



ACTIVATING ALIGNMENT

Applying the G-20 Principles for Sustainable Finance Alignment with a Focus on Climate Change Mitigation

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Abbreviations

ACT (methodology) = Assessing low-Carbon Transition

AFOLU = agriculture, forestry, and other land use

ASEAN = Association of Southeast Asian Nations

BIS = Bank for International Settlements

capex = capital expenditures

CBI = Climate Bonds Initiative

CCS = carbon capture and storage

CCUS = carbon capture, utilization, and storage

CO₂ = carbon dioxide

COP26 = 2021 United Nations Climate Change Conference

COP27 = 2022 United Nations Climate Change Conference

CPI = Climate Policy Initiative

DNSH = do no significant harm

EC = European Commission

EHS = World Bank Environmental, Health, and Safety guidelines

EMDEs = emerging markets and developing economies

ESG = environmental, social, and governance

EU = European Union

G-20 SFWG = Group of 20 Sustainable Finance Working Group

GDP = gross domestic product

GFANZ = Glasgow Financial Alliance for Net Zero

GHG = greenhouse gas

GIIP = good international industry practice

Gt = gigaton

GtCO₂ = gigatons of CO₂

GtCO₂e = metric gigatons of CO₂ equivalent [queried]

GVA = gross value added

ICMA = International Capital Market Association

IEA = International Energy Agency

IFC = International Finance Corporation

IIGCC = Institutional Investors Group on Climate Change

ILO = International Labour Organization

IPCC = Intergovernmental Panel on Climate Change

ISIC = International Standard of Industrial Classification; ISIC codes

ISO = International Organization for Standardization

ISSB = International Sustainability Standards Board

KPI = key performance indicator
LIC = low-income countries
LT-LEDS = long-term low emissions development strategies
LULUCF = land use, land-use change, and forestry
MNE = multinational enterprise
MSMEs = micro-, small, and medium enterprises
MSS = minimum social safeguards
NACE code = standard European nomenclature of productive economic activities
ND-GAIN = Notre Dame-Global Adaptation Initiative
NDCs = nationally determined contributions
NGFS = Network for Greening the Financial System
OECD = Organisation for Economic Co-operation and Development
opex = operating expenses
OPIM = Operating Principles for Impact Management
PAT = Portfolio Alignment Team
R&D = research and development
R&D&I = research, development, and innovation
RBC = responsible business conduct
RCPs = representative concentration pathways
RCP2.6 = representative concentration pathway 2.6
SBTi = Science Based Targets Initiative
SDA = Sectoral Decarbonization Approach
SDGs = Sustainable Development Goals
SFC = Financial Superintendence of Colombia
SFDR = Sustainable Finance Disclosure Regulation
SFWG = Sustainable Finance Working Group
SMEs = small and medium enterprises
SSB = Sustainability Standards Board
TCFD = Task Force on Climate-Related Financial Disclosures
tCO₂-eq-1 = tons of carbon dioxide equivalent in a year
UNFCCC = United Nations Framework Convention on Climate Change
WRI = World Resources Institute



A GLOBAL PRESSING OBJECTIVE:

Strengthen the “climate information architecture” to support the transition to a low-carbon and climate-resilient economy



G-20 Principles for the development and coordination of alignment approaches

Asset-level, entity-level, and portfolio-level alignment approaches

They include, but are not limited to, taxonomies, transition planning frameworks, portfolio warming methodologies.

BUT

These approaches have spread globally, and at an increasing pace, leading to a vast array of methodologies, objectives, and governance frameworks underpinning them...this leads to: market fragmentation, increased transaction costs, data inconsistencies, greater greenwashing risks...ultimately missing the Paris Alignment goals.

SO

FOUNDATIONS OF OUR WORK

1. A robust, credible, and science-based grounding.
2. A right balance is struck between interoperability and local context and purpose.
3. Alignment approaches are unified by the overarching goal of achieving similar real-world decarbonization outcomes. Alignment should not merely lead to a redistribution of greenhouse gas emissions among financial market participants.
4. Specificities and status of emerging markets and developing economies (EMDEs) are accounted for.
5. Issues of supply chains (credibility of net-zero commitments, scaling up of investments in funding for climate mitigation in climate-vulnerable countries and in hard-to-abate sectors, special status of SMEs and inclusiveness) are addressed.
6. Contributions are made to the progress of efforts on global and regional standards for sustainability disclosures and financial instruments.

A practical approach to technical issues and options for the design and implementation of alignment approaches:

1. Greater level of detail strengthens the link between climate-alignment assessment methodologies and the financing needs and specificities of distinct regions and countries, especially in EMDEs.
2. This approach facilitates a higher degree of interoperability and a minimum degree of comparability across approaches around the globe.

Operationalizing the Principles

What are the main options for comparability, convergence, and credibility across alignment approaches? How can they form part of an ambitious transition finance framework ?



PRINCIPLE 1

Ensure material positive contribution to sustainability goals and focus on outcomes.

- Identifying and setting climate and environmental objectives
- Prioritizing sectors
- Referencing the translation of carbon budgets into benchmarks as part of portfolio-alignment methodologies
- Assessing GHG emissions and considerations for life cycle analysis
- Addressing just transition considerations
- Seeking consistency across statistical industry classifications for the design of asset- and entity-level alignment approaches



PRINCIPLE 2

Avoid negative contribution to sustainability goals.

- Adjusting DNSH (do no significant harm)/minimum safeguards for a variety of asset classes
- Applying a two-tiered approach: minimum ground (global and local regulations for minimum safeguards) and options (risk management approach such as IFC Performance Standards, set of E+S performance topics)
- Implementing a broader responsible business conduct due diligence and identification of due diligence priorities



PRINCIPLE 3

Be dynamic in adjustments reflecting changes in policies, technologies, and state of the transition.

- Updating and refreshing periodically alignment approaches considering evolving expectations and related governance recommendations
- Dealing with the legacy of green and sustainability-aligned bond instruments



PRINCIPLE 4

Reflect good governance and transparency.

- Ensuring quality and reliability in the application of alignment approaches through disclosures, data, and verification (mandatory disclosure requirements, disclosure of forward-looking information, and so on.)



PRINCIPLE 5

Be science-based for environmental goals and science- or evidence-based for other sustainability issues.

- Identifying the types, pros, and cons of a series of science-based foundations for alignment approaches (nationally determined contributions, sectoral decarbonization pathways, national and regional policies, and so on)



PRINCIPLE 6

Address transition considerations.

- Deciding how to embed supply chain criteria and targets in entity-level transition plans
- Ensuring that the content of transition plans is based on 7 pillars: setting net-zero and/or Paris temperature targets; grounding in a transition taxonomy or sectoral pathways; setting an implementation strategy; grounding in reliable and quantifiable metrics and targets; ensuring governance, transparency, and accountability; addressing adverse impacts; and addressing just transition challenges

Asset-level approaches

Entity-level approaches

Portfolio-level approaches



EXECUTIVE SUMMARY

The first action in the G-20 Sustainable Finance Roadmap proposes six high-level principles for the development and global coordination of approaches to align investments with sustainability goals. “Alignment approaches” are national and international frameworks for the financial sector that aim to monitor global sustainable finance flows and ensure that they are contributing to the temperature goals of the Paris Agreement, the Sustainable Development Goals (SDGs), and other international sustainable finance objectives. These approaches increasingly leverage “alignment tools,” which include but are not limited to (a) taxonomies (or classifications) of private sector activities that can be labeled as achieving environmental and social objectives; (b) certifications and labels that confirm that products or services have met environmental, social, and governance (ESG) standards; (c) disclosure frameworks that guide private sector entities to manage and report on their ESG performance; and (d) transition frameworks that help the private sector design a credible shift to low-carbon technologies and practices. The tools can then be *applied in different ways*—ranging from national-level regulations to voluntary private sector-led initiatives, to corporate-level practices. The tools can be applied by investors and finance providers for *different purposes at different levels*: at the “asset level” (as in determining whether a project or activity is compatible with a relevant sustainable finance taxonomy or due diligence framework); the “entity level” (as in whether a corporate or financial institution has a robust low-carbon transition plan and adheres to the International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work); or “portfolio level” (as in whether an index is aligned with a credible temperature objective or supports poverty reduction). The G-20 Voluntary Principles for Developing Alignment Approaches provide a common foundation for ensuring these alignment approaches are robust and consistent.

The Voluntary Principles for Developing Alignment Approaches



1. Ensure material positive contributions to sustainability goals and focus on outcomes.



2. Avoid negative contributions to other sustainability goals (such as by doing no significant harm to any sustainability goal requirements).



3. Be dynamic in adjustments reflecting changes in policies, technologies, and the state of the transition.



4. Reflect good governance and transparency.



5. Be science based for environmental goals and science or evidence based for other sustainability issues.

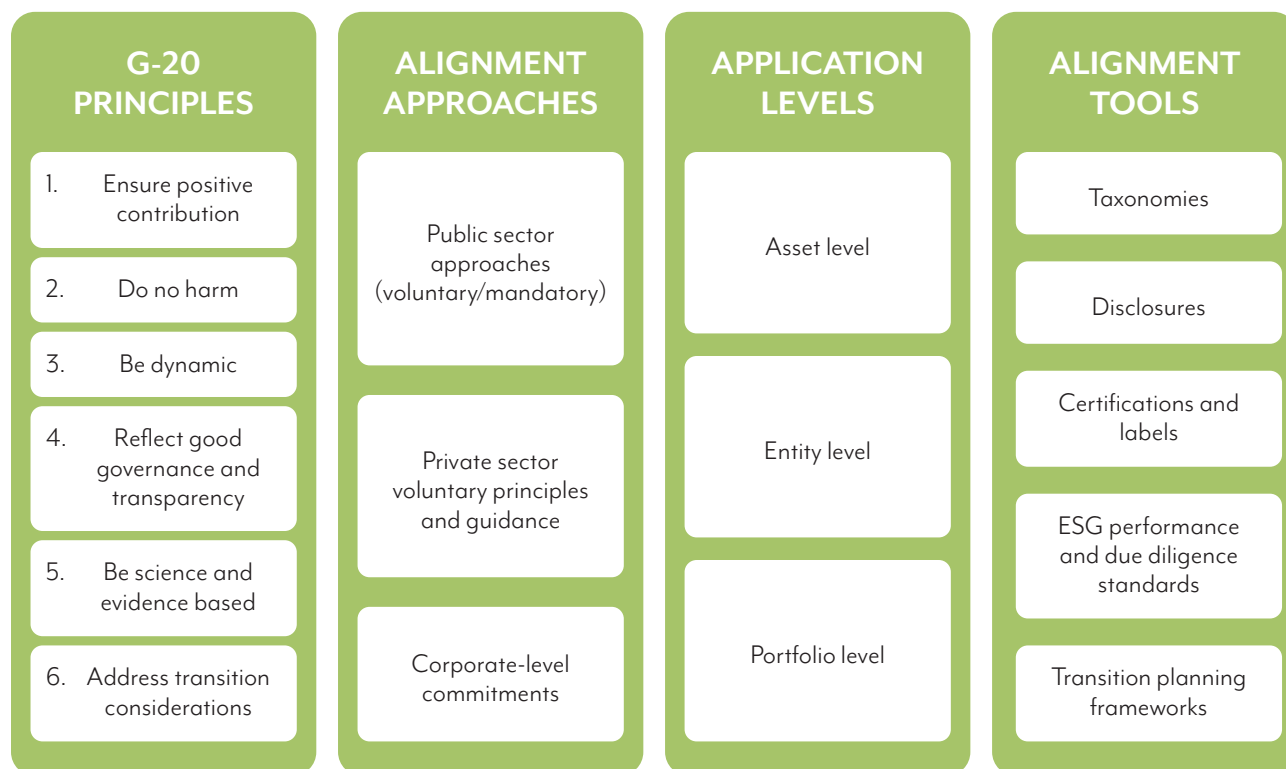


6. Address transition considerations.

Given the increasing diversity of alignment approaches, international organizations participating in the G-20 Sustainable Finance Working Group (SFWG)¹ agreed to analyze the Principles on the basis of experiences from developed countries, emerging markets, and developing economies. The goal of this analysis is to increase understanding of alignment approaches (how and when they can be used, how they link together), lessons learned, and highlight emerging good practices. This report presents the findings from that analysis. It offers a practical approach to certain technical issues and options for the effective design and implementation of alignment approaches. Although the approaches can apply to broader sustainability topics, the focus of the SFWG, and therefore this analysis, is primarily on achieving alignment with the temperature goals of the Paris Agreement. Key intersecting sustainability themes are acknowledged but are not covered in depth. The report aims to help relevant public authorities and private organizations to develop and improve sustainable finance alignment approaches. Ultimately, the effort aims to improve their effectiveness and interoperability, identifying core elements that could provide a minimum baseline of comparability across approaches, which may help reduce the risk of fragmentation in capital markets. The analysis in this report leverages the combined knowledge of the authors' participating organizations—notably, in relation to emerging practices across advanced economies as well as emerging markets and developing economies (EMDEs)—and captures the currently emerging complexities at the front lines of developing alignment approaches. The report does not seek to promote one type of approach over another, but identifies common principles and fundamental connections between them.

¹ Comprising the International Monetary Fund (IMF), World Bank, Organisation for Economic Co-operation and Development (OECD), and Bank for International Settlements (BIS).

Figure E.1: Levels of analysis for alignment approaches and tools



Source: Original figure for this publication.

Note: ESG = environmental, social, and governance.

Each of the alignment approaches has varying governance arrangements. Asset-level approaches can be top down and government led, such as national sustainable finance taxonomies, or bottom up and industry led. Several have mechanisms for future flexibility, which is an essential element. Entity-level approaches, such as transition frameworks and disclosure good practice, can be privately led and can leverage sector-level collaboration, or they can be regulator led, such as through stock exchange listing instructions, with increasing public initiatives to standardize their content and provide credibility to technically complex methodologies. Portfolio-level methodologies are highly variable: some are emerging as innovative and differentiating strategies by banks and investors; others are required by new regulations or guided by public-private initiatives. Portfolio-level methodologies are difficult to assess for quality even by sophisticated market participants, and the underlying reference data and aggregation methods vary because of market data gaps and evolving practices. There is growing recognition of the importance of market-level leadership and governance for sustainable finance, preferably through effective coordination between all relevant government agencies and private sector stakeholders.

Some lessons are emerging from global experience to date, including the following:

Asset-level approaches, such as taxonomies, may benefit from sector prioritization, particularly for those assets with high carbon intensity or exposure to transition risks and where funding gaps exist. Sectoral decarbonization pathways, such as the Sectoral Decarbonization Approach of the Science-Based Targets Initiative (SBTi), are a valuable tool that may be used at the asset, entity, and portfolio levels. However, the links across alignment approaches are complex (for example, a focus on taxonomy-aligned activities does not necessarily mean a sufficiently ambitious alignment with a 1.5°C or 2.0°C temperature trajectory, at least in the short to medium term). Aggregating asset- and entity-level climate alignment assessments when considering financial portfolios is also a complex exercise. Conducting assessments from a sectoral perspective can identify connections between assets related to globally shared decarbonization objectives, pathways, and scenarios.

