



BANCA D'ITALIA
EUROSISTEMA

**Survey on the extent
of integration of
climate and
environmental risks
into the
organizational
system of Less
Significant
Institutions (LSIs)**

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1 The survey

1.1 Introduction

In April 2022, the Bank of Italy published its first ‘Supervisory expectations for climate and environmental risks’ (the ‘Expectations’), in line with similar previous initiatives adopted by the European Central Bank (ECB) and other national supervisory authorities, and prepared a first set of non-binding indications for directly supervised banking and financial intermediaries on the integration of climate-related and environmental risks into their **governance and control systems, business models and strategies, organizational systems and business processes, risk management systems and market disclosures**.

When notifying the Italian banking system of the publication of the supervisory expectations, **the Bank of Italy urged intermediaries to examine and assess the relevance of climate-related and environmental issues to their own operations**¹ and design solutions that match the actual level of risk exposure based on the type, scale and complexity of their activities.

In the second quarter of 2022, the Bank of Italy conducted a first survey on the extent of integration of climate and environmental risks into the organizational systems of the Less Significant Institutions (LSIs) and took part in the ECB survey on Significant Institutions (SIs) with a sample of LSIs.²

1.2 Survey overview

The survey was conducted on 21 LSIs directly supervised by the Bank of Italy. The banks in the sample were selected to ensure broad diversification in terms of business model, size and geographical area in which the banks operate.³

The banks were asked to respond to a questionnaire consisting of four sections: (i) governance and risk appetite, (ii) materiality assessment, (iii) business model and strategy, (iv) risk management. The banks replied to the various questions based on a self-assessment of **the extent to which the ‘Expectations’ had been met, annexing company documentation in support** of their responses.

The responses were verified by the Bank of Italy based on the principles of progressive improvement and proportionality set out in the ‘Expectations’ and using the methods made available by the ECB; for each section, the respondents provided synthetic assessments on the drivers reported in the table

¹ Although the supervisory expectations focus on environmental issues, the intermediaries can also apply them to the broader category of ESG risks if they are relevant for their operations and provided that they comply with industry-specific legislation.

² Further details on the ECB survey are available at this link: [ECB sets deadlines for banks to deal with climate risks \(europa.eu\)](#).

³ Specifically, the sample included banks (both *popolari* and listed) offering traditional lending activities and specialist banks with a business model oriented mainly towards asset management.

below, choosing one of four possible scores to rate the level of alignment of their business practices with the expectations ('yes', 'mostly', 'partially', 'no').

The assessment was carried out bearing in mind the practices and processes implemented to monitor and control both physical and transition risks. Specifically, the former refers to the economic impact of the expected increase in natural events, which can be defined as 'extreme' or 'chronic';⁴ the latter refers to the economic impact of the adoption of legislation designed to cut carbon emissions and boost renewable energy, of new technology, and of changes in consumer preferences and market confidence.

Table 1
Survey sections

Sections	
Governance and risk appetite	<ul style="list-style-type: none"> 1.1 Board of Directors 1.2 Risk appetite 1.3 Remuneration policies 1.4 Organizational structure 1.5 Data governance 1.6 Reporting
Business model and strategy	<ul style="list-style-type: none"> 3.1 Business environment 3.2 Key Performance Indicators (KPIs) 3.3 Business model resilience
Materiality assessment	<ul style="list-style-type: none"> 2.1 Credit risk 2.2 Market risk 2.3 Legal and reputational risk 2.4 Liquidity risk 2.5 Strategic risk 2.6 Overall risk
Risk management	<ul style="list-style-type: none"> 4.1 Risk quantification 4.2 Mitigation measures 4.3 Capital adequacy 4.4 Risk management

Note: Expectation 12 (market disclosure) is excluded from the survey; Expectation 9 (market risk) and Expectation 12 (liquidity risk) are included only in part.

Frequent discussions were held with the intermediaries. The project was illustrated to the risk managers of the less significant institutions in an ad hoc meeting that took place on 14 April 2022. Regular calls were conducted during the survey to monitor the progress made in responding to it, answer any of the banks' questions and obtain further details on some of the replies to the questionnaire.

Between September and October 2022, each bank in the sample received feedback on the level of maturity of their initiatives, also in comparison with the other responding LSIs.

This report helps to **raise awareness across the banking system**, summarize the main findings of the survey and urge the banks' management and control bodies to **approve and implement action plans** to set out a gradual process of alignment with the expectations, defining the timeframes for adapting the main corporate policies and organizational and management systems in a consistent way.

⁴ Acute physical risks are driven by extreme weather events (such as floods, heatwaves and droughts) made more intense and frequent by climate change. Chronic physical risks, on the other hand, are driven by climate events that emerge over time (e.g. gradually rising temperature and sea levels, deterioration in ecosystem services and loss of biodiversity).

The initiatives adopted and planned by the intermediaries – including those that are not part of the sample – will continue to be examined and monitored within the ordinary supervisory dialogue to make sure that their practices are progressively brought in line with the expectations.

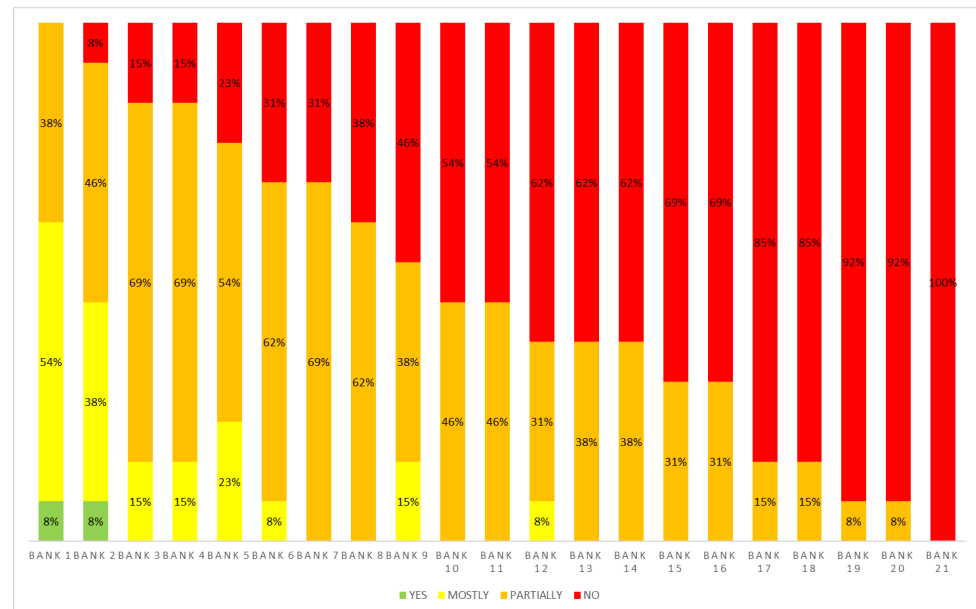
2 The status of the LSI system

2.1 Main findings

Apart from a few positive exceptions, the survey, which covered both transition and physical risks, showed that there is a low degree of alignment with the expectations but, at the same time, it revealed a widespread and growing awareness of the key role of this issue.

About 60 per cent of intermediaries received an unfavourable assessment for over 50 per cent of the drivers analysed. The remaining 40 per cent are more aligned, as they were quick to launch discussions and projects in this area. Furthermore, in most cases the solutions adopted and the practices observed are only 'partially' in line with the expectations.

Figure 1 - Degree of alignment with expectations. Overall results by bank



In general, larger LSIs have developed systemic and all-encompassing projects so far, while smaller banks, apart from a few exceptions, have put in place isolated initiatives and are broadly dependent on joint projects, some of which are about to be launched. In terms of business models, the intermediaries specializing in asset management have gained more experience; apart from a few positive exceptions, traditional commercial banks started the discussions and projects regarding climate-related and environmental issues with some delay.

The biggest problem is one of **availability of data and advanced data management systems**. The use of quantitative approaches in climate risk measurement is still rare and not really integrated; risk management processes are rather unstructured; Key Risk Indicators (KRIs) and Key Performance Indicators (KPIs) are not commonly used to express objectives.

