive (EU) 2019/2034 for investment firms, when establishing and applying total remuneration policies, institutions should ensure that the policy is consistent with and promotes sound and effective risk management and does not encourage risk-taking that exceeds the institution's level of tolerated risk of the institution.

225. A robust and appropriate incentive-based mechanism is important for achieving an appropriate risk culture. In the context of designing their ESG risk strategy, institutions should also evaluate how to account for ESG risks in their remuneration policies. Whilst this could apply to all staff, it is particularly valid for remuneration policies and practices applicable to staff

[183] Taking into account proportionality criteria, the risk management function and the compliance function may be combined. See Section 19-3 of EBA Guidelines on internal governance.

whose professional activities have a material impact on the institution's risk profile ('identified staff' subject to additional requirements[184]).

226. Aligning the remuneration policy with the institution's ESG objectives, e.g. long-term resilience of the business strategy under ESG considerations and risk appetite, is important for avoiding conflicts of interest when business decisions are taken. Indeed, remuneration policies that give the right incentives to staff members to favour decisions in line with the institution's ESG risk-related strategy would facilitate the implementation of ESG risk-related objectives and/or limits, as the staff members would benefit from meeting these (long-term) targets, e.g. in the context of green credit granting or reducing exposures that are highly affected by transition risk. The impact of remuneration policies on the achievement of sound and effective long-term risk management objectives from the point of view of ESG considerations may be especially relevant when it comes to the variable remuneration of staff whose professional activities have a material impact on the risk of the institution, and in particular when they have responsibilities for defining and implementing ESG-related strategy.

Conclusions and policy recommendations

Based on the analysis presented, the EBA sees the need for institutions to proportionately incorporate ESG risks into their internal governance arrangements[185]. This should cover the management body and its 'tone from the top', allocation of tasks and responsibilities related to ESG risks as drivers of financial risk categories in the decision-making process, adequate internal capabilities and arrangements for effective management of ESG risks, and remuneration policies that are aligned with the long-term interests, business strategy, objectives and values of the institution. The EBA recommends that institutions to achieve this by:

- **integrating ESG risks into their governance structures, establishing clear working procedures for business lines, internal control functions, the relevant committee(s) and management body, with a view to ensuring a sound and comprehensive approach to the incorporation of ESG risks into the business strategy, business processes and risk management;**

[184] Regulatory Technical Standard on identified staff for remuneration purposes. By the same token, in accordance with Article 30 of Directive (EU) 2019/2034, remuneration policies and practices for investment firms should take into account the material impact of the professional activities of relevant staff on the risk profile of the investment firm and the assets it manages.

[185] As corporates, institutions are also recommended to monitor the broader European Commission initiative on sustainable corporate governance. As financial institutions, institutions have to comply with prudential requirements on sound internal governance arrangements.

- **clearly allocating the tasks and roles related to ESG risks, including a clear allocation of duties between the members of the management body[186];**
- **ensuring that the role of the risk management function allows for an adequate management of ESG risks, that the risk management function considers ESG risks when implementing risk policies and that its control of the risk management framework also extends to ESG risks;**
- **ensuring that the internal audit function is able to include ESG risks in its review of the effectiveness and adequacy of the internal governance arrangements, processes and mechanisms;**
- **enhancing awareness, induction, training and expertise, where needed, to identify, assess and manage ESG risks at all levels of the institution (business units, internal control functions, management body);**
- **encouraging staff behaviour that is consistent with the institution's ESG risk approach;**
- **considering ESG indicators and ESG risk-related objectives and/or limits when taking into account the long-term interests of the institution in the design of remuneration policies and their application, including considering the implementation of a remuneration policy that links the variable remuneration of staff whose professional activities have a material impact on the risk of the institution - taking into account their respective roles and responsibilities - to the successful achievement of those objectives, while ensuring that green-washing and excessive risk-taking practices are avoided;**
- **establishing a framework to mitigate and manage conflicts of interest which incentivise short-term-oriented undue ESG-related risk-taking, including green-washing or mis-selling of products.**

In order to facilitate the integration of ESG risks into the governance frameworks of institutions, the EBA intends to reflect ESG risks more explicitly in its regulatory products, on the basis of the outcome of this report. The EBA recommends that EU legislators adapt level one provisions in directives and regulations applicable to the banking sector (e.g. CRD and CRR) to incorporate ESG risk-related considerations and enable the implementation of the recommendations outlined above.

[186] See EBA Guidelines on Internal Governance. This does not affect the collective liability principle of the management body where so established under national law.

4.3 Risk management framework

227. As described in Chapter 2, ESG risks can affect institutions in different ways and ultimately lead to financial impacts. Active ESG risk management is therefore fundamental to ensure that institutions identify such risks in a timely manner, hence being able to respond to them.

228. This section describes the current status of incorporating ESG risks into risk management and then elaborates on specific aspects that are relevant for institutions' management of ESG risks, in particular related to:

a. risk appetite, risk policies and risk limits;

b. data and methodology;

c. risk measurement, monitoring and mitigation;

d. testing resilience to ESG risks.

4.3.1 Current practices

229. The above-mentioned EBA survey conducted in 2019 showed that a growing number of credit institutions are working on determining the materiality of ESG risks. Although credit institutions assess climate-related risks (including physical and transition risks) to be potential material risks for their activities, their current efforts to put in place specific risk management processes in relation to climate-related risks are limited. In particular, it appears that credit institutions have neither yet established key performance indicators that are necessary for a robust internal risk review process, nor more sophisticated modelling approaches. Feedback received as part of the consultation on the EBA discussion paper on ESG risk management and supervision confirmed that ESG risks are integrated only to some extent into risk management frameworks. Existing frameworks can be leveraged as a baseline, but efforts are still needed to expand the approach from a transactional basis to a portfolio approach, establish forward-looking quantification methods and measure the impact on prudential risks.

230. The EBA findings are broadly in line with the evidence found by other surveys which mostly focus[187] on climate-related risks only. Notwithstanding the ongoing efforts and progress made, most available studies and surveys call for a more assertive integration of climate risk as a financial risk, hence moving beyond a purely reputational risk focus. Some relevant evidence in this regard is provided, inter alia, by the following studies:

a. In mid-2018, Oliver Wyman and the International Association of Credit Portfolio Managers (IACPM) conducted a climate-risk-focused survey across 45 global

[187] BlackRock FMA considers ESG risks.

institutions (including 18 EU banks).[188] The survey found that institutions should treat climate risk as a financial risk, not just as a reputational risk, and that they need to integrate climate risk into their financial risk management framework to effectively manage it and protect themselves against its potential impact.

b. In the fourth quarter of 2019 the Institute of International Finance (IIF), in conjunction with the European Banking Federation (EBF), surveyed their members across the world on how they are approaching climate-related risks.[189] More than half of the participants in the survey do not seem to have specific processes for identifying and assessing climate-related risks and opportunities, and only 17% of the participants have fully integrated climate-related risks into their overall risk management framework. Data and methodological issues (e.g. in terms of measuring scope 3 emissions, (shadow) carbon pricing and use of a broad range of data and service providers) are also identified by the respondents, calling for a better toolkit to manage climate-related risks and support disclosures. Moreover, the IIF-EBF survey also finds that the adoption of the TCFD recommendations varies widely across geographies, with 60% of the respondents in mature economies complying (fully or partially) with TCFD recommendations compared to only 37% of financial institutions in emerging markets.

c. Another comprehensive study related to climate risk management was published by Shareaction in April 2020 and features the current practices of the 20 largest European institutions.[190] These findings suggest that the European banking sector has a long way to go in terms of addressing climate-related risks. While the surveyed banks have become much more transparent about their approaches to climate change, in line with the TCFD recommendations, the sector performs the worst in terms of risk assessment and management of climate risk.

d. In May 2020, GARP Risk Institute published its second Global Annual Survey of Climate Risk Management at Financial Firms. In the survey, 85% of the 71 institutions show concerns about their resilience to climate change beyond 15 years.[191] The main barriers to addressing climate risks mentioned by the respondents relate to the availability of reliable models and regulatory uncertainty, especially in the short term. In addition, most firms state that getting internal alignment on their climate risk strategy is a challenge in the short term.

[188] https://oliverwyman.com/content/dam/oliver-wyman/v2/publications/2019/feb/Oliver_Wyman_Climate_Change_Managing_A_New_Financial_Risk_paper.pdf.

[189] https://www.ebf.eu/wp-content/uploads/2020/01/Global-Climate-Finance-Survey-2020.pdf.

[190] https://shareaction.org/research-resources/banking-on-a-low-carbon-future-ii/.

[191] https://climate.garp.org/insight/second-annual-global-survey-of-climate-risk-management-at-financial-firms/.

e. Finally, BlackRock FMA finds that the integration of ESG in risk management processes varies significantly among banks. Overall, most interviewed banks mention that they have integrated ESG into their lending policies, credit applications and due diligence across selected high-risk sectors - albeit with varying levels of sophistication and granularity - and, to a lesser extent, in their investment activity (e.g. advisory or debt capital markets). Integration into portfolio monitoring and steering is less advanced and most banks do not have an aggregate portfolio view of their exposure to ESG risks. Most interviewed banks state that they do not have a clear and granular definition of ESG risks in place, i.e. a mapping of the underlying ESG factors for each pillar and their relevance as risk drivers, based on specific sectors, geographies, client segments and products. The analysed banks tend to use a mix of internal client data and externally sourced data to assess ESG risks. Transition risk assessments are mostly focused on the corporate book pertaining to high risk sectors (e.g. oil & gas, mining) rather than covering all relevant sectors. Physical risk assessments can sometimes also cover the retail book (e.g. residential mortgages). Some banks have also publicly committed to using science-based targets to align parts of their portfolio, usually those related to carbon-intensive sectors, to the goals of the Paris agreement. Half of the interviewed banks mention that they have integrated ESG factors into their risk appetite framework, although mostly as a qualitative statement rather than with quantitative metrics and limits. Integration of ESG risks into risk models, as well as stress testing, ICAAP, ILAAP and regulatory processes, are seen to be at a very early stage. ESG risks in the scope of banks' risk management frameworks tend to be analysed individually across the E, S and G pillars, instead of being combined under one ESG 'umbrella' and may vary among banks.

231. Some banks are conducting impact assessments of their counterparties. Impact assessments refer to the analysis of the principal negative impacts that business activities or assets may have on ESG factors. These assessments could be carried out, for example, in the form of an in-house ESG scoring system developed by the institutions (see Chapter 3). Knowing the negative impacts caused by a business activity or an asset facilitates the analysis of potential losses when such impacts need to be internalised, e.g. via a carbon price as an example for transition risk, and identified where there is a reputational risk.

232. The practices to reduce ESG risks are currently heterogeneous and vary across institutions. They include engagement with stakeholders to promote sustainable development in the finance industry, carrying out a social and environmental impact evaluation on individual loans granted, and the development of metrics for measuring clients' potential energy savings in the context of buildings. Some institutions also mentioned the introduction of sectoral policies in economic sectors (including exclusion policies) with a high impact on the environment and/or that are potentially vulnerable to the transition to a low-carbon economy, such as energy, mining, infrastructure and agribusiness.

233. Exclusion criteria for certain sectors and exposures are tools that institutions have begun to consider in their risk policies and risk management frameworks. Indeed, the findings of the EBA market practices survey shows that some credit institutions consider both the positive and negative impacts of their investments and take those impacts into account in their financial decisions.

234. Asset managers use a number of approaches for the purpose of selecting exposures and implement sectoral exclusion policies which could, in principle, also be applied by institutions:[192]

a. Exclusion: the entity excludes from its investment range controversial assets (for example, negative environmental or social impact, corruption affairs) that do not match a minimum non-financial score established by an internal methodology designed by it.

b. Best-in-class: the entity ranks companies by sector using an internal methodology (e.g. by GHG emissions) and allows for investment only in the three first companies in every sector, for instance. No economic sector is ignored using this approach.

c. Best-in-universe: the entity ranks all the assets in its investment range using an internal methodology (once again entities can be ranked according to their GHG emissions) and chooses only to invest in the assets ranked best. This can lead to certain economic sectors being ignored.

d. Best-effort: the entity chooses to invest in companies that have shown the best improvements in regard to ESG factors (e.g. biggest GHG emissions reduction). Hence, these companies are not necessarily the best in terms of 'absolute' ESG indicators.

e. Impact: the entity selects specific companies that have a positive impact in regard to ESG criteria previously defined by the entity, e.g. a start-up developing an innovative ecological solution.

f. Normative: the entity selects investments according to their compliance with international norms and standards.

235. Based on the findings of the EBA market practices survey, the development of scenario analysis and stress-testing tools in EU banks is still at an early stage, as only 15% of respondents indicated that they perform scenario analysis, and only some of them indicated that they are

[192] See 'A sustainable and responsible investment guide for central bank portfolio management', NGFS Technical document (October 2019) and 'Bilan de l'application des dispositions du décret n°2015-1850 du 29 décembre 2015 relatives au reporting extra-financier des investisseurs', a joint publication by ACPR, the French Market Authority (AMF) and the French Treasury (July 2019) and BaFin 'Guidance Notice on dealing with sustainability risks' (December 2019).

developing such approaches for inclusion in their risk appetite. Furthermore, despite some banks having conducted targeted climate-risk scenario analysis on segments of their portfolio, few carry out these exercises as structured group-wide stress testing efforts covering all relevant sectors[193].

236. It is important to note that despite the identified shortcomings, stock-taking assessments and surveys of practices of EU institutions also illustrate a growing awareness and dynamic, as well as the emergence of best practices, paving the way to the implementation of more ambitious risk management frameworks.

4.3.2 Risk appetite, risk policies and risk limits

237. Risk appetite means the aggregate level of types of risk an institution is willing to assume within its risk capacity, in line with its business model, to achieve its strategic objectives. The institution's risk appetite specifies the scope and focus of the risk to which the institution is exposed.

238. Based on the EBA Guidelines on internal governance, an institution's risk management framework should provide specific guidance on the implementation of its strategies and, where appropriate, establish and maintain internal limits that are consistent with its risk appetite and commensurate with its sound operation, financial strength, capital base and strategic goals.

239. In general, and building on definitions and transmission channels explained in Chapter 2, ESG risks are understood to be drivers of traditional financial risks and institutions should be able to capture the risks associated with ESG factors when they account for them in their risk appetite and apply their risk management frameworks with appropriate and accurate **risk metrics and limits**.

240. There are specific considerations for incorporating ESG factors into the risk appetite framework. For example, the composition of the portfolio in line with the institution's ESG risk-related strategic objectives and/or limits, and including its concentration and diversification objectives in relation to business lines, geographies, economic sectors and products is important also from an ESG risk perspective.

241. Depending on the overall strategy and approach to transition risk, the relevant limits might need to be reviewed or extended to include new types of limits that are relevant from the ESG perspective (e.g. sectors excluded from eligibility based on the institution's business strategy). With regard to physical risks, institutions could set limits to consider the potential physical impact of geographical events such as floods and droughts on land, real estate, infrastructure projects and business activities in their counterparties' production cycle. Similarly, from both a

[193] BlackRock (2020), 'Development of Tools and Mechanisms for the Integration of ESG Factors into the EU Banking Prudential Framework and into Banks' Business Strategies and Investment Policies' (link).

social and a governance perspective, institutions could follow strict measures to exclude from their portfolio counterparties that use child labour or do not respect social and employment safeguards.

