Institute for Sustainable Finance

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CANADA'S TRANSITION & GREEN TAXONOMY FOR SUSTAINABLE FINANCE

Insights from a Review of Industry Publications

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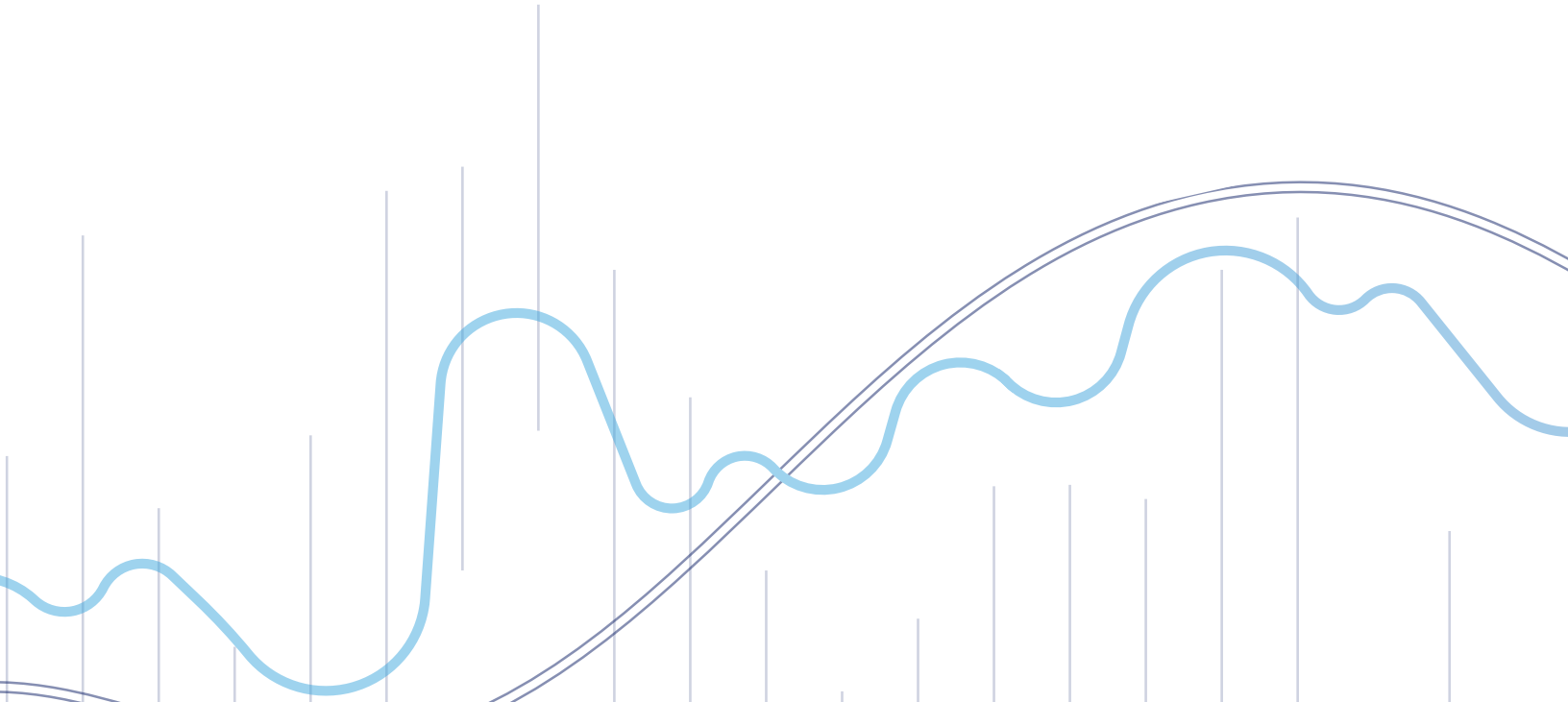

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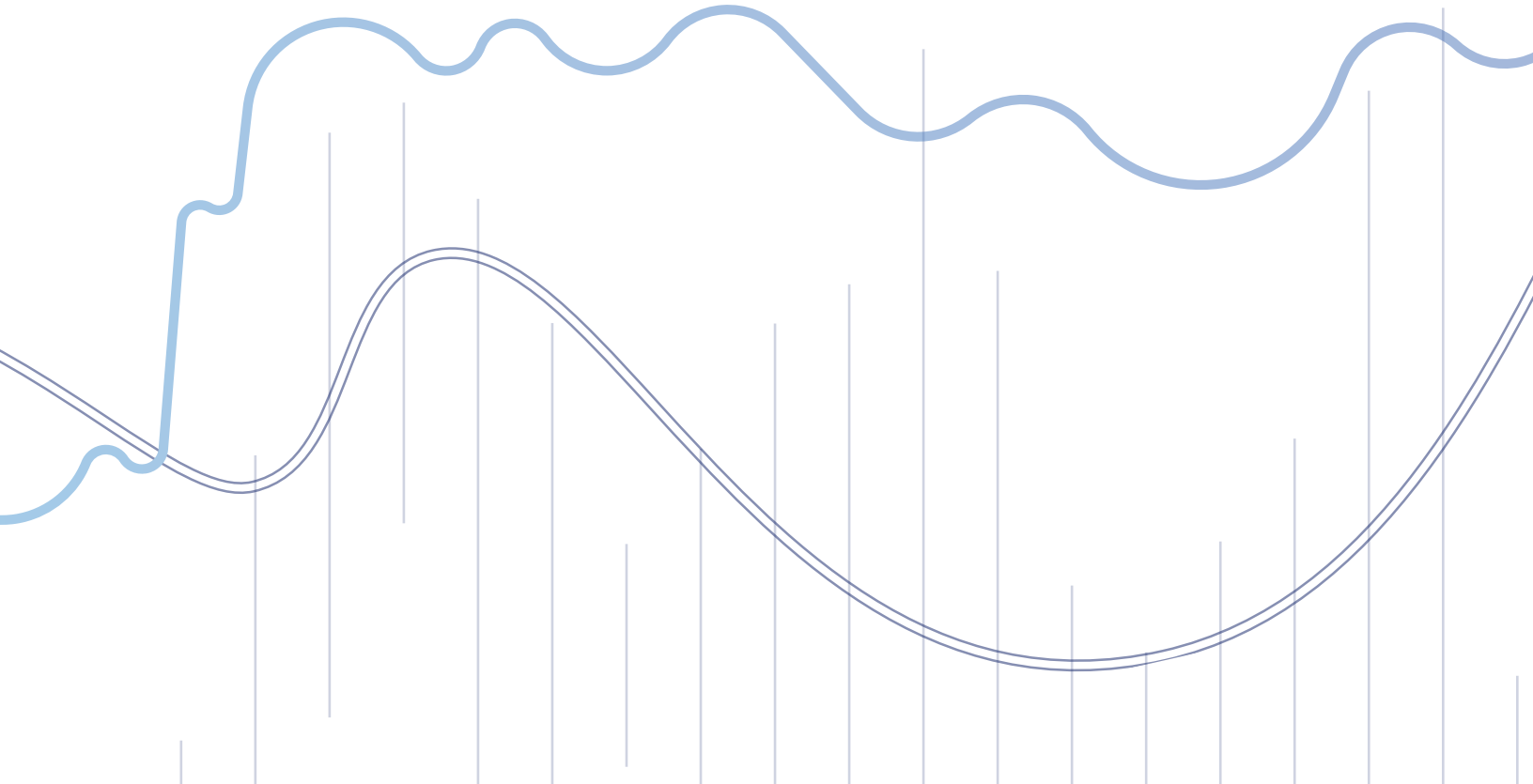


Executive Summary

The Institute for Sustainable Finance (ISF) has completed this research activity with the objective of identifying and distilling key learnings from a selection of publications relevant to the work of the Sustainable Finance Action Council's (SFAC) Taxonomy Technical Expert Group (TTEG). These publications were authored by the Organisation for Economic Co-operation and Development (OECD), the World Bank, the Bank for International Settlements, the European Union's Platform on Sustainable Finance, the United Nations Department of Economic and Social Affairs (UN DESA), and the Canadian Climate Institute. A review of each publication follows this Executive Summary.