A few good practices observed with regard to the various matters covered by the survey are illustrated in the **Annex** to this report.

2.2 Main findings by assessment area

Climate-related and environmental issues are now on the agenda of the boards of directors of virtually all the banks in the sample, with initiatives to adapt their organizational systems and internal rules and enhance their knowledge of the issue. **Larger gaps were reported in the following areas: (i) data governance strategies; (ii) integration of climate-related risks into the Risk Appetite Framework (RAF) and definition of KRIs; (iii) definition of a suitable framework for reporting to the Board; (iv) inclusion of climate-related risks in the remuneration policies and internal control systems.**

The main focus is on the difficulty in obtaining robust and reliable data, which has a crosscutting impact on all four areas, especially with regard to the proper identification, monitoring and management of climate-related risks. Only a limited number of banks have put in place, in some cases through external providers, comprehensive projects for the collection and management of climate and environmental risk data that are suitable to support the development of metrics for assessing these factors.

Consequently, the disclosure to governance and control functions of the overall exposure to environmental factors is also limited, if not entirely lacking.

The materiality assessment of climate-related risks is essentially based on qualitative assessments conducted on the basis of highly diversified levels of documentation and methodological soundness. **A residual share of banks did not carry out any assessments.**

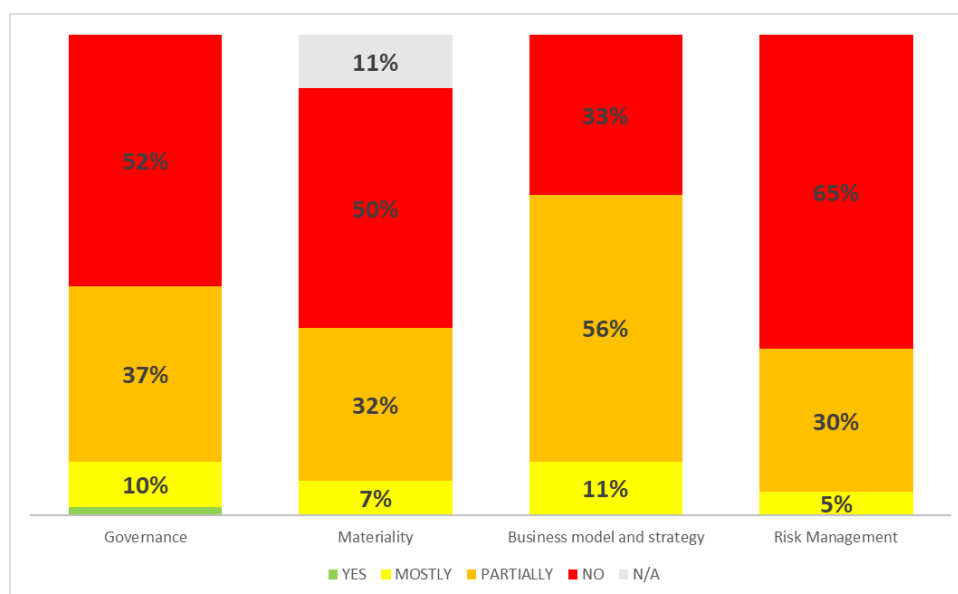
In line with the main business of the intermediaries in the sample, the traditional risk profiles for which a material impact of climate risk factors was assessed are credit and operational risks.

In most cases, the responding banks' strategic policies and plans to adapt their operations include remarks and projects to integrate environmental issues into their business models, though with different levels of detail and courses of action. The organizational measures reported tend to promote the establishment of centralized structures tasked with steering the process of bringing business practices in line with the expectations. Within the context of a broader discussion on the sustainability of their business models, the banks adopted a gradual approach towards incorporating environmental issues into their operations. **The different speed at which the banks have addressed the issue explains their different placement in terms of the integration of climate-related risks into their operational and sales strategies.**

The most significant delays were observed in the definition of a structured climate risk management framework, which is still not a very common practice; the main shortcomings regard **the incorporation of environmental factors into the risk limits system and internal capital adequacy assessment processes.**

Figure 2 summarizes the respondents' opinions broken down by survey section.⁵

Figure 2 - Degree of alignment with expectations. Overall results by thematic area



2.3 Alignment plans

The majority of banks reported that they either have launched or are planning initiatives, also by taking part in joint projects, to help gradually meet the expectations, especially with regard to the business strategy, credit risk and investment services. **However, virtually none of the intermediaries incorporated these initiatives into a structured plan approved by the Board of Directors** (i.e. work projects, managers and timeframes).

In most cases, the projects presented are of a general nature and they are in their preliminary development phase. It is worth noting, moreover, as reported by some intermediaries, that **issuing the expectations and conducting a first assessment contributed to raising the banking system's awareness and sped up the definition and implementation of ESG projects.**

In line with the principles of progressive improvement that inspire the approach to the supervision of climate-related risks, the Bank of Italy is urging the management bodies of all LSIs to approve a 'suitable action plan' to integrate climate-related and environmental risks into their decision-making processes and organizational and operational systems.

⁵ The percentages in Figure 2 are measured as the simple average of the degree of alignment of each parameter assessed in the four sections of the questionnaire. The "N/A" percentages expressed in the Materiality column refer to market risk, deemed negligible by several banks, given their business model.

3 Governance and risk appetite

Expectation 1

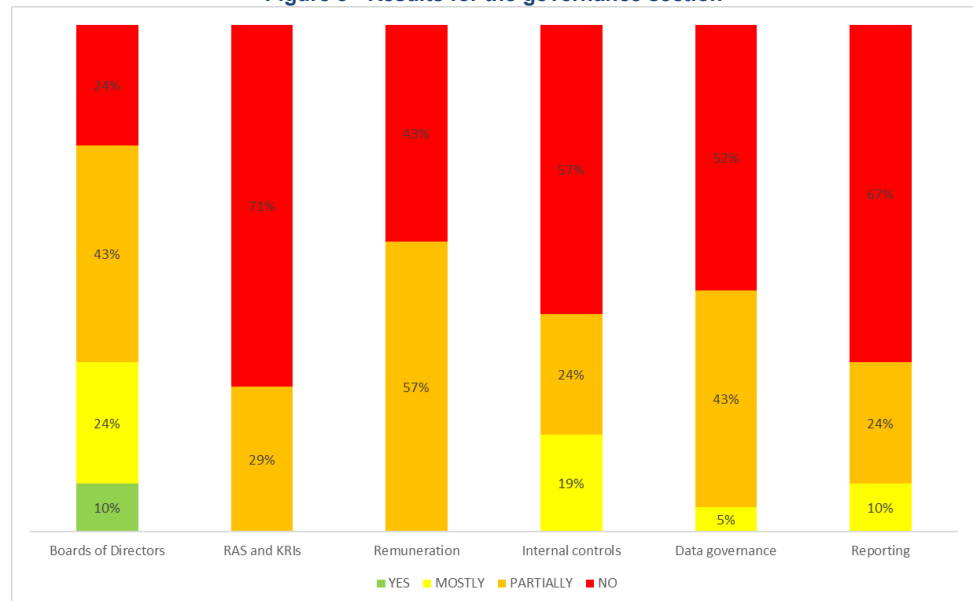
The management body of intermediaries plays an active role in steering the integration of climate-related and environmental risks into the corporate culture and strategy, into the corporate risk appetite framework (where applicable) and into the risk limits of the portfolios managed, consistently defining the main corporate policies and the adaptation of organizational and management systems. In this regard, the management body approves an appropriate action plan.

This section of the survey aimed to verify that:

- Environmental issues are included in the purview of the Board of Directors, also by allocating responsibilities to the directors, with special regard to the strategic planning process;
- Climate-related factors are included in the Risk Assessment System (RAS), together with a definition of the indicators and limits, and in the internal control system;
- A comprehensive approach is set up to govern data relevant for environmental risk management, identifying information needs and sources and integrating 'environmental and climate-related' information into the overall information capital, adapting the IT system where necessary;
- There is a framework for reporting to the Board, which can be used for monitoring the impact of climate-related risks on the business model, strategy and individual risk profiles.

Figure 3 shows the aggregated results of the individual profiles.