242. With regard to risk strategy, risk appetite and the overall risk policy it is important to ensure that these sufficiently reflect ESG factors as part of the framework as a whole. The incorporation of ESG risks into **risk appetite** would allow institutions to embed the ESG perspective in all the relevant processes of the risk management framework and would lead them to regularly assess their counterparties' risk profiles also from this perspective. Similarly, in the case of investments, the risk appetite incorporating ESG risks and the composition of investment portfolios in this regard would allow institutions to assess and decide on the main changes in their investment strategies. Risk appetite statements incorporating ESG risks would then cascade down to group entities, business lines and units, in close interaction with the implementation of the business strategy.

243. Risk management policies could envisage limits on financing projects, activities or, where they can be identified, counterparties that significantly harm environmental or social objectives, in line with the institution's business strategy. These policies could also account for the potential change in investment demand for sustainable financing. Moreover, the institution could enter into a **constructive dialogue** with counterparties that are highly exposed to ESG risk to eliminate or at least reduce the source of ESG risks deriving from the counterparty to a level below the maximum limit set in the risk appetite framework. Further examples could consist of setting up an **ESG scoring** system (see description of the exposure method in the previous chapter) and modifying **credit conditions** for borrowers included in an exclusion list, on the basis of their ESG score. Similarly, investment firms can use assessment tools to account for ESG risks in their risk management policies, such as exclusionary screening, best-in-class screening or the incorporation of ESG risk into financial analysis when estimating future cash flows from investments[194].

244. The risk appetite accounting for ESG risks would be implemented with the support of applicable **ESG risks metrics and limits**. These metrics and limits could cover key aspects of the risk appetite associated with the risk in question, as well as counterparty segments, collateral types and risk mitigation instruments. The metrics would mostly be a combination of backward-looking and forward-looking indicators, tailored to the business model and complexity of the institution.[195]

245. As the influence of ESG risks can be expected to increase, institutions should be in a position to assess whether ESG risks are becoming **material** financial risk drivers and, where appropriate,

[194] As mentioned above, these approaches can also potentially be applied, with adaptations, by credit institutions.

[195] Chapter 3 provides a non-exhaustive list of indicators and metrics that can be selected for the identification of ESG risks.

use all the available risk monitoring and mitigating tools for the relevant exposures. For example, for the purpose of managing the concentration of credit risk, institutions set quantitative (and qualitative) internal credit risk limits for their aggregate credit risk, as well as portfolios with shared credit risk characteristics, sub-portfolios and individual counterparties. This is highly relevant from an ESG risk point of view. For example, **concentration risk** with a specific counterparty or group of counterparties operating in a specific sector and carrying out unsustainable business activities, or the concentration of banking activities in a specific geographical area that is high risk due to environmental conditions or violations of human rights, pose a significant challenge for institutions. Institutions can account for these ESG risks only when they strive to understand the ESG risks associated with their exposures through effective dialogue and due diligence vis-à-vis their counterparties. Similarly, when investment activities are concentrated in counterparties, sectors or commodities that are particularly vulnerable to ESG risks, the manifestation of ESG risks via market movements in the institution's financial performance becomes more significant. Setting appropriate metrics, limits and corrective measures in the case that limits are exceeded is therefore essential to the effective integration of ESG risks into risk management frameworks.

246. For physical risks and transition risk, a high degree of **granularity** appears to be warranted, as it allows the differences in vulnerability within countries or sectors to be taken into account. Institutions should try, for instance, to identify the share of their counterparties' assets located in geographical areas that are more vulnerable to acute or chronic physical risks and any measures taken by them to mitigate the vulnerability of those specific assets.

247. Institutions should also include in their **ICAAP and ILAAP** frameworks a description of the risk appetite/tolerance levels, thresholds and limits set for the identified material risks, as well as the time horizons, and the process applied to keeping such thresholds and limits up to date. This would align institutions' practices with supervisory expectations as this information is indicated in the EBA Guidelines on ICAAP and ILAAP.[196] The forward-looking approach of those frameworks should take into account the materialisation horizon of ESG risks, for the short, medium and long term. Similarly, institutions should take into account the relevance of ESG-related impacts on business lines when designing scenarios for **recovery planning processes**, as these can be especially prone to climate change and environmental degradation.

248. In addition to these, and as part of their risk management policies, institutions' **creditworthiness assessments** of their counterparties are a fundamental part of the mechanisms for understanding and managing the ESG risks associated with prospective transactions. Creditworthiness assessments, where applicable, could include a sensitivity analysis (as discussed in Chapter 3). **Loan origination criteria** aligned with institutions' risk appetite and limits, including the information and data to be collected on specific transactions,

[196] EBA Guidelines on ICAAP and ILAAP information collected for SREP purposes (EBA/GL/2016/10).

form a central part of the ESG risk management framework. To that end, it is important that the credit decision is clear and encompasses all the conditions for the loan agreement, including those to mitigate the risks identified in the creditworthiness assessment, such as risks associated with ESG factors.

4.3.3 Data and methodology

249. **Data availability and accuracy** are key for a robust risk management framework. Section 3.1 explained that the lack of data to identify and measure ESG risks is one of the main challenges faced by institutions. Further developments in the EU legislative and regulatory framework, coupled with institutions' efforts to collect ESG-related data from their counterparties, will play a crucial role in addressing these challenges in the risk management framework. Furthermore, data on ESG risks are also needed for large institutions to meet their Pillar 3 disclosure requirements as per Article 449(a) of Regulation (EU) 2019/876, hence to improve transparency for market participants and the wider public. The EBA has published a consultation paper with proposals for disclosures on climate-change related transition and physical risks, including information on exposures to carbon-related assets and assets subject to chronic and acute climate change events, on institutions' mitigating actions to support their counterparties and on a GAR to identify the assets financing taxonomy-aligned activities. The EBA will publish later in 2021 the final implementing technical standards to specify ESG risk-related disclosure requirements.

250. A number of EU initiatives are contributing to the development of a more **enabling data framework** with respect to ESG factors, including the review of the Non-Financial Reporting Directive[197], preparatory work for the elaboration of EU sustainability reporting standards[198], the establishment of a European single access point (ESAP) for financial and non-financial information publicly disclosed by companies[199], and the EU taxonomy. The role of the latter as a reference classification and disclosures tool should be of particular help in the standardisation of data with respect to the assessment of the extent to which the activities of large corporates (financial and non-financial) qualify as environmentally sustainable.

251. As indicated in Chapter 3, even where data such as CO_2 emissions, waste production or adherence to ILO conventions of a company are available, the translation of these ESG factors into expectations for its financial performance is not straightforward and may need to rely on scenario analysis. Nevertheless, it is important that institutions proactively build up their data

[197] See the EBA answer to the public consultation on the review of the NFRD.

[198] As mandated to the European Financial Reporting Advisory Group (EFRAG) by the European Commission: https://ec.europa.eu/info/publications/210308-efrag-reports_en. A multi-stakeholder task force established by the EFRAG has proposed a roadmap for the development of a comprehensive set of EU sustainability reporting standards.

[199] See the European Commission consultation.

infrastructure and increasingly collect the information necessary to conduct such assessments. Institutions may also consider the use of proxies and estimates as first intermediate steps.

252. **Loan origination** is a crucial phase for collecting the necessary ESG-related information and data associated with the different elements of the transaction, e.g. the product itself, collateral or counterparty. The information and data collected at the initial evaluation phase would directly feed into the monitoring process**.** In addition, as part of loan origination, institutions evaluate the repayment capacity and creditworthiness of the borrowers, typically based on the financial and non-financial analysis of a corporate or retail counterparty. In these evaluations, institutions typically apply a frequently used approach by assigning a certain rating or score to the potential borrower to indicate the level of risk. In some cases, although ESG factors and associated risks are relevant and present, these rating or scoring systems have not yet reflected ESG factors as relevant parameters.

253. As part of loan origination or ongoing engagement with customers, institutions should gradually incorporate the evaluation of ESG factors into their processes, as set down in the Guidelines on loan origination and monitoring[200]. Including ESG considerations at a very early stage of a business relationship with clients and counterparties should help institutions in their approach to gathering data and assessing ESG risks. For example, a targeted **due diligence** assessment of the counterparty's ESG risk profile can be implemented by institutions, especially for types of counterparties and asset classes where, for example, environmental risks may be particularly relevant (e.g. project finance, large corporates, mortgages, etc.). Due diligence assessments can take the form of qualitative questionnaires and should also be considered to check the adherence of counterparties to social and governance standards. Similarly, investment firms can implement dedicated ESG risk assessments for the specific investee company and the instrument before taking a decision on the investment.

254. **In methodology building**, it is essential to evaluate which of the existing methods can sufficiently incorporate the ESG factors and transmitted ESG risks into financial risk categories, and what additional methods or approaches need to be incorporated to capture exposure-based and portfolio-based risk measurement and monitoring. For example, commonly used traditional credit risk indicators, such as PD and LGD, are primarily based on historical data, which in most cases do not fully reflect the expected impact of environmental or social factors. The assessment of ESG risks in the initial methodology building should consider the role of additional and complementary metrics in order to take into account the realisation timeframe of ESG risk, whether in the short, medium or long term, in a forward-looking manner.

255. As the evaluation of ESG risk involves a much longer time horizon than that used in the existing risk management tools, **forward-looking tools** such as scenario analysis and stress

[200] EBA/GL/2020/06.

testing are being explored by institutions. It is essential for institutions to evaluate which methods and metrics are the most suitable for them, considering their strategy and overall approach to ESG risks.

256. Methodological challenges due to limited availability of data could hamper this quantitative analysis, especially for **social and governance risks**, for which prospective analyses such as scenario analysis are less developed than for climate- and environment-related risks, and common sets of indicators are not yet finalised. Given the characteristics of these risks, institutions could rely first on qualitative information and a comprehensive and thorough due diligence process in order to establish a risk profile of the different counterparties. Such analysis could exhibit certain social and governance practices that could be incompatible with the institution's risk appetite. Nevertheless, institutions could ultimately aim to establish quantitative metrics for assessing and monitoring social and governance risks. Improvements in data availability and quality in the context of methodology building would also enable institutions to be better informed when setting strategies and shaping their risk management framework.

257. Quantitative indicators can take the form of **key performance indicators** (KPIs), which capture both risk and opportunities, and allow for a comparison between portfolios. Nevertheless, beyond a static monitoring of their exposures, institutions should also focus on evaluating potential current and future impacts of ESG risks through scenario analysis. It might be less straightforward to translate social and governance risks into commonly agreed quantitative indicators and a more qualitative approach for these risks may be implemented in the first place.

258. Institutions can incorporate ESG risks into their risk management frameworks as **drivers** of existing financial risk: risks to capital (credit, operational, market) and risks to liquidity. Integrating ESG risks as a horizontal financial risk theme that can influence the traditional categories of financial risks should help ensure that the various impacts of ESG risks are identified and managed, whilst avoiding any double-counting effect.

259. With regard to **credit and counterparty risk**, ESG risks may challenge institutions in all stages of the process, from granting to monitoring. Specifically, ESG risks can impact the main credit parameters:

a. PD: an increase in the PD of vulnerable counterparties can be triggered, for instance, by a shift in social norms that reduces the demand for certain products and increases downward pressure on revenues, or the impact of severe weather conditions, such as drought, pushing agricultural business into default;

b. Exposure at Default (EAD): counterparties subject to physical risk might need to draw more from their committed credit lines to respond to sudden shocks, like floods;

c. LGD: in a transition scenario, the value of stranded assets will decrease, determining lower collateral values and, in a default scenario, lower recovery values.

260. ESG risks can drive **market risks**. For example, higher downside risks can be associated with financial instruments issued by companies that are environmentally unsustainable or socially irresponsible. Understanding and establishing a direct relationship between how ESG risks impact issuers and how the value of the related financial instruments changes is challenging, but it is important to assess and evaluate both the risk of losses and of increased volatility.

261. With regard to volatility, it should be considered that investments in financial instruments issued by companies belonging to sectors perceived as not sustainable from an ESG perspective, or lacking an adaptation policy, are more prone to be exposed to the effects of news flow. Indeed, the price of such financial instruments will be more affected by policy and regulatory actions in the ESG area, as well as to the increasing percentage of investment funds allocating a minimum level of their Asset under Management to ESG-compliant instruments.

262. The inclusion of ESG risks in market risk strategy is not sufficient to ensure that the risk is properly addressed. An appropriate organisational framework is also needed. Such a framework should clarify the responsibilities for deciding, implementing, monitoring and reporting the impact of ESG risks on the market portfolio of the institution.

263. ESG risks can drive **operational risk**, e.g. legal risk, and **reputational risk** that can arise as a result of the institution's activities. For instance, an institution that has financing activities that are publicly controversial (e.g. hydraulic fracturing or fossil fuel financing) might see their reputation impacted or might be subject to legal claims. As mentioned earlier in this report, institutions may also be directly subject to the physical risks stemming from climate-related and environmental factors. Institutions should accordingly ensure that their operational risk management adequately considers physical risk impacts, with a view to ensuring their business continuity and ability to recover from disasters, taking into account their geographical location, physical assets and outsourcing arrangements.

264. As evidenced in the EBA's survey on sustainable finance market practices[201], there is a growing consensus in the industry to consider ESG risks as drivers of existing prudential risks, with the exception of liquidity risk. However, it is deemed important not to overlook **liquidity**

[201] EBA staff paper series – Sustainable Finance: Market practices (No. 6 January 2020).

and funding risk. Indeed, ESG factors could also result in funding issues for an institution or make some assets less liquid.

265. On the asset side, ESG factors can influence the value of financial assets, which in turn might affect the liquidity of that asset, thereby creating **liquidity risk**. This risk can also arise as the result of ESG events triggering a run on the bank: environmental crises, such as social unrest, can lead to higher withdrawals or put stress on the liquidity position of the institution in a specific geographical area.

266. On the liability side of the balance sheet, ESG factors can affect the availability and/or stability of funding (e.g. hampered or more expensive access to market funding, unstable deposits due to changing customer preferences), thereby creating **funding risk**. In this context it is important to acknowledge the potential effect of reputational issues on the funding of institutions.

267. ESG factors and risks can thus influence both short- and medium-term liquidity and the short-, medium- and long-term funding of institutions. As a result, institutions should take into account ESG factors when managing liquidity and funding risks over an appropriate set of time horizons and under normal and stressed conditions.

268. Institutions should take into account that ESG risks can affect, through micro-prudential and macro-prudential factors, both their profit and loss account and their balance sheet. ESG factors, both independently and through the aforementioned profit and loss account, can affect an institution's capital and liquidity adequacy, the risk weight of its assets, and its access to capital and liquidity.

4.3.4 Risk measurement, monitoring and mitigation

269. When **identifying** and **measuring** or **assessing** risks, due to the unique characteristics of ESG risks, institutions would need to employ measurement methodologies that are able to capture the most relevant ESG factors and sufficiently deal with the fundamental uncertainty of such risks.

270. In Chapter 3, this report provides an overview of metrics and existing observed methods, including their advantages and disadvantages and potential use, in particular for exposure origination and portfolio monitoring purposes. These metrics and methods should not be seen as strict recommendations, nor as a complete list. The EBA sees merit in maintaining flexibility at this stage in the choice of methodologies to be used by institutions, as expertise and underlying data are rapidly evolving. However, institutions can already consider the applicability of these metrics and methods (portfolio alignment, risk framework or exposure) for measuring and monitoring individual exposures, groups of exposures or portfolios. Institutions are well-advised to consider the application of a combination of approaches, as well

as to continue to develop alternative methods. The following section is dedicated to stress testing as one of the tools for evaluating climate-related risks.