A robust foundation of ESG risk management can help avoid negative contributions to other sustainability goals. Established and widely used approaches to ESG due diligence and risk management, supported by international conventions, (a) contribute to financial stability by reducing investment risk, (b) prevent greenwashing, and (c) prevent unintended or secondary negative impacts on society and the environment that can undermine progress on alignment. For example, in an asset-based alignment approach, a project that increases water availability should avoid significant harm to climate change goals (such as from additional greenhouse gas emissions) and ensure compliance with certain social safeguards (such as by avoiding human rights abuses). Emerging lessons indicate that existing standards and frameworks can underpin risk management requirements in alignment approaches and can support convergence in disclosure and data availability, thereby reducing the cost burden for adopting entities.

Alignment approaches should be inclusive of all parts of the global economy—particularly small and medium enterprises (SMEs), women, and vulnerable groups—and appropriate for EMDEs. Inclusivity can be considered during the design and maintenance of alignment approaches (such as consulting with SMEs, women, and marginalized groups), embedded in the criteria and metrics for assessing their success (such as the degree to which green finance reaches SMEs), and considered in the risk management and safeguard criteria (such as to “do no significant harm” to factors such as financial inclusion). Interoperability approaches should also account for the status of EMDEs, given they play a key role in global supply chain considerations and may have different low-carbon transition dynamics (such as sector performance standards, high carbon sectors, and social priorities). Strategic use of national taxonomies is crucial. Current alignment approaches often overlook the need to accelerate the decarbonization of hard-to-abate sectors and to support and improve the emission profiles of the SMEs that are key to supply chains in EMDEs.

Alignment approaches with robust, credible, and science-based grounding tend to be more comparable and interoperable. As a result, they will promote the development of sustainable finance markets, alleviate concerns about greenwashing risks across the world, and accelerate the funding of decarbonization in currently carbon-intensive economies.

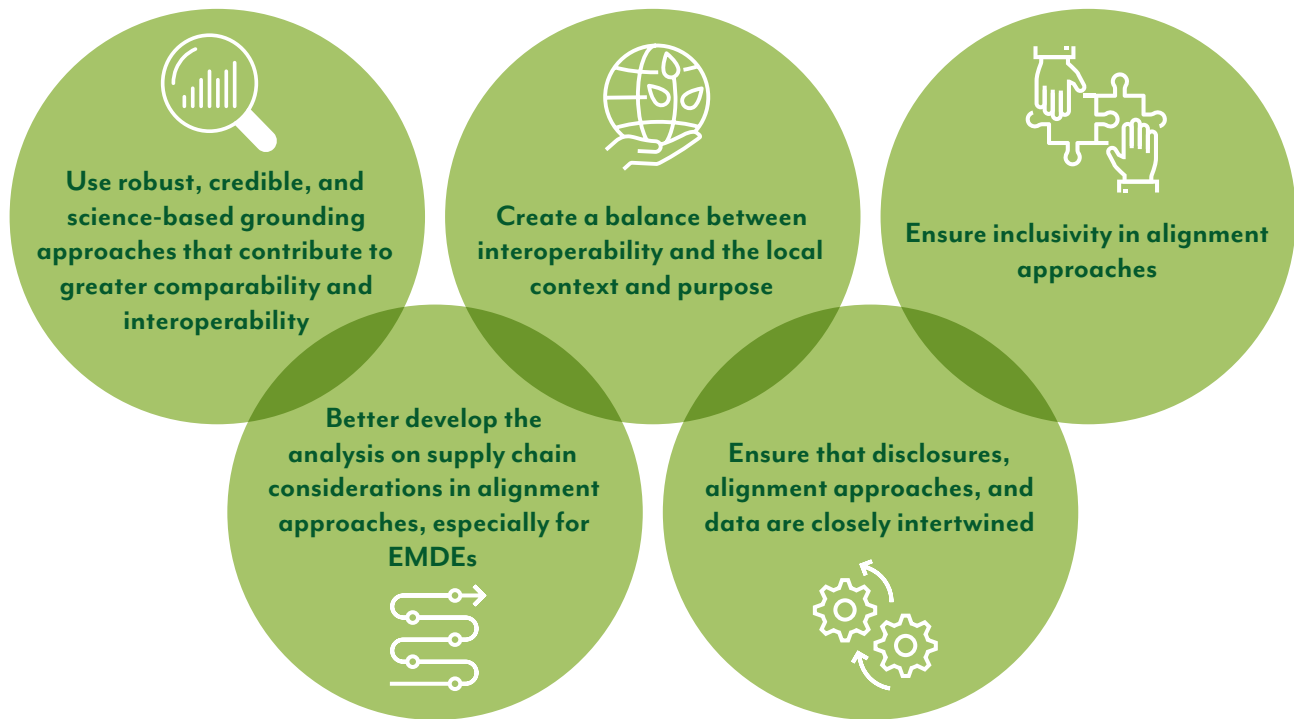
A balance between interoperability and the local context and purpose must be achieved. Alignment approaches may be developed for individual jurisdictions or at a regional level by considering factors such as (a) the characteristics and maturity of the market, (b) the existing regulatory context and regulator mandates, (c) the mix of green versus high-emitting sectors, (d) the national policy priorities, (e) the existing sector standards and regulations, (f) the priorities of local stakeholders, and (g) immediate versus future-use cases. However, interoperability of alignment approaches is critical to the progress of international efforts on global and regional standards for sustainability disclosures and financial instruments. Agreement on core elements of good practice as well as common agreed activities and performance expectations can facilitate cross-border investment by investors with significant impact capital.

Data remain a key challenge behind all alignment approaches. This report therefore highlights the close relationship between all alignment approaches and disclosure, which is the mechanism of choice for most markets to support the implementation, transparency, and credibility of sustainable finance. International convergence around disclosure requirements and decision-useful metrics can fast-track better-quality data that are comparable and available across industries, markets, and countries, helping pave the way for interoperable approaches.

Good design of alignment approaches needs to consider and balance:

- **Bottom-up and top-down approaches.** The benefit of voluntary approaches, which can stimulate private sector adoption and innovation, should be balanced against regulator interventions that can ensure alignment of the minimum standards with international targets and regional and sectoral low-carbon ambition.
- **Use cases.** The tailoring of use cases across jurisdictions depends on (a) the private or public sector institutional ability and technical expertise required; (b) the degree to which credible, forward-looking mid- and long-term transition plans can be captured on the basis of available data and public sector practices; (c) the particular institutional processes and mandates; (d) the related implementation costs (such as for SMEs); and (e) the desired flexibility to adjust and adapt to transition pathways as technology and supporting policy evolve.
- **Level of granularity.** Operationalizing the Principles requires a “middle lane” approach that finds the right balance between overly granular and overly flexible classifications. At a minimum, a common language is needed to determine the equivalence of specific features and to facilitate their use and recognition across different jurisdictions.
- **Level of application.** While science-based alignment measures (such as in taxonomies) and key financial instruments (such as green bonds) are mostly sector, activity, or project based, investors may find it more useful to receive clear signals about the sustainability performance and commitment of the entity as a whole (such as through ESG disclosure and transition plans) and to incorporate both asset- and entity-level disclosure into portfolio-level strategies. This approach indicates value in ongoing operationalization of the Principles across asset, entity, and portfolio levels.
- **Backward-looking and forward-looking approaches.** Further operationalizing the Principles may require both backward- and forward-looking elements to consider transition plans and verify the progress made. Combining backward- and forward-looking approaches could also be conducive to covering the whole-of-economy climate transition, including carbon-intensive sectors and EMDE-based issuers, where much of the potential for financing of decarbonization processes remains untapped.

Figure E.2: Foundations in implementing common principles for alignment approaches



Source: Original figure for this publication.

Note: EMDEs = emerging markets and developing economies.

The report recognizes that one size does not fit all and that a supporting policy environment is needed for alignment approaches to achieve their goal. While the findings of the report support the setting of targets, the report also allows for different pathways and sufficient flexibility with tiered options. The report also acknowledges that alignment approaches and the tools to apply them—even where they are compatible with the Principles—are not sufficient on their own to shift financial flows so that they are Paris aligned. A comprehensive, supportive policy environment is needed, including through fiscal and other public policy tools and incentives, emissions trading systems, improved data provision and digital developments, risk assessment tools, efforts to address “just transition” concerns, and other levers, as appropriate and according to country conditions.



The background of the entire page is a photograph of a vast, rolling landscape of green hills. The hills are covered in lush, vibrant green grass. The sky is a pale, clear blue, suggesting a bright, sunny day. The perspective is from a slightly elevated position, looking down and across the hills.

EMERGING LESSONS AND CONSIDERATIONS

Applying Common Principles across Alignment Approaches— Rationale, Objectives, and Methodology

Synthesis Paper



A

Rationale

The Voluntary Principles for Developing Alignment Approaches



1. Ensure material positive contributions to sustainability goals and focus on outcomes.



2. Avoid negative contributions to other sustainability goals (such as by doing no significant harm to any sustainability goal requirements).



3. Be dynamic in adjustments reflecting changes in policies, technologies, and the state of the transition.



4. Reflect good governance and transparency.



5. Be science based for environmental goals and science or evidence based for other sustainability issues.



6. Address transition considerations.

In 2021, the G-20 Sustainable Finance Working Group (SFWG) was mandated by finance ministers and central bank governors to develop a Sustainable Finance Roadmap to focus the G-20 countries, international organizations, and other stakeholders on key priorities of the sustainable finance agenda. As a first action to promote market development, the G-20 Roadmap encouraged jurisdictions that intend to develop their own approaches to align investments with sustainability goals using a set of voluntary principles (G-20 SFWG 2021a). The Roadmap proposes six high-level principles for the development and global coordination of the approaches (the “Principles”).

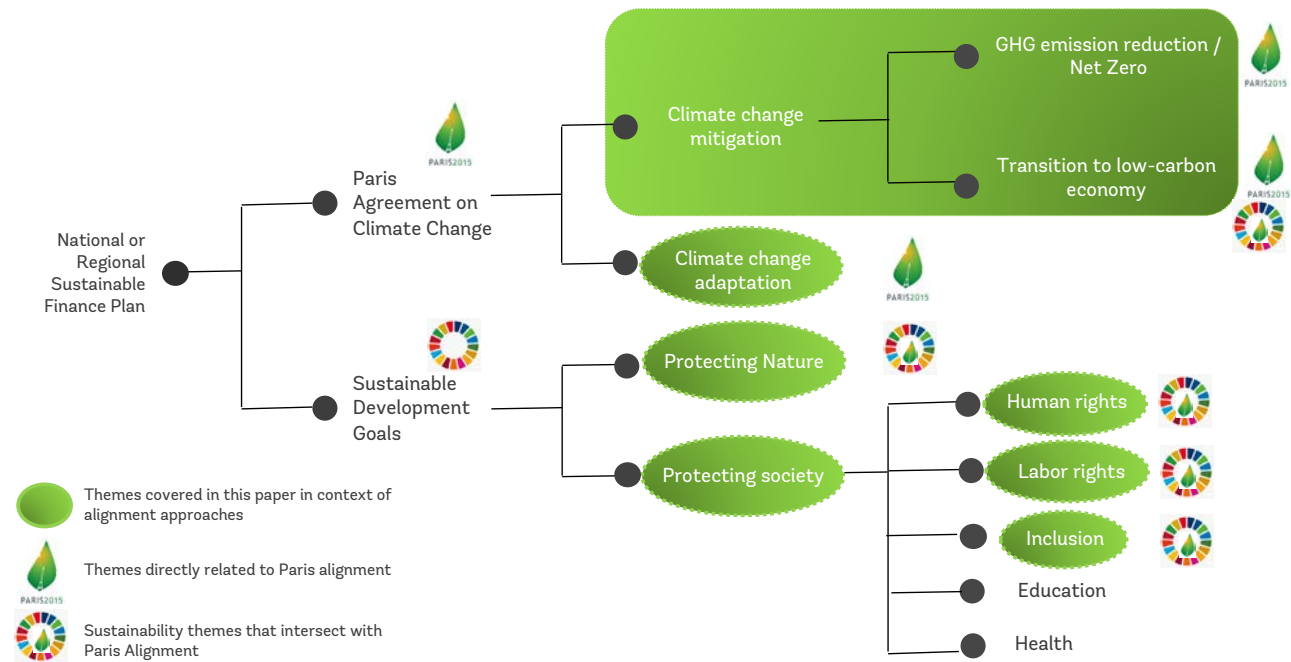
“Alignment approaches” aim to monitor and ensure that global sustainable finance flows are contributing to the temperature goal of the Paris Agreement, sustainable development goals (SDGs), and other international sustainable finance objectives. These approaches consist of various *alignment tools*—including taxonomies; environmental, social, and governance (ESG) scores; disclosure frameworks; and transition planning frameworks (when aligned with temperature objectives and other sustainability goals). These tools can be applied in different ways—ranging from national-level regulations to voluntary private sector-led initiatives to corporate-level practices. They are applied for different purposes at different levels: at the asset level (determining, for example, whether a particular investment is compatible with a relevant taxonomy); the entity level (for example, whether a corporate or financial institution has a robust low-carbon transition plan [CDP 2022]); or a portfolio level (for example, whether an index is aligned with a credible temperature objective). The Principles provide a common foundation for ensuring all approaches are robust and consistent however these tools are designed and implemented.

In developing the Principles, the SFWG recognized the diversity of alignment approaches and the challenges of linking those approaches together. As a result, the international organizations agreed to develop an analysis of the Principles to increase understanding of alignment approaches; to identify how and when they can be used and the linkages between them; and to share lessons learned, highlight emerging good practices, and improve interoperability and effectiveness. (See Action 3 of the Roadmap and Recommendation 3 of the Group of 20 [G-20] SFWG Synthesis Report [G-20 SFWG 2021a, 2021b].) Alignment approaches alone, even those conforming with the Principles, will not be sufficient to ensure that sustainable finance flows materially contribute to the Paris Agreement temperature goal and other sustainable finance goals. As the G-20 Roadmap also notes, broader policy support (including carbon pricing and non-pricing policies) and a comprehensive approach covering all types of finance are needed. Climate policies and finance are indeed complementary—and climate policies are a prerequisite for enabling private finance by sending a strong signal to market participants, which in turn contributes to the achievement of climate policy goals.

Although the approaches can apply to broader sustainability topics, the focus of the SFWG, and therefore this analysis, is primarily on achieving alignment with the temperature goals of the Paris Agreement—that is, the climate change mitigation goals—in line with article 2.1 of the Agreement (UNFCCC 2015).¹ However, intersections with other sustainability topics such as biodiversity and nature, climate change adaptation, and just transition also are important. Figure 1 outlines how the findings from this report fit within the broader ecosystem of international, regional, and national environmental and social objectives—namely, how countries and regions design their approaches to align with the Paris Agreement and sustainability goals.