Figure 3 - Results for the governance section



The analyses conducted show that climate-related and environmental risk management is now in the purview of many boards of directors and is being integrated into their governance mechanisms.

In many cases, the rules of the Boards of Directors were amended to explicitly assign responsibilities regarding climate-related risks and, more in general, ESG factors. The importance given to these factors becomes apparent also from the frequent establishment of sustainability sub-committees dedicated to sustainability issues. Despite a rather widespread awareness that there is a knowledge gap, **not all banks put in place structured induction programmes**

for the members of the board, while climate and environmental knowledge was included in the **assessment of the collective suitability of the Boards of Directors** only by the most forward-looking banks.

Expectation 3

The management body adapts the different interventions on the organization and on operational processes to address climate-related and environmental risks in a manner that is consistent with and proportionate to their materiality.

With regard to the **organizational structure**, the most forward-looking entities have also expanded the competences of their corporate functions with a view to monitoring sustainability issues, and **there is a tendency to place new organizational figures in charge of coordinating the various initiatives**, which are mostly crosscutting.

The organizational choices must take into account the bank's maturity in the integration of ESG factors into its risk management and governance paradigms, as well as the strategy pursued and the Risk Assessment Framework (RAF) as a whole. Against this backdrop, the intermediaries' management bodies have full autonomy in deciding whether to adopt a centralized approach, establishing an ad hoc structure that serves as a reference point for all issues relating to sustainability, or a decentralized one, in which the management of sustainability issues is spread over the various units involved.

The growing awareness of environmental issues is reflected also in the **promotion of 'green' internal practices for ongoing operations**, aimed at reducing paper and energy consumption – monitored also through specific quantitative targets⁶ – and of sustainable mobility for the banks' employees (e.g. car sharing initiatives, renewal of the corporate fleet).

Expectation 5

Intermediaries take action to create a comprehensive, high-quality database for climate-related and environmental risk profiles integrated into an information system suitable to support the development of metrics for assessing climate-related and environmental risks.

Despite the progress made, some actions are still in their initial phase: (i) data governance strategy; (ii) integration of climate-related risks into the Risk Appetite Framework (RAF) and definition of Key Risk Indicators (KRIs); (iii) definition of a suitable framework for reporting to the Board; (iv) inclusion of climate-related risks in the remuneration policies and internal control systems.

The availability of non-financial data and information on the climate and environmental profiles of borrowers or investee companies is a fundamental prerequisite for measuring the exposure to climate-related risks and their actual integration into the risk governance and management frameworks. Data collection can be especially challenging for less significant institutions, given the limited availability of non-financial information on small and medium-sized enterprises (SMEs), which are their main customer base.

In this regard, besides some objective difficulties, **there have been widespread delays in the implementation of an overall strategy for the development and governance of non-financial data**. There are a number of promising initiatives to allow intermediaries to autonomously collect information from their customers, but they require better integration into the company's procedures, including adapting the IT systems, where necessary, to optimize the management of sufficiently granular non-financial data and of the overall wealth of corporate information. When using external data providers, **there is ample room for improvement in the drawing up of internal guidelines aimed at guaranteeing full awareness**

⁶ The KPIs observed include: CO₂ emissions/economic value generated; percentage of renewable energy used/total; annual energy consumption; grams of paper used per customer.

of the characteristics, quality and limits of the data collected before using them.

Only 5 per cent of intermediaries put in place all-encompassing data governance projects to create a comprehensive, high-quality database for climate-related and environmental risk profiles integrated into an IT system suitable to support the development of metrics for assessing these factors, with regard to both physical and transition risks. Several banks autonomously started or planned basic data collection processes by submitting questionnaires to the customers during the loan granting process or by drawing on external providers. Some banks – especially smaller ones – expect useful support to come from **some joint initiatives**.

Overall, there is a need to **develop a wealth of information containing elementary data that are more granular and forward-looking** (at the counterparty, instrument or asset level) to fully understand the exposure to the risks arising from climate change.

Consequently, the **actual integration of climate-related risks into the RAF and internal risk reports has proved mostly insufficient**. As a matter of fact, only 30 per cent of banks have identified and started monitoring a first set of rather simplified environmental KRIs and set up a framework for reporting to the Board of Directors. Nonetheless, some intermediaries plan to incorporate specific climate-related risk indicators into their next RAF update.

Similarly, the integration of climate-related risk targets into the remuneration policies (57 per cent of the sample started to conduct the first assessments) **and internal control systems** (43 per cent of the sample started to update their corporate policies) **is still not a universal practice**.

As for the remuneration policies, **the financial intermediaries are starting to expand the goals on which the variable component depends**, setting internal green targets (e.g. level of cooperation to reduce the firm's environmental impact, use of sustainable means of transport), as well as targets connected with investment and/or funding (e.g. green bond issuance, placement of green financial products or granting of ESG-compliant loans). This change is in line with the expectation that remuneration policies will integrate the quantitative targets with qualitative ones designed to reward how financial performance is achieved.

As for the **internal control functions**, it is rare that the Compliance function adopts a structured and comprehensive approach to determining the degree of alignment with certain regulations (e.g. SFDR Regulation; European Banking Authority (EBA) guidelines on ESG risk management and supervision; Markets in financial instruments Directive II - MiFID II / Insurance Distribution Directive - IDD with regard to sustainability matters). Similarly, the assessments of portfolios for compliance with the sustainability policies drawn up by the bank (e.g. composition of the target portfolio, exclusion of specific types of companies or sectors) carried out by the Risk Management function are seldom systematic. At present, the Internal Audit function is involved only marginally in the development of the various projects and solely in an observer/advisory capacity.

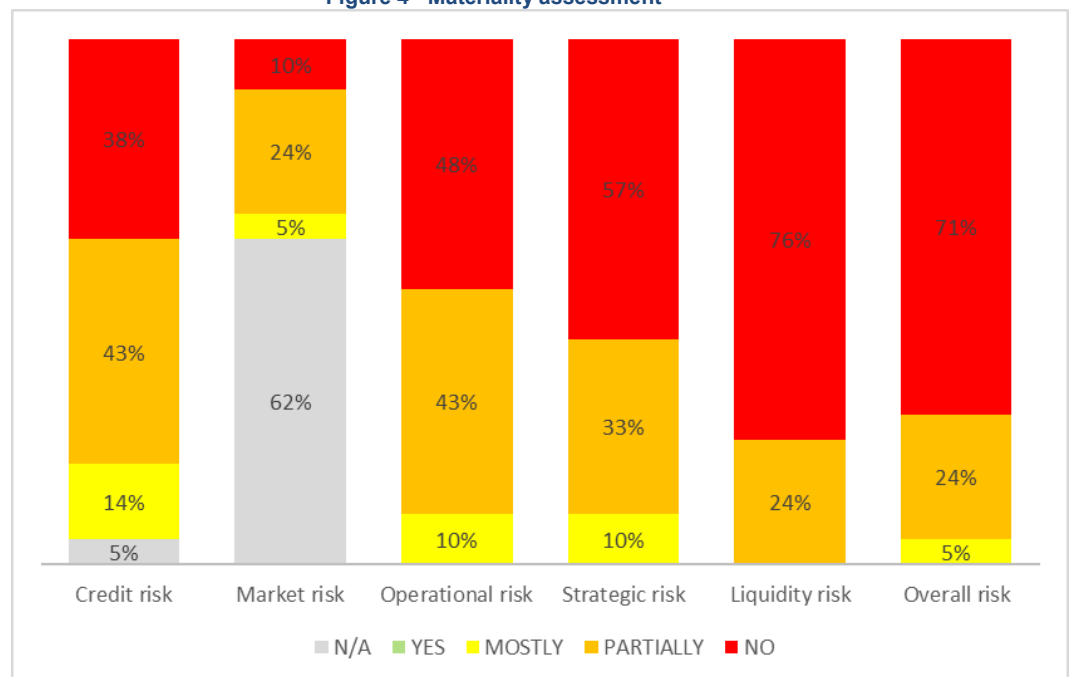
4 Materiality assessment

Materiality is defined as the ability of climate and environmental factors to influence the sustainability of current and future corporate returns. The expectations require intermediaries to assess the materiality of each type of traditional risk based on the principle of proportionality and taking into account, among other things, their business models and the complexity of their operations.