Sustainable Finance Taxonomies

The understanding of, and definitions provided for taxonomies across the selected publications is consistent. Taxonomies, in the context of sustainable finance, can generally be defined as comprehensive classification systems for identifying and defining activities or investments aligned with selected sustainability objectives. Their primary purpose, or strategic aim, is typically to facilitate and accelerate 'green' or 'sustainable' financial flows, i.e., attract capital to sustainable investments.

Taxonomies can play an important role within a broader policy framework for sustainable finance. For instance, they provide a foundational reference for additional approaches to identify, verify, and align investments consistent with sustainability goals. Overall, well-designed taxonomies can enhance market clarity and integrity and meaningfully contribute towards efforts to catalyze sufficient financing for achieving high-level sustainability goals. Given our core mission to support the alignment of Canada's financial markets with the transition to a prosperous, sustainable economy, taxonomies are a key research focus of the ISF.

The Current State of Play

There is growing interest by both private and public actors for employing sustainable finance taxonomies across a variety of applications[i], and development efforts are rapidly increasing in both number and ambition[ii]. Notably, the growing involvement of public authorities in taxonomy development efforts is driving a shift towards increasingly detailed, and at times mandatory, approaches.

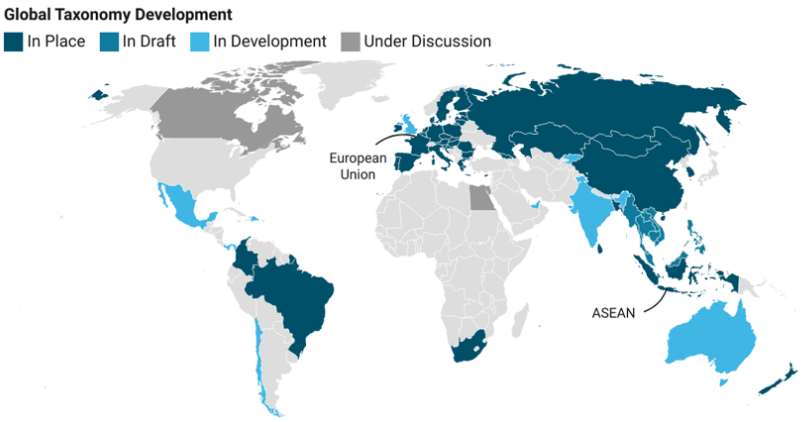


Figure 1: *Areas of the world where taxonomy efforts are completed, underway, or actively under discussion.*

The application of detailed taxonomies in the context of sustainable finance is still a nascent concept, and there is a clear need to take stock of the existing landscape to understand current approaches and to inform future development efforts. Several of the publications reviewed here have comparatively assessed the global landscape and identified characteristic features of sustainable finance taxonomies. While encouraging similarities exist, there is considerable variation across observed examples. The table below includes some high-level observations from our review of these comparative assessments.

i Survey results from a recent report by the Network for Greening the Financial System (NGFS) reveal that of the 25 central bank respondents, 15% currently use and another 45% are planning/considering using a taxonomy for FX reserves and/or non-monetary policy portfolios. Additionally, approximately 10% currently use and another 55% are planning/considering using a taxonomy for monetary policy portfolios. Meanwhile, of the 24 supervisor respondents, 21% currently use, while another 58% are planning/considering using a taxonomy.

ii Efforts by the ISF to track global taxonomy developments indicates that approximately 30 country- and regional-level efforts are completed, underway, or actively under discussion. The vast majority of these efforts feature public sector involvement.

Comparative Observations

Strategic Goal	Sustainable finance taxonomies can (and often do) have more than one strategic goal. Broadly, they typically aim to support the reorientation of capital towards sustainability-aligned investment.
Sustainability Objectives	To date, taxonomies have focused almost exclusively on environmental goals. These goals are largely consistent across existing examples. Climate change mitigation and adaptation are common starting points for taxonomy development.
Sectoral Coverage	Sectoral coverage varies considerably and is often informed by the specific circumstances of the jurisdiction. Frequent inclusions include renewables, and green building construction/renovation. Other sectors, including information & communication technologies, non-renewable power generation, and transport feature more sporadically.
Environmental Performance Spaces	The predominant focus of existing taxonomies is on 'green' activities and assets. For instance, focusing on activities that are already low carbon (in the context of mitigation). Consideration for so-called 'transition' sectors – i.e., hard-to-abate, carbon intensive sectors, is minimal. However, this is changing due to an increasing recognition of the need for taxonomies to expand their coverage of the economy.
Approach to Eligibility	Eligibility approaches vary; however, two main methodologies have emerged. - The catalogue approach, where the inclusion of an activity indicates eligibility. Not technology neutral. - The thresholds-based approach, where activity eligibility is contingent upon meeting performance criteria. Typically technology neutral.
Environmental and Social Risk	While approaches vary, taxonomies commonly incorporate environmental and social safeguards to account for cross-environmental and social risk.

Considerations for Taxonomy Design

In the publications that have reviewed existing approaches, there is clear consensus that taxonomies must be designed well to achieve their strategic goals. As an initial consideration for effective design, two concepts in particular require attention:

1. Ensuring its interoperability with other taxonomies globally to avoid generating policy and market fragmentation that may undermine the strategic aim of developing taxonomies in the first place.

2. At the same time, interoperability ≠ uniformity. Heterogenous economic circumstances across countries and markets render a "one size fits all" approach to taxonomy development nearly impossible to achieve. Taxonomies will be most effective in their respective jurisdictions if they are justified on the basis of national socio-economic realities and sustainable development priorities.

The need to design a taxonomy that is largely interoperable at the global level, and, at the same time, sensitive to the national or regional context suggests that a balance must be struck between these two concepts. Generally, both interoperability and national contextual conditions require consideration throughout the process of developing a taxonomy. Certain aspects of a taxonomy's design will require a tailored approach informed by national circumstances, while other aspects must closely align with existing approaches.

Moreover, taxonomy design may also need to account for differences within the geographic area that the taxonomy is expected to apply. The need to balance regional disparities is evident in existing efforts to develop regional taxonomies, such as in the European Union and Association of Southeast Asian Nations (ASEAN). Although there is still room for innovative thinking on accounting for regional differences and disparities, these efforts demonstrate that it is possible to do so when developing a taxonomy. Canada, while a single country, has many regional differences. For instance, the emissions intensity of electricity generation when measured at the provincial and territorial level in Canada is indicative of the need for any Canadian effort to account for such disparities in its approach.