¹ Please see the short glossary for definitions of how key climate terminology is used in this report.

Figure 1: Achieving alignment with the Paris Agreement



Source: Original figure for this publication.
 Note: GHG = greenhouse gas.

A variety of these alignment approaches have spread globally, and at an increasing pace. The number of asset-level alignment approaches, including taxonomies, has increased substantially, and while such approaches can apply to a range of purposes, they have primarily been designed with credit, listed equity, and corporate bond asset classes in mind. For example, green taxonomies define (among other environmental objectives such as biodiversity preservation and restoration, pollution prevention, and pollution control) the low-carbon or decarbonization nature of assets, activities, and sectors according to specific standards and technical criteria. Entity-level approaches are also developing rapidly and include transition planning frameworks and emission reduction assessment methodologies. Approaches at the instrument level, such as scores, labels, and certifications, as well as portfolio-level approaches (indexes and benchmarks, alignment metrics, and portfolio tools) have also seen rapid development (OECD 2022a).

That growth has led to a wide array of methodologies, objectives, and governance frameworks underpinning the alignment approaches (see table 1). The different approaches generally reflect differing national sustainable development plans and low-carbon pathways, sector focus, regulatory context, maturity of the financial sector, and immediate versus long-term use. The approaches can be voluntary or mandatory and can be led by government, industry, or international agencies or a combination of these entities.

For example, the Association of Southeast Asian Nations (ASEAN) taxonomy guidelines suggest a “traffic light” approach to defining low-carbon and transitional activities that can be adapted by members to fit their country context and can be applied at a principle-level or by using detailed technical criteria. Meanwhile, Indian authorities have taken a “two-tier” approach to their sustainability disclosure tool (outlining mandatory “essential” disclosures and “voluntary” disclosures), with application initially for large listed companies, and progressively widening in scope over time.

Although expansion may promote tailored approaches that are fit for purpose, development that occurs in silos may lead to market fragmentation, increased transaction costs, data inconsistencies, and greater greenwashing risks.² The latter refers to risks of misleading sustainability claims occurring and deceiving investors in their decisions. Yet, as underlined by ESMA (2023, 6), “pledges about future ESG performance, in particular net-zero commitments and so-called ‘transition plans’ are exposed to greenwashing risk.” In this context, there is a close connection between the need to ensure the quality of climate-related and sustainability disclosures and the development of a robust transition finance framework. If fragmented, ultimately such approaches would miss the overriding aim of article 2.1c of the Paris Agreement—that is, making financial flows consistent with a pathway toward low greenhouse gas emissions and climate-resilient development (Parente 2023).

This report does not promote one type of approach over another but rather identifies common principles and fundamental connections between them. Approaches would be unified by the overarching goal of achieving similar real-world decarbonization outcomes and ensuring that alignment does not merely lead to a redistribution of emissions among financial market participants. As emphasized by the IPCC (2022, 1553),

assessing climate consistency or alignment implies looking at all investment and financing activities, whether they target, contribute to, undermine or have no particular impact on climate objectives. This all-encompassing scope notably includes remaining investments and financing for high-greenhouse gas (GHG) emission activities that may be incompatible with remaining carbon budgets, but also activities that may play a transition role in climate mitigation pathways and scenarios.

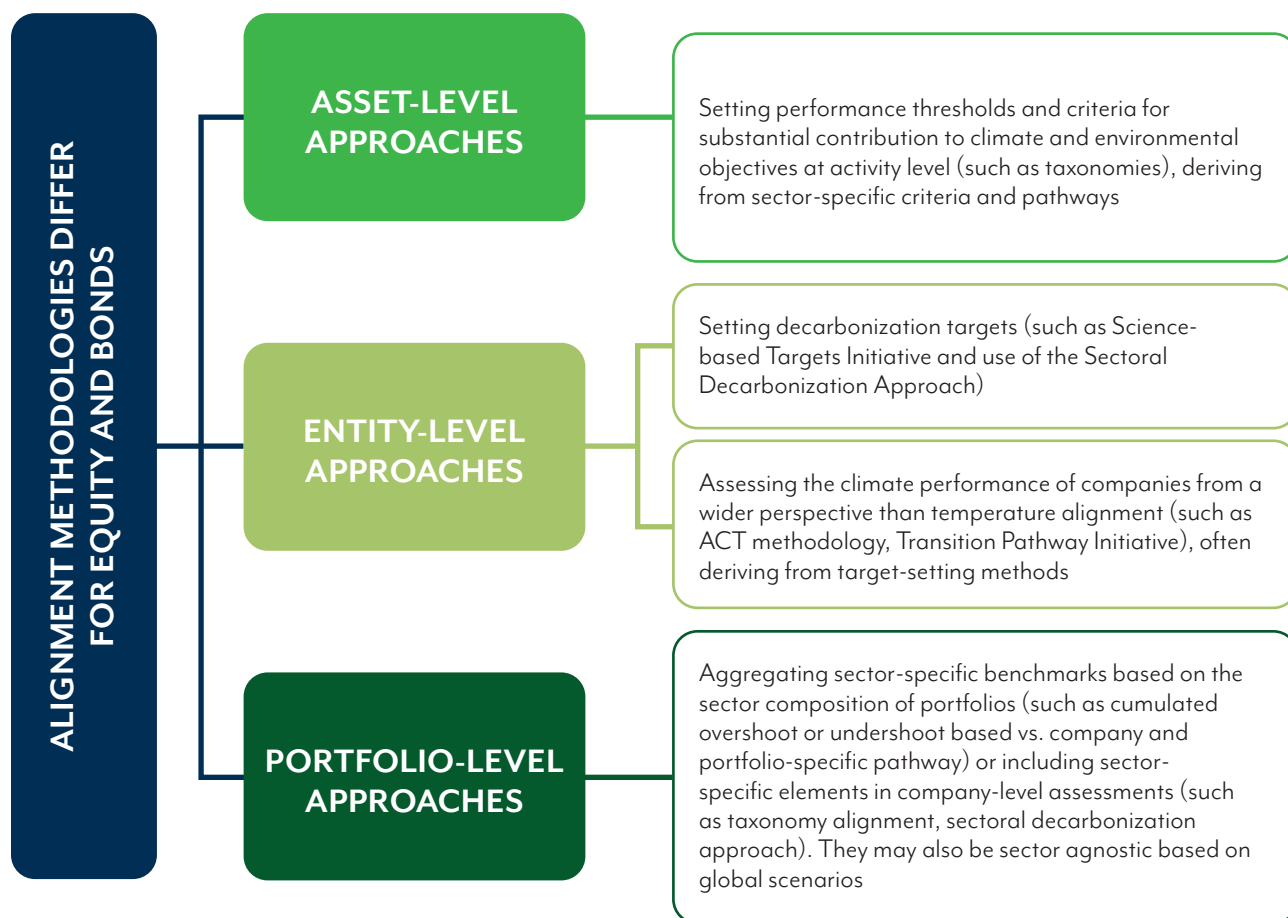
In addition, this report aims to capture emerging practices across developed, emerging, and developing economies and thereby reflect common principles, intersections, opportunities for interoperability, and practical areas of divergence to address differences in market maturity and local context.

Even where a common decarbonization goal exists, different jurisdictions will inevitably vary on the criteria they adopt under alignment approaches, leading to interoperability considerations. For example, jurisdictions have often set diverging criteria to assess the sustainability of energy sector-related activities (such as coal, natural gas, nuclear), either referring to specific emission thresholds or other sustainability criteria, or allowing for phasing out of fossil fuel-based electricity generation under specific circumstances. The challenge is to settle on a mechanism that promotes interoperability of approaches sufficient to enable a common language of comparison between alignment approaches and principles, to discern approaches that can be considered equivalent in terms of design, governance, and aspiration across regional and global contexts.³ This consideration applies in the context of one country’s alignment approaches (a transition taxonomy and plan framework, for instance) having a reach into a third country, as well as the context of disclosure requirements in one jurisdiction interacting with those of another (figure 2).

2 Creed and Horsfield (2021). Greenwashing risks would indeed be related to the credibility of the corporate entity’s decarbonization pathway, which should be science based and testable (credibly demonstrated). The Climate Bonds Initiative (CBI) underscores that incomplete disclosure that is not aligned with the climate science and credibly demonstrated raises “concerns for investors as [it] makes it difficult to determine whether the company is making a comprehensive transition or just ‘cherry-picking’ low-hanging fruit, which would raise questions over greenwashing” (Creed and Horsfield 2021, 13). Climate alignment approaches aim at tackling situations in which “oftentimes environmental claims made by companies are expressed very vaguely and may include inaccurate information as an effort to attract a ‘green’ audience” (Dimitrieska, Stankovska, and Efremova 2017).

3 As an example, the United Kingdom has recently proposed a three-level interoperability mechanism, relating to the future UK Taxonomy’s technical screening criteria and related disclosure, and advocating for harmonization across taxonomies to foster international cooperation. The report states, “It is crucial not to neglect the value of harmonization, while also noting that harmonizing taxonomies without taking local context into consideration could result in misaligned incentives for national decarbonization goals. Finding a balance between harmonization and a tailored approach ... is vital in ensuring that taxonomies are both effective and relevant.” See Green Technical Advisory Group (2023).

Figure 2: Three main categories of alignment approaches for climate change mitigation



Source: Original figure for this publication.
 Note: ACT = Assessing low-Carbon Transition.

It is a global imperative to strengthen the “climate information architecture” to support the transition to a low-carbon and climate-resilient economy (Barnett, Brock, and Hansen 2020; Carbone et al. 2021; Ferreira et al. 2021). Financial markets associated with climate change face major information challenges (Eren, Merten, and Verhoeven 2022). These challenges include a lack of relevant, decision-useful information, with limits to data quality, comparability, and consistency. Ensuring links between alignment approaches and disclosures, to enhance the efficiency and relevance of science-based information, is a key policy objective for the sound and robust development of sustainable finance. Developing the right policy response and obtaining financing require not only relevant and high-quality information, but also increased adoption and use of such information. Adoption and use of that information also require efforts to improve the level of understanding and capacity of the main stakeholders best placed to use the information. Improved data on climate-related risks can also provide robust, valuable information that can improve the comparability and consistency of use (NGFS 2022b). However, alignment approaches may require information that is not covered by disclosure regimes. For many alignment approaches, a first priority is to enable more and better information in the market—including, but broader than, that which can be obtained from disclosure regimes—to support alignment efforts by investors and other financial market participants (OECD 2021). For this reason, alignment approaches may be premised on obtaining or verifying sustainability data, such as ESG scoring, indexes, and verification

approaches (Avramov et al. 2022), or may be developed with the goal of generating a certain type and quality of data (such as disclosure regulations, including transition plan frameworks and taxonomies of aligned activities and technologies). This report therefore highlights the close relationship between alignment approaches and disclosure.

The various alignment approaches each serve important purposes and share common features (OECD 2020).

These include science-based transparency, benchmarking for capital allocation purposes,⁴ transition planning and investment decision-making in view of climate and environmental objectives, and anti-greenwashing functions (Cardona and Berenguer 2020). The commonality of these approaches lies in their ultimate purpose, which is to allow investors and other financial market participants to identify high- and low-carbon real and financial assets, and to assess the impact of low-carbon investment strategies to reduce greenhouse gas emissions discharged in the real economy, including the private sector (D’Arcangelo et al. 2022). Well-coordinated alignment approaches may also promote better comparability of portfolio-level GHG exposures (Noels and Jachnik 2022) and provide a useful starting point for other capital allocation or risk management tools, such as standardized classifications of high-emitting assets.⁵

An emerging concern is to ensure that alignment approaches are designed in a way that includes all parts of the economy (IFC 2013).

Those parts include small and medium enterprises (SMEs), women, youth, households, and vulnerable groups and communities. Inclusivity is a priority for many emerging markets and developing economies (EMDEs) because of the significant role played by SMEs in these markets and the heightened risks posed to vulnerable segments of society by climate change. This focus is evidenced by efforts on the part of regulators to (a) measure the impacts of climate change on vulnerable groups and households, (b) ensure that alignment approaches include sectors and activities that are accessible to these groups as both participants and beneficiaries, and (c) support climate-focused investment strategies that contribute to inclusion and climate change mitigation at the same time (Volz et al. 2020; Inclusive Green Finance Working Group and University of Luxembourg 2022). Inclusion can be considered during the design of alignment approaches by considering both risks and opportunities related to SMEs and vulnerable groups. It can also be embedded in the criteria and metrics for assessing the success of alignment approaches. Measures may involve tracking positive contributions to inclusion as well as ensuring that unintended negative impacts on inclusion are quickly identified and addressed. For instance, onerous technical criteria and reporting requirements are more likely to exclude SMEs and vulnerable groups. Similarly, alignment approaches that favor sectors, activities, and technologies that typically feature large infrastructure projects are less likely to offer opportunities for participation by all parts of the economy. Financial intermediaries and larger companies in SMEs’ supply chains can also play a supportive role for SMEs. Finally, the risk management and safeguard criteria, such as “do no significant harm” and minimum social safeguards in alignment approaches can consider inclusion. One of the ways to foster inclusion in alignment approaches is to make sure that potentially marginalized groups are included as stakeholders in the design process and during implementation.

4 The persistent misallocation of capital (Robins 2022) needs to be addressed to fulfill the goal of the Paris Agreement’s Article 2.1c (“making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development”). As pointed out by (Songwe, Stern, and Bhattacharya 2022, 70), “applying to all forms of finance and all instruments, the clause has not been operationalized to the same degree as others in the treaty: the UNFCCC process does not provide a space to fully articulate definitions or develop requirements for reporting on the consistency of financial flows (as with Article 9 on climate finance from developed to developing countries). Despite strong momentum, finance flows remain heavily misaligned.” In this context, it is relevant for “improving methodologies and standards to bring clarity and transparency around delivering Article 2.1c, and to improve interoperability across different approaches and with other tools (such as transition finance and taxonomies)” (Songwe, Stern, and Bhattacharya 2022, 70).

5 On risk management, BCBS (2021) provides useful commentary on the usefulness and limitations of current classification schemes. “Climate-risk-specific heterogeneity adds complexity which is not well reflected in most established risk classifications. For example, current activity- or industry-based classifications do not incorporate the locations of constituent components as a differentiating feature, which can limit their relevance for purposes of physical risk differentiation. Therefore, a climate risk classification would need to account for context-specific features salient for assessing the sensitivity of exposures to climate-related factors. Moreover, compared to most traditional risk classification systems which are less frequently updated, a climate risk classification may need to incorporate dynamic features that respond to future changes in the distribution of climate impacts and evolutions in technological frontiers, or the classification could incorporate provisions for a periodic refresh of selection criteria. It is important to emphasize that classifications are not sufficient on their own to map and monitor risk exposure or to estimate the financial impact stemming from climate risks. Notably, these classification schemes can help rank order exposures according to relative risk vulnerability criteria, but do not determine how to grade those exposures along judgmental criteria for risk.”