The survey aimed to verify whether the banks had properly assessed the materiality of the impact of climate and environmental factors on credit, market, operational, strategic, liquidity and overall risks.

The study found widespread delays in the design of structured and comprehensive processes, as shown in Figure 4.

Figure 4 - Materiality assessment



A total of 16 banks began a first assessment of the impact of climate-related factors on the most significant risks to their business models (mainly operational and credit risks), while two intermediaries conducted materiality assessments on all the risks; the remainder of the sample did not carry out any materiality assessments at all.

When an initial materiality assessment was conducted, this showed that the alignment with the expectations is often partial, as it is **limited to a qualitative assessment and/or takes into account only some physical and transition risk factors, mainly because of the lack of data.**

The assessment approach often depends on external ESG rating providers that assign scores to the loan and securities portfolios. Only a few banks started measuring the carbon intensity of their loan and investment portfolios, by assigning to each counterparty the average emissions of their business sector; estimates of

the potential impacts of adverse scenarios, especially with regard to credit risk, are also rarely calculated (see Chapter 6).

Although there is no structured and documented approach, **a materiality assessment of climate-related risks is implicit in the various projects and initiatives put in place.** Specifically, most projects focus on credit risk, which seems to imply that the materiality assessment of the impact of climate factors on this type of risk is built on an experiential basis. Similarly, several banks incorporated the possible impact of climate events on business continuity, acknowledging their role in operational risk management. Finally, the banks' widespread tendency to incorporate sustainability issues into their business strategies suggests an initial materiality assessment of climate factors in strategic risk appraisal (see Chapter 5).

5 Business model and strategy

Expectation 2

In order to ensure the resilience of their business model and guide its development prospects, in drawing up and implementing their business plan, intermediaries identify climate-related and environmental risks that could affect the business environment, understanding and measuring their potential impacts.

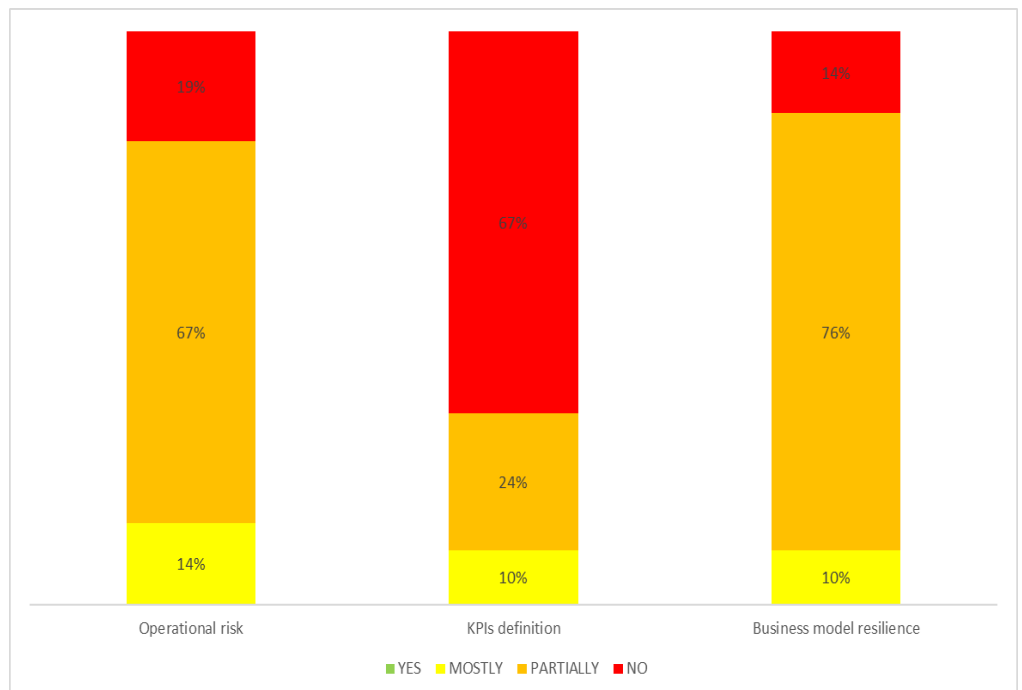
This section of the survey aimed to verify, specifically, that:

- The impacts of climate-related and environmental risks on the business environment are monitored;
- Green KPIs are identified in the strategic plans;
- Strategic initiatives are designed to ensure the resilience of the business model in the short, medium and long run.

The majority of the intermediaries started their **first assessments** of the impact of climate-related risks on their business, identifying a few initial strategic actions, but they are still not fully in line with the supervisory expectations.

The best results (Figure 5) are observed for the first and third items, while **the critical issues described earlier with regard to the quantitative measurement of ESG mean that performance indicators are still rarely adopted** (not available for 67 per cent of the sample).

Figure 5 - Business model and strategy



More specifically, **around 80 per cent of the intermediaries in the sample carried out an analysis of the legislative framework and competitive landscape to identify the short- and medium-term actions necessary to bring their processes, policies and strategies in line with the expectations.** With regard to the legislative framework, the following laws and regulations were examined: legislation arising from the implementation of the Paris Agreement, the European Green Deal and the EU Commission's Action Plan; the EBA guidelines

and the ECB expectations on the integration of climate-related and environmental risks into the banks operations; the EBA guidelines on loan origination and monitoring.

The analyses carried out on the competitive landscape made it possible to **map any climate risk factors that could affect the macroeconomic and sector scenario in which the banks operate** (e.g. growing exposure of Italy and/or of certain business sectors to adverse climate events), as well as **the business areas/corporate processes that are potentially more exposed to those risks**. In some cases, the LSIs conducted stakeholder engagement surveys to learn about their customers' expectations on ESG development.

For around 85 per cent of the sample, these analyses were translated into a **first set of strategic actions aimed at fostering the resilience of their business models**. These actions almost always received an assessment of 'partially aligned' (76 per cent of the sample), since these are often 'broader considerations which have not been translated into quantitative performance targets yet. Banks seemingly intend to intervene mainly on their core business areas, i.e. the provision of investment services in the case of asset managers and credit risk in the case of traditional intermediaries, fostering their customers' ecological transition.

The initiatives carried out or planned include, but are not limited to: placement of ESG-compliant asset management products; purchase of tax credits for the energy upgrade of buildings; sale of insurance policies covering physical risk; gradual divestment from firms whose turnover depends significantly on coal.

KPIs, identified only by one third of the sample, generally refer to the carbon footprint of the resources managed on behalf of the customers (for asset managers) or of the loan portfolios (for traditional banks) or securities portfolios. In some cases, these indicators refer to the banks' operations (e.g. level of emissions, energy consumption, etc.).

Sustainability targets suitable for the plan's timeframe increase the banks' ability to monitor and maintain the long-term resilience of their business models, and, in case of unjustified misalignments, promptly identify the need to take actions to mitigate potential long-term impacts.