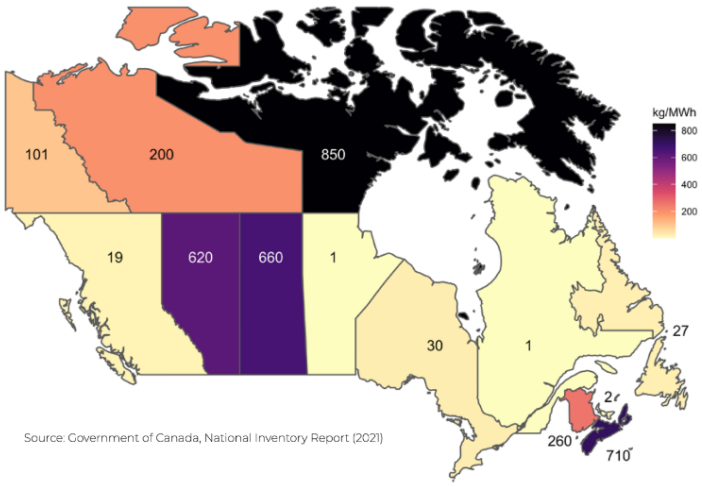


Figure 2: *Regional emissions intensity of electricity generation in Canada (2019). From: Shaffer, B. (2021).* Technical pathways to aligning Canadian electricity systems with net zero goals. *Canadian Institute for Climate Choices.*

The development of a taxonomy is a complex undertaking, so in addition to the general considerations above, several publications provide recommendations related to taxonomy design that, together, represent an emerging consensus for designing effective, interoperable sustainable finance taxonomies.

Designing Effective Taxonomies	
Consider the Implications of Design Choices	Design decisions will have direct implications for usability. Given this, it is necessary to carefully consider the implications of each design choice. Important usability considerations include data availability, proportionality (taxonomy compliance should be achievable for smaller market participants), and the general implications each design choice will have for interoperability.
Use a Common Language	Nomenclatures, particularly the International Standard Industrial Classification of all Economic Activities (ISIC), can promote the use of a consistent terminology across taxonomies and enhance their comparability.
Align to High-Level Policy Goals	The taxonomy's selected sustainability objectives should reflect the national agenda and ideally have measurable targets that are linked to, and consistent with high-level policy goals. Examples include the Paris Agreement, which is further articulated in many countries as a net-zero by 2050 goal.
Be Objective and Science-Based	Where applicable, taxonomies should be informed by the best available science. Activities should have a technically sound basis for inclusion, with an eligibility approach that incorporates clear performance thresholds and interoperable metrics.
Be Responsive to Change	Taxonomies should be 'living' documents subject to regular review and update to remain responsive to innovation, policy priorities, and changing markets.
Ensure Net-Positive Contributions	Eligible activities should be required to demonstrate a net-positive contribution. I.e., the contribution to one objective should not come at the serious expense of other sustainability goals. Consider any cross-environmental and social risks associated with an activity through concepts like the 'Do No Significant Harm' Principle and minimum social safeguards.

Lastly, and in addition to the above recommendations, it is important to note that a **taxonomy is not an outcome in and of itself, but a tool** within a broader policy framework. Taxonomies have a specific purpose with associated benefits; however, they are not a panacea. An additional imperative for maximizing a taxonomy's effectiveness in achieving its strategic goals is to ensure that it is conceived within a broader, supportive, and coherent policy framework for sustainable finance that, together, fosters a robust and credible sustainable finance market.

Publications reviewed from the World Bank, the OECD, and the BIS all suggest that, to maximize their effectiveness, taxonomies should be placed within a broader, coherent sustainable finance policy framework. For country-level efforts, this suggests that some level of involvement from the government in taxonomy development is important. In particular, the World Bank's report on developing national green taxonomies advocates for a taxonomy to be raised to the stature of an official guideline or policy, and further recommends strong involvement by financial regulators, and close coordination with government ministries responsible for determining the country's environmental and broader sustainable development priorities.

The Canadian Opportunity

Given that many existing efforts are still ongoing, it is difficult to determine their focus (e.g., 'green,' 'transition,' etc.) with any real precision. However, the vast majority solely or primarily focus on 'green' activities, with very limited inclusion for 'transition' activities. Given this, concerns have emerged that this focus is not sufficient to increase financing to levels that will drive the ambitious environmental transitions that are required.

There is some indication that a handful of efforts, including taxonomies in the EU and South Africa, will be extended to include additional performance spaces, including **'transition'** in the future; however, there are no true taxonomies that have been developed by public authorities at this stage focused on transition activities, and a review of emerging normative approaches (taxonomies, principles, etc.) for transition finance demonstrates that the space is still nascent.

The global low-carbon transition is continuing to accelerate, and countries that move too slowly in response to this transition will face risks to the global competitiveness of their economies. As a resource-rich economy whose traditional economic growth has been sourced from a number of transition-vulnerable sectors, the stakes are particularly high for Canada. There is an important opportunity for Canada to provide leadership on informing transition taxonomy efforts globally. Its unique national circumstances position the country to make important contributions related to heavy-emitting and hard-to-abate sectors, just transitions, and the incorporation of robust consideration for indigenous communities within transition finance frameworks.

Publications Reviewed in this Report

OECD. (2020). *Developing Sustainable Finance Definitions and Taxonomies*. OECD Publishing. https://doi.org/10.1787/134a2dbe-en

Hussain, F. I., Tlaiye, L. E., & Jordan Arce, R. M. (2020). *Developing a National Green Taxonomy: A World Bank Guide* (No. 150118). World Bank Group. http://documents.worldbank.org/curated/en/953011593410423487/Developing-a-National-Green-Taxonomy-A-World-Bank-Guide

Tandon, A. (2021). *Transition finance: Investigating the state of play: A stocktake of emerging approaches and financial instruments* (OECD Environment Working Papers No. 179). OECD. https://doi.org/10.1787/68becf35-en

Ehlers, T., Gao, D. (Nicole), & Packer, F. (2021). *A taxonomy of sustainable finance taxonomies*. Bank for International Settlements. https://www.bis.org/publ/bppdf/bispap118.htm

Platform on Sustainable Finance. (2021). *Public Consultation Report on Taxonomy extension options linked to environmental objectives*. European Commission. https://ec.europa.eu/info/publications/210712-sustainable-finance-platform-draft-reports_en

United Nations - Department of Economic and Social Affairs, & International Platform on Sustainable Finance. (2021). Improving compatibility of approaches to identify, verify and align investments to sustainability goals: Input paper for the G20 Sustainable Finance Working Group (SFWG) [Input Paper]. https://g20sfwg.org/wp-content/uploads/2021/09/G20-SFWG-DESA-and-IPSF-input-paper.pdf

Samson, R., Arnold, J., Ahmed, W., & Beugin, D. (2021). Sink or Swim: *Transforming Canada's economy for a low-carbon future*. Canadian Institute for Climate Choices. https://climateinstitute.ca/reports/sink-or-swim/

Report 1: Developing Sustainable Finance Definitions and Taxonomies[iii] (OECD)

Author: Organization for Economic Co-operation and Development (OECD)

Overview

Many governments have created legislative/official taxonomies[iv] and definitions (hereafter, "taxonomies") for sustainable finance to establish greater certainty on the sustainability of a range of economic activities and investments. The OECD has produced the report being summarized here to provide insights on a selection of legislative taxonomies developed at the time of publication. The key findings of the report are twofold.