271. Given the potential of ESG risks to fully materialise over long-term time horizons, a key aspect of a comprehensive and forward-looking risk management approach is the review and potential adjustment of **business strategies and processes** in order to respond to the challenges of ESG risks. As stated in the EBA Action plan on sustainable finance, proactive strategies and forward-looking approaches that aim to build resilient business models in the long term combined with adequate governance arrangements should be understood, if appropriately designed, as tools that mitigate the potential impact of ESG risks. In this context, the aspects of business strategy and process described in Section 4.1 (such as clear ESG-risk-related objectives and limits, engagement with counterparties to support their transition, or development of sustainability-oriented products) can be considered to be elements in the risk monitoring and mitigation processes. The previous sections also explained that appropriate internal governance arrangements and decision-making processes, including appropriate ESG-related risks and limits in the risk management framework, are fundamental ESG risk mitigation tools for institutions.

272. Additional and complementary measures that institutions may take to **mitigate** ESG risks depend on the source of the ESG risks. For instance, if ESG factors impact credit risk, institutions can consider credit risk mitigation tools (e.g. guarantees and collateral). If operational risk is impacted, institutions can consider taking corrective measures (e.g. insurance policies). Market risk mitigation could entail the diversification of portfolios, thereby reducing concentration risks, amongst others.

273. Thus, institutions can manage ESG risks, at least to a certain level, by implementing an **exclusion policy or by setting specific limits** in line with their ESG-risk-related objectives and/or limits for tailor-made ESG risk indicators (see Annex 1). For instance, this can be done by integrating climate risk indicators in lending criteria (such as a maximum exposure level to certain climate-sensitive sectors or individual counterparties).

274. **Pricing** is another element that institutions should consider to ensure that their pricing frameworks also reflect, together with other drivers and characteristics, the risks driven by ESG factors. Indeed, as ESG factors are incorporated into their risk appetite and business strategies, institutions should progressively ensure that their prices are consistent with their business models and risk strategies. Similarly, it is important that an appropriate governance structure that accounts for ESG risks complements the maintaining of an accurate pricing approach.

275. It is equally important for institutions to link the specific ESG risk targets they set in their risk appetite with their pricing strategies in order to assess whether they can facilitate the achievement of these ESG risks targets. In line with their business strategy and risk appetite,

institutions may **incentivise** their counterparties to mitigate ESG risks and transition towards more sustainable business models. This could, for instance, entail setting the interest rate of an environmentally sustainable loan at a level consistent with higher resilience to such risks and the associated improved creditworthiness under otherwise unchanged conditions. For credit institutions originating sustainable lending, the interest rate adjustment process could be linked to the achievement of sustainability targets by the client over a predefined period of time, in which climate-related and environmental risks are reduced. Similarly, the increase of ESG issuances with attractive funding costs and linked to a strict use of proceeds would provide a basis for pricing differentiation.

276. ESG risks require **monitoring** on a continuous basis, using metrics such as the percentage of transactions reviewed for ESG aspects, as well as tools, models and data. In order to do so, appropriate reporting frameworks, enhanced and supported by the underlying IT systems, would seem to be essential. Accurate data and information related to ESG risks collected at the point of loan origination form the basis of the monitoring process for the purposes of risk management and throughout the lifecycle of the transactions and products, subject to necessary review and updates. Enhanced and more granular monitoring for exposures assessed as potentially more subject to ESG risks should be considered.

4.3.5 The climate risk stress testing framework for banks

277. Another relevant part of the risk management framework is testing the resilience of institutions to adverse market developments, considering different scenarios of future developments and impact of these scenarios on financial and prudential soundness, or stress testing tools. In the context of prudential regulation and supervision, the stress testing tools have been used widely for testing the resilience of institutions to meeting solvency and liquidity prudential requirements under stress.

278. However, they can also effectively be used to test resilience to the long-term negative impacts of environmental, social and governance factors, providing a better understanding of the most vulnerable portfolios to these risks and enabling institutions to adjust their business strategies and processes as described in Section 4.1.

279. So far, central banks, supervisors, banks and academics have mainly focused on the quantification of environmental risks, leaving the inclusion of social and governance risks in stress tests uncharted territory. The reason for this is that social and governance risks present more challenges in terms of modelling and data availability than climate risks.

(i) Main challenges of a climate risk stress test framework

280. The identification of exposures affected by climate-related risks is the basis of a climate risk stress test. Up until now, only limited empirical and sufficiently granular data exist to measure

actual climate risk exposures. Moreover, classifying green versus non-green exposures in a consistent manner is currently one of the major challenges.[202] In addition, translating borrower level criteria into supervisory data requirements at exposure class level also appears to be fraught with operational issues as more granular information would be needed at activity level to identify those borrowers that are particularly exposed to climate risk.[203] Moreover, integrating input data with a broader set of climate risk indicators, such as those defined by external data providers, or with public information on the borrower, could pose significant comparability and data quality issues.[204]

281. Second, there are significant modelling challenges in calibrating scenarios for transition and physical risks given the interactions between policy, technology and economic sector shocks. In addition, the assumption of longer time horizons challenges the way risks are usually assessed: transition risk scenarios often consider a time span from 10 to 30 years while banks and supervisors typically use one- to five-year periods to conduct business planning and stress testing exercises.

282. Third, transition risks vary across sectors depending on the pace of adaptation and can change in the future: early adaptation (electric cars) vs. late adaptation (coal power station). In light of this, historical information would not help the modelling of these risks especially in the long run. Therefore, to make an accurate assessment, banks require a methodology which also embeds these forward-looking features and allows major differences in risks to be capture across various sectors or companies.

283. In light of these challenges, climate stress tests remain a work in progress and should not be expected to provide the same type of outcome as standard supervisory stress tests. To date, climate stress tests remain less comprehensive in nature than the usual stress tests and given their complexities and assumptions, they need to be assessed and interpreted with caution.

(ii) Main practices for climate risk stress tests

284. As shown in Chapter 3, several climate stress testing methodologies have been proposed and applied by supervisors and central banks to date. Stress testing can be run at portfolio, industry or counterparty level and can be conducted by national competent authorities, banks themselves or external providers. In most cases, climate stress tests are currently run in the form of pilot exercises in order to test methodologies and check data availability.

[202] The publication of the EU taxonomy represents a step towards a common definition of sustainable exposures but it only defines green exposures.

[203] For example, the total exposure of a holding company (energy producer) is the sum of the activities of its subsidiaries (coal power stations, renewable energy producers) or project activities. However, it is not clear how the holding company's total exposure should be classified.

[204] For instance, regarding public information for borrowers, data on carbon emissions are generally not available for smaller companies and scope 3 emissions data can be difficult to obtain.

285. Published methodologies are not always disclosed in detail and in some cases they are described at high level. In a first step, the channels through which the risk factors provided in the climate scenarios affect banks' balance sheets are identified. Then, the transmission mechanism of the shock to banks' exposures is modelled. Climate risk stress methodologies are applied at different levels of aggregation depending on the granularity of the data available (loan, obligor or at sector level) and focus mainly on credit and market risk exposures.

286. Climate stress tests usually apply pre-defined climate scenarios (certain temperature pathways), which, for instance, develop emission reduction pathways associated with specific climate goals. The international scientific community has developed several databases identifying climate pathways (i.e. well below 2 degrees Celsius compared to pre-industrial levels) and the implied trajectories for economic variables and sectors. This is done mostly through Integrated Assessment Models, which combine insights from various disciplines into one single framework, using socioeconomic, energy and climate factors. Instead of looking at scenarios that meet certain temperature targets, climate stress can also be modelled through event-based shocks. These could be in the form of carbon taxes which increase the cost base of certain companies (a policy shock), technological breakthroughs which may imply a major shift away from certain industries (a technology shock) or changes in expectations and consumer behaviour (a preference shock).

287. Climate stress test methodologies are at an early stage. Supervisors have initially started to conduct exposure analyses to identify and quantify the potential implications of environmental risks on the banking and insurance sectors. A few supervisors have conducted such analyses and translated their results into a heat map segmented across locations and sectors while others have classified credit and market risk exposures using CO_2 emission data.[205]

288. In May 2021, the EBA published a report[206] on the first EU-wide pilot exercise addressing climate risk (see Box 14).

Box 14: Main findings from the EU-wide pilot exercise

The 2020 EBA pilot exercise is first EU-wide exercise addressing climate risk for the banking sector and is based on a sample of 29 volunteer banks covering more than 50% of the EU banking sector's total assets. Its main objective was to explore data and methodological challenges to categorise exposures in relation to climate risk and provide some starting point estimates for future EBA work in this area.

[205] As described in Section 3.2.2.

[206] For the EBA Report 2021/11 ("Mapping climate risk: Main findings from the EU-wide pilot exercise") see https://www.eba.europa.eu/sites/default/documents/files/document_library/Publications/Reports/2021/1001589/Mapping%20Climate%20Risk%20-%20Main%20findings%20from%20the%20EU-wide%20pilot%20exercise%20on%20climate%20risk.pdf.

The scope of the exercise was narrowed to EU corporate exposures, for which climate related information were expected to be easier to retrieve at this stage.

Bank data were mapped and evaluated according to different classification approaches, including the EU taxonomy. The latter was applied by banks directly and complemented with a top-down classification tool. These approaches come with certain limitations but represent a first attempt to measure the greenness of the EU banking sector with available information and methodologies. Finally, a scenario analysis based on a joint EBA/ECB tool was also employed for exploring modelling options regarding the transmission mechanism of the shocks from climate risk scenarios, as defined by the Network for Greening the Financial System (NGFS) to banks' balance sheets.

Overall, the findings show that more disclosure on transition strategies and greenhouse gas (GHG) emissions would be needed to allow banks and supervisors to assess climate risk more accurately. In addition, the results highlight the importance for banks of expanding their data infrastructure to include client information at activity level.

This is particularly crucial, as for the 29 banks in the sample, more than half of their exposures to non-SME corporates (58% of total) are to sectors that could be sensitive to transition risk. A parallel analysis based on GHG emissions reveals that 35% of banks' total submitted exposures are to EU obligors with GHG emissions that are higher than the median of the distribution.

Regarding the EU taxonomy classification, banks are currently in different development phases in regard to assessing the greenness of their exposures. Two estimation techniques, banks' bottom-up estimates and a top-down tool, are considered in this exercise, highlighting the differences in outcomes. Given the outlined constraints and based on a first estimate from a top down tool, the EU aggregated GAR stands at 7.9%.

The scenario analysis shows that the impact of climate-related risks across banks has different magnitudes and is concentrated in particular sectors (electricity and real estate). Tools for scenario analysis are quickly developing and further progress should be made on modelling the transmission channels of climate risk shocks to banks' balance sheets.

The findings of the exercise give a clear picture of banks' data gaps and highlight the urgency with which these should be remedied if they are to achieve a meaningful and smooth transition to a low-carbon economy. In particular, a more harmonised approach and common metrics would be key elements for measuring the potentially disruptive impacts of environmental risks.

Given the nature of the exercise and the related data and methodological limitations, the results should be interpreted with caution. In this regard, it should emphasised that the objective of the exercise is to analyse different data classification methods for mapping banks' corporate non-SME exposures and to identify advantages and limitations in terms of data and methodologies. Despite the appreciated efforts made by the volunteer banks in the sample, given the data gaps and the various approaches used, the findings should be considered as starting point estimates for future work on climate risk.

Conclusions and policy recommendations

Based on the above analysis, the EBA sees the need for institutions to incorporate ESG risks into their risk management frameworks, taking into account the assessment of their materiality over different time horizons. Whilst challenges related to data availability and quantification of ESG risks are acknowledged, institutions should identify the gaps they are facing in terms of datasets and methodologies and take remedial actions, taking into account the on-going developments in the field of ESG data and methods. It is paramount for institutions to take early, proactive actions in order to build a long-term, forward-looking and comprehensive approach, giving particular consideration to climate-related and environmental risks. The EBA recommends that institutions achieve this by:

- **embedding material ESG risks in their risk appetite frameworks, including not only a description of the risk appetite, tolerance levels, thresholds and limits set for the identified material risks, but also describing how the risk indicators and limits are allocated within the banking group, different business lines and branches;**[207]
- **setting out appropriate policies and procedures as well as criteria for the assessment of the repayment capacity and creditworthiness of counterparties, taking ESG factors and ESG risks into account;**
- **collecting necessary information and data related to ESG risks associated with counterparties at the loan origination phase, and review and update this information throughout the lifecycle of the transaction, where needed;**
- **developing risk monitoring metrics at exposure-, counterparty- and portfolio-level, and categorising them according to their ESG characteristics and risks associated with these, subject to their size and complexity;**
- **managing ESG risks as drivers of financial risks within their current risk management frameworks, in consistency with risk appetite, and as reflected in both ICAAP and ILAAP frameworks;**
- **taking into account the relevance of ESG-related impacts on business lines when designing scenarios for recovery planning processes;**

[207] See Section 5.3 of the EBA Guidelines on ICAAP and ILAAP information collected for SREP purposes (EBA/GL/2016/10).

- **due to the less advanced approach for social and governance risks, developing their understanding, policies and practices related to social and governance risks and, based on data availability and considering the use of proxies, calculate indicators. Institutions could, for instance, try and identify outstanding assets of counterparties that are particularly exposed to social and governance issues, for instance by replicating the indicators contained in Annex 1 of this report or in Annex 1 of the delegated regulation supplementing the SFDR, as regards principle adverse impacts, and tailor them to their own business model and types of exposures.[208]**

The EBA also sees a need to gradually develop methodologies and approaches to test the resilience of institutions to the long-term negative impacts of environmental, social and governance factors. The initial objective of this testing should be to assess the long-term resilience of institutions' business models and support the setting of ESG-risk-related strategic objectives and/or limits. When these methodologies and approaches are sufficiently tested, it will provide institutions with additional input into the assessment of their ICAAP and ILAAP. This gradual approach also implies the prioritisation of testing resilience to the environmental factors, for which more data and methodologies are available, followed by social factors.

In order to build ESG-related testing capabilities, the EBA sees the need for institutions to build their related data infrastructures, proportionate to their size, complexity, risk and business profile, allowing for testing to be performed that covers all material risk factors.

In order to facilitate the integration of ESG risks into the risk management framework of institutions, the EBA intends to reflect ESG risks more explicitly in its regulatory products, on the basis of the outcome of this report. The EBA recommends that EU legislators adapt level-one provisions in directives and regulations applicable to the banking sector (e.g. CRD and CRR) to incorporate ESG risk-related considerations and enable the implementation of the recommendations outlined above.

4.4 Specific considerations for investment firms

289. The reasoning and arguments presented in this report may be applied to investment firms that are similar to credit institutions in terms of their business model and risk profile, that fall under the framework of the CRR and CRD. The activities of these systemic and bank-like investment firms are exposed to credit risk, mainly in the form of counterparty credit risk, in addition to market risk for positions they take on their own account, client related or otherwise.