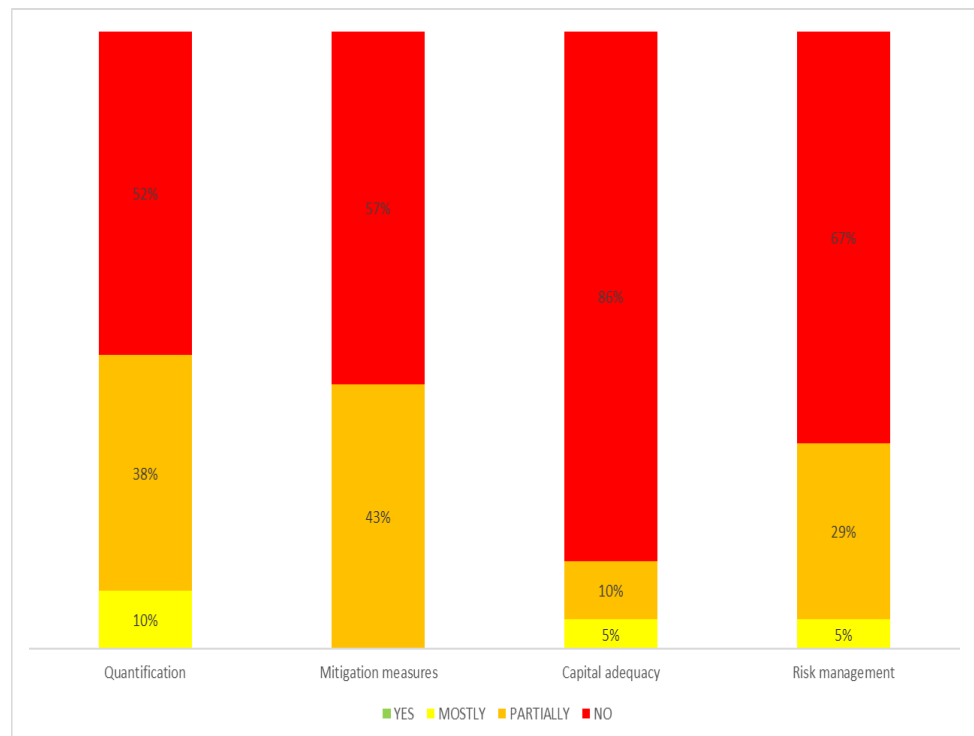
6 Risk management

This section of the survey aimed to verify the practices adopted in the following fields:

- Quantification of the exposure to climate-related and environmental risks;
- Establishment of safeguards to mitigate exposure to climate-related and environmental risks;
- Factoring climate-related and environmental risks into the capital adequacy assessment;
- Inclusion of climate-related and environmental risks in the risk management framework.

Risk management is lagging farther behind as, for each field analysed, at least 50 per cent of the sample did not draw up any specific practices (Figure 6).

Figure 6 - Risk management



Expectation 4

The intermediaries carry out a mapping of the events that could occur as a result of climate and environmental risks (physical and transition) risks and consequently integrate the risk management system, identifying the risks that would be potentially affected and the implications of a prudential nature.

6.1 Risk management framework

LSIs have started to consider climate-related physical and transition risk factors among the drivers potentially leading to the emergence of traditional risks (e.g. credit, market and operational risks), also by updating their risk taxonomy and corporate policies: **however, less than 50 per cent of banks**

developed a quantitative approach, which is necessary for the identification of monitoring indicators to be included in the RAF.⁷

As illustrated above, misalignments can be linked to the scarce availability of quantitative materiality assessments. **The gradual development of databases, to be integrated into suitable IT systems, should lead to an improvement in the measurement, management and monitoring of ESG factors.**

Expectation 6

Based on adequate materiality analyses, banks incorporate climate-related and environmental risks into their internal capital and liquidity adequacy assessment processes by integrating the risk limits system.

Climate-related and environmental risks still bear little weight in the internal capital adequacy assessment (ICAAP) processes: none of the banks in the sample quantified the impact on traditional risks for ICAAP purposes and only three banks drew up an initial ESG stress testing framework, limited to credit and strategic risk. These banks took into account physical and/or transition risks, also based on the methodological approaches defined in the ECB climate stress tests.

The ongoing work on the collection of reliable data and the development of quantification methodologies are expected to facilitate the inclusion of climate-related risks in the ICAAP document, for which specific work was started under several joint projects.

Expectation 7

In view of the highly dynamic nature of climate-related risks, intermediaries draw up a programme for the regular review and updating of the decisions taken on methodologies and tools for assessing climate-related risks in order to maintain their continued validity and significance.

In this context, it is worth noting that, **given the long-term nature of climate-related risks, forecasting tools (such as scenario analysis and stress tests) have proved to be especially useful in identifying these risks, also with a view to redefining business strategies.** The supervisory expectations point out that *'climate-related and environmental risks can produce their effects beyond the typical time horizon of strategic planning, e.g. in line with the public policy push for the transition to a more sustainable economy.'*

Therefore, intermediaries that do not rely on forecasting tools might not yet be able to fully comprehend the risks to the resilience of their business models: for instance, they might lack the capacity to identify the risks arising from their own portfolios not being in line with the EU's climate transition benchmarks.

6.2 Focus on credit and operational risks

6.2.1 Credit risk

Expectation 8

Intermediaries integrate climate-related and environmental risks into all phases of the credit process, adapting their lending policies and procedures in line with the EBA GLs on loan origination and monitoring (EBA/GL/2020/06).

Some banks have started, or are planning, to integrate counterparty climate risk exposure into their loan origination and monitoring processes.

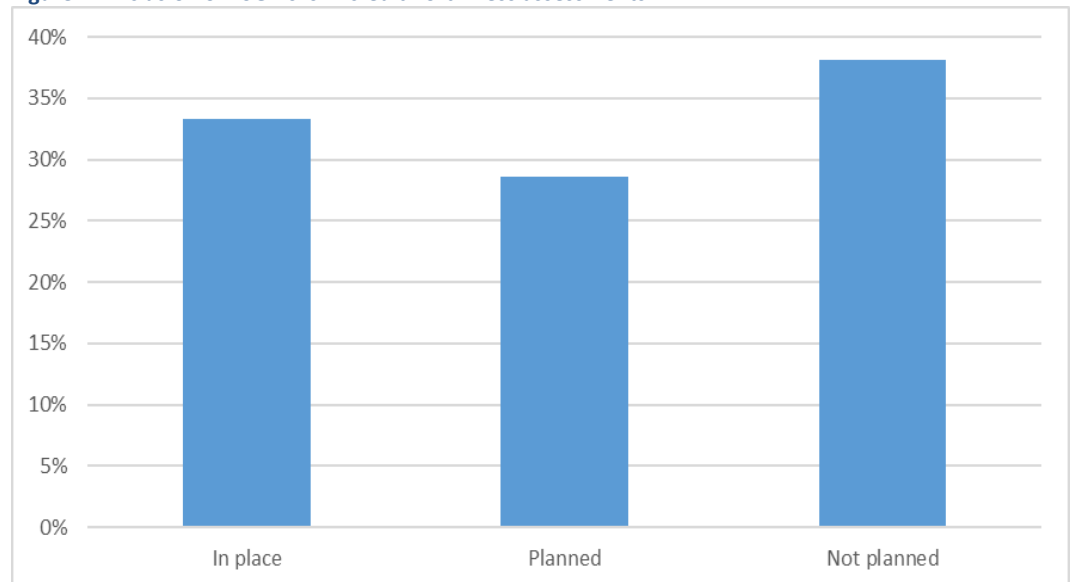
More specifically, one third of intermediaries updated their corporate policies by adding climate-related risk factors to their counterparty creditworthiness assessment drivers. For example, they drew up exclusion lists of counterparties to which loans cannot be granted because they operate in sectors with a high environmental impact or for which the loan origination decision is subject to a positive assessment that the loan is compatible with environmental sustainability

⁷ The indicators used include, but are not limited to: the carbon footprint in direct active portfolio management; the average ESG exposure score of own portfolios and ESG assets under management; and the value of collaterals in high landslide geographical areas and in high hydrogeological risk areas.

goals. Among the intermediaries that have identified climate risk indicators, one bank is set out to adopt a risk-adjusted pricing model that takes into account also an indicator based on social and environmental factors.

Among the remainder of the intermediaries, six have planned changes to their credit policies along the lines of those described above, while eight have not yet planned any actions of this sort.

Figure 7 - Inclusion of ESG risks in creditworthiness assessments



Questionnaires to be submitted during loan origination are the main tool used to collect data for ESG rating. In some cases, the questionnaires are based on proprietary qualitative and quantitative methodologies, but more frequently they are prepared using external providers’ software applications.

The most experienced banks envisage rating overrides based on sustainability assessments. Energy performance certificates in real estate property appraisal and financial products designed based on the environmental characteristics of the collaterals are becoming more and more common; this also affects the pricing differentiation of financial products. **Conversely, collateral physical risk is rarely appraised.** Furthermore, so far these initiatives have been integrated into the corporate procedures and credit software applications only to a limited extent.

Expectation 10

Institutions consider the possible impact of climate-related and environmental risks on business continuity as well as on their reputation, also taking into account the possible involvement in legal disputes.