1. A mapping exercise of the selected taxonomies reveals that some sectors, such as renewable energy and green buildings, are covered in each taxonomy and enjoy a certain degree of convergence. Other sectors enjoy partial coverage and vary more significantly, for instance, in the eligibility criteria referenced. Moreover, none of the taxonomies are exhaustive in their scope. For example, some sectors, such as aviation, are not covered by any.

2. The report emphasizes that **taxonomies are an important part of a supportive policy framework for sustainable finance**; however, to effectively accomplish their stated objectives, taxonomies must be designed well. Given this, the report discusses several considerations for policymakers related to design, usability, and implementation issues. Thus, this report may be particularly instructive for those in the exploratory stages of developing a taxonomy.

Objectives

The report sought to provide insights into two of three identified problem areas related to developing taxonomies for environmentally sustainable investments, and which are currently subject to debate within the financial and regulatory community.

1. First, the merits of taking legislative action to establish sustainable finance taxonomies versus allowing the continuing development of market-based definitions.

2. Second, if legislative taxonomies are preferred, how should they be designed?

3. A third problem area, which was outside of the scope of this report, is the merits of pursuing international coordination of taxonomies and identifying the potential constraints of a global approach.

Approach

The report, published in October 2020, is divided into two parts. Part 1 is primarily analytical. A non-exhaustive overview of legislative and market-based (including institutional and in-house) taxonomies summarizes the current landscape. The authors then conduct a mapping exercise of a selection of five legislative taxonomies and definitions. The included taxonomies are the European Union (EU) taxonomy for sustainable activities and China's 2015 Green Bond Endorsed Project Catalogue. The included definitions (i.e., less ambitious in scope than a true taxonomy) are from France, Japan, and the Netherlands. The mapping exercise is a sector-by-sector comparison that identifies the similarities and differences in sectoral coverage and associated criteria. Part 1 concludes with a preliminary reflection on design and usability issues that warrant consideration by policymakers engaging in

iii OECD. (2020). Developing Sustainable Finance Definitions and Taxonomies. OECD Publishing. https://doi.org/10.1787/134a2dbe-en

iv "Taxonomies" as referenced in the report, as well as in this summary, "should be understood as referring to both taxonomies and definitions – i.e., policies, regulations or official guidance defining sustainable finance activities or products comprehensively in a given jurisdiction."

developing taxonomies. Part 2 of this report is descriptive. Like Part 1, Part 2 covers the five selected legislative taxonomies; however, it is not a comparative exercise. Each taxonomy has a chapter containing detailed descriptions separated along somewhat uniform categories (e.g., history and present status, objectives and scope, outlook and next steps).

Key Takeaways

The mapping exercise reveals that across these five taxonomies, despite some differences, "there is a degree of convergence between approaches and metrics" across the three sectors present in all: forestry, renewable energy (e.g., hydro, solar, and wind power generation), and green buildings (construction and renovation). However, approaches are not identical. Variation exists between criteria used in each taxonomy. Variation in criteria can exist in several ways, such as threshold stringency or reliance on different standards (e.g., national versus international) Table 1 illustrates this point.

The report also notes differences in sectoral coverage. Notable points of divergence occur in the non-renewable power generation, transport, and manufacturing sectors. For instance, the EU taxonomy is the only taxonomy reviewed that includes the manufacturing of aluminum, cement, and iron and steel. Finally, sectoral gaps (i.e., sectors that none of the taxonomies cover) are highlighted, including aviation. Considering the COVID-19 pandemic, the absence of coverage for the health care sector is also noted. While insightful, the mapping exercise in this report has some limitations. First, only two of these legislative taxonomies (EU, China) are generally considered to be 'true' taxonomies. Second, the rapidly evolving landscape in this space means that updated and more in-depth comparison is likely warranted. For instance, China's 2015 catalogue was replaced by a new 2021 version that includes some notable changes, including removing "clean coal."

The report goes on to provide a detailed overview of several important issues for policymakers to consider, particularly while in the exploratory stages of taxonomy development.

There are many policy objectives that a taxonomy can contribute to. Benefits derived from a taxonomy's implementation can be thought of along two dimensions: **improving market clarity and improving market integrity**.

1. Generally, improving market clarity can assist with the flow of capital towards environmental and broader sustainability objectives. It can reduce due diligence costs, reduce the time and effort needed to understand and utilize methodologies for assessing 'greenness,' and facilitate price discovery by increasing the comparability of products.

2. Improving market integrity may help address greenwashing fears and reduce the risk of a price bubble in sustainable assets in the right policy environment. In addition, taxonomies can enable the tracking and measurement of sustainable investments and their assessment against specified environmental objectives.

Taxonomies can also serve as a foundational basis for developing supportive policies (e.g., monetary, fiscal, or financial policy incentives). However, the report emphasizes that the potential benefits of implementing taxonomies will likely only be realized if policymakers give proper consideration to their design, usability, and implementation. In particular, design choices will have direct implications for usability, so it is important to consider the implications of design decisions throughout the effort to develop a taxonomy. Please see Table 2 and Table 3 for further detail.

Report 1: *Appendix*

Table 1: *Some sectors, including green building construction, are similar in their coverage but have diverging criteria*

Green Buildings	CBI Taxonomy	EU Taxonomy	China Definitions	Japan Definitions	France Definitions	Netherlands Definitions
Criterion	An emissions footprint in the top 15% of the local market.	Primary energy demand (kWh/m2/ year) at least 20% lower than NZEB[v].	Regional/ City level standards	National standards e.g., LEEDs and CASBEE	CBI criterion	NZEB for new builds after 2020.

From: *Developing Sustainable Finance Definitions and Taxonomies*, by the OECD, 2020, Paris: OECD Publishing. https://doi.org/10.1787/134a2dbe-en

Table 2: *Design considerations*

Overarching objectives		The objectives a taxonomy will be expected to contribute to will influence design choices.
Basis of the taxonomy		Taxonomies can be based on a variety of criteria. For instance, the EU taxonomy is based on economic activities. China and the Netherlands have both based their taxonomies on financial products.
Scope	**Environmental (and other) objectives**	Taxonomies typically cover specified environmental objectives. Social and governance objectives may be incorporated as well. Objectives can be inter- or independent (see 'systems approach').
	Types of activities	A taxonomy may seek to define what is green and may take a binary (green/not green) or shades (light green à dark green) approach. The scope may be expanded to include "transition" activities and could also further articulate "brown" activities (i.e., activities detrimental to identified environmental and sustainability objectives).

v NZEB refers to nearly zero energy buildings. NZEBs are buildings that meet certain primary energy requirements defined by the European Union.