Properly functioning alignment approaches that deliver clear information to investors on risk and impact can actually drive down the cost of capital, which is key to driving the transition in the real economy (Wissenburg et al. 2021). Sustainability performance may influence capital allocation (Inderst, Kaminker, and Stewart 2012), with preferences being expressed not only in traditional bond, loan, and equity markets but also in dedicated markets for sustainable products. Where firms undertake sustainability disclosures, markets tend to react positively to such disclosures. There is also a future benefit to the market from improved disclosure that allows regulators and financial market participants to analyze the relationships between sustainability performance, financial performance, and business risk. Several studies to date show that sustainability-focused finance may be linked to lower credit risk for financial institutions and may lead to outperformance for investors.⁶ Robust, comparable, and verified data are required to understand the causal links, which can then reinforce investment strategies that aim for both financial returns and alignment ambitions. Finally, data are also critical for understanding whether alignment approaches are (a) achieving their intended outcomes, such as capital flows to prioritized activities and positive impacts on people and the environment, or (b) resulting in unintended negative outcomes, such as discouraging alignment because of complex requirements or excluding certain segments of the market, such as SMEs, women, youth, and vulnerable groups. This information can be used by regulators to adjust their approaches accordingly over time.

Aggregating asset- and entity-level climate alignment assessments when considering financial portfolios is a complex exercise (Portfolio Alignment Team 2020). However, conducting climate or sustainability assessments from a sectoral perspective can identify connections between assets related to globally shared decarbonization objectives, pathways, and scenarios (Teske et al. 2020). Given the variety of transmission mechanisms through which sustainable finance can influence the decarbonization of the real economy—such as cost of capital, access to liquidity, and changing corporate practices (Caldecott et al. 2022)—alignment approaches can offer predictability and transparency for a variety of asset classes (public and private equity, debt, and real assets). They may also provide valuable tools for conducting forward- and backward-looking assessments of climate alignment, for target setting and steering action, and for monitoring and reporting on progress along a trajectory. A complementary approach can also reduce compliance cost burdens and promote innovation in the use of the data produced by the different alignment approaches. In the absence of an overarching governing framework for interoperability, these Principles and this report can offer a common language and promote the convergence of good practices.

Asset-level approaches, such as taxonomies, may benefit from focusing on sectors, particularly those with high carbon intensity or exposure to transition risks. Sectoral decarbonization pathways, such as the Sectoral Decarbonization Approach of the Science-Based Targets Initiative (SBT 2015), are also a valuable tool that may be used at the asset, entity, and portfolio levels. However, a focus on taxonomy-aligned activities does not necessarily mean alignment with a 1.5°C or 2.0°C temperature trajectory, at least in the short to medium term (Institut Louis Bachelier 2020). A portfolio initially may have exposure to carbon-intensive assets that are not taxonomy aligned, but with the application of a trajectory alignment method (see box 1), the portfolio may progressively decrease its carbon intensity in line with the Paris Agreement temperature goals. In addition, other alignment approaches may also have a particular sectoral and geographical focus, such as temperature alignment methodologies with sector-specific benchmarks. These examples show the complexity and the links across alignment approaches that are the targets of this analysis.

6 For examples, see Biffis and Rocciolo (2020); Dunz, Naqvi, and Monasterolo (2021); Kleimeier and Viehs (2018); Kölbel et al. (2022); Santi (2023); and Yu, Van Luu, and Chen. (2020). Note also the findings of Takahashi and Shino (2023) on Japanese banks significantly decreasing lending to higher GHG-emitting firms.

Box 1: Different ways to assess alignment with the Paris Agreement

These methods are not mutually exclusive and may apply to the same alignment approach.

Alignment by temperature trajectory. This method consists of aligning with a chosen temperature, such as 2°C, and assessing how compatible a company, asset, or portfolio is with meeting that trajectory. Multiple trajectories could be chosen to maintain the target temperature, and multiple variables can affect the trajectory, including the rate of decarbonization, the rate of economic activity and growth, the timing and nature of the peak of greenhouse gas emissions, the role of emission removal, and the overall time horizon and scope of decarbonization (Institut Louis Bachelier 2020).

Alignment with the temperature goals of the Paris Agreement. Criteria for this category are slightly more prescriptive as they apply to the 1.5°C limit. Global peaking takes place as soon as possible, there is limited reliance on emissions removal, and natural carbon sinks must play a role (Institut Louis Bachelier 2020).

Alignment with the broader goals of the Paris Agreement. This method encompasses the broader objectives of Article 2 of the Paris Agreement, which look at more than just the temperature target. These include (a) fostering climate change adaptation and resilience without threatening food production and (b) making finance flows consistent with a pathway toward low greenhouse gas emissions and climate-resilient development.

Each of the alignment approaches has varying governance arrangements. Asset-level approaches have widely varying governance mechanisms, ranging from top-down government-led to bottom-up industry-led approaches. Several have mechanisms for future flexibility, which is an essential element, including sector-based decarbonization pathways and clauses for evolution of alignment criteria to account for scientific and technological developments. Entity-level approaches, such as transition plans, are typically privately led despite increasing public initiatives to standardize their content. Given the technical complexity of these, credibility of the methodologies is essential. Consequently, they may come under more formal regulation over time. Portfolio-level methodologies are highly variable and stem primarily from public or public-private initiatives. They are difficult to verify, even by sophisticated market participants, and the underlying reference data and aggregation methods remain fluid. Other key features of alignment approaches are summarized in table 1.

Table 1: Key features of alignment approach categories

Alignment approach category	Examples	Relevance to financial market participants	Data-related challenges	Factors influencing the effectiveness of achieving GHG emission reduction goals
Asset-level approaches	ICMA Green Bond Principles, Social Bond Principles, Sustainability Bond Principles, taxonomies, and similar types of classifications at sector and activity levels.	A wide range of potential uses that includes promoting transparency and disclosure and labeling products such as bonds. Such approaches can indicate entity- and portfolio-level activities contributing to decarbonization and feed into entity- and portfolio-level approaches.	Data consistency and availability depend on a series of factors in the design and the application of these approaches: level of detail; link to disclosure requirements; consistency across statistical classifications; and coverage across supply chains, assets, and companies.	Effectiveness depends on the ambition and stringency of the criteria for substantial contribution. It also should be based on measurable outcomes through disclosed and technology-neutral key performance indicators.
Entity-level approaches	Transition plans as well as entity-level GHG emission reduction assessments based on company-level emission intensities compared with time series of sector-level benchmarks under selected scenarios (for example, IEA scenarios).	The main objective is to demonstrate if it is credible that the entity will achieve a climate-related target and to support accountability to internal and external stakeholders. These approaches may allow investment strategies to be based on an entity-specific assessment and may feed into a transition risk assessment, in combination with other methods.	Data-related issues are numerous, from assessing backward-looking GHG emissions to incorporating scenario-based forward-looking analyses.	Effectiveness depends on the level of transition performance, coherence with sectoral decarbonization pathways, and potentially other trends such as global temperature targets, nationally determined contributions, and trends over time.

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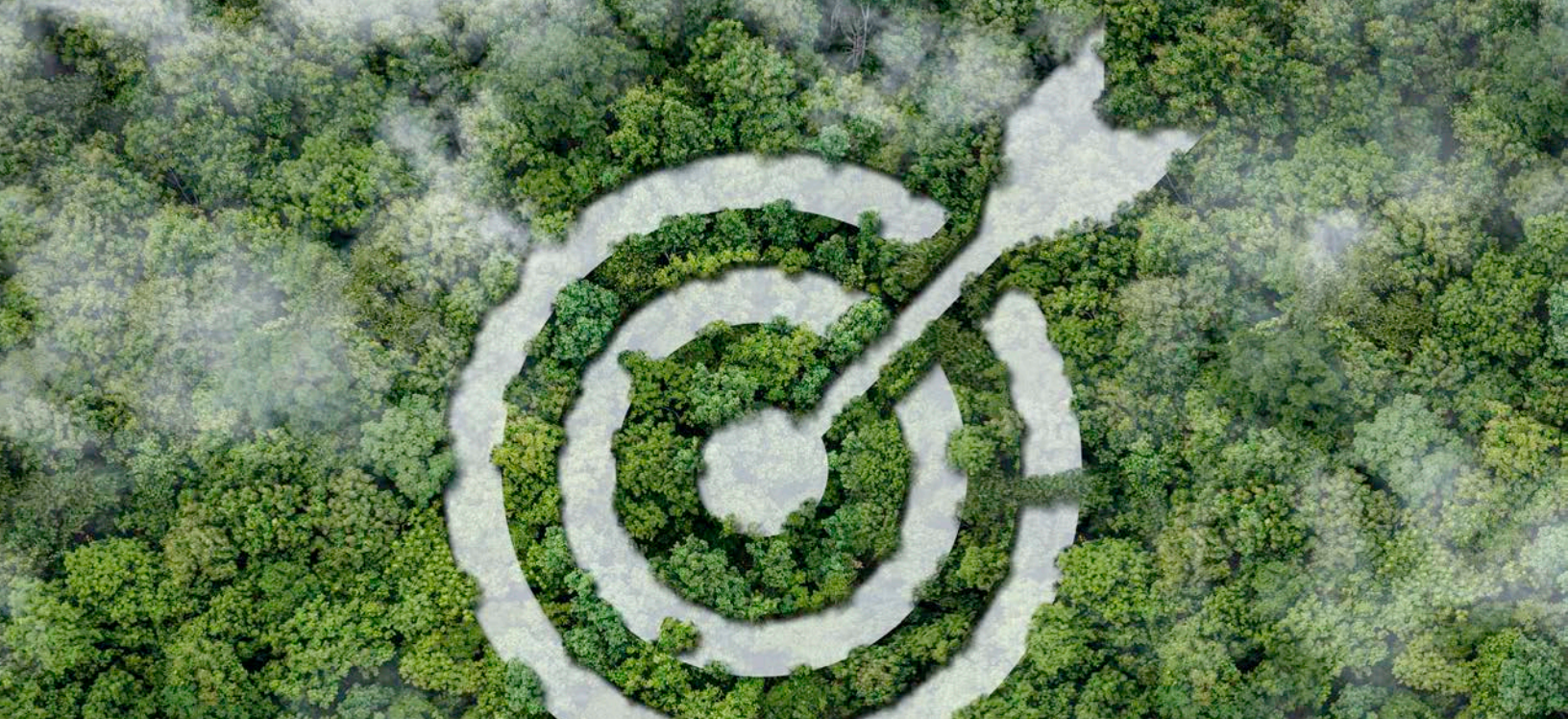
Alignment approach category	Examples	Relevance to financial market participants	Data-related challenges	Factors influencing the effectiveness of achieving GHG emission reduction goals
Portfolio-level approaches	Portfolio alignment methodologies (GHG emission reductions, temperature pathways, warming metrics).	These methodologies allow for climate-related alignment assessment of investment portfolios and products, allowing investors and lenders to assess the position of companies and portfolios on the path to net zero, ^a to compare them with peers, and to track progress over time.	Entity-level alignment assessment is the key input to these approaches (for example, some portfolios' warming methods would aggregate company-level absolute cumulative over- or undershoot based on ownership share before converting to a portfolio warming metric), in addition to challenges in determining and disclosing Scope 3 GHG emissions. In addition, alignment assessments of financial portfolios require the assessment of each individual asset in order not to obscure poor-performing portfolio segments, leading to challenges related to coverage gaps, methodological inconsistencies, and double-counting risks. Updating of underlying reference scenarios, especially at the country and sector level, remains an open issue.	Overall GHG emissions may indeed be lower for an aligned portfolio cumulated over a given time horizon, but it requires more granular assessment on concrete outcomes at the sector level. Issues arise related to the chain of causality and additionality of investors' actions, depending on the initial exposure, the investment approach adopted (engagement with carbon-intensive companies vs. investment in less-emitting companies), the critical size in assets under management, and the compatibility with temperature pathways.

Sources: Original table for this publication.

Note: GHG = greenhouse gas; ICMA = International Capital Market Association; IEA = International Energy Agency.

a. Climate policy ambition is increasingly expressed as a specific target date for reaching net-zero emissions, typically linked to the peak temperature goals of the Paris Agreement. However, the net-zero objective is not included in the Paris Agreement itself, although it is intrinsically a scientific concept (Fankhauser et al. 2021). Following analysis by the IPCC (2018), under the Paris Agreement countries have agreed to limit global warming to well below 2.0 °C and make efforts to limit it to 1.5 °C. Meeting the 1.5 °C goal with 50 percent probability translates into a remaining carbon budget of 400–800 gigatons of carbon dioxide (CO₂). Staying within this carbon budget requires CO₂ emissions to peak before 2030 and fall to net zero by around 2050.

One important point is that alignment approaches alone, even those conforming with the Principles, will not be sufficient to ensure that sustainable finance flows materially contribute to the Paris Agreement temperature goal and other sustainable finance goals. As the G-20 Roadmap also notes, broader policy support (including carbon pricing and non-pricing policies) and a comprehensive approach covering all types of finance are needed (including actions to improve data provision, risk assessment tools, policy incentives, and related support, including for digital developments and for addressing “just transition” concerns). Climate policies and finance are indeed complementary—and climate policies are a prerequisite for enabling private finance by sending a strong signal to market participants, which in turn contributes to the achievement of climate policy goals (Chateau, Jaumotte, and Schwerhoff 2022).



B Objectives

As a first step, this report provides a greater level of detail on asset- and entity-level approaches to enable as strong a linkage as possible between climate-alignment assessment methodologies and the financing needs and specificities (such as industrial composition, mitigation, and adaptation challenges) of distinct regions and countries, especially in EMDEs (IEA 2021; WEF 2022). It aims to facilitate a higher degree of interoperability and a minimum degree of comparability across approaches around the globe. It also provides some, albeit less extensive, references to portfolio-level methodologies, which remain the focus of ongoing work at a global level because of their technical complexity.

The following sections describe foundational elements that were based on joint research and analysis and close collaboration with stakeholders, including country authorities in EMDEs.

First, alignment approaches with robust, credible, and science-based grounding tend to be more comparable and interoperable. As a result, they will promote the development of sustainable finance markets, alleviate concerns about greenwashing risks across the world, and accelerate funding of decarbonization of currently carbon-intensive economies (NGFS 2022a).

Second, the right balance between interoperability and the local context and purpose must be achieved. Alignment approaches may be developed for individual jurisdictions or at a regional level by considering factors such as (a) the characteristics and maturity of the market, (b) regulatory mandates, (c) existing regulatory context, (d) national policy priorities, and (e) immediate and future-use cases. It is therefore important to find the right balance between common principles and detailed requirements for such approaches.