[208] Regulatory technical standards with regard to the content, methodologies and presentation of disclosures pursuant to Article 2a, Article 4(6) and (7), Article 8(3), Article 9(5), Article 10(2) and Article 11(4) of Regulation (EU) 2019/2088 – Joint Committee (https://www.eba.europa.eu/sites/default/documents/files/document_library/Publications/Draft%20Technical%20Standards/2021/962778/JC%202021%2003%20-%20Joint%20ESAs%20Final%20Report%20on%20RTS%20under%20SFDR.pdf.

In other words, these investment firms have characteristics of credit institutions and may be subject to ESG risks in a similar manner.

290. There are also investment firms that are not systemic and bank-like. These are different from credit institutions in terms of their economic activities because they do not have large portfolios of retail and corporate loans and do not take deposits. Therefore, the risks faced and posed by investment firms, especially from an ESG standpoint, may have some differences compared to those faced and posed by credit institutions.

291. Given the importance of ESG risks, investment firms are expected to increasingly consider ESG factors in their activities, investments in various assets on the markets, and potentially adjust their investment behaviour to reflect their risk tolerance to ESG risks (e.g. to assets that are less prone to ESG risks or assets that create opportunities from a sustainability point of view). Such changes in investment behaviour, which are also impacted by environmental regulations and consumer preferences, also need to be supported by adjustments in reporting and disclosure practices in line with the relevant legislative developments.

292. Investment firms carry out a set of (mutually non-exclusive) investment services and activities. The main services and activities are listed in Section A of Annex I of Directive 2014/65/EU.[209] It is reasonable to expect that ESG risks may materialise and investment firms may be subject to ESG risks when investment firms perform dealing on own account investment activities. When investment firms perform dealing on own account activity in their own name or on behalf of their clients, ESG risks may manifest on their balance sheets mainly through the positions they take in the markets, i.e. ESG risk may emerge via market risk.

a. Net position risk: financial assets, which are subject to ESG risks, may lose the transaction value recorded in the trading book of the investment firm.

b. Daily trading flows: financial instruments affected by ESG risks may lead to changes in the value of total daily trading flow.

c. Concentration risk: exposures to an individual position or group of connected counterparties may be more prone to ESG risk.

293. In addition, the type of investment and the assets for investment may drive the impact of ESG risks in investment firms dealing on own account. Investment firms dealing in commodity

[209] The list includes: (1) reception and transmission of orders in relation to one or more financial instruments; (2) execution of orders on behalf of clients; (3) dealing on own account; (4) portfolio management; (5) investment advice; (6) underwriting of financial instruments and/or placing of financial instruments on a firm commitment basis; (7) placing of financial instruments without a firm commitment basis; (8) operation of a multilateral trading facility (MTF); and (9) operation of another multilateral trading facility (OTF).

derivatives that are more prone to ESG factors such as energy or agricultural products would carry a greater ESG risk.

294. For investment firms that do not deal on own account, the impact of ESG risks would be limited and take different forms, e.g. a reduction in fees and commissions and other monetary gains. This would be the case, for example, of investment firms that provide investment advice, manage portfolios on behalf of their clients, execute orders on behalf of their clients or carry out a reception and transmission of order service. For these investment services and activities, the materialisation of ESG risks would manifest in different risk metrics monitored under the IFD such as risk-to-clients factors. In these cases, the ESG factors would manifest on firms' balance sheets indirectly, from the business areas of the investment firms which harm their clients' financial position and eventually impact the investment firms' capital and liquidity positions.

d. Assets under management: when significantly concentrated, e.g. in a specific geographical location or sector, specific assets under management are more prone to material ESG risks and the value and liquidity of these assets could fall. ESG risks materialise, negatively affecting the ability of financial assets to perform and, hence, causing the depreciation of assets. The effect on the investment firm could be the loss of dissatisfied clients (thereby reducing the assets under management) or even claims for damages, e.g. where an investment firm has failed to correctly inform clients about potential ESG risks affecting their portfolios according to Article 6(1)(b) of Regulation (EU) 2019/2088.

e. Client orders handled: financial instruments affected by ESG risks may drive volatility in the amount and value of daily client orders handled, resulting from increased demand to open or close positions in these financial instruments. This would affect investment firms' capital requirements and could be detrimental for them.

295. Furthermore, for investment firms that do not deal on own account, e.g. that provide investment advice or manage client portfolios, ESG factors may be material with respect to their business models. If the clients of these investment firms increasingly focus on ESG-favourable investment strategies or avoid ESG-harmful activities, investment firms that are unable to provide these strategies on demand would suffer. It is therefore important for investment firms to monitor and align with shifts in investor/consumer preferences in regard to ESG considerations, build capacity to provide and validate sustainable funds or investment strategies and consider the reputational risk that may occur due to investing in harmful activities.

296. It is recognised that some aspects of the adjustment of business strategies and processes, internal governance and risk management frameworks presented in this chapter, or some methodological approaches for assessing ESG risks, may not be fully applicable for the economic activities of investment firms. However, the key arguments for the need to incorporate ESG risks into the business strategies and processes are also valid for the activities of investment firms. The need to capture the ESG risks in the internal governance and risk management of investment firms, reflecting the specificities of their activities is equally valid.

Conclusions and policy recommendations

- **Based on the analysis presented, the EBA sees the need to enhance the incorporation of ESG risks into the investment firms' business strategies and processes. Adjusting the business strategy of an investment firm to incorporate ESG risks as drivers of financial risks, e.g. market risk, can be considered as a progressive risk management tool to mitigate the potential impact of ESG risks.**

- **The EBA sees a need for investment firms to incorporate into their internal governance and risk management frameworks an evaluation process to assess the relevance of ESG factors and risks depending on the specific investment activities and services they provide. Depending on their assessment, investment firms should reflect ESG risks in their governance and risk management arrangements in a proportionate manner.**

5. ESG factors and ESG risks in supervision

297. Based on the mandates included in Article 98 (8) of the CRD and Article 35 of the IFD, the EBA shall assess the potential inclusion of ESG risks in the review and evaluation process performed by competent authorities.

298. Except for the mandates on which this report is based, ESG factors and ESG risks are not yet explicitly included in the CRD, the IFD or in the SREP guidelines. Chapter 4 of this report includes a justification for the inclusion of ESG risks into institutions' business strategies and processes, internal governance and risk management.

299. The same arguments are valid to justify the need to reflect ESG factors and ESG risks in the supervisory review in a proportionate manner. Negative impacts on institutions from ESG risks can already occur in the short and medium term, and it is likely that the full impact of ESG risks will unfold over a much longer time horizon.

300. This chapter provides details on how ESG risks could be reflected in supervisory review, building on common definitions from Chapter 2 (ESG factors, ESG risks, transmission channels) and elements to be considered by institutions in Chapter 4 (business strategies, business processes, governance and risk management). The measures identified and the recommendations made are subject to the principle of proportionality, meaning that they are to be applied in a manner that is appropriate, particularly taking into account the institution's business model, size, internal organisation and the nature and complexity of its activities. Smaller institutions are not immune to ESG risks and could be even more susceptible to them, for instance, if they are particularly concentrated in vulnerable sectors or geographies, which will be taken into account when ESG considerations are integrated into the SREP, especially in the context of the intensity of the assessment.

301. The integration of ESG risks into the supervisory review will be implemented gradually, considering the development of the related methodologies for the qualitative and quantitative assessment of ESG risks. In the short term, supervisory assessment would be more likely to prioritise their integration into institutions' strategies, as part of the business model analysis, as well as into their overall internal governance arrangements, including the corporate and risk culture, and the risk management frameworks, as described below. At a later stage, especially when more ESG risk data are available to support the development of additional tools to assess their quantitative impact on financial risks, the supervisory assessment could provide more comprehensive coverage of risks to capital and liquidity, as well as to the capital and liquidity

adequacy assessments of the SREP. The chapter first includes a short overview of the existing scope of the supervisory review for credit institutions and investment firms and elaborates on the links between the ESG-related strategy, governance and exposures, and the existing elements of the supervisory review. Second, considering these links, the specific aspects of the ESG risk assessment that are relevant for the supervisory review are included. Third, preliminary conclusions related to the incorporation of ESG factors and risks into the supervisory review are provided, which expresses a preference for incorporation into existing elements of the supervisory review due to their intrinsic links.

5.1 Scope of supervisory review in the CRD and IFD

302. The scope of supervisory review in the CRD is defined by Article 97, under which supervisors shall review the arrangements, strategies, processes and mechanisms implemented by institutions to comply with the CRD and CRR, taking into account the technical criteria set out in Article 98, and evaluate the risks to which the institutions are or might be exposed and the risks revealed by stress testing. The technical criteria in the Article 98 cover a broad range of areas, including specific risks (such as credit risk, market risk, interest rate risk in the banking book, concentration risk or liquidity risk) and a number of qualitative areas (such as business model, application of internal policies and procedures, or diversification).

303. The scope of supervisory review in the IFD is defined by Article 36, under which supervisors shall review the risk profile and business model, the arrangements, strategies, processes and mechanisms implemented by investment firms to comply with the IFD and IFR, and the set of risks (risk to clients, risk to market, risk to the investment firm and liquidity risk), the geographical location of an investment firm's exposures, the business model, systemic risk, ICT risks, interest rate risk from non-trading book activities, and governance arrangements.

304. Building on the provisions of the CRD, the EBA developed Guidelines on common procedures and methodologies for the SREP and supervisory stress testing. These guidelines aim at achieving convergence of supervisory practices and supervisory stress testing. The supervisory review is structured around the SREP elements: business model analysis, internal governance and institution-wide controls, risks to capital, risks to liquidity and funding, SREP capital assessment and SREP liquidity assessment.

305. The IFD also includes a mandate for the EBA and ESMA to develop guidelines for supervisory review under Article 45(2) of the IFD. Sequencing will be needed to develop these guidelines. As explained in the EBA's Roadmap on Investment Firms,[210] the EBA will leverage on

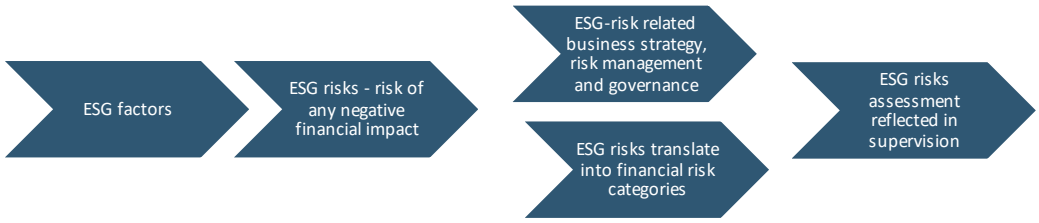
[210] https://eba.europa.eu/sites/default/documents/files/document_library/Regulation%20and%20Policy/Investment%20firms/884436/EBA%20Roadmap%20on%20Investment%20Firms.pdf.

the output of this report on ESG risk management and supervision to further enrich the SREP guidelines for investment firms under Article 35 of the IFD.

5.2 Main links between ESG factors, ESG risks and supervisory review

306. As referred to in Chapter 2, ESG factors are ESG matters that may have a positive or negative impact on the financial performance and solvency of an entity, sovereign or individual, which then can turn into ESG risks via any negative financial impacts. While these ESG risks stemming from institutions' counterparties are managed by the institutions themselves through appropriate governance arrangements and strategies, ESG risks also materialise in the form of financial risks and thus should be included in the supervisory review. In Figure 13, the links between ESG factors and the supervisory review are shown in a simplified way.

Figure 14 Links between ESG factors and supervisory review



307. In Chapter 4 of this report, we identified the key areas that support institutions' sound and effective management of ESG risks. These areas include (i) business strategies and business processes, (ii) internal governance and (iii) risk management. At the same time, as explained in Chapter 2 and Chapter 4 of the report, ESG risks manifest through different transmission channels and can impact the overall risk exposure with a subsequent impact on capital and liquidity adequacy.

308. Business strategy and processes: considering the relevance and potential impact of ESG risks on institutions, the inclusion of sustainability considerations in institutions' business strategies and processes is seen as inevitable for their economic resilience and viability over the long term. Business strategies and processes are not only considered for strategic planning and product design, but also reflected in appropriate governance arrangements and risk management frameworks. When setting the business strategy, ESG factors and risks should also be taken into account for the medium to long term time horizon.

309. Internal governance: ESG-related additions to governance, internal controls and risk management arrangements described in Chapter 4 are relevant also for the supervisory review of the institution's wider internal governance and controls. The structure, composition and organisation of internal governance bodies, as well as the risk culture, play a crucial role in the

efficient incorporation of ESG factors into institutions' business strategies and decision-making processes.

310. Risk management: additional ESG-related aspects for risk management described in Chapter 4 are relevant also for the supervisory review. These include the overall risk management framework and more risk-specific aspects that are relevant for risks to capital or risks to liquidity and funding.

311. Exposures to ESG risks: ESG risks imply negative financial impacts for the institution when they materialise in the form of financial risks and may therefore impact the overall capital and liquidity position of the institution (including in the long term). This can affect the resilience of its business model. Supervisory understanding of the institution's ESG risk exposure is very relevant for the evaluation of the risks the institution is or might be exposed to.

312. Similar to the time horizon for institutions' strategic planning and risk management (see Chapter 4), the question of the time horizon considered by supervisors in the supervisory review arises when evaluating how to include ESG risks. For example, the assessment of the viability of a credit institution's current business model covers the following 12 months, and the sustainability of the credit institution's strategy (as its ability to generate acceptable returns) covers a forward-looking period of at least three years, based on its strategic plans and financial forecasts. The capital requirements established in Pillar 2 are estimated to cover primarily the unexpected losses over a 12-month period, and capital guidance (P2G) is based on stressed conditions over a forward-looking horizon of at least two years, reflecting relevant stress scenarios.

313. While supervisors are certainly evaluating risks on different time horizons as part of the risk assessment, the above mentioned time horizons for business model analysis and capital could indicate that ESG risks are not likely to be fully captured by the existing supervisory reviews due to their longer time horizon.

314. The NGFS guide for supervisors on integrating climate-related and environmental risks into prudential supervision captures, in fairly detailed manner, the supervisory approaches to climate-related and environmental risks to date and suggests that this work is still at an early stage.

315. The following sections this report outline specific areas for supervisory consideration to be covered under the supervisory review, reflecting the main areas covered in Chapter 4, with a focus on institutions, as defined in article 4(1)(1) and (2) of Regulation (EU) No 575/2013.

5.3 ESG risks in business model analysis

316. As outlined in Chapter 4, the quantification and management of ESG risks are subject to distinct challenges and therefore institutions need to take ESG risks into account when formulating and revising their business strategies. The following section describes how the integration of ESG risks into business strategy should be evaluated by supervisors as an additional perspective.

317. ESG risks should be part of the assessment of the viability and sustainability of the business model and of the **long-term resilience of an institution.** In particular, this covers aspects of the long-term sustainability of the institution's strategy in light of changing climate, environmental degradation, the increasing importance of social acceptability of businesses and the transition to a more sustainable economy.

318. Chapter 4 of this report suggests four main considerations for institutions regarding the integration of ESG risks into their business strategies and processes:

a. monitoring changing business environments and evaluating long-term resilience;

b. setting robust strategies considering ESG risk-related objectives and/or limits;

c. engaging with counterparties and other relevant stakeholders;

d. considering the development of sustainable products.