Eligibility	**Systems Approach**	Consideration for the broader system in which an economic activity operates when determining the sustainability of the activity. The EU has operationalized this concept through "substantial contribution" to at least one objective while simultaneously doing no significant harm (DNSH) to all other environmental objectives.
	Pathway integration	Pathway integration can help ensure that investments are compatible with long-term policy objectives (e.g., carbon neutrality by 2050). This would include thresholds to be met today and the expected future trajectory that must be followed.
	Criteria stringency	Less stringent thresholds favour the uptake of green and sustainable financial products by green investors. More stringent thresholds could increase investor confidence through greater assurance of an investment's environmental benefits. Stringent thresholds may also spur innovation from corporates.
Adaptability		It is important to ensure that taxonomies are not static to accommodate innovation and the emergence of new technologies. This can be challenging, so policymakers should ensure frequent updates to minimize lag.

From: *Developing Sustainable Finance Definitions and Taxonomies*, by the OECD, 2020, Paris: OECD Publishing. https://doi.org/10.1787/134a2dbe-en

Table 3: *Usability and implementation considerations*

Geographical Scope	Taxonomies that reflect a single jurisdiction and its associated activities may be insufficient in enabling investors and issuers to cover their investments and activities internationally. Additionally, the presence of many taxonomies specific to their jurisdictions raises consistency issues. There are differences in sectoral coverage, thresholds and other exclusions, and the choice of environmental objectives.
Data availability	With legislative taxonomies, investors and issuers face a potentially significant increase in the demand for data to assess activity or investment eligibility. Additionally, considering that certain metrics can be reported using a variety of methodologies, attention should be paid towards standardizing the data provided and towards identifying gaps between the data a taxonomy may require and what is currently available.
Data Verification	Taxonomies do not guarantee the elimination of greenwashing, as financial market participants can intentionally or unintentionally report their compliance inaccurately. To reduce this risk, attention should be paid towards the quality of the verification process that a taxonomy incorporates.
Usability	The design issues identified above will directly impact the overall complexity of the taxonomy. It is important to consider the intended users of a taxonomy and the "ease of use" they will experience when using the taxonomy in light of the design decisions made.
Proportionality	If taxonomy compliance is to be achievable for smaller financial market participants, proportionality in the approach to compliance and verification may need to be incorporated.

From: *Developing Sustainable Finance Definitions and Taxonomies*, by the OECD, 2020, Paris: OECD Publishing. https://doi.org/10.1787/134a2dbe-en

Report 2: Developing a National Green Taxonomy: A World Bank Guide[vi] (World Bank)

In some countries, policymakers have updated the taxonomies reviewed in this report. Please see the Updates in the Appendix for more information

Author: Farah Imrana Hussain, Laura E. Tlaiye, Marcelo Jordan (World Bank Group)

Overview

Over the past several years, the World Bank Group has gained extensive experience supporting green taxonomy development initiatives in Colombia, Malaysia, Mongolia, and South Africa. The report summarized here has been produced by the World Bank to distill the insights gained from their participation in these initiatives to guide regulators seeking to develop a green taxonomy.

Like other reports of this nature, the authors have emphasized the importance of engaging in a taxonomy development process that is given careful and thorough consideration throughout every step. To assist regulators with this, the authors provide a step-by-step process for defining the content of taxonomies and undertaking the various phases of the development process. **There is attention towards designing harmonized taxonomies across jurisdictions; however, the authors frequently emphasize prioritizing the national context and accounting for local realities**.

The recommendations found in the report commonly reflect this stance. For instance, in addition to climate change mitigation and adaptation, countries should incorporate environmental objectives that reflect the national agenda. In addition, the process should include early and ongoing engagement, collaboration, and consultation with technical experts and all other relevant parties throughout the design, development, and implementation phases. Taking these steps will help ensure that the process is transparent, that investment eligibility is backed by a scientific and technically-sound rationale, **and promote buy-in of the taxonomy among stakeholders**.

Objectives

The main objective of this report is to provide regulators and other interested parties with a conceptual framework and detailed procedural guidance for taxonomy development. While the intended audience of this report is mainly regulators and their advisors in emerging markets, much of the provided guidance is applicable across contexts.

Approach

The report is divided into four parts. Part one defines 'green taxonomy' and provides a brief overview of what green taxonomies help achieve. Various ways a green taxonomy could be applied are described and summarized in Table 4. Part two outlines the authors' recommended approach for defining the contents of, and preparation process for, a green taxonomy, detailing step-by-step procedures for doing so. Part three is an overview of a selection of green taxonomies from Bangladesh, the Climate Bonds Initiative, China, the European Union, and Mongolia. Part four concludes the report and summarizes the essential takeaways. Finally, there are hypothetical examples provided in Appendix A that illustrate the recommended process for identifying taxonomy-eligible activities.

vi Hussain, F. I., Tlaiye, L. E., & Jordan Arce, R. M. (2020). *Developing a National Green Taxonomy: A World Bank Guide* (No. 150118). World Bank Group. http://documents.worldbank.org/curated/en/953011593410423487/Developing-a-National-Green-Taxonomy-A-World-Bank-Guide

Key Takeaways

The authors emphasize **careful and thorough planning to ensure that the taxonomy achieves its defined purpose**. There are six recommended actions for establishing the contents of the taxonomy:

1. Give careful consideration towards and define the taxonomy's strategic goal(s);
2. Identify environmental objectives that reflect the overall national sustainable development priorities;
3. Select the sectors and categories for investment;
4. Assess and choose specific activities and investments to incorporate into the taxonomy backed by technically sound justifications for inclusion;
5. Identify the target users, clearly stating the role and expectations of each user; and,
6. Consideration should be given to the nature of mandatory or voluntary approaches for reporting and monitoring purposes, based on a regulator's interest in taxonomy effectiveness monitoring.

In addition to these six actions, the authors emphasize that the taxonomy should have the stature of an official guideline or policy and be part of a broader supportive policy framework to achieve its goals. Table 5 outlines these steps in further detail.

The development, preparation, and implementation of a taxonomy requires collaboration early and often between regulatory authorities, the authorities responsible for determining the sustainability priorities of the country, environmental scientists and technical experts. Moreover, **extensive consultation with all relevant stakeholders** is an essential consideration. Defining the content of a taxonomy is a complex process. The authors recommend that a **working group or steering committee comprised of technical experts and key stakeholders** manages this process to ensure the development effort is technically sound and supported by stakeholders. The report outlines thirteen steps to guide the preparation process, listed in Figure 3.

Furthermore, the authors emphasize six main findings observed from a brief review of a selection of green standards (e.g., the Green Bond Principles) and the mapping exercise of green taxonomies from Bangladesh, the Climate Bonds Initiative, China, the European Union, and Mongolia:

1. The ultimate objective of the taxonomies is to boost green finance;
2. The taxonomies mainly target financial actors such as banks, financial institutions, and investors;
3. The sectoral coverage varies and appears to reflect the specific needs of the targeted users;
4. Climate change mitigation and adaptation are the common objectives, but national taxonomies often incorporate other goals that are important within the context of their respective jurisdictions;
5. Taxonomies vary widely in respect to their level of granularity; and,
6. The inclusion of environmental and social safeguards is a common feature of national taxonomies, which the authors consider to be a key strength.

Finally, in concluding their recommendations, the authors emphasize three essential principles.