Several interoperability approaches have been proposed that aim to achieve this balance for taxonomies, ranging from no interoperability to a middle ground of some interoperability, where activities or investments are assessed against each jurisdiction's own taxonomy, and to "hard equivalence" with one taxonomy, such as the European Union (EU) Taxonomy, which may have the effect of penalizing EMDEs (Green Technical Advisory Group 2023).

Third, interoperability approaches should account for the status of EMDEs. EMDEs play a key role in supply chain considerations, including consideration of the specific economic and financial structures of EMDEs, which are often dependent on international trade. The link between taxonomies in this regard is crucial, especially links between advanced economies and EMDEs. The current asset-level alignment approaches generally focus on already low-carbon activities, making it more difficult to effectively support the transition financing needs that are particularly relevant for EMDEs. These approaches also depart from different starting points, with a variety of both economic development and transition pathways (some of them recognized ab initio by science-based scenarios). They are also characterized by specific economic, industrial, and financial structures that make their financing needs for decarbonization somewhat unique, considering their insertion in global supply chains. Current alignment approaches, though they may adopt a whole-economy approach, often overlook the need to accelerate the decarbonization of hard-to-abate sectors (that is, steel, cement, chemicals, heavy transportation) in these economies and to support and improve the emission profiles of SMEs that are key to supply chains in these countries. The Multilateral Development Bank (MDB) approach to Paris Agreement alignment may have some emerging lessons for EMDEs and SMEs.⁷ One foundational element of the approach is on striking a balance between interoperability and the local context (including the characteristics and maturity of the market, regulatory context, national policy priorities, and so on). Continuous support to ensure suitable levels of ambition is also a foundational element.

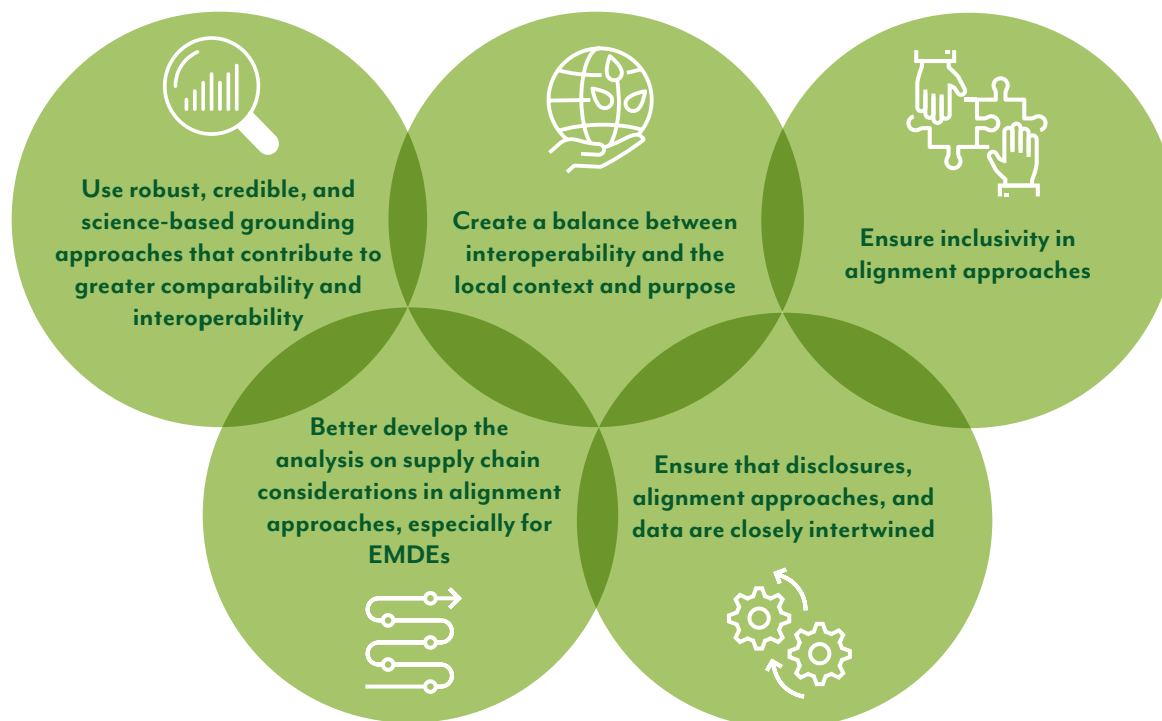
Fourth, by closely considering alignment issues related to supply chains, this report aims to (a) contribute to the credibility of net-zero corporate commitments (as GHG emissions in supply chains often cause climate and environmental impacts) (Coalition of Finance Ministers for Climate Action 2022), (b) participate in the scaling up of investments in funding for climate mitigation (and potentially adaptation) in climate-vulnerable countries and in hard-to-abate sectors, (c) improve SMEs' greenhouse gas profiles in EMDEs, and (d) accelerate the efficiency of advanced economies' alignment approaches. Specificities of supply and investment chains in EMDEs, including for energy-intensive and sophisticated EMDE-based entities, are critical to advanced economies' supply chains and ultimately mitigate supply chain price shocks.

Fifth, interoperability of alignment approaches is critical to the progress of international efforts on global and regional standards for sustainability disclosures and financial instruments. Global baselines can encourage better-quality data that are comparable and available across industries, markets, and countries, helping to pave the way for interoperable approaches. Meanwhile, disclosures following global baseline standards may contribute to global consistency of the underlying metrics used in alignment approaches. Where possible, standards should consider relevant information to be disclosed beyond a global baseline (OECD 2022c). See figure 3 for all the foundational elements.

⁷ At the 2019 UN Secretary-General's Climate Summit, MDBs reconfirmed in a joint statement their commitment to helping clients deliver on the goals of the Paris Agreement. To this aim, the MDBs developed an approach for aligning activities with the Paris Agreement goals consisting of six "building blocks": alignment with mitigation goals (BB1), adaptation and climate-resilient operations (BB2), accelerated contribution to the transition through climate finance (BB3), engagement and policy development support (BB4), reporting (BB5), and alignment of internal activities (BB6). Further details can be found at <https://thedocs.worldbank.org/en/doc/784141543806348331-0020022018/original/JointDeclarationMDBsAlignmentApproachtoParisAgreementCOP24Final.pdf>.

Comparable metrics offer the following advantages: They (a) give more credibility to claims of financial and nonfinancial market participants actually achieving climate, environmental, or other sustainability objectives; (b) are decision-useful when comparing financial and nonfinancial market participants with their peers, which then provides incentives for tracking progress and financing the transition; and (c) are actionable, by being based on the best available data (including decarbonization pathways and scenarios), drawing as much as possible on open source methodologies.

Figure 3: Foundations in implementing common principles for alignment approaches



Source: Original figure for this publication.

Note: EMDEs = emerging markets and developing economies.

Beyond the foundations, this report will also consider how development of a transition finance framework fits within the six Principles of the G-20 Roadmap because alignment approaches alone (even if in line with the Principles) will not be sufficient to deliver on sustainable finance promises and goals. A robust and widely applicable transition framework should be built on practical joint considerations and lessons for ensuring consistency with the G-20 SFWG Principles. These include the identification of transition-aligned investments, corporate and project-level reporting guidelines, impacts on the design of transition-finance-related financial instruments, and mitigation of other environmental and social impacts (including the aim of a just transition).

Operationalizing the Principles raises several challenges. To make considerable progress in operationalizing the Principles in the global context of a Paris Agreement–aligned investment environment, this report aims to provide clarity and practical options, noting the following challenges of designing a robust, low-carbon transition:

- **Bottom-up and top-down approaches.** As underlined in the G-20 SFWG 2022 report (G-20 SFWG 2022, 29), alignment approaches may vary widely, given that jurisdictions may have “specific policy priorities, capacities, market sophistication, regulatory framework, and use cases.” Operationalization of the Principles needs to consider and be inclusive of bottom-up approaches, such as GFANZ (2022), and top-down approaches, such as jurisdiction-led taxonomies that use alignment of minimum standards with international targets and regional and sectoral breakdowns (PRI 2020). These approaches include a variety of national or regional frameworks and laws, private sector–led tools and approaches, and tools and approaches developed by international organizations and market standard setters. Some government-led approaches focus on specific policy goals, such as internationally referenced climate-energy scenarios and nationally determined contributions (NDCs), to be incorporated into instrument or asset-level uses (Biorl 2021), while other bottom-up approaches are tailored more to the needs of market participants with a potentially positive effect on market development.
- **Use cases.** Tools and approaches can have a range of different use cases. Taxonomies, for example, provide a boundary and criteria- or threshold-based classification of qualified assets and/or sectors and activities, such as Colombia’s Green Taxonomy (Escobedo 2022). Labels and certifications, such as the EU’s “Ecolabel for Retail Financial Products,” can identify specific investments as sustainable. Indexes, alignment metrics, and portfolio tools may provide information on impact and performance measurement at an aggregate level (such as MSCI and Refinitiv). The options in this report cater to these different use cases. For example, taxonomies, specifically, may in some instances be used as climate risk management tools (in addition to their more conventional use for asset and portfolio alignment), though this requires a more holistic multi-asset/portfolio perspective and a transition-based approach. A handful of projects across the globe recognize the utility of taxonomies for both purposes, and this can lead to design challenges.

As emphasized in the G-20 SFWG 2022 report, use cases may also differ across jurisdictions, depending on the amount of technical expertise required; the degree to which credible, forward-looking mid- and long-term transition plans can be captured; institutional processes; related implementation costs (such as for SMEs); the desired flexibility to adjust and adapt to transition pathways as technology and supporting policy evolve; and the institutional ability to provide “a shared reference encouraging and supporting engagement between policy makers, investors and companies” (G-20 SFWG 2022, 29).

- **Level of granularity.** Approaches vary in terms of their level of detail and prescriptiveness. More detail arguably can provide a higher degree of clarity and consistency to prevent greenwashing and allows tailoring toward national (or regional) sustainability goals. Other approaches are more principles based, with an eye to allowing greater discretion and flexibility and potentially lowering the costs of auditing and certification, in particular for EMDE-based corporate entities. Operationalizing the Principles therefore requires a “middle lane” approach that finds the right balance between overly granular classifications and overly flexible ones, and at a minimum that offers a common language to determine the equivalence of specific features of alignment approaches and to facilitate their use and recognition across different jurisdictions (such as the ASEAN Taxonomy).

- **Level of application.** Approaches vary in terms of level of application; for example, taxonomies generally apply at an activity or underlying asset level. Labels can apply at the financial instrument level. Indexes or benchmarks can apply at the portfolio level. While science-based alignment measures (such as in taxonomies) and key financial instruments (such as green bonds) are mostly sector, activity, or project based, investors may find it more useful to receive clear signals about the sustainability performance of the entity as a whole (such as through transition plans), sometimes against the criteria or pathways of such classifications. The analysis considers this approach. Voluntary disclosure standards and disclosure regulations are entity based (that is, at the issuer or institution level). Both standards and regulations are arguably complementary in developing sustainability-related disclosures. For example, asset-level approaches (such as transition taxonomies built on sectoral decarbonization pathways) can inform disclosure requirements at the entity level, such as transition plans (OECD 2022b). Those approaches may then have an influence on portfolio-level methodologies, given that they are built on company-level aggregates. This would argue for an operationalization of principles that encompasses a broad range of levels of application, at asset, entity, and portfolio levels.
- **Backward-looking and forward-looking approaches.** A backward-looking approach can be based on disclosed data and a form of auditing, while a forward-looking view can provide valuable information about future trajectories and transition plans (based on extrapolated data, energy-climate scenarios, or decarbonization pathways). Further operationalizing the high-level Principles may require both backward- and forward-looking elements to consider transition plans and verify the progress made. This process could improve the credibility, accountability, and uptake of transition planning, because alignment approaches can inform the design (and reporting for accountability) of credible and comparable transition plans by investors or other firms upstream. Combining backward- and forward-looking approaches, such as with the Task Force on Climate-Related Financial Disclosures (TCFD) framework, could also be conducive to covering the whole-of-economy climate transition, including carbon-intensive sectors and EMDE-based issuers, where much of the potential for financing of decarbonization processes remains untapped.

This report therefore offers a practical approach to technical issues and options for the design and implementation of alignment approaches. It aims to help relevant public authorities as well as private organizations to develop sustainable finance alignment approaches or to enhance existing frameworks. It also helps to guide the private sector and to reduce the risk of fragmentation in capital markets. The approach adopted by this report leverages the joint knowledge of the authors' participating organizations, notably in terms of emerging application practices across advanced economies and EMDEs, and captures the currently emerging complexities at the front lines of developing alignment approaches.



C

Methodology

These high-level discussion points focus on climate-related issues—that is, supporting the temperature goals of the Paris Agreement and the outcomes of the Glasgow Climate Pact—which is a narrower approach than the abovementioned G-20 Roadmap’s focus on climate and sustainability. This narrower scope is needed to manage the analysis and application across financial markets while acknowledging that climate change mitigation goals remain the most urgent topic (noting that the rate of progress on climate mitigation is increasing the need to focus on adaptation, particularly for EMDEs). The negative impacts of climate change are indeed mounting, and rising GHG emissions “could soon outstrip the ability of many communities to adapt” (Tollefson 2022). Some fundamental aspects are applicable to other sustainability categories as well, such as adaptation to climate change, biodiversity and ecosystems, human rights, inclusion, and just transition issues. The report duly integrates them where they are material to designing approaches to align investments with the Paris Agreement goals. The following background work was undertaken:

- A **comparative analysis across all known existing and anticipated approaches** at the asset level. This analysis included a comparison of existing and forthcoming asset-level approaches, transition plan frameworks, and other entity- and portfolio-level approaches.
- A **literature review**, including documentation of key alignment approaches at the national, regional, and global levels.
- **Interviews** conducted with various public and private sector stakeholders.
- **Identification of technical issues encountered in applying the Principles.**
- **Development of answers for a set of more concrete questions for each Principle.**

With this information, the next steps were to (a) identify technical issues and apply them against each of the Principles, (b) develop suggestions to improve integration and compatibility of the Principles, and (c) provide suggestions to support the development of operational considerations and emerging lessons for each Principle. These elements are summarized in the synthesis and are detailed as part of a separate technical report for each Principle.

The structure of the review of each principle is as follows:

- **Operational issues.** This section identifies the issues regarding the relevant principles from the perspective of their design, disclosures, data, and interoperability. The objective is to lay out a series of key technical questions stemming from the analysis of the high-level principles and based on the author institutions' experience in supporting the design and implementation of alignment approaches as well as discussions among their participating organizations.
- **Key takeaways from the comparative and technical analysis.** This section showcases country-specific (or other types of) examples, as well as lessons from the literature based on the analyses undertaken.
- **Suggestions.** This part lays out options for comparability, convergence, and credibility across alignment approaches. It builds, to the extent possible, on existing analyses and recommendations from participating organizations and external stakeholders, as well as on novel work performed around alignment approaches.