317. These aspects can then form a basis for supervisors. In addition to the points above, the long-term resilience assessment would be a new aspect of the supervisory assessment and go beyond the minimum time horizon of 3 years currently expected based on the SREP Guidelines[211] and be aligned with relevant public policy such as the emissions reduction targets set for 2030.[212] The longer time horizon in the supervisory perspective mirrors the longer planning horizon of institutions advocated in Section 4.1.2. It would focus on the results of scenario analyses and other forward-looking tools, including qualitative assessments, in addition to more commonly used short-term performance indicators.

318. Given the various challenges associated with integrating ESG risks into institutions' strategies, it would be justifiable for supervisors to also follow a staggered approach, i.e. giving more prominence to climate-related and other environmental risks first and extending the BMA to social and governance risks in future steps. This approach would also mirror the progress in sustainable finance legislation, for instance, the Taxonomy Regulation starts with climate-

[211] EBA/GL/2014/13, as amended by EBA/GL/2018/03, par. 83.

[212] https://ec.europa.eu/clima/policies/strategies/2030_en.

related sustainable activities and is then further expanded, and EBA's approach for quantitative indicators in the Pillar 3 framework.

5.3.1 Business environment and long-term resilience

319. For the purpose of evaluating an institution's business model from an ESG risks perspective, it is helpful to use additional sources of information as a basis for the assessment, such as:

- forward-looking analyses conducted by the institution itself and studies published by relevant bodies on expected long-term developments;
- non-financial reporting in addition to financial, regulatory and internal reporting;
- ESG ratings of the institution itself as well as of its most material exposures.[213]

320. ESG factors and ESG risks would also enter into the **assessment of the institution's main activities, geographies and market position**, particularly in the determination of the materiality of its different exposures and the identification of its peer group, e.g. institutions providing funding to areas prone to weather hazards or industries with a record of lower labour safety standards.

321. With regard to the long-term effects of ESG risks and the transition to a more sustainable economy as agreed upon in national, EU and international strategies and agreements, a careful and, importantly, **forward-looking assessment of the future business environment** institutions are facing is key for the business model analysis. Competent authorities should consider, among others:

- relevant political commitments such as the Paris Agreement or the European Green Deal, notably including the EU Climate Law;
- social changes resulting from, inter alia, the COVID-19 pandemic and increasing digitalisation; and
- economic effects of more frequent and severe natural disasters and increasing environmental degradation, technological developments and changing customer preferences.

322. Future **key macroeconomic variables** could be informed by scenario analyses and competent authorities could leverage on the work carried out, e.g. by the NGFS[214]. The transition of the economy could also influence the **competitive landscape** in terms of other institutions pursuing dedicated sustainability strategies[215] and overall **trends in the market**.

[213] Supervisors should take into account any methodological limitations and underlying assumptions, and acknowledge that pure ESG ratings do not immediately provide an assessment of financial resilience.

[214] NGFS (June 2020), 'Climate Scenarios for central banks and supervisors'.

[215] See EBA Staff Paper Series, Sustainable Finance – Market Practices, Jan. 2020, p. 12.

5.3.2 Understanding the current business model from an ESG risk perspective

323. For the analysis of the current business model, supervisors conduct both a quantitative analysis, to understand an institution's financial performance and the adequacy of capital and liquidity to assure stability, not only in the short term, and a qualitative analysis to understand how its financial performance is driven by risk appetite compared to peers and its potential success drivers and key dependencies. The impact of regulatory changes, such as carbon-pricing, minimum environmental or labour standards, or an outright ban of certain activities, on the creditworthiness of borrowers or the market values of investee companies, should be part of both these quantitative and qualitative analyses.

324. The **quantitative analysis** includes the main drivers of profit and loss, balance sheet composition, asset composition and concentrations therein and the adherence to formal risk limits. Considering that ESG risks can already materialise in the short and medium term, it seems relevant to extend the factors considered to include ESG factors.

325. In terms of understanding the impact of ESG factors on the current business model, the following, but not exhaustive, considerations appear to be the most relevant for quantitative analysis:

a. whether the reviewed institution derives a significant portion of its **profitability** from assets that are more exposed to ESG risks;
b. whether the institution observes differences in the **profitability** of conventional loans and loans that include ESG risk-related objectives, including whether the institution can benefit from first mover advantage or a dedicated sustainable business model;
c. whether the **impairment** of asset values is caused (partially) by ESG risks affecting such exposures and how this is assessed and quantified by the institution;[216]
d. whether the **balance sheet review** reveals a problematic regional or sectoral **concentration** of assets, physical collateral or liabilities that are highly exposed to ESG risks; for example, concentration of lending to or deposit-taking from households in a region where the economy heavily depends on carbon-intensive industries or that is prone to natural hazards. In contrast, supervisors may recognise sectoral and geographical diversification.

326. With regard to **qualitative analysis,** the incorporation of ESG factors is equally relevant and could comprise at least the following areas:

[216] For example, the demand shock experienced by the aviation industry following the outbreak of COVID-19 was aggravated by the fact that airlines were prone to economic failure even before the pandemic due to strong competition, market fragmentation, currency risks, the absence of protective restructuring regulations, or simply poor management and high leverage, see Jack Dutton (Feb. 2019), 'Airline insolvencies: European carriers take the hit'.

a. the institution's **internal capacities,** including IT tools capable of identifying and evaluating ESG risks and sufficient staff with expertise in dealing with ESG risks;
b. the **strength of the institution's relationships** with stakeholders in terms of identifying their material ESG risks and implementing and effectively monitor engagement strategies in a proactive and timely manner;
c. whether the offering of sustainable banking products could lead to an improvement in the resilience of the institution's business model and result in a potential **competitive advantage** for the institution.

5.3.3 Analysis of the strategy and financial plans

327. In a forward-looking manner, supervisors are deemed to analyse the institution's financial projections and strategic plans. The analysis encompasses the main quantitative and qualitative management objectives, the institution's projected financial performance, the plausibility and consistency of its assumptions and its ability to effectively execute its strategy and achieve its financial forecasts.

328. Building on the justifications provided in this report, this is one of the key areas where supervisors can extend the time horizon of their supervisory assessment and add the evaluation of long-term strategies and ESG risk-related objectives and/or limits set by the institutions.

329. With regard to ESG risk-related **strategic objectives and/or limits**, the following, but non-exhaustive aspects, are of particular interest to supervisors:

a. the reasoning for such ESG risk-related objectives and/or limits (e.g. reputation, risk mitigation, growth opportunities);
b. the financial objectives the management body is seeking to achieve;
c. the level of ambition of these objectives compared to the overall strategy;
d. the interconnectedness with other, potentially conflicting objectives or limits;
e. major challenges faced by the institution;
f. where the institution aims at aligning with sustainability standards, such as the SDGs, how far this alignment responds to ESG risks or contributes to profitability;
g. where the institution offers sustainable banking products, whether these are also designed to mitigate ESG risks, e.g. by reducing exposure to activities that are particularly affected by the transition to a sustainable economy;
h. where the institution engages with its customers, how this is deemed to help mitigate ESG risks stemming from such exposures;
i. the effectiveness of the steering capabilities and strategic processes of the institution.

330. Supervisors may evaluate whether the strategy and financial plans adequately respond to ESG risks, i.e.:

a. whether and when ESG risks impact the strategy and the **projected financial performance;**[217]
b. whether ESG risks-related objectives, sustainable banking products or engagement with customers on their preparedness and alignment with the transition are **success drivers** of the business strategy;
c. whether the institution accounts for the energy transition, climate change, digital transformation as an enabler of a green deal and other ESG matters in its **macroeconomic assumptions;**[218]
d. whether the institution has the **execution (know-how) capabilities** to implement any ESG risk-related objectives and/or limits, judging from the track record of previous strategic adjustments and the availability of relevant expertise while acknowledging the relative novelty and potential complexity of ESG-related strategies.

331. The absence of ESG risk-related considerations in a business strategy should be critically challenged, taking into account that major parts of the economy will undergo unprecedented changes in the coming decades.

5.3.4 Assessing business model viability and sustainability

332. Building on the analyses of the business environment and current business model, supervisors assess the viability of the business model in view of its ability to generate acceptable returns over the next 12 months. By incorporating ESG factors into the analysis of the business environment and current business models, these factors would then be channeled into the assessment of the business model viability.

333. The assessment of the sustainability of an institution's strategy, understood as economic sustainability in the context of SREP, takes on a more forward-looking stance. Under this assessment, supervisors evaluate for at least the following 3 years whether the institution is able to generate acceptable returns given its strategy, forecasts and business environment. The assessment ranges from the plausibility of the institution's assumptions and projected financial performance and the impact of a potentially different supervisory view of the business environment to the risk level of the proposed strategy and likelihood of success.

334. Under this minimum 3-year time horizon, a broader scope of ESG risks should be captured compared to the 1-year horizon in the case of business model viability. For example:

[217] For example, the massive 55% drop in the share prices of British Petroleum after the accident on the offshore oil-drilling rig Deepwater Horizon in only two months: https://marketrealist.com/2014/09/bp-lost-55-shareholder-value-deepwater-horizon-incident/.

[218] See EU Commission, 'The European Green Deal', COM (2019) 640 final, and NGFS, (June 2020), 'Climate Scenarios for central banks and supervisors'.

- the massive implications for the **business environment** in which institutions operate from announced public policies such as the EU Green Deal, comprising the Climate Law, national climate and environment protection acts, carbon taxes or schemes, and moves to tackle social issues;[219]
- whether and how the institution integrates such implications into its **assumptions and projected financial performance**, namely by carrying out ESG-related scenario analyses; this also implies abstaining from simply carrying forward the historical returns and losses of carbon-intensive industries;
- whether the institution runs a **higher strategic risk level** by failing to adapt to a changing world despite high exposures to vulnerable (sub-)sectors or regions (business-as-usual');

335. With these assessments of the viability and sustainability of the business model, some ESG factors would be captured and related vulnerabilities could be identified. However, the existing assessment would probably not sufficiently enable supervisors to understand the longer-term breadth and magnitude of the impact of ESG risks on future financial positions and related long-term vulnerabilities.

5.3.5 ESG risk-related considerations as longer-term resilience of the institution's strategy

336. Based on the above, it could be useful to introduce an additional aspect of supervisory analysis into the business model, to assess how far the institution's approach to managing ESG risks contributes to its longer-term resilience. In this context, it is paramount for supervisors to understand that a **high level of strategic ambition in terms of ESG risk-related objectives (and/or limits)** is not necessarily equivalent to a high-risk level in the strategy. At the same time, it must be ensured that all risks are appropriately considered in the risk strategy and managed accordingly. In the context of the transition to a more sustainable economy it could be considered prudent to question the current business model and target major changes in the future, in particular where the current business model is heavily reliant on vulnerable (sub-) sectors or regions.

337. Furthermore, given the longer-term **time horizon** of the transition with climate mitigation targets being set for 2030 and 2050 in the EU, this forward-looking assessment would similarly require a much longer time horizon, ideally aligned with the time horizon of the public policies. Therefore, competent authorities should analyse institutions' business plans and strategies for a period of at **least 10 years ahead**. This would also allow institutions which are performing well under current market conditions but whose short-term strategy is deemed risky and may cause

[219] See also ACPR (2020), 'Governance and management of climate-related risks by French banking institutions: some good practices'; BaFin (2019), 'Guidance Notice on Dealing with Sustainability Risks'; ECB (2020), 'Guide on climate-related and environmental risks'; DNB (2020), 'Good Practice – Integration of climate-related risk considerations into banks' risk management'.

trouble when the business environment fundamentally changes in line with agreed public policies to be identified at an early stage.

338. Notwithstanding the importance of analysing the short- and medium-term impacts of ESG risks, the forward-looking assessment of longer-term resilience could become a **new aspect** of business model analysis. It should take into account the projected longer-term changes to the business environment and shed light on the question of how the institution's business strategy responds to ESG issues which are supposed to fundamentally overhaul the economies and societies we currently live in.[220] In this context, it is paramount that the business strategy is fed by scenario analysis on plausible future states of the economy, using a set of different scenarios.

339. The EBA acknowledges the uncertainties relating to an assessment of the institution's resilience over a period of not less than 10 years. In contrast to the analyses of the viability of the business model and sustainability of the business strategy, which cover the short- and medium-term horizon respectively, any quantitative projections for the longer-term would necessarily come with increasing uncertainties and be based on a variety of different economic scenarios. Therefore, it would be preferable to design this long-term element in a **qualitative manner** as a first step. Depending on the development of more readily-available data from counterparties and methodologies to conduct forward-looking analysis, some key performance indicators could be analysed, e.g. the projected GAR of the institution in ten years' time, the level of financed emissions or the projected distribution of energy efficiency across the real estate portfolio.

Conclusions and policy recommendations

- **In order to reflect the ESG risks in the supervisory evaluation, the EBA sees the need to proportionately incorporate ESG factors and considerations into business model analysis, in particular with regard to the analysis of the business environment, the current business model, strategy, and the assessment of the viability and sustainability of the business model. Key aspects to be considered in this regard include (sub-)sectoral and geographic concentrations, the institution's (potential lack of) reflection on the impact of a changing business environment, internal capacity building, relationships with stakeholders and projected profitability and losses under an ESG risk perspective.**

- **The existing viability and sustainability assessments under supervisory reviews might not sufficiently enable supervisors to understand the longer-term impact of ESG risks, or their breadth and magnitude, on future financial positions and related long-term vulnerabilities. In this context, the EBA sees a need to introduce a new aspect of analysis into the supervisory assessment, evaluating whether institutions sufficiently test the**

[220] The NGFS names, as examples, key macroeconomic variables such as growth, productivity, food and energy prices, inflation expectations and insurance costs: NGFS (April 2019), 'A Call for Action', p. 12.

long-term resilience of their business models against the time horizon of the relevant public policies or broader transition trends, i.e. exceeding commonly used timeframes of 3-5 years and covering a time horizon of at least ten years. Assuming different time horizons would also enhance the reliability of the analysis and allow supervisors to offer a more proactive and forward-looking response to the emerging risks the institution is facing.

- **Taking into consideration the uncertainties surrounding longer-term projections, competent authorities should perform a qualitative analysis of the longer-term impact of ESG factors and risks on the institutions' business models and ensure that their (long-term) strategies appropriately respond to ESG requirements and identified challenges. Over time, with the development of methodologies and the availability of more precise data, supervisors should complement the long-term assessment with a quantitative analysis.**

5.4 Internal governance and institution-wide controls

340. Building on the ESG-specific governance arrangements covered in Chapter 4, this section elaborates on specific ESG aspects that are relevant for supervisors when assessing internal governance and institution-wide controls.

341. The main objective of the supervisory assessment of internal governance in institution-wide controls includes the evaluation of whether their internal governance arrangements ensure the sound management of risks and include appropriate internal controls and oversight throughout the institution. These arrangements should be adequate and commensurate to its size and internal organisation, and also to the nature, business model and complexity of the credit institution.

5.4.1 Overall internal governance framework

342. As stated in Chapter 4, internal governance arrangements, including the involvement of the management body in providing the 'tone at the top', establishing a business and risk strategy, including the setting of the risk appetite, along with a risk culture and the implementation of a robust internal control framework with reporting lines that are clearly defined, are key aspects for a successful implementation of ESG considerations and managing ESG risks.

343. It is very important for supervisors to consider how ESG factors and ESG risk management have been incorporated into the overall internal governance framework. Particularly in terms of the following points.

- Demonstration of a robust and transparent organisational structure with clearly defined and widely integrated responsibilities regarding ESG factors and risk

monitoring, including those of the management body and its committees. In particular, the horizontal nature and novelty of ESG factors could require particular coordination and consistency between strategic planning, risk taking and risk monitoring.