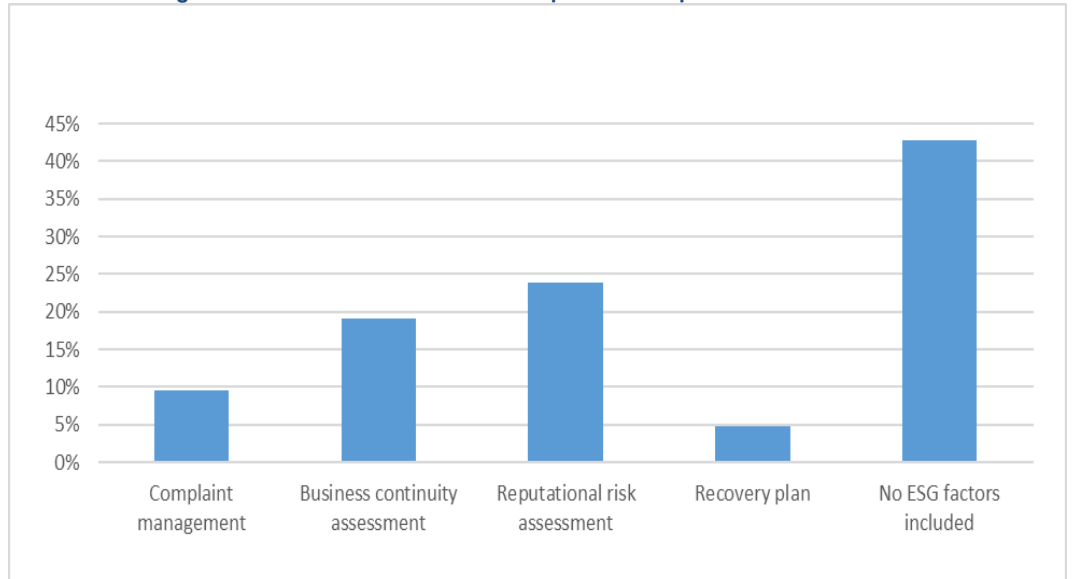
6.2.2 Operational/reputational risk

Climate-related and environmental risks are factored into operational risk management only to a limited extent.

Some banks (5 out of 21) included ESG factors in their **reputational risk assessment** by, for example: i) submitting questionnaires to stakeholders to assess the bank’s perceived reputation; ii) monitoring the relevance of ESG issues in complaints and disputes with customers.

Other intermediaries (4 out of 21) included ESG factors in the disaster recovery scenarios within their **business continuity assessment**; one intermediary included these factors in the operational risk scenarios within their Recovery Plan.

Figure 8 - Inclusion of ESG factors in operational/reputational risk



7 Annex

Best practices observed

Introduction

This Annex shows, for each section of the questionnaire, the main **best practices** identified by the survey, which may set examples for gradually aligning with the expectations published by the Bank of Italy.

These best practices are described merely by way of example; therefore, full alignment with supervisory expectations is not warranted. Each intermediary can thus assess the consistency of a specific solution with their business model, governance system and organization.

Each section of the Annex provides some references to the supervisory expectations (in black) and illustrates the corresponding best practices (in blue), which are listed in Table 1.

Please note that the Bank of Italy may integrate any new best practices into its updated supervisory expectations.

Table 1 - List of best practices

Section	#	Best practice
1 Governance and risk appetite		
1.1 Role of the Board of Directors	1.1.1	Updated duties of the boards of directors and their integration into governance systems
	1.1.2	Organizational structure
	1.1.3	Professional skills of the Board of Directors
1.2 Risk assessment framework, key risk indicators and reporting	1.2.1	RAF, KRIs and reporting
1.3 Data governance	1.3.1	Data acquisition process
1.4 Internal controls	1.4.1	Checks by internal control functions
1.5 Remuneration policies	1.5.1	Introduction of green indicators into remuneration policies
2 Materiality assessment		
	2.1	Mapping of ESG factors that may have an impact on traditional risks
	2.2	Materiality assessment of climate-related and environmental factors in credit risk
	2.3	Materiality assessment of climate-related and environmental factors in operating, legal and reputational risks
3 Business model and strategy		
3.1 Business environment	3.1.1	Business environment analysis – transition risk
	3.1.2	Business environment analysis – climate emergency
3.2 Business model resilience and KPIs	3.2.1	Strategic initiatives in the industrial plan
	3.2.2	Quantitative performance indicators
4 Risk management		
4.1 Risk management/mitigation	4.1.1	Own portfolio risk management
4.2 Capital adequacy	4.2.1	Stress tests

1. Governance and risk appetite

1.1 Role of the Board of Directors (Expectations 1 and 3)

The growing importance of climate-related and environmental risks requires management bodies to assess how these must be integrated into decision-making processes and into organizational and operational frameworks through ad-hoc action plans.

For a board of directors to comply with supervisory expectations, each financial intermediary should focus on the following areas, among others:

- Skills, including any board-specific training initiatives;
- Roles and responsibilities, i.e. assigning specific roles and responsibilities to board members and/or to existing or new sub-committees in terms of climate-related and environmental risk management.

From an organizational point of view, the board will clearly identify the climate-related and environmental risk units, outline their mandate and update their key policies and procedures. Under this respect, organizational measures (in terms of centralization and/or decentralization) must be consistent and commensurate with climate-related and environmental risk materiality assessments, also based on the business environment and strategy, as well as the Risk Appetite Framework (RAF).

Updated duties of the boards of directors and their integration into governance systems (1.1.1)

A number of intermediaries amended their corporate governance plans, Board and sub-committee regulations to include sustainability mandates and integrate the potential impact of climate-related factors into the discussions of individual risk categories. In some banks, for instance, roles and responsibilities have been assigned as follows:

- The Board of Directors is in charge of drawing up and approving risk management policies, which specifically include sustainable finance goals and the ESG factors to be integrated into corporate decision-making processes, as well as setting operational and supervisory guidelines;
- The Control and Risk Committee supports the Board in its steering function as well as in strategy execution, based on ESG considerations;
- The Credit Committee conducts preliminary assessments, performs advisory functions and plays a proactive role in relation to lending. In fulfilling its duties, it specifically takes into account ESG factors.

Other organizations have set up sustainability sub-committees.

Organizational structure (1.1.2)

Our survey finds that there are different practices:

- In some organizations, ESG projects are coordinated by a central unit reporting directly to the Board and led by an external expert;

- Other banks have adopted a blended approach and set up an office that, in addition to its coordination role, assigns specific responsibilities to other offices;
- Lastly, a smaller number of intermediaries have distributed ESG responsibilities across business units.

The assignment of ESG duties to a central office and/or to existing business units was formalized by updating internal regulations and key corporate policies, including those for lending, investment and private banking services; some banks have stated their commitment to environment protection in their Code of Ethics.

Professional skills of the Board of Directors (1.1.3)

Some banks are investing in sustainability awareness by offering induction programmes on ESG topics for members of the Board of Directors and the Board of Auditors, top managers and a large number of employees.

In its document on the composition of the Board of Directors and the Board of Auditors, one of the banks in the sample specifically included environmental proficiency (including regulations, financial aspects, investment activity) among the professional requirements for appointment to the boards. The document mentions, among other things, the following areas:

- ESG, climate change and decarbonization;
- EU Taxonomy for Sustainable Finance;
- Renewable energy and energy efficiency;
- Environmental certification and its legislative framework;
- Organic farming, biodynamic agriculture, sustainable farming;
- Environmental impact measurement.

1.2 Risk assessment framework, key risk indicators and reporting (Expectation 1)

The Board of Directors identifies an appropriate reporting system for climate-related and environmental risks, setting measurable and quantifiable KPIs and KRIs to monitor and assess progress towards the goals.

Where no sound or consistent quantitative metrics are available, the reporting system will draw on qualitative information to provide the Board with a reliable picture of climate-related and environmental risks.

RAF, KRIs and reporting (1.2.1)

A limited number of intermediaries have identified and included in the RAF ESG-specific indicators, mostly relating to credit, operational risks and investment services (see the table below; for KPIs, see Chapter 2).⁸

⁸ See Chapter 2 for further details on some of the above-mentioned indicators on materiality assessment.