Notably, several of the high-level principles are highly interdependent, especially as discussed in the following:

- **Principle 1: material positive contributions to sustainability goals, and Principle 5: science basis for environmental goals.** The interdependence is due to credibility, implementation, and usefulness considerations of sustainable finance classifications. A science basis for a climate objective under Principle 5 is a prerequisite for making any contribution to a climate-focused sustainability goal.
- **Principle 3: be dynamic to reflect policy, technology, and state of the transition changes, and Principle 6: address transition considerations.** The dynamism can be contemplated from a transition timing perspective—that is, scientific, technical, and technological changes; regulatory considerations; demand evolutions; market changes; and adjustments to ensure inclusion of all parts of the economy—and a criteria-setting perspective, such as decarbonization pathways.

The report recognizes that one size does not fit all, and reconciling the goal of having sufficient ambition and aligning with the Paris Agreement requires inclusivity and flexibility for financial market participants, including SMEs in EMDEs. While the findings of the report support the setting of targets, the report also allows for different pathways and sufficient flexibility with tiered options.

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A landscape of rolling green hills under a bright sky. The foreground is a lush green field with visible rows of crops. The hills in the background are covered in green grass and extend towards a clear, bright sky. The overall scene is peaceful and natural.

SYNTHESIS BY PRINCIPLE

**Critical Considerations
and Emerging Lessons
in Applying Principles for
Alignment Approaches**



PRINCIPLE

1

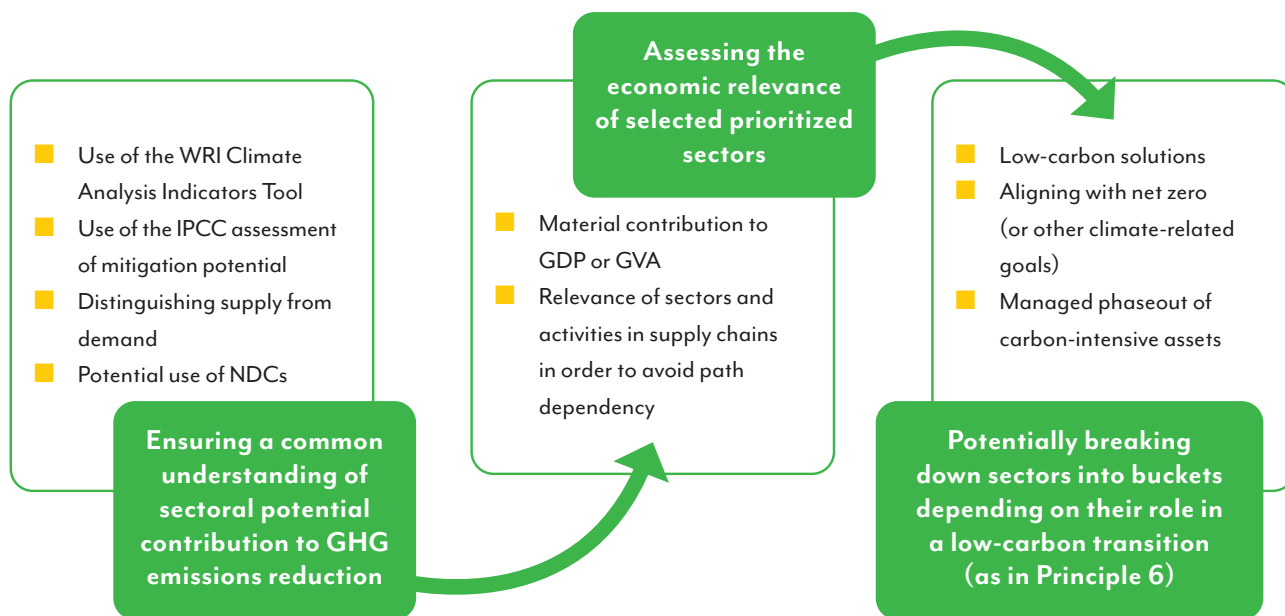
Aims to ensure that alignment approaches bring material positive contributions to sustainability goals and focus on outcomes.

This report focuses on how this principle applies to climate change mitigation as a primary objective, to ensure material real-world decarbonization outcomes. Designing an alignment approach according to this principle raises a variety of methodological challenges, including (a) formalizing the scope of the objectives, (b) defining climate change mitigation and how it affects criteria setting, and (c) developing the methodology to define screening criteria (principles based or outcome based) and assess alignment. Existing approaches have mostly focused on climate change mitigation as a primary objective, with diverse methodologies in sectoral coverage choices and assessment of what constitutes a substantial contribution. In this context, the report highlights that the application of Principle 1 may be based on the following foundations:

- **A common and science-based definition of a climate change mitigation objective.**
- **A common process to set climate or environmental objectives**, in line with a climate-related ambition defined beforehand and tailored to financing needs at the regional, national, or sectoral level—especially for emerging markets and developing economies (EMDEs) and low-income countries. On this basis, consideration can be given to (a) financing gaps for the objectives and (b) vulnerabilities and current barriers to achieving those objectives. This process ensures that the alignment approaches can support transparency, assessment, and financing. Alignment approaches may also consider multiple objectives, which can be developed in phases, considering the interactions—and potential trade-offs—between climate and environmental goals (or other sustainability goals), as well as the feasibility of the application of a “do no significant harm” (DNSH) approach to these objectives (see Principle 2).

- Sectoral prioritization, which is a crucial step in the design of an alignment approach, primarily at the asset and entity levels and most particularly for climate change mitigation goals.** Three key principles may be applied: (a) a broad coverage of sectors looking at a system level; (b) clear-cut terminology use, distinguishing between economic sectors, activities, industrial processes, and technologies; and (c) a distinction in setting criteria or decarbonization pathways (or both) between sectors with high decarbonization pathways and those with a potential to enable decarbonization (for example, information technology for efficient grid operations). Given the carbon-intensive nature of economies, alignment approaches need to promote a substantial contribution to climate-related goals by scaling up zero-carbon alternatives to high-emitting activities, especially those in hard-to-abate sectors, as a prerequisite to phasing out high-emitting assets. A three-step methodology (figure 4) can be considered for sectoral identification and prioritization based on (a) decarbonization potential, (b) economic relevance of the activity to a country or region, and (c) a “three-bucket” approach in the assessment of the sectors’ contribution to decarbonization goals—namely, low-carbon solutions, alignment with the Paris Agreement temperature goals, and managed phaseout. The report also includes emerging lessons in translating carbon budgets into benchmarks as part of portfolio-level alignment approaches.
- A common approach to assess greenhouse gas (GHG) emissions and perform life cycle analysis,** particularly given the data-related challenges such as Scope 3 and value chain GHG emissions data, lack of avoided emissions data, inconsistency of data across providers, and limited data for micro, small, and medium enterprises (MSMEs). Climate performance metrics should also factor in different temporal perspectives, with policy milestones preferred to allow for consistency, comparability, and tracking.

Figure 4: A three-step approach to assess substantial contribution

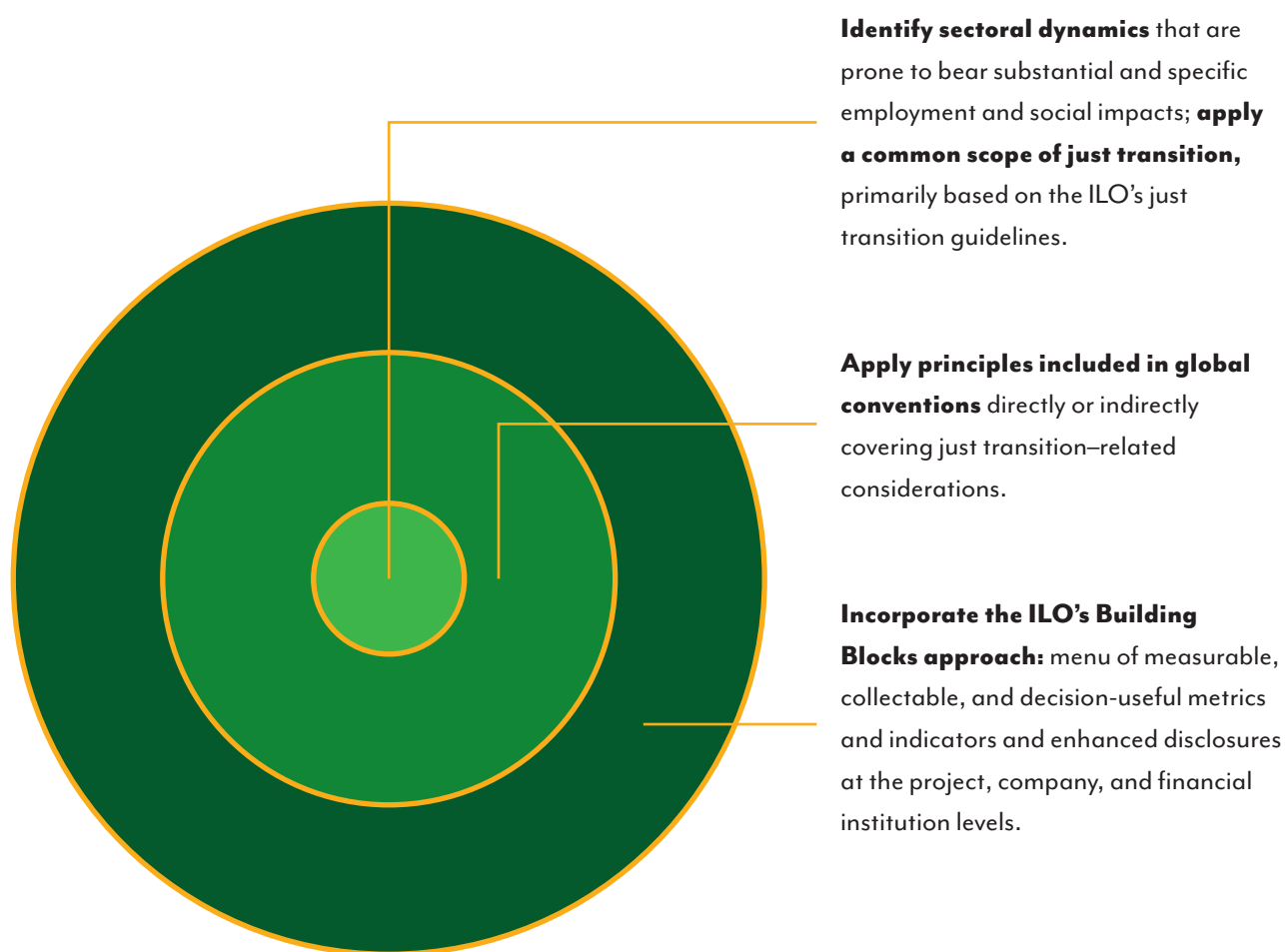


Source: Original figure for this publication.

Note: GDP = gross domestic product; GHG = greenhouse gas; GVA = gross value added; IPCC = Intergovernmental Panel on Climate Change; NDCs = nationally determined contributions; WRI = World Resources Institute.

- Principles-based observations to address just transition considerations**, as part of the assessment of a substantial contribution to climate-related objectives and the integration of transition considerations (Shipper et al. 2022). The report lays out a series of options, summarized in figure 5.⁸ The International Labour Organization (ILO) defines a “just transition” as one that maximizes the social and economic opportunities of climate action, while minimizing and carefully managing any challenges (such as employment impacts of the low-carbon transition in hard-to-abate sectors, socioeconomic impacts of the phasing out of coal at the subnational level because of structural dependencies on the coal-producing industry, and so on)—including through effective social dialogue among all affected groups and respect for fundamental labor principles and rights.

Figure 5: Ways to address just transition considerations in alignment approaches



Source: Original figure for this publication.
 Note: ILO = International Labour Organization.

8 Originally defined by the International Labour Organization, the most recent statement of the 2022 United Nations Climate Change Conference (COP27), November 2022, noted that a “just and equitable transition encompasses pathways that include energy, socioeconomic, workforce and other dimensions, all of which must be based on nationally defined development priorities and include social protection so as to mitigate potential impacts associated with the transition” (UNFCCC 2022, 6).

- **A dual and complementary solution to seeking consistency across asset-level alignment approaches from a statistical point of view.** This solution consists of (a) the use of the same industrial classification system across all approaches—or, at a minimum, the connection to the same industrial classification system for those asset-level alignment approaches that have already been adopted—and (b) mapping between International Standard of Industrial Classification (ISIC) codes and other regional or national statistical classification codes to ease international assessment.



PRINCIPLE

2

Aims to avoid negative contribution to other sustainability goals (for example, through requirements to do no significant harm to any sustainability goal).

This Principle emphasizes that alignment approaches need to be underpinned by a foundation of environmental, social, and governance (ESG) risk management to avoid negative contributions to other sustainability goals. A robust ESG due diligence and risk management approach contributes to financial stability by reducing investment risk, prevents greenwashing, and prevents unintended or secondary negative impacts on society and the environment. For example, in an asset-based alignment approach, a project that increases water availability should avoid significant harm to climate change goals (for example, from additional GHG emissions) or ensure compliance with certain social safeguards (for example, avoiding human rights abuses).

Operational design issues include defining “significant harm.” Considerations include the following:

- How is material and significant risk defined?
- What are the thresholds that trigger further assessment and mitigation?
- Is harm identified at the activity level or at a company level?
- How far into subsidiaries and supply chains should harm be assessed?
- What level of mitigation will bring the activity into alignment?

From a data and disclosure perspective, questions arise regarding when an assessment should be undertaken and how often, because harm may emerge over time; what external assurance could be given to ensure the assessment is credible; and how to ensure that broader ESG risk management is embedded in an entity from a good governance perspective.

Several taxonomies have adopted both a “do no significant harm” (DNSH) criterion and a minimum social safeguard (MSS) screening criterion. Other taxonomies rely on adherence to national environmental and social regulations and laws. Green bond disclosure frameworks may also require disclosure of social and environmental risks and the processes in place for mitigation. ICMA’s Green Bond Principles call on issuers to clearly communicate to investors about how they identify and manage perceived social and environmental risks associated with the relevant project(s); and encourage issuers to have a process in place to identify mitigants, including clear and relevant trade-off analysis.

Emerging lessons suggest that rather than inventing new methodologies to demonstrate avoidance of significant harm, to the extent possible existing standards and frameworks can underpin DNSH and MSS criteria. Doing so can allow existing systems and data sources to be employed.

Thus, a **two-tiered approach for implementing Principle 2** could be based on shared minimum ground and options for improvement.

At a minimum, the framework could ensure compliance with the following:

- **National environmental and social regulations and laws** applicable to the sector, location, and activity.
- **Relevant international conventions to which the jurisdiction is a signatory**, such as conventions on labor and human rights (such as the ILO Declaration on Fundamental Principles and Rights at Work and the International Bill of Human Rights) and those that are directly related to the preservation of the environment (for example, the Convention on Biological Diversity, the Montreal Protocol on Substances That Deplete the Ozone Layer, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, the London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, the Stockholm Convention on Persistent Organic Pollutants, and other international conventions). Explicit reference to conventions in alignment approaches may facilitate interoperability and international investor due diligence.