1. **Determine an appropriate balance between simplicity and granularity**. It is vital that financial actors expected to utilize the taxonomy understand it. However, achieving simplicity should not come at the expense of providing sufficient granularity for avoiding ambiguity.
2. **Seek out and ensure the participation of experts in the financial and industrial sectors** so that they may provide advice and expertise in the areas they specialize in.
3. **Be transparent**. Disclosing the scientific rationale behind activity or investment eligibility and aligning with international best practices wherever possible will help to promote cross-border harmonization.

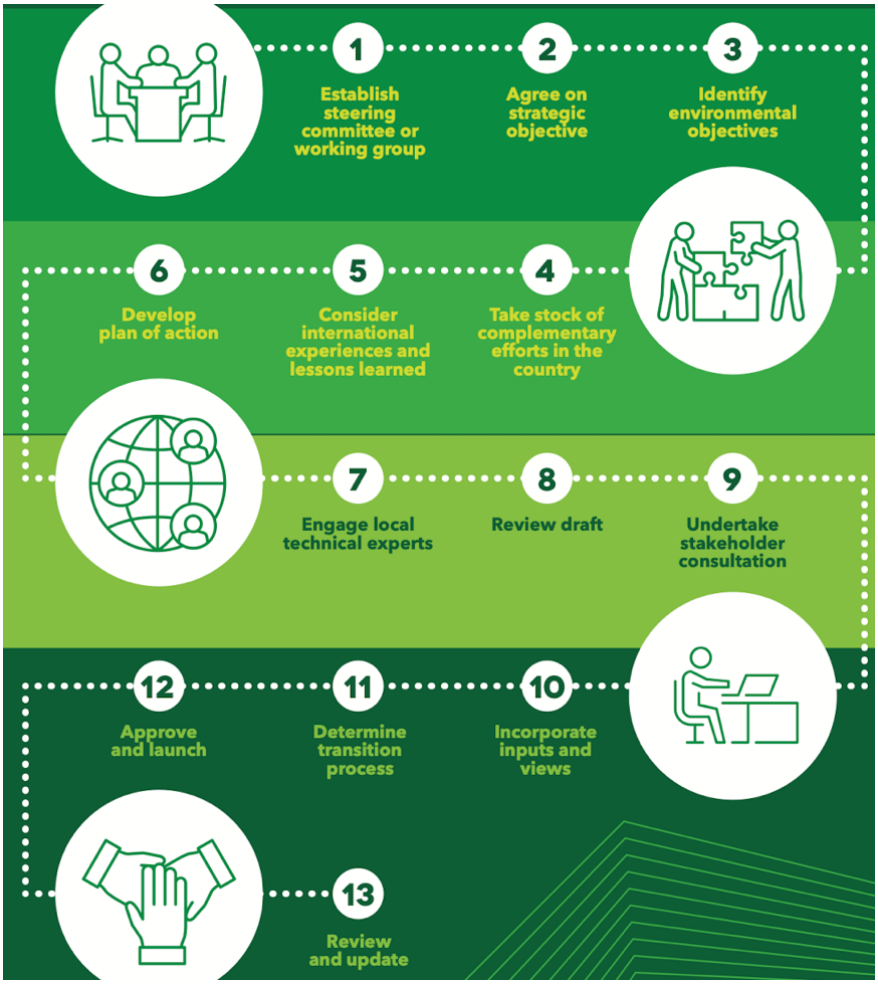
Report 2: *Appendix*

Table 4: *Taxonomies have many use-cases across a variety of stakeholders*

Target Users	Potential Uses
Banks and financial institutions	- Originate and structure green banking products - Improved efficiency of green lending / funding operations - Faster identification and verification of eligible assets - Improved certainty and reduced reputational risks - Disclose exposure to sustainable investments as required by regulators
Financial regulators	Greening the financial sector: - Information from taxonomies can support regulatory interventions to encourage banks to lend to eligible green firms - Facilitate new (or enhance existing) climate- and other sustainability-related reporting and disclosure guidelines for financial market actors - Measure financial flows towards climate and sustainable development policy priorities at the asset, portfolio, institutional, and national levels
Investors	- Identify opportunities that align with the taxonomy's sustainability criteria for impact investments - Disclose exposure to sustainable investments - Understand the exposure of portfolios to green investments and design investment policies - Support investor engagement with investees regarding business models and transition plans
Bond issuers, certifiers, and verifiers	- Identify eligible activities for relevant thematic bonds
Policymakers	- Bridge funding gaps by identifying areas of underinvestment - Facilitate the development of a green project pipeline that supports national environmental and sustainable development priorities - Develop strategies to achieve national climate and sustainability commitments and improve the tracking and measuring of associated financing flows
Others	- Provides a foundational reference for various standard-setters and developers of financial products that can enhance consistency in approaches

From: *Developing a National Green Taxonomy: A World Bank Guide* (Report No. 150118), by F.I. Hussain, L.E. Tlaiye, and R.M. Jordan Acre, 2020, Washington, DC: World Bank Group. http://documents.worldbank.org/curated/en/953011593410423487/Developing-a-National-Green-Taxonomy-A-World-Bank-Guide.

Figure 3: *Thirteen recommended steps for undertaking the preparation process*



From: *Developing a National Green Taxonomy: A World Bank Guide* (Report No. 150118, p. 29), by F.I. Hussain, L.E. Tlaiye, and R.M. Jordan Acre, 2020, Washington, DC: World Bank Group. http://documents.worldbank.org/curated/en/953011593410423487/Developing-a-National-Green-Taxonomy-A-World-Bank-Guide.

Table 5: *Six steps to defining the contents of a green taxonomy*

Define the Strategic Goal	Broadly, the strategic goal of a green taxonomy is to support the aim of fostering an economy in the future that is environmentally sustainable. However, taxonomy developers may seek to support additional specific aims, influencing the design accordingly.
Select Environmental Objectives	Taxonomy developers should ensure that the selected environmental (and other) objectives reflect the country's agenda and priorities for sustainable development. This may require a review of the country's environmental regulations and policies and any commitments made at the international level. The authors specifically recommend selecting environmental objectives that have already been translated into targets (e.g., reducing carbon emissions by a specified level).
Assess and Identify Sectors	There are many starting points from which sectors may be derived, including existing industry classifications (e.g., NAICS), environmental regulations, or even classification systems for public sector budgets. Regardless, the selection of sectors and investment categories should be based on the relevance and expected contribution towards meeting the identified environmental objectives.
Assess and Identify Investments[vii]	**The core task of taxonomy development**. As with sectors, taxonomy developers should select activities or investments based on their expected contribution towards the environmental objectives, which should ideally be determined based on the ability of the activity to meet an established target, standard, or threshold. While the authors stress consideration of the national context, the approach to activity eligibility should align with international best practices. For instance, criteria that reference internationally applicable energy standards such as LEED or BREEAM; or require that eligibility against a threshold be assessed and reported using a widely accepted metric (e.g., gCO2e/unit of production). **Selected activities and investments should have a technically-sound justification for inclusion (i.e., the eligibility rationale).** It is also important to address any cross-environmental or social risks.
Identify Users and Beneficiaries	From the beginning, the intended users and expected beneficiaries of the taxonomy should be clearly identified. In addition, explain how each user is expected to utilize the taxonomy.
Specify the reporting guidelines	If the taxonomy's developing entity wants to monitor the taxonomy's effectiveness, a procedure for monitoring and oversight should be established. This requires consideration of mandatory and voluntary reporting methods. Mandatory approaches ensure regularity and consistency in reporting, while voluntary approaches provide flexibility, allowing market participants to determine the frequency and scope of their reporting. Regardless of the approach, to monitor effectiveness, the reporting information should include the aggregate flows of finance and investment and the use of proceeds.