- Demonstration of an effective internal governance and internal control framework that considers ESG factors and risks, including a well-functioning independent internal risk management, compliance and audit function. Responsibilities should be clearly allocated between the internal control functions.

- Responsibilities of the management body to include ESG-related aspects in the credit institution's business and risk strategy, including the setting of its risk appetite on an individual and consolidated level and implementing it. In particular, consistency between the established strategies, corporate and social responsibility statements, business processes (including product development) and risk management could be the most relevant to evaluate.

- Inclusion of ESG-related aspects in risk policies and their implementation. In particular, whether the specifics of the ESG factors and the nature of their potential impact are sufficiently reflected in the existing policies.

5.4.2 Management body, corporate and risk culture

344. The role of the management body to implement, monitor and oversee the credit institution's strategies, strategic objectives, risk strategy and governance arrangements applies also in the context of ESG considerations. As described in Chapter 4 the management body plays a key role in addressing existing gaps in credit institutions' business profiles and strategies, including the uncertainties surrounding the impact of ESG risks on their business activities.

345. When evaluating the organisation and functioning of the management body, particular aspects that could be relevant for the supervisory assessment of credit institutions' internal controls of ESG risks include:

- whether the management body, in its management function, appropriately directs the institution, considering its ESG risk-related strategy;

- whether the management body, in its supervisory function, adequately oversees and monitors management decision-making and actions, considering the credit institution's ESG risk-related objectives and/or limits;

- whether the management body has sufficient knowledge and skills, and is developing its experience with ESG factors and risks, especially when specific circumstances concerning the assigned function(s) might so require.

346. A sound and consistent risk culture should be a key element of an institution's effective ESG risk management and should be a pillar for making informed decisions. Supervisors should assess whether institutions have developed appropriate and integrated ESG risk-related strategies and have effectively communicated this to the whole organisation. Supervisors should also evaluate whether the risk culture is based on a holistic view of the ESG factors and risks the institution is faced with, taking into account its risk appetite. The risk culture should at least include, but not be limited to, clear guidance from the management body ('tone from the top') clarifying expectations on ESG factors and risks, effective communication and challenge to promote ESG-risk awareness, and a proper accountability framework.

347. As part of the evaluation of the integration of ESG risks into transparent corporate values and risk culture, competent authorities should ensure that the institution has a clear, strong and effective communication system for its ESG strategy, ESG training programmes, ESG risk and other policies and whether a risk culture covering ESG factors and risks is applied across all levels of the organisation.

5.4.3 Remuneration policies and practices

348. In the area of remuneration policies and practices, the most relevant from the perspective of ESG is the alignment of remuneration policy with the institution's long-term risk management framework and objectives (see Chapter 4). The impact of the remuneration policies on the achievement of sound and effective long-term risk management objectives from the point of view of ESG considerations may be especially relevant when it comes to the variable remuneration of categories of staff whose professional activities have a material impact on the institution's risk profile, taking into account their roles and responsibilities in relation to its ESG strategy.

5.4.4 Internal control framework

349. The main elements assessed by supervisors in the internal control framework are equally relevant with regard to ESG risk-related strategies, policies and procedures. Particular ESG aspects could be considered when evaluating the 'lines of defence' model, in regard to consistency in the implementation of ESG risk-related objectives and/or limits in the risk taking, risk management and internal audit function.

5.4.5 Risk management framework

350. As for the risk management framework, it is important to ensure that ESG factors and risks are sufficiently incorporated as part of the overall framework. When supervisors evaluate the appropriateness of the risk management framework, ESG aspects could be relevant when assessing:

a. whether the risk strategy, risk appetite and risk management framework are appropriate and consistent;

b. whether the identified ESG factors and risks are sufficiently embedded in the risk appetite framework and strategy, notably via a set of qualitative and quantitative ESG indicators and related limits, tolerances and thresholds; these should be monitored to evaluate the relevance of the exposures in terms of prudential risk and the risk appetite framework should be forward-looking, in line with the strategic planning horizon;

c. whether institutions have set up a sound risk identification process for newly relevant ESG factors;

d. whether the ICAAP and ILAAP frameworks consider ESG factors and risks and transmission channels in financial risks;

e. whether the institution has sufficient capabilities to test resilience to long-term negative impacts of environmental, social and governance factors, taking into account its size and internal organisation, business model and the nature, scale and complexity of its activities;

f. whether the risk management function is developing sufficient expertise in evaluating ESG risks (e.g. the ability to evaluate longer-term risks or specific aspects of transition risk, physical risk, social and governance risks).

g. with regard to the risk management framework, more specific considerations for institutions are included in Chapter 4 (e.g. portfolio composition, concentration, diversification objectives, review of limits for managing ESG risks) which are also relevant for supervisors when evaluating aspects of the risk management framework.

5.4.6 Information systems

351. As part of the internal governance framework, supervisors also evaluate whether the institution has effective and reliable information and communication systems, whether these systems fully support risk data aggregation capabilities and whether such systems and the institution's internal processes are capable of identifying, quantifying and monitoring ESG risks.

Conclusions and policy recommendations

- **The supervisory review should proportionately incorporate ESG risk-specific considerations into the assessment of the institution's internal governance and wide controls, monitoring how ESG factors and risks will be incorporated into the overall internal governance framework, the functioning of the management body, the corporate**

and risk culture, remuneration policies and practices, risk management framework and information systems and internal control framework.

5.5 Assessment of risk to capital

352. In Chapter 2 of this report it has been clarified that the impact of ESG risks materialises in the form of existing financial risks (e.g. credit risk, market risk and operational risk). This section explores in greater detail how supervisory authorities can evaluate and understand how to evaluate and understand the impact of ESG factors and risks on the risk to capital.

353. In assessing these risks, the supervisory authorities need to be mindful of the evolving understanding of ESG risks: the management and quantification of climate-related and environmental risks is more advanced, while social and governance risks are mostly managed in a qualitative manner. The supervisory review may first focus on how institutions are advancing their measurement and management of ESG risks and catch up with the latest methodological and organisational developments. For climate-related and environmental risks, the supervisory authorities might want to further invest in their ability to quantify the level of risk to which institutions are exposed.

5.5.1 Assessment of credit and counterparty risk

354. In assessing how ESG risks drive the credit risk profile of institutions, it is important to design a minimum set of controls to form a view on how the institution is managing its ESG risks.

355. A key characteristic of ESG risks, especially climate-related and environmental risks, is their manifestation not only in the short to medium run, for example, due to an abruptly announced policy measure, but also over the following decades, because the physical impact of environmental change and/or because previously insufficient political action forces a sudden and comprehensive transition.

356. Consequently, supervisors will need to adapt their assessment in order to:

- review whether and how the institutions ensure that their loan book is sustainable in the medium to long term, notably leveraging on the business model assessment;
- introduce controls, such as scenario analysis, to assess the resilience of the loan book to transition or physical risks.

357. In their review, supervisory authorities may rely on qualitative and quantitative information. It is likely that quantification methodologies will continue to develop in the future. In this respect, the use of proxies or approximation methodologies may nonetheless be beneficial to

anchor the dialogue with institutions to the initial quantifications of the impact and challenge the assessment of materiality of ESG risks.

358. In the review of the quantitative information provided by institutions, supervisors shall assess whether this information is based on meaningful risk measurement tools. A possible control would be to ascertain the extent to which the institution relies on these risk tools for strategic decisions. The use of such tools as inputs in the risk processes is a proxy of the reliability of the quantitative information provided.

Inherent credit risk

359. In order to properly capture the level of ESG risks to which credit portfolios are exposed, supervisors can adapt the standard credit risk assessment to take into account the impact of ESG risks. Credit risk is generally assessed in the short to medium term, so the introduction of forward-looking metrics is therefore a valuable instrument for understanding whether ESG factors impact an institution's credit risk profile. These indicators are particularly important for long-term loans such as real estate financing. From a strategic perspective, supervisors can assess how the loan book would evolve if long-standing business relations were impacted by ESG risks.

360. In this respect, a starting point is always the assessment of the underlying assumptions and strategies of the institution, including:

- whether the institution is aware of how ESG risks drive credit risk for each portfolio;
- if the institution has assessed the impact of ESG risks on its credit risk, whether it has properly embedded ESG risks into its Risk Appetite Statement,
- how ESG risks are consequently are included in loan origination and monitoring.

361. ESG risks should be considered in the assessment, both at inception and during the ongoing relationship, of the risk profile of the counterparty. For instance, supervisors might check that institutions have properly embedded the material ESG factors into their rating assignment and review process.

362. At portfolio level, ESG risks can be assessed by means of concentration analysis (considering both counterparties and/or collateral) and with a review of the specialised lending portfolio. In the subsequent paragraphs a list of controls is provided as examples.

363. Sectoral concentration can provide an overview of exposure to transition risk when matched with transition risk metrics. This methodology has been largely explored in assessing how

sectors are impacted by ESG risks.[221] However, quantification exercises are more developed for climate and environmental risks than for social and governance factors. Supervisors could expect institutions to investigate ESG sectoral concentration analysis in a qualitative form.

364. Geographic concentration may be matched with physical risk metrics,[222] which are meanwhile largely available from academics[223] or in the market of data providers. More simply, supervisors could look at risk metrics to match the location of the counterparties with the physical risks that could affect these locations (bearing in mind that production facilities and location do not always match). In the medium to long term, with the improvement of methodologies and the availability of data, geographical analysis of physical risk may be extended to the entire value chain.

365. Single name concentration analysis is a good tool for identifying exposure to ESG risks, which can be more easily tracked to the due diligence of single counterparties. Supervisors could review due diligence policies applicable to large counterparties.

366. Specialised lending and project financing deserve a specific mention. It is likely that institutions may consider financing projects with low ESG risks from counterparties that are nevertheless exposed to ESG risks. While transition projects might carry a lower risk as they mitigate the exposure to ESG factors, supervisors need to ensure that the use of project financing does not circumvent the assessment of the counterparty's exposure to ESG factors, for instance by performing a weaker due diligence. For other types of specialised lending, supervisors could check whether the object or asset is associated with any specific ESG label or certification, where applicable.

5.5.2 Assessment of portfolio credit quality (with focus on loan origination)

367. The incorporation of ESG risks into the review of the credit quality of the portfolio gives rise to a number of questions. The assessment is also dependent on the availability of reliable data and information, and on the development of appropriate supervisory methodologies.

368. A starting point for the valuation of exposures is the concept of stranded assets. Assets impacted by the transition (e.g. high polluting assets) or by physical events (e.g. floods) are potentially affected by lower valuations. Supervisors can check, amongst other points, that institutions include in their risk measurement a set of forward-looking tools to investigate how exposures can be impacted by, for instance, climate-related risks. A natural control for such

[221] Battiston et al. (2017).

[222] Getting started on Physical climate risk analysis in finance - Available approaches and the way forward. Institute for climate economics.

[223] See for example http://senses-project.org/.

exposures is to review whether the transition paths of the counterparties are considered in financing decisions, particularly in the case of restructuring loans.

Quality and effectiveness of risk management and controls

369. An important element in assessing the capability of institutions to deal with ESG risks is the review of the management and control framework steering the credit strategy. A comprehensive supervisory review will aim at assessing how the framework incorporates ESG considerations, how responsibilities are assigned and how the risk is identified, measured, controlled and monitored.

370. As further described in Section 4.1 and the EBA Guidelines on loan origination and monitoring, a strategic approach to managing ESG risks can include setting ESG risk-related objectives and/or limits in the institution's strategy. Supervisors will consequently check that the credit strategy is fully aligned and properly reflects the underling ESG risk appetite. Performing these assessments also implies controlling how the responsibilities for implementing and monitoring the ESG-related targets are set.

371. The EBA Guidelines on loan origination and monitoring also include significant criteria, on which supervisors can build for the ESG review.[224] These include, among others, the minimum requirements for institutions that plan to engage in environmentally-sustainable activities, including:

- a list of the projects and activities, as well as the criteria, that the institution considers eligible for environmentally-sustainable lending or a reference to relevant existing standards on environmentally-sustainable lending;
- the process by which the institutions evaluate that the proceeds of the environmentally-sustainable credit facilities they have originated are used for environmentally-sustainable activities.

372. With the set of controls listed above, supervisors might be able to infer the risk of the institutions engaging in greenwashing activities. The result of such an analysis will not only inform the assessment of institutions' credit control frameworks, but also support the analysis of the related reputational risk.

5.5.3 Assessment of market risk

373. Investors and market participants are showing a growing awareness of the importance of ESG risks. Although the level of ESG issuances is still low compared to the size of the financial markets, demand for ESG investments is increasing. At the same time, more and more investors

[224] Paragraphs 56 to 59 of the EBA Guidelines on loan origination and monitoring.

are implementing negative screening policies and proxy voting policies which are solidly grounded in ESG considerations. For such reasons, it is important that supervisors assess how institutions proactively monitor the impact of ESG risks on their market risk positions.

374. This can be achieved by reviewing whether the proper set of controls to detect the emergence of ESG risks is in place, for instance, with the methodologies reported in Chapter 3, and whether credit institutions have put a proper ESG strategy for market risk in place.

375. By reviewing its market risk strategy, supervisors will find important information on how the institution intends to consider ESG risks in the financial market. The presence of specific investment criteria, including ESG checklists and the requirement for proper due diligence on market investments are all positive signs that show how much the institution has engaged with the topic. Supervisors could also look for risk limits related to the overall ESG strategy of the institution. The inclusion of ESG risks in the institution's strategy matched with the absence of risk tools to constrain investment in, for instance, firms with no plans to engage in the transition, is a negative sign and might be linked to greenwashing.

376. As per the lack of data, supervisors could check that institutions have clear policies for deciding on investments where they lack reliable ESG data. In this respect, the presence of negative screening policies or exclusion criteria, for example, can provide proof that the institution is carefully reflecting on its market exposures even in cases where the appropriate data are not available.

5.5.4 Assessment of operational risk

377. Operational risk is also heavily affected by ESG risks. This includes the failure to evaluate compliance of an institution's exposures with existing ESG standards, which might lead to future financial impacts via reputational or legal damage.

378. In this respect, supervisors could consider the extent to which the activities in which the institution is involved, or the exposures that the institution is financing, increases the risk of future reputational damage. Supervisors can review whether the institution has understood such risks and properly assessed them.

379. Among others, a signal of understanding the risk could be an institution's decision to link its operational and business activities to ESG standards, which provide a direction in which institutions can steer their businesses. Supervisors can review how ESG risks are managed from a reputational risk perspective, challenging the institutions with their own public disclosures. Divergence between the role of ESG risks in the institution's communications and their relevance in its internal reputational risk management should alert the supervisors. Specific attention must also be given to legal risk. Institutions that fail to properly assess the ESG profile

of their products might be involved in future miss-selling claims, with the risk of financial impacts.

5.5.5 Risk identification, measurement, monitoring and reporting of social and governance risks

380. While efforts on measuring and quantifying environmental risks are ongoing, the supervision of social and governance risks is mostly approached from a qualitative angle. The EBA is aware that qualitative and quantitative indicators and methods for the assessment of risks may be more advanced for environmental risks compared to social and governance risks. In this respect, supervisors could assess, in a first phase, whether institutions are making progress in developing their quantitative frameworks for the assessment of environmental risks. In this timeframe, supervisors could review the impact of social and governance risks on institutions from a qualitative perspective only. In the medium term, when both institutions and supervisors will have accumulated enough experience on social and governance risks, supervisors might proceed by assessing how the latter are incorporated in the risk identification, measurement, monitoring and reporting frameworks.