The approach can also propose the following:

- **A well-defined risk management approach** (such as an environmental and social risk management standard or a due diligence and monitoring approach)—for example, the International Finance Corporation (IFC) Performance Standards⁹ or those adapted from those standards, such as the OECD Common Approaches or the Equator Principles, as well as the impending disclosure standard being prepared by the International Sustainability Standards Board for managing material sustainability risks and opportunities.¹⁰
- **An indicative set of environmental and social performance topics**, such as those reflecting global consensus demonstrated by ESG risk management standards, sustainability disclosure good practice, and the Sustainable Development Goals (SDGs)

9 IFC’s ESG Standards comprise the Performance Standards, which define clients’ responsibilities for managing their environmental and social risks, and the Corporate Governance Methodology, which sets out an approach to evaluate and improve the corporate governance of clients (IFC 2012). See also the IFC Corporate Governance Methodology, 2023, <https://www.ifc.org/content/dam/ifc/doc/2023/ifc-corporate-governance-methodology.pdf>.

10 Joint research by the IFC and the Equator Principles Association (June 2023) has explored the linkages between the IFC Performance Standards (PSs) and World Bank Environmental, Health, and Safety (EHS) Guidelines, and the DNSH and minimum safeguards criteria set by the European Union’s Taxonomy for Sustainable Activities. The research concluded that the PSs and EHS Guidelines approach to environmental and social risk management is entirely compatible with the EU Taxonomy’s DNSH and Minimum Safeguards (MS) requirements.

The implementation of a broader Responsible Business Conduct (RBC) due diligence framework should provide an anchor framework to cover supply chains beyond companies' own operations. An RBC due diligence framework sets an expectation that businesses (including investors) will avoid and address adverse impacts of their operations (or economic activities), including when they occur in their supply chains and business relationships. The Organisation for Economic Co-operation and Development (OECD) “Guidelines for Multinational Enterprises on Responsible Business Conduct” (MNE Guidelines; 2023) are recommendations addressed by governments and aimed at multinational enterprises operating in or from adhering countries. These guidelines are the only multilaterally agreed on and comprehensive code of responsible business conduct that governments have committed to promoting. They adopt a risk-based approach to identify, prevent, mitigate, and account for how they address these actual and potential adverse impacts in their own operations, their supply chains, and other business relationships. The approach can be particularly relevant in the context of assessing the contribution of business and the financial sector to GHG emissions and reductions of those emissions, both from corporate operations and across the supply chain. The MNE Guidelines were updated to reflect and clarify expectations. They are now the first government-backed recommendations for businesses (including financial service providers) on how to align with global temperature goals. The Environment chapter sets out the expectations that enterprises conduct due diligence to assess and address adverse environmental impacts associated with their operations, products, and services, and their business relationships, including in relation to climate change, biodiversity, and human rights.

Figure 6: Method to assess the “do no significant harm” principle in alignment approaches



Source: Original figure for this publication.

Notes: IFC = International Finance Corporation; OECD = Organisation for Economic Co-operation and Development.



PRINCIPLE

3

Aims to ensure that alignment approaches are dynamic, reflecting changes in policies, technologies, and the state of the transition.

Approaches for alignment would be most effective if they reflected (a) scientific, technological, and market changes and (b) the evolution of both domestic and international policy agendas and priorities, yet examples of these are disparate and relatively scarce.

In addition, a few asset-level alignment approaches have evolved their criteria for those activities that are highly carbon intensive. Dynamism also involves adapting over time with improvements in the availability and quality of data and metrics, and it encompasses the changing nature of the transition and achievement of targets. Such dynamic adjustments may take the form of changing coverage (for example, sectoral coverage) and technical standards. The application of Principle 3 may be based on the following foundations:

- **Alignment approaches should be reviewed and updated** periodically to capture changing expectations, as countries and industries move forward in decarbonization over time and while transition pathways across emerging markets and developing economies progressively converge. This is particularly important for high-priority sectors for decarbonization that would be more prone to such evolutions and as alignment approaches ultimately aim to mobilize capital for research, development, and innovation of alternative low-carbon technologies and solutions (for example, technological and economic breakthroughs in green steel or cement production).

- **An alignment approach may detail the specific conditions under which approaches would evolve and the governance arrangements that are in place to implement new developments.** Such details may include implementing permanent governance committees to address the challenges of implementation and updating the sectors, activities, and criteria, all of which will require resources and time for public entities. Governance committees need clear mandates and delegated responsibilities; a process to conduct stakeholder engagement every *n* years; a process to ensure continuous capacity building of stakeholders; and the design and implementation of measurement, reporting, and verification systems and mechanisms. For example, entities using transition plans as part of Principle 6 may need to consider the transition of carbon-intensive assets, activities, and sectors in line with scientific and technological developments and, therefore, regularly review and update their plans.
- **Disclosures in transition plans must regularly evolve and make direct references to the time span in which they operate.** This information is crucial given that transition requirements will progressively become more stringent as low-carbon targets approach and something is needed to motivate the adoption of scientific and technological developments.
- **An inclusive approach may be developed for the treatment of green and sustainability-aligned bond instruments**—without undermining the ambition of alignment approaches—by integrating the concept of equivalent information into the framework where there is an absence of reported information. The use of equivalent information may integrate the concept of grandfathering to committed (or allocated) proceeds of green and other types of sustainability financial instruments—for example, financing fixed assets, capex (capital expenditures), opex (operating expenses), sovereign expenditures, equity, and debt.



PRINCIPLE

4

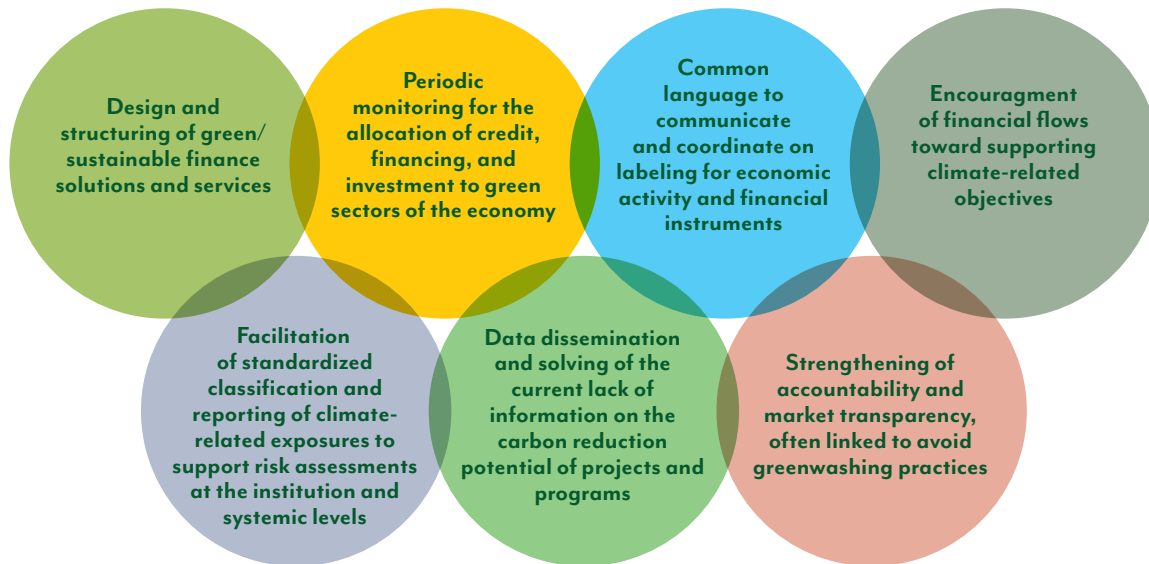
Aims to ensure that alignment approaches reflect good governance and transparency.

Good governance and transparency are critical during both the development and maintenance stages of alignment approaches. Essential elements include the following:

- **Clear ownership and leadership** by appropriate institutions in the market, which may include a mix of government agencies and private sector entities or associations
- **Clarity of the purpose** of the alignment approach, how it will be implemented, and what claims can be made
- **Clear guidance** on disclosure of performance and outcomes
- **Representation of relevant voices** during stakeholder consultation and in ongoing oversight structures
- **Transparent communication** to interested and affected parties on governance and implementation matters
- **A process to respond to stakeholder grievances** to ensure accountability and responsiveness to market realities
- **A commitment to review and respond** to emerging information on the effectiveness of the alignment approach
- **A commitment to promote ease of use and broad applicability** through interoperability and the use of common international approaches

Figure 7 provides objectives for existing alignment approaches and illustrates how they overlap.

Figure 7: A variety of objectives for existing alignment approaches



Source: Original figure for this publication.

Strong governance standards can help overcome a range of disclosure and information challenges in the design and successful implementation of alignment approaches. However, there are common disclosure dilemmas in relation to alignment approaches, including the following:

- **Quality of information available to investors.** Market failures from insufficient disclosure practices in traditional capital markets can lead to reduced funding flows and higher funding costs. Sustainable finance may be marred by similar market failures and may operate in a more complex and less developed data environment than conventional finance. Through improving information quality, governance frameworks can help steer investors toward objectives that are consistent with the preferences and policy objectives of sustainability and the impact aspirations of their clients. Information produced by financial market participants can also help set the appropriate price for externalities (such as carbon taxes), thus enhancing the sustainability of economic activities.
- **Minimum disclosure requirements that distinguish between entity-level reporting and activity- or sector-level reporting while recognizing the linkages between the two.** An asset-level approach that ignores entity-based information altogether is prone to greenwashing risks (such as misleading labeling) because a company or an issuer that can label part of its activities or project as green should not necessarily be considered green or sustainable as an entity. Although much of the sustainable finance market—particularly in relation to green bonds—has focused on verifying green, low-carbon, or sustainable activities, asset-level alignment approaches are progressively incorporating entity-based information, which allows for leveraging the entity’s overall approach to managing ESG risk as well as its transition commitment and plan.

- **Addressing the needs of diverse users of information.** Sustainable finance is of interest to a broader set of stakeholders than just investors in a company's equity or debt securities. Given the need to account for the externalities that a firm imposes on the environment in which it operates, a common view is that disseminated information should be material to both investors and other stakeholders (double materiality), and the adoption of double-materiality standards could improve the quality and comparability of the information provided. It also serves to manage stakeholder relationships, which in turn reduces risk and has been linked to other business benefits, including financial outperformance (Eccles, Ioannou, and Serafeim 2014).
- **Managing data complexity.** Sustainability-related data needs are inherently higher than those in conventional finance, particularly for sustainability-linked bonds, where specific performance metrics are tracked, and transition finance, for which companies need to disclose progress on their specific transition plans and milestones. (In particular, this is the case for sustainability-linked bonds, where use of proceeds is not tracked.) For example, investors in thematic bonds, as opposed to "vanilla" bonds, will demand additional data on the use of proceeds or key performance indicators as well as ongoing data updates to track progress toward promised results. Alignment approaches can help identify core elements of, and metrics for, environmental impact and thus contribute to the improvement of the effectiveness of disclosure and data availability, as well as harmonization of scoring methodologies.
- **Ensuring consistent and transparent use of climate-related metrics.** Metrics used by third parties (such as index providers and transition finance framework providers, including authorities and industry bodies) should support the global comparison of climate-related risks and opportunities as well as the achievement of climate objectives for those financial market participants committed to those objectives. Methodological elements should be transparent to support the quality of climate-related metrics. Where chosen metrics align with existing indicators used in disclosure frameworks, alignment approaches can leverage existing frameworks and contribute to common data usage.
- **Accommodating different disclosure requirements, which recognize that small and medium enterprises (SMEs) in all economies and firms in EMDEs typically have fewer resources to comply with onerous disclosure requirements.** Different disclosure regimes for such firms could solve the issues of limited availability of assurance services in EMDE markets and compliance costs for SMEs that may be excessive relative to their size, and the lower risks they present. They could also address broader concerns about these firms' ability to acquire and process complex data. Less data should be expected from companies further down the supply chain (because of the associated costs); therefore, one strategy is to prioritize key metrics, such as GHG Scope 1 and Scope 2, which can inform Scope 3 disclosure by larger entities that are either buyers from or investors in the SME. In this way, disclosure regimes for SMEs can focus on strengthening their ability to secure contracts with buyers along supply chains and to gain access to finance from banks because of their climate and ESG credentials.
- **Increasing credibility through external review.** Use of assurance and verification has implications for the costs of adopting alignment approaches and can therefore be perceived as a market barrier. Use of assurance and verification also requires that regulators consider the availability of local service providers and provide guidance on suitable standards of practice, such as whether assurance providers must be certified according to local or international standards. There are other options that may add more value for SMEs, such as getting certified in line with specific labels or programs or International Organization for Standardization (ISO)-type standards. Assurance will generally focus on the systems that underpin ESG performance. If verification of GHG Scopes 1, 2, and 3 is the main goal, then audit, assurance, and verification can be limited to that topic.

To promote quality, consistency, and reliability in sustainable finance alignment approaches, policy makers, financial authorities, and central banks—within their mandates—can therefore consider the following:

- **Supporting the consistent and transparent use of climate-related metrics** to foster greater quality and comparability across jurisdictions and industries
- **Gradually working toward mandatory disclosure requirements** to reduce market uncertainty and promote the availability and use of reliable, comparable, and high-quality data
- **Disclosing entity-level as well as activity-level information** to prevent greenwashing and assess companies' broader alignment to national, regional, or global industry-specific climate-related targets
- **Encouraging disclosure of forward-looking information**, including interim targets and transition plans
- **Ensuring effective, high-quality external review**
- **Providing clear and proportional guidance** to support the scope, format, and frequency of information (including forward-looking information) to be disclosed



PRINCIPLE

5

Aims to ensure that alignment approaches are science based for environmental goals and science or evidence based for other sustainability issues.

The best available science and technologies should drive the definitions of metrics, thresholds, and technical screening and assessment criteria in alignment approaches. Where science-based metrics are not feasible, approaches adopted should be fact based and ideally subject to verification.

Several design challenges arise in applying this principle: (a) choosing the science-based driver, whether normative or scientific (such as national development priorities, SDGs, Paris Agreement temperature goals) and (b) defining a scientific baseline and ensuring it is incorporated into the criteria setting (such as choices regarding Scope 3 coverage, life cycle analysis, or inclusion of negative emissions from carbon capture).

Embedding the approach in science has significant consequences in terms of sectoral coverage, revision of the criteria over time to reflect evolving scientific and technical developments, and application of a transition-based approach.

It also leads to key consequences in terms of disclosures and data. Because of the technical nature of the metrics, data points, underlying methodologies, and overall reporting, data need to be verifiable. Any system of external assurance needs to be practical, and the choice of accounting standards to inform reporting under science-based criteria is significant.