From: *Developing a National Green Taxonomy: A World Bank Guide* (Report No. 150118), by F.I. Hussain, L.E. Tlaiye, and R.M. Jordan Acre, 2020, Washington, DC: World Bank Group. http://documents.worldbank.org/curated/en/953011593410423487/Developing-a-National-Green-Taxonomy-A-World-Bank-Guide.

vii In Appendix A of the report, hypothetical examples illustrate the process of identifying eligible investments. These examples were constructed to align with international harmonization principles recommended by the EU's Technical Expert Group in their final report published in March of 2020 (p. 53).

Updates

This report references a 2017 list, subsequently updated in 2020, published by Bangladesh Bank outlining green products eligible for financing. In December 2020, Bangladesh Bank's Sustainable Finance Department released the Sustainable Finance Policy, which contains a sustainable finance and green finance taxonomy. The Sustainable Finance Policy is accessible here:
https://www.greenfinanceplatform.org/policies-and-regulations/sustainable-finance-policy.

In January of 2021, SFD Circular No. 01 was released. The Circular mandates that of the loans disbursed by banks and financial institutions, at least 15% must be for sustainable financing. The Circular is not available in English. A Bengali version is available here:
https://www.greenfinanceplatform.org/policies-and-regulations/sfd-circular-no-1.

This report references China's 2015 Green Bond Endorsed Project Catalogue. The People's Bank of China (PBOC), the National Development and Reform Commission (NDRC), and the China Securities Regulatory Commission (CSRC) jointly released an updated Green Bond Endorsed Project Catalogue in April of 2021. An official English translation is available here:
http://www.pbc.gov.cn/goutongjiaoliu/113456/113469/4342400/2021091617180089879.pdf

After the publication of this report, the European Union's Taxonomy Regulation, in July of 2020, entered into force. In April of 2021, the first of two major delegated acts was "approved in principle." A second delegated act covering the taxonomy's remaining four environmental objectives is expected in 2022. Updates on the European Commission's activities can be found here:
https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en#regulation.

Updates specific to the Taxonomy Regulation and accompanying delegated acts can be found here:
https://ec.europa.eu/info/law/sustainable-finance-taxonomy-regulation-eu-2020-852/amending-and-supplementary-acts/implementing-and-delegated-acts_en

Report 3: Transition Finance: Investigating the State of Play: A Stocktake of Emerging Approaches and Financial Instruments[viii] (OECD)

Author: Aayush Tandon (OECD)

Overview

There is an urgent need to enable emission reduction pathways for emissions-intensive, hard to abate sectors. This requires sufficient financing, making transition finance a key topic for policymakers and market participants. The report summarized here explores transition-relevant taxonomies, guidance, and principles (hereafter, 'standards'); and 39 financial instruments and products. Two preliminary views are proposed from these reviews.

1. First, the nature of transition finance is spurring "entity-wide change to reduce exposure to transition risk and preserve competitiveness in a low-carbon economy" (p. 11).

2. Second, transition finance is not limited to or defined by any single financial product or structure and may be more appropriately viewed as a risk management tool to potentially improve market pricing of transition risks.

Like other reports, the author stresses that **standards developers must be mindful to avoid inconsistencies** by minimizing divergences and "coalescing around a common understanding of the purpose and function of transition finance" (p. 14).

Objectives

The two main objectives are to improve understanding of the features that commonly characterize transition finance and to assess the additionality of transition finance. Commonalities and areas of divergence in existing standards are highlighted, and some considerations going forward related to ensuring "coherent market development and progress towards environmental goals" (p. 15) are outlined.

Approach

Chapter 1 provides the context and rationale for the growing focus on enabling financing for transitioning high emitting and hard to abate sectors. In chapter 2, a comprehensive comparative review of 12 transition-relevant standards is undertaken, followed by a detailed summary of each standard. Chapter 3 reviews the financial and non-financial characteristics of 39 transition-relevant financial instruments.[ix] The aim of the review was to include all known approaches (excluding those still under development) and instruments as of May 2021.

Key Takeaways

Reducing CO2 and non-CO2 emissions at levels necessary to achieve the Paris Agreement requires global transformation at an unprecedented pace and scale. However, this transformation will not occur uniformly across countries. Each country will need to undergo a low-carbon transition of its real economy and financial system. The low-carbon transition pathway in each **"will be a function of its domestic economic structure, long-term emissions targets, envisaged economic composition post-2050, priorities and capabilities"** (p. 21). Consequently, technologies and economic activities being phased out in some jurisdictions will continue in others. Additionally, high-emissions activities such as cement and steel manufacturing will continue to be essential inputs for further

viii Tandon, A. (2021). *Transition finance: Investigating the state of play: A stocktake of emerging approaches and financial instruments* (OECD Environment Working Papers No. 179). OECD. https://doi.org/10.1787/68becf35-en

ix Financial instruments and products were covered in this overview if they "are explicitly labelled, marketed or, based on literature review, generally considered to provide transition financing."

economic development. These high-emissions and hard-to-abate activities require sufficient capital to reduce their emissions to the furthest extent possible. Some transition issuances have faced criticism that reveals the tension between international climate commitments and alignment with domestic climate policies[x].

A stocktake of transition-relevant standards

The economic activities targeted for transition finance are **emissions-intensive, lack viable green substitutes, and are important for socio-economic development purposes**. Reducing emissions is the exclusive focus of most standards; however, **few provide guidance on appropriate trajectories** for Paris Agreement alignment and the appropriate manner for demonstrating such alignment. Additionally, economy-wide decarbonization will have societal implications, so **transition strategies need to account for unintended consequences and distributional effects**. Some standards have incorporated social safeguards to try and prevent negative social consequences. Finally, most of the standards have not explicitly listed transition 'eligible' technologies, activities, etc.

While eligibility lists and technical criteria are not clearly articulated, many **standards provide use cases**. Common use cases include activities to lower the emissions of carbon-intensive manufacturing (e.g., steel, cement, etc.) and enhancing energy efficiency in existing facilities. Some approaches stipulate use cases that are not present in any other. For instance, the Russian Green Taxonomy includes a use case example to improve thermal power plants' energy efficiency. The author also finds that **all standards have included boundary conditions** that must be met to borrow transition finance. Three 'core' criteria were distilled from the review, described in Table 6.

A stocktake of transition-relevant financial instruments and products

All the included financial instruments/products fall under two main types: vanilla bonds and KPI-linked fixed income, such as sustainability-linked bonds, and sustainability-linked loan revolving credit facilities. Other labelled products such as green and social bonds typically pursue a use-of-proceeds format. In contrast, **all transition-relevant instruments reviewed raised capital for general corporate purposes**. This has occurred despite the reviewed approaches typically incorporating guidance for applying transition finance through use-of-proceeds and general-purpose formats. The stocktake reveals two core features of transition-relevant instruments.