Table 2 - Examples of quantitative risk indicators

Scope	Key risk indicators
Credit risk	Average ESG credit score of the credit portfolio
	Exposure to high transition risk sectors and carbon intensive industries (green asset ratio)
	Value of real estate collateral in high landslide risk areas and high hydrogeological risk areas
	Share of assets used as collateral in areas exposed to high landslide and hydrogeological risks
	Share of transition risk assets used as collateral
Operational, legal and reputational risks	Own CO ₂ emissions
	Sustainability rating from an external provider
	Brand reputation
	ESG litigation and complaints
	Staff turnover (in connection with social responsibility)
Investment services	Carbon footprint of companies included in own securities portfolios
	Green investments as a share of total assets under management

In some cases, the RAF contains only a monitoring threshold for exposure to climate risks, as captured by an indicator; in others, it also provides goals in terms of risk appetite.

Reports on any changes in the risks mapped in the RAF and on progress in the industrial plan, with the corresponding KRIs and KPIs, are submitted to the Board of Directors, usually on a quarterly basis. In addition, more virtuous banks issue specific reports on their credit risk and operations showing, for instance, loans with a positive impact on the environment and progress in cutting direct emissions (scopes 1 and 2).

1.3 Data governance (Expectation 5)

The availability of reliable, exhaustive, comparable and granular data on climate risk is essential for intermediaries to wisely manage their physical and transition risks.

Intermediaries must put in a considerable effort to collect and store data, including through constructive dialogue with their counterparties.

When resorting to external data providers, intermediaries should set thorough guidelines to fully understand the nature and quality of the data (e.g. in terms of internal responsibilities, analysis of data construction and proxies, sample testing, benchmarking analysis).

Data acquisition process (1.3. 1)

Faced with significant gaps in the development of a data governance strategy, some intermediaries have started to feed proprietary databases.

The main sources are currently external ones, e.g. private providers or public databases, especially for loan and securities portfolios. The most virtuous LSIs

have started to systematically collect some data from customers applying for loans through a questionnaire covering, among others, the following areas: use of recycled raw materials, environmental investment, renewable energy and energy efficiency, emissions, streamlining of water resource management and good environmental practices.

For more details on the topic of data, please refer to the paragraphs on materiality assessment and risk management.

1.4 Internal controls (Expectation 3)

The Board of Directors ensures that climate-related and environmental risks are incorporated into the assignments and operations of internal control functions.

Checks by internal control functions (1.4.1)

Best practices include updating Risk Management, Compliance and Internal Auditing policies and adding ESG assessments to the respective action plans, such as, for instance:

- Checking compliance with sustainability regulations, e.g. gap analysis on the degree of alignment with Commission Delegated Regulation (EU) 2019/2088 (a.k.a. SFDR) and EBA guidelines on ESG risk management and supervision; a risk assessment covering compliance with MiFID II/IDD regulations governing sustainability and ESG sustainability measures;
- Extending ordinary audits on remuneration and incentive schemes and on the ICAAP report to ESG risks and factors, when included in these documents.

1.5 Remuneration policies

Remuneration policies and practices can promote behaviour that is consistent with the corporate approach to climate-related and environmental risks. To encourage this kind of behaviour, variable remuneration is tied to the achievement of climate-related and environmental goals, based on measurable and quantifiable indicators.

Integration of green indicators into remuneration policies (1.5.1)

In the policies of some LSIs with greater data checking capabilities, the variable component is also tied to the achievement of ESG targets with reference to the bank's operations or to lending and funding policies, as listed in Table 3.

Table 3 - Examples of indicators used to determine variable remuneration

Scope	Indicators
Environmental impact	Contribution to reducing the bank's environmental impact (e.g. consumption of electricity, paper, etc.)
	Use of sustainable transport
Fund-raising, lending and investment services	Green bond issuance
	Placement of green financial products
	Granting ESG-compliant loans

2 Materiality assessment (Expectations 1 and 3)

The Bank of Italy expects financial intermediaries to be able to assess the materiality of climate-related and environmental risks, whether they are physical or transition risks, that may have repercussions on the business environment.

Materiality, defined as the ability to influence the sustainability of current and future returns on their own as well as on third-party portfolios, must be measured on a proportional basis, taking into account the complexity, risk profile and type of business model.

For example:

- Higher vulnerability to physical risks in some geographical areas (e.g. hydrogeological risk areas) or industries (e.g. agriculture) may result in lower counterparty credit ratings (e.g. PD and LGD trends);
- Growing investor awareness of climate-related and environmental issues could increase reputational risks stemming from allocation decisions that are not in line with stakeholders' expectations, as well as legal risks associated with reckless environmental behaviour or greenwashing.

Mapping of ESG factors that may have an impact on traditional risks (2.1)

Some intermediaries have launched new procedures and methods to assess the impact of climate-related (physical and transition) risks on traditional business risks. Sometimes developed with the input of external advisors, these approaches are currently based mostly on qualitative parameters. They first identify ESG factors that can have a significant impact on traditional risks.

More specifically, one of the intermediaries in the sample adopted the approach developed by the Intergovernmental Panel on Climate Change (IPCC) for identifying climate-related risk factors based on hazard, exposure and vulnerability. The internal materiality of ESG factors was assessed considering how often they can influence traditional risks, based on the correlation between relevant ESG topics, conventional risks and corresponding safeguards (see Figure 1).

Figure 2 - Correlation between ESG factors and traditional risks



For instance, climate-related and environmental factors are deemed to affect the following:

- Credit risk, in terms of the loss in value of financial or real estate guarantees (e.g. any damages from extreme events may have an impact on the loan to value ratio and, indirectly, on the probability of default; for property located in adjacent areas and exposed to extreme events, the impact on the concentration risk was considered as well);
- Operational risk, in terms of the potential effects of environmental (e.g. natural events, use of energy), social (e.g. human resources, suppliers, technological change) and governance factors (e.g. corporate integrity), as well as the negative repercussions on business continuity for both the bank and the companies it invests in, with the resulting share depreciation;
- Reputational risk, in terms of the bank's sustainability awareness as perceived by its customers and/or third parties;
- Market risk, which may be heightened by sustainability factors, particularly for investments in financial and corporate assets, where ESG litigation or poor ESG performance (e.g. working conditions, cybersecurity, waste production) may result in declining returns;
- Strategic risk, due to a failure to develop and distribute products based on ESG considerations, or to develop environmentally-friendly funding solutions.

Materiality assessment of climate-related and environmental factors in credit risk (2.2)

One of the intermediaries in the sample conducted a massive survey of its credit portfolio in terms of ESG score, also based on data on exposure to natural risks from various institutional sources, such as the Italian national institute of statistics (*Istituto nazionale di statistica*, ISTAT), the Italian national institute of geophysics and volcanology (*Istituto nazionale di geofisica e vulcanologia*, INGV), the Italian national institute for environmental protection and research (*Istituto superiore per*

la protezione e la ricerca ambientale, ISPRA) and the Ministry for Cultural Heritage. This analysis covers physical risk, with a focus on the geographical area, type of counterparty and type of investment funded.

For the environmental factor, the average of the hydrogeological and seismic risk indices was used as an indicator. The hydrogeological risk index was built on flooding and landslide risk indicators, based on data from the ISPRA report for each Italian municipality. The seismic risk was quantified using an indicator ('Highest value of the peak ground acceleration in the grid points falling within the municipal area') based on the earthquake hazard map drawn by the INGV.