Interoperability issues arise because of differences in quality, comparability, and reliability of data (specifically physical data) across economies, where significant data gaps exist. Different starting points and objectives in achieving climate-related objectives lead to differences in implementation of these alignment approaches, including from a science-based perspective.

Alignment approaches should aim to be objective in nature, supported by clearly defined and disclosed metrics, thresholds, or technical screening and assessment criteria that align with the best available science and technologies, where appropriate, and should be internationally interoperable.

When science-based metrics are not feasible, the approaches adopted should be fact based and subject to verification. Designers of the approach can lay out the rationale behind the design of the alignment approach and the advantages and disadvantages of the different science-based drivers of alignment approaches, such as nationally determined contributions (NDCs), sectoral road maps or decarbonization pathways, localization of global scenarios at the regional or national level, and use of national regulations.



PRINCIPLE

6

Aims to address transition considerations.

Alignment approaches should consider how to support a credible and just transition to a low-emission and climate-resilient economy. "Transition" means the fundamental interim process by which financial market participants, including nonfinancial companies, must transform their business model and their activities to substantially decarbonize; to ensure their environmental, social, and financial resilience; and therefore to adapt to a (warming) world under tight GHG emissions constraints.

As a result, transition is a forward-looking concept, meaning that it applies time-bound decarbonization pathways to reach net-zero goals, temperature alignment, or other environmental objectives. **It is also a holistic concept,** meaning that it has to be applied at the entity level.

Addressing transition considerations is a challenging exercise, given the unintended consequences it may entail—involving carbon lock-in, low-integrity investments, greenwashing risks, and rebound effects, if solely based on reducing emissions intensity rather than on absolute emissions (Creed and Horsfield 2021). Forward-looking information is indeed particularly exposed to greenwashing risks, owing to its reliance on projections. In this context, ensuring that alignment methodologies fully address transition considerations and capture transition dynamics includes elements such as the identification of transitional assets; the design of credible transition pathways; the implementation of relevant disclosures, including transition plans; and the rollout of verification requirements. Therefore, enhancing the robustness of a transition finance framework also aims to ease the mismatch between increasing demand for sustainable finance products and limited already low-carbon investment opportunities, thus helping to address greenwashing and contributing to a credible definition of a transition-aligned investment (ESMA 2023).

For asset-level alignment approaches, primarily in the form of taxonomies, there are three main approaches to transition:

- **A transition whitelist approach.** This approach includes activities with a positive climate impact that do not require any thresholds (for example, solar energy generation) and activities with benefits for climate mitigation purposes (for example, carbon capture, utilization, and storage [CCUS] for coal; reduction of methane leakage in pipelines).
- **A “dynamic pathway” approach** from significant harm to significant contribution, using a traffic-light approach. Amber activities are those that (a) move toward a low-carbon pathway but are not currently zero emissions, (b) face decarbonization barriers because alternatives do not exist, and (c) adopt interim solutions that reduce GHGs (for example, carbon capture and storage in a gas plant).
- **Remedial efforts to transition.** These efforts, though still causing some harm, do not involve further carbon lock-in.

Notably, just transition considerations are currently not embedded in these approaches.

The application of Principle 6 may involve the following:

- **Detailing options to effectively embed supply chain criteria and targets in transition plans.** Decarbonization criteria may be focused on the most efficient abatement levers, including circularity, process and material efficiency, use of renewable power, and nature-based solutions with advantages that may differ among sectors and geographical areas.
- **Underscoring to what extent and how entity-level reporting is key**, especially if associated with sectoral pathways and if based on a full GHG scope reporting criterion, to encompass the entire value chain.
- **Providing environmental and financial credibility to corporate climate transition plans so that they can have a measurable impact on the real economy and support climate alignment frameworks at the financial sector level.** In this context, entity-level alignment approaches can address transition considerations in a science-based manner through consideration of seven pillars, as circle the core in figure 8.
- **Connections with asset-level and portfolio-level alignment approaches.** These connections are varied and often important across these seven pillars. Such connections are all the more important because of the increasing investor focus on alignment approaches' impacts on real economy decarbonization.

Figure 8: Pillars to transition-related considerations in alignment approaches at the entity level



Source: Original figure for this publication.

- **In transition planning, accounting for the particular circumstances of MSMEs and certain companies in EMDEs.** While the recommendations in principle apply to all companies and jurisdictions, the particular challenges of MSMEs and certain EMDEs need to be accounted for. This is because corporate transition strategies and plans should be in line with the global temperature goals of the Paris Agreement and, as a result, carbon-intensive lock-in must be avoided. MSMEs and some EMDEs have fewer resources available to comply with onerous disclosure requirements. Consequently, their focus can be on aligning their operations to keep their position in global supply chains or on structuring their operations to benefit from (for example) domestic preferential financing opportunities in support of a transition. In addition, MSMEs play a key role in the deployment of low-carbon innovation and employment and in promoting social cohesion.

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Glossary

In the context of this paper, the following terms are used as per the following definitions. Some definitions are adapted from the ICMA Sustainable Finance High-Level Definitions and from the glossary of the IPCC Special Report 1.5°C (2018).

Abatement	Measures that companies take to prevent, reduce, or eliminate sources of GHG emissions within their value chain. Examples include reducing energy use, switching to renewable energy, and retiring high-emitting assets. Another similar term is <i>decarbonization</i> .
Adaptation	In human systems, the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities. In natural systems, the process of adjustment to actual climate and its effects; human intervention may facilitate adjustment to expected climate and its effects.
Alignment approaches	National, regional, and international policy frameworks for the financial sector that aim to monitor and ensure global sustainable finance flows are contributing to the goals of the Paris Agreement and the Sustainable Development Goals.
Alignment tools	Tools that support the implementation of alignment approaches. They include but are not limited to taxonomies, transition planning frameworks, labels, certifications, indexes, emission measurement methodologies for financial activities, and Paris- and/or SDG-aligned disclosure requirements.
Carbon credits	Units that are generated through voluntarily implemented emission reduction activities. Carbon credits can represent emission reductions achieved through either avoidance, for instance by capturing methane from landfills, or by removal from the atmosphere, such as sequestering carbon through afforestation or directly capturing carbon from the air and storing it. Each carbon credit represents 1 metric ton of carbon dioxide equivalent (tCO ₂ e) reduced or removed.
Carbon markets	A mechanism that allows countries or companies to buy and sell carbon credits. They include both compliance (created under a national, regional, or international policy or regulatory requirement) or voluntary.
Carbon sinks	A reservoir (natural or human, in soil, ocean, and plants) where a GHG, an aerosol, or a precursor of a GHG is stored.
Certifications	A system of checking that entities, products, or services have met certain standards or definitions.
Climate finance	Financing that supports the transition to a climate-resilient economy by enabling mitigation actions to reduce and contain greenhouse gas emissions and adaptation actions that promote the climate resilience of infrastructure as well as social and economic assets.
Climate transition	A pathway supported by plans, policies, targets, milestones, and initiatives to achieve a climate-resilient economy with low greenhouse gas emissions in line with the goals of the Paris Agreement. Article 2.1 (c) of the Paris Agreement refers to “making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.”
Decarbonization	The process by which countries, individuals, or other entities aim to achieve zero fossil carbon existence. This typically refers to a reduction of the carbon emissions associated with electricity, industry, and transport.
Decoupling	Decoupling (in relation to climate change) is where economic growth is no longer strongly associated with consumption of fossil fuels. Relative decoupling is where both grow but at different rates. Absolute decoupling is where economic growth happens but fossil fuels decline.
Do No Significant Harm	A requirement in the context of sustainable finance policy that, while a financed activity, asset, or entity makes a significant contribution to certain environmental or social objectives, it should not at the same time do significant harm to other environmental or social objectives, thereby negating or diminishing the overall environmental and social benefit of the activity, asset, or entity.
Double materiality	A disclosure is material if it is material from an “impact” perspective (that is, affects employees, customers, vendors, or the environment), a financial perspective (that is, investors or creditors), or a combination of both.

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ESG disclosure	Mandatory or voluntary disclosure by private and/or public sector entities—with reference to international or national regulations, standards, or frameworks—on their approach and results in managing ESG performance and impacts.
ESG investing	Strategies and practices that incorporate material ESG factors in investment decisions and active ownership with a view to minimize risks and maximize returns. It can be pursued by all investors as part of their fiduciary duty on the basis that ESG factors are considered as having a material impact on returns.
ESG index	An index of companies, sovereigns, or supranationals that meet certain criteria for environmental, social, and governance performance. In the case of alignment with the Paris Agreement goals, the constituent entities may need to demonstrate adherence to certain criteria or performance thresholds for climate change mitigation and reduction of greenhouse gas emissions.
ESG standards	Voluntary or mandatory performance standards for managing the environmental, social, and governance performance of an activity, asset, or entity. ESG standards can be used to manage risk in financed activities, assets, and entities. They may link to disclosure requirements.
Financial inclusion	The availability and equality of opportunities to access financial services. It refers to a process by which individuals and businesses can access appropriate, affordable, and timely financial products and services. These include banking, loan, equity, and insurance products.
Green finance	Finance that addresses environmental objectives, such as climate change mitigation and adaptation, natural resource conservation, biodiversity conservation, and pollution prevention and control.
Green, Social, and Sustainability (GSS) Bond	Fixed-income financial instruments, from which proceeds are used to finance or re-finance a combination of green and social projects or activities with the aim of addressing environmental and social challenges, including climate change.
Impact finance	Financing of businesses or economic activities which produces verifiable and direct positive impact on the society and/or environment, based on agreed metrics and benchmarking, while also seeking market-aligned or better financial returns.
Inclusive green finance	Access to and usage of financial services and products that build resilience to the negative impacts of climate change, loss of biodiversity, and ecosystems, and that facilitate participation of low-income households, small businesses, and vulnerable groups in the green and low-carbon economy.
Just Transition	A framework initially developed by the trade union movement that encompasses a range of social interventions needed to secure workers' rights and livelihoods and minimize negative social impacts, particularly on vulnerable communities, when economies are shifting to address environmental challenges, such as climate change. In the context of climate change, a just transition may seek to ensure that the substantial benefits of a low-carbon transition are shared widely while also supporting those who stand to lose economically.
Label	An official symbol that shows that a product meets certain criteria. For instance, an environmental label indicates that a product has been designed to do less harm to the environment than similar products. Environmental or social labels are a means of measuring performance and also communicating and marketing the sustainability credentials of a given product.
Lock-in	A situation in which the future development of a system, including infrastructure, technologies, investments, institutions, and behavioral norms, is determined or constrained ("locked in") by historic developments.
Low-carbon	Causing or resulting in only a relatively small net release of greenhouse gases (CO ₂ equivalent) into the atmosphere.
Minimum social safeguards	A requirement in the context of sustainable finance, and particularly taxonomy frameworks, whereby activities that seek to be identified as having environmental and social benefits and/or meeting sustainability criteria must, at a minimum, meet certain social and human rights criteria or standards.
Mitigation (of climate change)	A human intervention to reduce emissions or enhance the sinks of greenhouse gases.

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Net Zero	A state in which human-caused greenhouse gases going into the atmosphere are balanced by human-led removal out of the atmosphere, over a specified period and within specified boundaries. It is also used to describe targets and strategies adopted by governments, cities, and private sector entities to adhere to national emission-reduction pathways that are consistent with limiting the global temperature increase to 1.5°C above pre-industrial levels in line with the Paris Agreement.
Paris Agreement	A legally binding international treaty on climate change adopted by 196 Parties at the UN Climate Change Conference (COP21) in Paris, France, on December 12, 2015, with the overarching goal of holding “the increase in the global average temperature to well below 2°C above pre-industrial levels” and pursuing efforts “to limit the temperature increase to 1.5°C above pre-industrial levels.”
Pathway (or Emission pathway)	The temporal evolution of natural and/or human systems toward a future state. Pathway concepts range from sets of quantitative and qualitative scenarios or narratives of potential futures to solution-oriented decision-making processes to achieve desirable societal goals. Pathway approaches typically focus on biophysical, techno-economic, and/or sociobehavioral trajectories and involve various dynamics, goals, and actors across different scales.
Resilience	The capacity of social, economic, and environmental systems to cope with a hazardous event, trend, or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure while also maintaining the capacity for adaptation, learning, and transformation. This definition builds from the definition used by the Arctic Council (2013).
Scopes (of GHG emissions)	<p>Scope 1 Direct GHG emissions occur from sources that are owned or controlled by the company—for example, emissions from combustion in owned or controlled boilers, furnaces, vehicles, and so on, or emissions from chemical production in owned or controlled process equipment.</p> <p>Scope 2 Emissions from purchased electricity, heat, and steam for use in business operations. Scope 2 emissions physically occur at the facility where electricity is generated and so would fall into the Scope 1 category for the power generator.</p> <p>Scope 3 Scope 3 is a reporting category that allows for the treatment of all other indirect emissions. Scope 3 emissions are a consequence of the activities of the company but occur from sources not owned or controlled by the company—typically as a result of supplier or customer activities.</p> <p>These can be up or down the value chain—for example, transport and distribution—or the disposal of goods or services after they reach the consumer. Some examples of Scope 3 activities are extraction and production of purchased materials; transportation of purchased fuels; and use of sold products and services.</p>
Sustainable Development Goals	The 17 goals that form the core of the 2030 Agenda for Sustainable Development, which were adopted by the United Nations on September 25, 2015, to end poverty, protect the planet, and ensure prosperity for all. Each goal has specific targets to be achieved by 2030, totaling 169 targets for all 17 goals. These goals and targets have been designed for consideration by national governments and are increasingly used by the private sector.
Sustainable finance	Practices by financial institutions and other financial sector participants that reduce and manage ESG risks resulting from or affecting financial sector activities, including climate change risks, and that encourage the flow of capital to assets, projects, sectors, and businesses that have environmental and social benefits, including climate change mitigation and adaptation.
Sustainable finance taxonomy	A classification system identifying activities, assets, and/or project categories that deliver on key environmental, social, or sustainable objectives and/or criteria with reference to identified thresholds and/or targets.
Sustainability-linked loan	Any type of loan instrument and/or contingent facility—such as bond line, guarantee line, or letter of credit—that incentivizes the borrower’s achievement of ambitious, predetermined sustainability performance objectives.
Transition frameworks	Principles, guidance, and/or methodologies that help the private sector to design and communicate a credible shift to low-carbon technologies and practices in line with the Paris Agreement goals.
Value chain GHG emissions	Can mean a company’s Scope 3 emissions (see <i>Scopes</i>). However, sometimes the term value chain is used more broadly and includes a company’s operational emissions (Scope 1 and Scope 2) as well as Scope 3.

Note: CO₂ = carbon dioxide; ESG = environmental, social, and governance; GHG = greenhouse gas; GSS = green, social, and sustainability; SDGs = Sustainable Development Goals.



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