5.6 Assessment of risks to liquidity and funding

381. While the link between ESG risks and liquidity and funding is seen by institutions as more indirect, it is deemed important to not overlook these links when evaluating the risks to liquidity and funding. For example, the NGFS Guide for supervisors refers to liquidity risk in the context of a lack of reliable and comparable information on climate-sensitive exposures, which could create uncertainty and cause procyclical market dynamics, including fire sales of carbon-intensive assets and, potentially, liquidity problems. As indicated in Chapters 2 and 3, ESG factors could also result in funding issues for institutions or make some assets less liquid.

382. Supervisors assess the institution's short- and medium-term liquidity risk to ensure that the institution maintains adequate levels of liquidity buffers, under both normal and stressed conditions for a time horizon of up to one year. In this assessment, ESG factors and ESG risks seem to be the most relevant when conducting the following assessments.

- The evaluation of liquidity needs in the short and medium term, in particular whether ESG risks could cause net cash outflows that negatively impact the institution's liquidity position. For example, situations of environmental crisis or social unrest can lead to higher withdrawals, share buybacks, or other stresses on its liquidity position.

- The evaluation of the liquidity buffer and counterbalancing capacity, in particular whether ESG factors and risks are considered in scenario assumptions to predict a potential depletion of the buffer and in the ability of the institutions to monetise liquid

assets, especially in case of a large concentration of such assets in geographies, sectors, and counterparties subject to high ESG risk. For example, ESG risk-free assets could be prioritised by the market above traditional asset classes, so impacting their value.

- Supervisory liquidity stress testing, where specific vulnerabilities linked to ESG factors and risks can be evaluated in more detail.

383. Supervisors assess the institution's inherent funding risk and whether its medium- and long-term obligations are adequately met with a range of stable funding instruments under both normal and stressed conditions. Under this assessment, ESG factors and ESG risks seem to be the most relevant when conducting the following assessments.

- The evaluation of risks to the stability and sustainability of the funding profile, in particular whether ESG factors could imply material changes to the types and characteristics of both assets and liabilities. These changes could be motivated by high concentrations in funding instruments with high ESG risk and counterparties that could affect funding in the future.

- The evaluation of the current, and medium- and long-term market access, in particular due to reputational issues deriving from a perceived lack of ESG awareness and actions or the assessment of behavioural changes in investor preferences (e.g. increasing integration of ESG factors into their investment decisions) that may affect institutions' ability to attract investors.

384. The third component is the governance and risk management framework underlying liquidity and funding risk. In this assessment, the following elements, at least, should include ESG risk-specific considerations:

a. the liquidity and funding strategy and tolerance, in particular by considering ESG in strategic objectives and in the institutions' risk appetite that could take the shape of concentration limits for various categories of assets in the buffer (in terms of geographies, sectors and counterparties); risk identification and measurement, in particular whether the ESG factors and ESG risks are reflected in key assumptions that recognise interaction between different risks and in the evaluation of their ability to access financial instruments;

b. risk identification and measurement, in particular whether the ESG factors and ESG risks are reflected in key assumptions that recognise interaction between different risks and in the evaluation of their ability to access financial instruments;

c. the institution's liquidity-specific stress testing, in particular whether ESG factors have been considered;

d. the institution's liquidity contingency plans, in particular whether the assumptions used in these plans might need to be adjusted to reflect ESG factors; and

e. the institution's funding plans, that should reflect potential changes along with the time horizon envisaged for the transition to a different and more ESG-oriented funding profile.

5.7 SREP capital assessment

385. As already covered in Section 4.3.2, the EBA expects institutions to cover at least all material risks [225] in their ICAAP, meaning that internal capital estimates should be provided for all material risks. Where an institution believes that risks should not be covered by capital but be mitigated in a qualitative manner, this should be explained accordingly.

386. The ICAAP assessment should be a starting point for supervisory dialogue, to discuss with institutions which ESG risks are material to them and how they intend to mitigate them.

387. The EBA acknowledges the inherent uncertainties with respect to the quantification of ESG risks, and specifically social and governance risks, that are deemed to be less advanced. In this respect, supervisors should continue developing their methodologies to detect and quantify ESG risks. Data availability is expected to largely improve once corporates and institutions start disclosing information on these risks in accordance with several different regulations [226]. Along with further methodological developments, competent authorities should be able, in the medium-long term, to assess whether the levels of internal capital adequately cover the ESG risks to which the institutions are exposed.

Conclusions and policy recommendations

- **The impact of ESG risks materialises in the form of existing financial risks (e.g. credit risk, market risk and operational risk). For this reason, the supervisory review should proportionately incorporate ESG risks as drivers of financial risks, in particular risks to capital and risks to liquidity and funding. The assessment of such ESG risks should progressively and proportionally be integrated into the existing set of supervisory review, for both the assessment of the level of risk and the review of risk-specific controls. The use of scenario analysis and stress testing is very relevant, particularly when assessing the resilience of institutions in specific scenarios.**

- **Competent authorities should further develop their stress testing methodologies and practices in order to better understand institutions' vulnerabilities related to ESG risks, and**

[225] EBA Guidelines (EBA/GL/2016/10) on ICAAP information collected for SREP purposes.

[226] E.g.: Article 449a CRR, NFRD, Taxonomy Regulation.

in particular to evaluate the potential impacts driven by transition risk and physical risk on financial and prudential soundness, and to explore which measures are more appropriate for addressing potential inadequacies.

- **The assessment of these ESG risks should progressively and proportionally be incorporated into the supervisory capital assessment to evaluate whether additional own funds are required to cover risks that are not sufficiently covered or not covered by parts three, four and seven of Regulation (EU) 575/2013 and Chapter 2 of Regulation (EU) 2017/2402. Such additional own funds should be determined on a risk-by-risk basis. A more quantitative consideration of ESG risks in the SREP may follow future developments in data quality and methodologies.**

- **In order to facilitate the integration of ESG risks into the supervisory framework, the EBA sees the need to embed ESG risks in the scope of the supervisory review. In accordance with Article 16 of Regulation (EU) No 1093/2010, on the basis of the outcome of this report and as set down in Article 98(8) of the CRD, the EBA intends to capture these risks in an update to the SREP Guidelines. In addition, based on the recognised materiality of ESG risks, these risks should be included in the CRD and the IFD.**

Annex 1 Non-exhaustive list of ESG factors, indicators and metrics

This Annex proposes a non-exhaustive list of ESG factors and corresponding indicators that can help institutions and supervisors to identify ESG characteristics. They can be applied in a proportionate manner to the analysis of counterparties, such as entities, sovereigns or individuals that the institution is exposed to, and allow for the aggregation and comparability of ESG characteristics across these counterparties. The factors and indicators should be considered in the context of the ESG characteristics of the counterparty under consideration, not the institution's own performance.

The list presented is solely an illustration of some of the key factors and indicators to be considered for the management of ESG risks. It should not be understood as an exhaustive or final inventory of all relevant factors and indicators, not least because these will evolve and will need to be updated over time. The applicability of the various ESG indicators will depend on the specific nature and underlying characteristics of the given exposures, taking into account the materiality of the ESG risks. Further, the evaluation and interpretation of the metric values and outcomes will crucially depend on the exposure's nature and specific circumstances and may need to be considered on a case-by-case basis.

Information in this Annex is based on i) the regulations, standards and frameworks listed in Chapter 2 of this report, ii) different Competent Authorities' guides in respect of ESG risks, iii) national or EU-wide reports on specific ESG topics, iv) credit rating agencies' methodologies, v) responses of banks to the EBA survey on market practices, vi) the responses received to the consultation on the EBA Discussion Paper on 'Management and supervision of ESG risks for credit institutions and investment firms', and viii) information from non-financial corporates' Annual Reports and sustainability reporting.

The indicators are further refined into concrete metrics, which are both quantitative and qualitative in nature. Some define clear calculations and formulas, depending on the relevance and context, some are in the form of an absolute measure (totals), others in the form of a relative measure (ratio). Some qualitative information on ESG characteristics can also be included in the form of certifications on the observance of ESG-standards/norms by third-party verifiers (e.g. in the form of labels), which may not necessarily be included in this list.

The factors, indicators and metrics provided in this Annex can assist institutions in their approach to managing ESG risks. Large institutions are reminded that the EBA will publish later in 2021 Implementing Technical Standards to define ESG risks disclosure requirements in accordance with Article 449a of the CRR.

References for terms applied in this Annex

(a) '**greenhouse gas (GHG) emissions**' as defined in the GHG Protocol methodology (https://ghgprotocol.org/calculation-tools) or the ISO 14064-1:2018 standard and, where appropriate, in the European Commission's Recommendation 2013/179 on the use of common methods to measure and communicate the life cycle environmental performance of products and organisations;[227]

(b) '**scope 1, 2 and 3 GHG emissions'** means the greenhouse gas emissions referred to in point (1)(e)(i-iii) of Annex III of Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds, and amending Directives 2008/48/EC and 2014/17/EU and Regulation (EU) No 596/2014;[228]

(c) '**tonnes of CO_2'** means tonnes of carbon dioxide equivalent as defined in Article 3(j) of Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003, establishing a system for greenhouse gas emission allowance trading within the Union and amending Council Directive 96/61/EC;[229]

(d) **'carbon footprint'** is an absolute or relative measure of GHG emissions as defined in points (a) and (c);

(e) **'fossil fuel sectors'** relates to the production, processing, distribution, storage or combustion of fossil fuels, with the exception of investment related to clean vehicles[230] as defined in Article 4 of Directive 2009/33/EC of the European Parliament and of the Council on the promotion of clean and energy-efficient road transport vehicles;

(f) '**national emissions reduction commitments'** for EU countries, these are obligations to reduce emissions of a given substance, specifying the minimum emission reductions that have to be achieved in the target calendar year, as a percentage of the total of emissions released during the base year (2005), as per Directive (EU) 2016/2284 of the European Parliament and of the Council of 14 December 2016 on the reduction of national emissions of certain atmospheric pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC (OJ L 344, 17.12.2016, pp. 1-31). For other countries, refer when available to intended nationally determined contributions to reduction in GHG emissions under the United National Framework Convention on Climate Change (UNFCCC);

(g) **'energy consumption intensity'** measures the energy consumption per unit of activity, output or any other metric, in the meaning of Directive ((EU) 2018/2002) amending the Energy Efficiency Directive (2012/27/EU);

(h) **'renewable energy sources'** means renewable energy sources referred to in Article 2(1) of Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion and use of energy from renewable sources (recast)[231];

(i) **'non-renewable energy sources'** means energy sources other than those referred to in point (h);

[227] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013H0179&from=EN.

[228] OJ L 171, 29.6.2016, p. 1.

[229] OJ L 275 25.10.2003, p. 32.

[230] Proposal for a Regulation on the European Regional Development Fund and on the Cohesion Fund (COM(2018)372).

[231] OJ L 328 21.12.2018, p.82.

(j) **'water consumption intensity'** in the meaning of Directive 2000/60/EC of 23 October 2000 establishing a framework for Community action in the field of water policy with a view to protecting the sustainable use and environmental status of all waters;
(k) '**hazardous waste'** means hazardous waste as defined in Article 3(2) of Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives [232], and radioactive waste;
(l) **'non-recycled waste'** means any waste not recycled within the meaning of 'recycling' in Article 3(17) of Directive 2008/98/EC;
(m) **'water pollutants'** means Direct Nitrates emissions (scope 1), Direct Phosphate emissions (scope 1), Direct Pesticides emissions (scope 1), Direct emissions of priority substances (scope 1) as defined in the Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy[233], Council Directive of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources (91/676/EEC) [234], Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment[235] and Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control)[236];
(n) **'air pollutants'** means Direct Sulphur dioxides (SOx/SO2) emissions, Direct Nitrogen oxides (NOx/NO2) emissions, Direct Ammonia (NH3) emissions, Direct Particulate matter (PM2.5) emissions, Direct Non-methane volatile organic compounds (NMVOC) emissions, Direct total heavy metals (HM) emissions as referred to in Directive (EU) 2016/2284 of the European Parliament and of the Council of 14 December 2016 on the reduction of national emissions of certain atmospheric pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC[237];
(o) **'biodiversity and ecosystem services'** refers to the concept of biodiversity and ecosystem services as laid out in the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), released in May 2019;
(p) '**protected area'** means an area designated under the European Environment Agency's Common Database on Designated Areas (CDDA)[238];
(q) **'area of high biodiversity value outside protected areas'** means an area not subject to legal protection, but recognised for important biodiversity features by a number of governmental and non-governmental organisations, including habitats that are a priority for conservation, which are often defined in National Biodiversity Strategies and Action Plans prepared under the United Nations (UN) Convention, 'Convention on Biological Diversity', 1992;

[232] OJ L 312, 22.11.2008, p. 3.
[233] OJ L 327, 22/12/2000, p. 1w.
[234] OJ L 375, 31.12.1991, p.1.
[235] OJ L 135, 30.5.1991, p. 40.
[236] OJ L 334, 17.12.2010, p.17.
[237] OJ L 344, 17.12.2016, p.1.
[238] https://www.eea.europa.eu/data-and-maps/data/nationally-designated-areas-national-cdda-14.

(r) **'gender pay gap'** means the difference between average gross hourly earnings of male and female paid employees for equal work or work of equal value, as a percentage gross hourly earnings of male paid employees;
(s) **'human rights policy'** means a policy commitment approved at highest decision-making level on human rights;
(t) **'workplace safety and health'** as specified in the Directive 89/391/EEC, known as the **OSH 'Framework Directive'**, which lays down the main principles to encourage improvements in the safety and health of workers at work, and the requirements developed thereafter by the European Commission and the European Agency for Safety and Health at Work (EU-OSHA).
(u) **'inorganic pollutants'** means emissions within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the Best Available Techniques Reference Document (BREF) for the Large Volume Inorganic Chemicals - Solids and Others industry;
(v) **'soil degradation'** means the diminishing capacity of the soil to provide ecosystem goods and services as desired by stakeholders, according to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) as referred to in paragraph 100 of Decision No 1386/2013/EU;
(w) **'areas of high water stress'** means regions where the percentage of total water withdrawn is high (40-80%) or extremely high (greater than 80%) in the World Resources Institute's (WRI) Water Risk Atlas tool 'Aqueduct';
(x) **'heatwaves'** means heat or hot weather that lasts for several days, as defined in the European Environment Agency's indicator assessment of 'extreme temperatures and health'.
(y) **'water scarcity'** means pressure on the renewable freshwater sources of a defined territory during a specific period, where the percentage of total water withdrawn is high (40-80%) or extremely high (greater than 80%) in the World Resources Institute's (WRI) Water Risk Atlas tool 'Aqueduct'.
(z) **'floods'** means overflows of large amounts of water beyond its normal limits, caused by increases in mean local sea levels which can be further increased by storm surges and tidal changes, as defined in the European Environment Agency's indicator assessment of 'Extreme sea levels and coastal flooding'.
(aa) **'coastal erosion'** is the process by which local sea level rise, strong wave action, and coastal flooding wear down or carry away rocks, soils and/or sands along the coast, as defined in the US government's Climate Resilience Toolkit.
(bb) **'wildfire'** is an unplanned fire that burns in a natural area such as a forest, grassland or prairie and which are often caused by human activity or a natural phenomenon, the risk of which increases in extremely dry conditions such as droughts, as defined in the European Environment Agency's indicator assessment of 'Forest fires'.