Materiality assessment of climate-related and environmental factors in operational, legal and reputational risks (2.3)

The main tools used to assess the relevance of ESG factors for operational, legal and reputational risks are the following:

- Measuring the entity's own CO2 emissions with the methodological support of external providers, by applying the Greenhouse Gas Protocol international standards and the guidelines of the Italian banking association (ABILab). The measurement scope, the methods and the results of the assessment are disclosed to the stakeholders in the non-financial declaration (*Dichiarazione non finanziaria*, DNF);
- Measuring the entity's own environmental and sustainability profile using international third-party tools (e.g. tools developed by B Lab and the United Nations Global Compact);
- Indicators developed by third-party companies to gauge their brand reputation, with a focus on sustainability issues; more specifically, synthetic scores of brand reputation are created also based on press articles in which the entity is associated with negative connotations and bad reviews on social networks;
- Using a 'risk thermometer' to monitor, ex-ante and ex-post, all the risks (including climate-related and environmental ones) that may have an impact on the entity's media exposure and reputation; in this case too, in some of the practices under study, a score is assigned for actions taken to mitigate a high risk;
- Reviewing ESG litigation files and complaints.

As mentioned above, part of these indicators were included in some RAF documents.

3 Business model and strategy

3.1 Business environment (Expectation 2)

Analysing the business environment and its numerous variables (macroeconomic scenario, competitive landscape, corporate policies, regulatory framework, available technology, social and demographic changes) is especially important for the purposes of strategy design.

Business environment analysis – transition risk (3.1. 1)

One of the intermediaries in the sample conducted an assessment of the competitive landscape to understand the business environment and how long the transition towards a sustainable economy would be.

More specifically, starting from the Paris Agreement targets, it analysed transition scenarios (Orderly, Disorderly, Hot House World; source: Network for Greening the Financial System-NGFS) based on IPCC scientific studies as well as the consequences of climate change that are already visible. With a focus on disorderly transition, it assessed the credit market at the geo-sectoral level, in order to identify the business risks and opportunities associated with the transition towards a green economy.

In some cases, for the purpose of drawing up the strategic plan, a market positioning analysis in terms of sustainability, based on portfolio analysis, was used to identify the entity's carbon footprint and determine its climate risk mitigation strategy.

Business environment analysis – climate emergency (3.1.2)

Two intermediaries investigated the climate emergency in Italy and found a significant increase in the probability of meteorological risk compared with the past 20 years; even stronger growth can be expected if the rise in sea levels is included.

They identified the areas most exposed to future extreme climate events (e.g. heatwaves, heavy rainfall) and analytically quantified the damages suffered by Italy (infrastructures, cities, cultural heritage) and its population (evacuation and casualties) over the last few years due to extreme events (heavy rainfall, river flooding, tornadoes, drought and high temperatures).

3.2 Business model resilience and KPIs (Expectation 2)

Once the risks have been identified, financial intermediaries should be able to understand and gauge their impact on the business environment in the short, medium and long run, including with a view to steering strategic decisions and ensuring the resilience of their business models. They are expected to include environmental sustainability goals (key performance indicators) in their strategic plans and monitor progress towards targets.

Climate-related and environmental risks can produce their effects beyond the typical time horizon of strategic planning, e.g. in line with the public policy push for the transition to a more sustainable economy. In this context, though financial intermediaries are not required to change their time horizon, they may incorporate the findings of longer-term analysis of climate-related and environmental risks into their strategic plans.

Strategic initiatives in the industrial plan (3.2. 1)

The key strategic initiatives found by the survey include:

- Issuing sustainability-linked bonds to fund green projects;
- Granting sustainability-linked loans to encourage customers to meet ESG targets and/or increasing the share of loans to socially vulnerable borrowers;
- Setting credit ceilings to help firms transition to greener business models, and homeowners to improve the energy efficiency of their properties;
- Buying tax credits on fiscal bonuses for residential property energy redevelopment;
- Selling home insurance policies covering physical risks.

In some cases, specialist capability centres have been or will be set up to provide local SMEs with sustainable growth solutions, also leveraging the opportunities associated with the NRRP.

Lastly, one of the banks in the sample approved a sustainability plan, in addition to the industrial plan, to promote the integration of ESG factors into its corporate culture, policies, processes, staff training and career programmes, client and partner relationships.

Quantitative performance indicators (3.2.2)

Performance objectives connected with climate-related and environmental factors focus mainly on loan portfolios and the environmental impact of banking operations; in some cases, they cover a longer time horizon than typical strategic planning (Table 4).

Table 4 - Examples of quantitative performance indicators

Scope	Key performance indicators
Loan portfolio (securities and credits)	Green asset ratio (sustainable assets/total assets)
	Percentage of sustainability-related loans granted
	Reduction in/zeroing of net CO ₂ emissions of the bank's own portfolio by 2050
	Divestment from companies whose turnover depends significantly on coal (by 2040).
Investment services	Percentage of customers with at least one ESG asset
Bank's environmental impact	Reduction in greenhouse gas emissions (including in association with business travel)
	Use of renewable energy (up to a 100% target)
	Reduction of energy consumption in offices
	Reduction of paper consumption
	Reduction of water consumption
	Waste reduction

4 Risk management

4.1 Risk management/mitigation (Expectations 4-6-7; Expectations 8-11 for individual risk categories)

The Risk Management function is in charge of the process for identifying, measuring, preventing and mitigating all the risks the intermediary has taken or may take. While climate-related and environmental risks have a specific nature, once they materialize they will have an impact on traditional prudential risks (namely, credit, market, operational and liquidity risks).

Own portfolio risk management (4.1. 1)

In terms of credit risk, one of the intermediaries in the sample chose to include physical and environmental risk factors at the loan origination and pricing stages.

Other intermediaries have specific practices in place to manage their own portfolios, such as the following:

- Drawing up a list of business areas and countries that are vulnerable to ESG risks; any investment in assets associated with entities on that list is subject to an assessment by the designated functions to gauge the potential impact on the bank's reputation;
- Negative screening, to shun corporate issuers that do not meet the ESG criteria listed in the bank's investment policy and violate international treaties or shared principles.

4.2 Capital adequacy (Expectation 6)

Based on extensive materiality analysis, banks incorporate climate-related and environmental risks into their internal capital adequacy and liquidity assessment processes by upgrading the risk limits system.

A lack of thoroughly validated approaches and the issues associated with the availability and quality of information weigh on the feasibility and relevance of these materiality assessments. Despite these problems, banks are expected to start a process to identify a tool kit (indicators, questionnaires, scenario analysis, stress testing) that can help gauge these risks.⁹ Considering the limits of risk assessment based on historical data in this area, forward-looking approaches (sensitivity analysis and stress testing) are recommended.

Stress tests (4.2.1)

One of the banks in the sample introduced into its ICAAP a credit risk stress test that takes into account the transition risk, also based on the ECB's climate-related stress tests. It started by classifying the loan portfolio in accordance with the ATECO (NACE) code, and identifying some businesses or industries with a potentially high ESG impact (e.g. energy, construction/real estate, agriculture, food, oil & gas, steel, transport).

⁹ The metric identification process can be rolled out gradually, initially using static indicators based on data from internal sources (e.g. a classification of counterparties/issuers by business sector and geographical area, carbon emission intensity by individual counterparty), and adjusting collection, storage and classification approaches for climate-related and environmental risk measurement.

In this exercise, the bank used as a reference the orderly transition scenario illustrated in the ECB economy-wide climate stress-test, where mining, electricity and gas are expected to be more affected by the transition to a green economy, while farmers should reap the greatest benefits from avoiding the physical damage envisaged in the hot house world scenario (i.e. a scenario in which no regulation or policy is introduced to mitigate climate change, resulting in very high risks; in this scenario the costs associated with the transition are extremely limited, as there is no transition, while the costs of natural disasters are extremely high).

Based on this analysis, the bank determined an 'add-on ESG risk', calculated as the difference between the default probabilities in the orderly transition scenario and the default probabilities in the hot house world scenario.

Another intermediary assessed in its ICAAP the potential impact of two adverse scenarios on its credit portfolio:

- In terms of transition risk, it simulated the impact of a newly introduced carbon tax, by worsening the borrowers' balance sheet data and ESG ratings (the latter obtained from external providers);
- In terms of physical risk, it simulated defaults from counterparties with weak ratings in the agricultural sector, assuming they are not able to convert or move their manufacturing plants following permanent climate change (a two-degree Celsius increase in temperature), resulting in a potential loss of productivity/biodiversity.

Lastly, one of the LSIs integrated ESG factors into the quantitative assessment of strategic risk, assuming lower indirect fundraising in association with assets under management with a higher ESG risk.