Table 4. Environmental factors

FACTOR	INDICATOR	METRIC
ENVIRONMENTAL FACTORS [239]		
Emissions	Total GHG emissions (broken down by scope 1, 2 and 3 carbon emissions)	Tonnes of CO_2e (see points (a), (b) and (c) above)
	Emissions of air pollutants	Weight in tonnes of air pollutants (see point (m above)
	Emissions of water pollutants	Weight in tonnes of water pollutants (see point (n) above)
	Emissions of inorganic pollutants	Weight in tonnes of inorganic pollutants (see point (u) above)
	Carbon footprint	Tonnes of CO_2 (see points (c) and (d) above)
	Fossil fuel sectors	% or total (see point (e) above)
	Reduction policies or initiatives on the use and production of fossil fuels	Presence/lack of reduction policies or initiatives in place on the use and production of fossil fuels (see point (e) above)
	Compliance with Paris Agreement targets	See point (f) above
	Reduction policies or initiatives on emissions	Presence/lack of reduction policies or reduction policies or initiatives in place on emissions (see points (a), (b) and (c) above)
Energy efficiency	Energy consumption intensity	In Gigawatt hours (GWh) (see point (g) above)
	Use of renewable sources of energy	% or total (see point (h) above)
		Presence/lack of initiatives to reduce the use of non-renewable energy (see points (h) and (i) above)
Water usage	Water consumption intensity	% or total - weight in tonnes of water consumption (see point (j) above)
Waste production	Production of hazardous waste	% or total - weight in tonnes of hazardous waste (see point (k) above)
	Reusability/Recyclability	% or total - weight in tonnes of non- recycled waste production (see point (l) above)
		Presence/lack of initiatives to reduce the production of waste (see point (l) above)

[239] Factors, indicators and metrics refer to the assessment of the counterparties, not the institution itself.

FACTOR	INDICATOR	METRIC
Biodiversity and ecosystems	Presence/operations (e.g. own, via value chain) in geographic areas impacted by soil degradation	% or total (see point (v) above)
	Presence/operations (e.g. own, via value chain) in geographic areas and industries that are particularly dependent on biodiversity and ecosystem services	% or total (see point (o) above)
	Presence/operations (e.g. own, via value chain) in protected areas or areas of high biodiversity value outside protected areas	% or total (see points (p) and (q) above)
	Operations (e.g. own, via value chain) affecting IUCN Red List species and/or national conservation list species	% or total (see points (p) and (q) above)
Environmental hazards	Presence/operations (e.g. own, via value chain) in areas likely to be affected by heatwaves	% or total (see point (x) above)
	Presence/operations (e.g. own, via value chain) in areas likely to be affected by water scarcity	% or total (see point (y) above)
	Presence/operations (e.g. own, via value chain) in areas likely to be affected by floods	% or total (see point (z) above)
	Presence/operations (e.g. own, via value chain) in areas likely to be affected by coastal erosion	% or total (see point (aa) above)
	Presence/operations (e.g. own, via value chain) in areas likely to be affected by wildfires	% or total (see point (bb) above)

Table 2. Social factors

FACTOR	INDICATOR	METRIC
SOCIAL FACTORS [240]		
Community/society	Relations with local communities (networks)	Establishment of business in rural and economically and socially underdeveloped areas
	Social impact of products and services	Products' potential to reach rural areas and groups of society where development gaps exist
Employee relationships/labour standards	Freedom of association and right to organise	Observation and implementation of due diligence policies on issues addressed by ILO fundamental conventions 1 and 2
	Forced labour	Observation and implementation of due diligence policies on issues addressed by ILO fundamental conventions 3 and 4
	Minimum age and child labour	Observation and implementation of due diligence policies on issues addressed by ILO fundamental conventions 5 and 6
	Equal representation	Average ratio of female to male board members
		Average ratio of females to males in total workforce
	Equal remuneration	Observation and implementation of due diligence policies on issues addressed by ILO fundamental convention 7
		Average gender pay gap
		Average ratio of the annual total compensation for the highest individual to the median annual total compensation for all employees (excluding the highest-compensated individual)

[240] Social factors have been grouped on the basis of the main stakeholders of the society with which institutions may interact, namely: society as a whole, employees, customers, and all stakeholders in regard to human rights and poverty. In addition, the fundamental conventions of the International Labour Organization (ILO) have been included in the list of factors. Factors, indicators and metrics refer to the assessment of the counterparties, not the institution itself.

FACTOR	INDICATOR	METRIC
		Ratio of annual total compensation for the highest compensated individual to the median annual total compensation for all employees (excluding the highest compensated individual)
	Discrimination	Observation and implementation of due diligence policies on issues addressed by ILO fundamental convention 8
		Number of incidents of discrimination (i) reported and (ii) leading to sanctions
	Human capital management and employee relations (training and development opportunities)	Share of employees attending training courses in a given year
		Frequency of performance assessment per employee
	Workplace health and safety	Rate of accidents
		Number of workdays lost to injuries, accidents, fatalities and illness
Customer relationships	Customer protection and product responsibility	Extent to which products are monitored once introduced on the market
		Extent to which product recall procedures are in place
		Number of incidents of product recalls/withdrawals
		Handling and degree of transparency on management's actions following product recalls/withdrawals
		Lack/presence of a supplier code of conduct
	Personal data security and privacy	Number/rate of data security incidents in which personally identifiable information (PII) was at risk
		Explanation/disclosure of policies and practices relating to user privacy
		Monetary losses (total amount in EUR) incurred as a result of legal proceedings associated with user privacy
		Degree of transparency on management's approach to identifying and addressing data security risks
	Rights of customers to obtain information about ESG factors	Percentage of significant product/service categories that comply with information and labelling that includes information on sourcing, content (i.e. substances that could have an environmental or social impact), safe use of the product or service, disposal of the product and environmental or social impacts

FACTOR	INDICATOR	METRIC
		Degree of transparency on the management's approach to marketing and labelling ESG-related information
		Publication of information on ESG performance (in the form of stand-alone reports or by integration into Annual Reports)
	Quality and innovation in customer relations	Number of customer complaint incidents
Human Rights	Contribution to human rights projects	Engagement in social projects aimed at supporting and advancing human rights issues in regions of concern
		Number of cases of severe human rights issues and incidents
		Presence/lack of processes and measures for preventing trafficking in human beings
		Presence/lack of human rights due diligence
		Presence/lack of a human rights policy
Poverty/famine	Contribution to poverty reduction	Engagement in poverty reduction/aid programmes
		Employment opportunities for economically less advantaged groups

Table 3. Governance factors

FACTOR	INDICATOR	METRIC
GOVERNANCE FACTORS [241] [242]		
Ethical considerations	Integrity of conduct/conduct frameworks	Alignment with the OECD Guidelines for Multinational Enterprises and UN Guiding Principles on Business and Human Rights
	Values and ethics	Alignment with the Charter of Fundamental Rights of the EU
	Bribery and corruption	Compliance with United Nations Convention against Corruption
		Identification of insufficient actions taken to address breaches in procedures and standards of anti-corruption and anti-bribery
		Convictions and violations of anti-corruption and anti-bribery laws (number of cases and amount of fines)
		Presence/lack of anti-corruption and anti-bribery policies
	Accountability/rule of law	Alignment with the Worldwide Governance Indicators (World Bank)
Strategy and risk management	Strategy implementation, operational execution and monitoring	Alignment with the OECD Guidelines for Multinational Enterprises and UN Guiding Principles on Business and Human Rights
	Internal controls and risk management policies and procedures	Alignment with the OECD Guidelines for Multinational Enterprises and UN Guiding Principles on Business and Human Rights
Inclusiveness	Discrimination	Gap between males and females or any other minority groups in the given region in education access and/or outcomes, representation in government positions and/or boards, salary income, etc.
		Lack of a diversity strategy in place (e.g. age, gender, minority groups)
		Percentage of employees and individuals in governance bodies as per the various diversity categories defined in GRI standard 405-1.

[241] Governance factors have been grouped across four main subheadings by identifying a common principal feature of the underlying factors, namely: ethical considerations, sound risk management structures, organisation and functioning of the management body and transparency. Factors, indicators and metrics refer to the assessment of the counterparties, not the institution itself.

[242] Note that the factor 'Systemic risk management', which is used in the Sustainability Accounting Standards Board (SASB), has not been included, as it is considered that the existing prudential framework has specific provisions to address the systemic risks of institutions.

FACTOR	INDICATOR	METRIC
Transparency	Observance of disclosures of information rules and practices	Reliance on high quality, broadly recognised national, EU-based or international frameworks when preparing non-financial statements, including disclosure of the framework chosen
		Compliance with Non-Financial Reporting Directive

Annex 2 Feedback received on the Discussion Paper and main changes in the report

The EBA discussion paper on ESG risk management and supervision, published for public consultation between November 2020 and February 2021, was broadly welcomed by stakeholders who acknowledged the financial impact of ESG factors and supported the introduction of new common definitions and a common framework for ESG risks. The integration of ESG factors and risks in institutions' and supervisors' frameworks was seen as justified, although respondents noted that this should not substitute the necessary public policy actions which should be the main driver for change. The main aspects were seen as covered and most respondents supported the non-prescriptive approach of the paper.

Cross-cutting comments concerned the challenges faced by institutions, particularly in terms of methodologies and data, which complicate quantification and forward-looking assessments. The positive aspects of ESG factors (opportunities side) was seen as under-represented. Some other horizontal requests concerned the need for clarity on: (i) the double-materiality perspective, (ii) the time horizons under consideration, as objectives and risk management methods would differ depending on which apply, (iii) the references to the EU taxonomy, in particular for risk management purposes, (iv) the scope of risks covered between climate-related, environmental, social and governance risks.

Most expectations appeared to respondents as achievable over time whilst some highlighted the need to overcome the data challenges and implement these requirements in a proportionate and gradual manner. A phase-in approach and supervisory dialogue as prior steps before implementation of hard requirements with quantitative implications was supported by most respondents. The need for coordination and consistency between the various (EU and international) initiatives was also flagged.

When deemed appropriate, comments received have led to adjustments in the EBA's proposed approach. This includes providing more clarity on the objectives pursued, i.e. the resilience of institutions in light of the potential financial materiality of ESG risks and more details on the regulatory timeline and proposal for a phase-in approach. The main changes by chapter include the following.

a. In Chapter 2, the list of existing frameworks has been elaborated upon and some of the provided definitions have been adjusted, in order to either bring them further in line with the Sustainable Finance Disclosure Regulation (SFDR) or to make them easier to understand. Clarification has been provided on how the report considers ESG risks to impact institutions, why it focuses on the impact of ESG risks through institutions' counterparties specifically, as well as on the 'outside-in' and 'inside-out' perspectives. The developments on liability risks have been merged into the sections on environmental, social and governance risks. More examples of

social and governance factors have been provided, as well as references to existing legislation, initiatives or industry practice. Additional explanations on how social and governance factors can translate into social and governance risks for institutions have been included.

b. In Chapter 3, additional challenges for the integration of ESG risks have been reflected. Changes in the methodologies section mainly relate to: i) better integration of investment firms; ii) strengthening the disclaimer on flexibility in the application of the methodologies; iii) further illustration of current practices. Other changes include more clarification on the climate risk stress test (tbc), highlighting additional challenges of ESG ratings, specific wording changes and clarifications throughout the text and in the tables (e.g. highlighting the specific focus on climate risk, clarification on linkages between ESG scores and financial risk, applicability of methods to risk management needs across different time horizons and clarifying that data challenges are relevant for all approaches).

c. In Chapter 4, the description of current practices has been complemented by new sources of information and proportionality and materiality aspects are further elaborated upon (e.g. role of the risk profile as fundamental driver). It has been further clarified that institutions remain responsible for setting their strategies, but should duly consider the impact of ESG risks taking into account different scenarios, including a long-term horizon of at least 10 years. With regard to management bodies and committees, it has been clarified that institutions may embed tasks and responsibilities related to ESG risks within their current structures, or decide to set-up a specialised ESG risk committee, but there is no mandatory requirement to have a specialised committee. Further, instead of having one individual member responsible for ESG risks, it is recommended to clearly allocate the tasks and roles related to ESG risks, including with a clear allocation of duties between the members of the management body. More details on EBA's stance on social and governance risks is now provided. It has also been clarified that, while challenges related to data availability and quantification of ESG risks are acknowledged, institutions should identify the gaps they are facing in terms of datasets and methodologies, and consider remedial actions, taking account of the ongoing developments in the field of ESG data and methods.

d. In Chapter 5, the report expresses a preference for the incorporation of ESG risks and factors into the existing elements of the supervisory review and further explains how the proportionality aspect will be taken into account, in particular in the context of the intensity of the SREP. The report now includes a proposal for a phase-in approach, starting with the inclusion of climate-related and environmental factors and risks in the supervisory business model and internal governance analysis, whilst encouraging financial institutions and supervisors to build up data and tools to develop quantification approaches. It has been clarified that supervisors and institutions alike should take at least a 10-year horizon, complementing a qualitative analysis with some Key Performance Indicators.

e. Finally, the language and references across the document have been adjusted to better incorporate investment firms, e.g. by adjusting the definitions provided (e.g. financial performance of assets in the definition of ESG risks), by defining the

counterparty as investee companies and clients as the corporates or private individuals to whom investment firms provide their investment services. A clear distinction between investment firms dealing on own account and investment services and activities other than dealing on own account has been made. The section on investment firms has been revised to clarify a number of points on how ESG risks can impact different types of investment firms.

f. Clarifications, adjustments and other wording changes have been implemented throughout the report.

With regard to the comments received on the EU taxonomy, it should be noted that the development of the EU taxonomy has a number of implications for the banking sector. By providing harmonised definitions of environmentally sustainable activities and in light of its potentially wide reach and impact, the taxonomy can support institutions from different perspectives in their approach to transitioning into a more sustainable economy and to identifying and managing environmental-related challenges. The taxonomy by and of itself cannot cover all needs and, as outlined in this report, institutions should consider a range of actions to appropriately deal with the impacts of ESG factors. As a classification table that does not provide a judgment on the financial performance of activities, the taxonomy has not been designed to solve all prudential issues related to climate and ESG risks, nor to force specific investment choices from regulated entities. Institutions will increasingly be expected to manage and disclose their environmental and climate-related risks across all (i.e. green and non-green) portfolios, based on the materiality of risks, and will further need to consider the transition pathways and adaptation strategies of their counterparties, even beyond a taxonomy-aligned or misaligned boundary.

Notwithstanding these limitations, the taxonomy is a cornerstone of the EU's initiatives on sustainable finance and institutions need to consider how to approach and make use of it, taking into account their strategic objectives and regulatory requirements. The EBA invites institutions to actively consider the implications of the taxonomy for their operations, emphasises that institutions under the scope of the Non-Financial Reporting Directive will have to disclose how and to what extent their activities qualify as environmentally-sustainable in accordance with the taxonomy, and further describes in the report how the taxonomy may be used as a supporting tool to classify exposures (e.g. the taxonomy delimits environmentally-sustainable activities and provide indications of the conditions under which economic activities are considered harmful to environmental objectives), design products, engage with clients and set strategic objectives and targets in line with institutions' risk appetite.

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