First, compared to other bonds by the same issuer, **these instruments exhibit an issuer premium/yield discount[xi] at issuance**. This is consistent with findings in the green bond market. A review of the literature by the author suggests that the premia in sustainable debt markets "appears to be more a consequence of market exuberance rather than a systemic assessment of credit risk due to emissions and climate change" (p. 52). Further analysis suggests that the yield spread tightens in the secondary market, moving closer to the issuer spread curve. To prevent mispricing and arbitrage, further work should be conducted to encourage "even pricing of transition risks across assets" (p. 17).

Second, most of the instruments reviewed incorporate some sort of penalty mechanism triggered by an issuer failing to meet the sustainability commitment. Transition instruments that incorporate KPI-linked penalty mechanisms can incentivize a firm to reduce emissions and drive an improvement in credit risk. The author stresses that **"credit risk reduction is a function of tangible lowering of emissions and not the type of finance borrowed, or label of instrument used"** (p. 53). More information on common penalty mechanisms can be found in Table 7.

x The report highlights how international commitments (Paris-alignment) and national objectives set in response to international commitments (e.g., Nationally Determined Contributions) may not be consistent. This can give rise to transitionwashing concerns, where projects may be justified on the basis of their compatibility with domestic policies, but are inconsistent with a Paris-aligned 1.5°C temperature trajectory.

xi "The yield discount at issuance is estimated as the difference between the benchmark spread of the transition instrument and the benchmark spread of the issuer discerned from the issuer's curve" (see p. 51).

Report 3: *Appendix*

Table 6: *Three core boundary conditions (i.e., eligibility conditions) in established standards*

Substitutability	Transition finance typically may be borrowed to fund either the capital expenditures of the issuer or a specific asset. However, the sector associated with the issuer or asset should not possess a viable zero or near-zero emissions alternative.
Demonstrating a clear commitment to the identified low-carbon trajectory	The pre-defined low-carbon transition pathway should be clear, verifiable, and aligned with long-term climate objectives. Note: this is a condition commonly included in the reviewed standards; however, the author notes that there is divergence among standards on whether demonstrating alignment with nationally determined contributions (NDCs) is sufficient to demonstrate alignment with the Paris Agreement goals.
Avoiding path dependency	When financing identified 'solutions,' entities should take care to avoid the lock-in of long-term emissions. In other words, avoid financing activities that would prevent the implementation of green alternatives in the future.

From: *Transition finance: Investigating the state of play: A stocktake of emerging approaches and financial instruments (OECD Working Papers No. 179), by A. Tandon, 2021, Paris:* OECD Publishing. https://doi.org/10.1787/68becf35-en

Table 7: *Commonly incorporated penalty mechanisms*

Coupon step-up	This is the most commonly incorporated mechanism. It is important to note that coupon step-ups can "trigger solvency issues and may compromise the financial health of the borrower/issuer" (p. 11).
Premium payment upon maturity	This is typically set as a fixed percentage of the redemption amount.
Obligation to purchase offsets	To meet the specific sustainability performance targets (SPTs). The majority of sustainability-linked bonds incorporate an emissions-related SPT. The obligation to purchase offsets is calculated as a percentage of the nominal amount.

Notes: (1) Penalty mechanisms are intended to be triggered by a failure to comply with stated SPTs. This is referred to as the trigger event. **(2)** No fixed-coupon vanilla bonds reviewed in this paper incorporate penalty mechanisms. **(3)** Penalty mechanisms may be a critical component for incentivizing compliance and ensuring progression towards stated objectives; however, the author stresses that the structure and form of these mechanisms must account for potential implications for the well-being of workers, transition objectives, and financial stability. Further investigation and analysis concerning the possible implications of incorporating penalty mechanisms are warranted.

From: *Transition finance: Investigating the state of play: A stocktake of emerging approaches and financial instruments* (OECD Working Papers No. 179), by A. Tandon, 2021, Paris: OECD Publishing.
https://doi.org/10.1787/68becf35-en

Questions posed by the author related to standards development:

1. "Which trajectories/pathways provide an appropriate benchmark against which transition activities and plans could (should) be measured" (p. 16)?

2. How do macro-level transition pathways translate to credible trajectories at the issuers level, particularly for those operating in several jurisdictions that may be subject to different climate commitments" (p. 16)?

3. Which types of investments and expenses (for instance, working capital, forms of capital expenditure, acquisition, decommissioning, R&D, divestment, purchasing offsets, refinancing) are acceptable to comply with the issuer's transition trajectory" (p. 17)?

Report 4: A Taxonomy of Sustainable Finance Taxonomies[xii] (BIS)

Author: Torsten Ehlers, Diwen (Nicole) Gao, and Frank Packer (Bank for International Settlements)

Overview

The paper summarized here clearly illustrates that while sustainable finance taxonomies can be an essential policy tool for scaling up sustainable finance, thereby helping to facilitate a sustainable transition, they should not be viewed as sufficient for this task when implemented in isolation. **Taxonomy implementation should be undertaken within a broader supportive policy framework that, together, will be most effective in accomplishing high-level sustainability goals.**

In addition, a comparative assessment of three notable taxonomies for sustainable finance from the European Union (EU), China, and the Climate Bonds Initiative (CBI) reveals that existing taxonomies could be improved to maximize their effectiveness in accomplishing their primary purpose. Given this, five design principles for taxonomy development are proposed, with the authors contending that common principles will promote comparability and interoperability across firms and jurisdictions.

Finally, there are several near-term policy recommendations to take away from this discussion:

1. Ensure that taxonomies directly correspond to an identified sustainability objective.
2. Develop transition taxonomies with a focus on Paris agreement alignment.
3. Provide monitoring and supervision for evolving certification and verification processes.
4. Facilitate a shift to mandatory impact reporting for green bonds.

Overall, the paper provides useful insights for policymakers considering the development of a sustainable finance taxonomy, particularly a climate transition taxonomy.

Objectives

The authors aim to answer three questions: What is a taxonomy, and what is its purpose? What are the key dimensions to consider when designing a sustainable finance taxonomy? And, more generally, what are the guiding principles for an effective design?

Approach

In chapter 1, the authors define sustainable finance taxonomies, clearly explain what they believe to be their primary purpose, and helpfully situate taxonomies within a policy framework for supporting the high-level policy goal of meeting accepted sustainability objectives. In chapter 2, the authors identify four main characteristics for classifying and comparing taxonomies, which are then used to comparatively assess three taxonomies from the EU, China, and CBI to identify gaps and determine their degree of comparability. Chapter 3 outlines principles for designing sustainable finance taxonomies with insights from the comparative assessment, followed by a discussion on applying these principles when designing climate transition taxonomies. Finally, chapter 4 concludes the paper by identifying four near-term policy actions.

xii Ehlers, T., Gao, D. (Nicole), & Packer, F. (2021). *A taxonomy of sustainable finance taxonomies*. Bank for International Settlements. https://www.bis.org/publ/bppdf/bispap118.pdf

Key Takeaways

The **primary purpose** of sustainable finance taxonomies is to classify assets based on their ability to support selected sustainability objectives and identify the non-financial information needed to assess the sustainability benefits of an asset. More simply, taxonomies "provide a strong signal to investors about non-financial benefits of a given asset" (p. 2). When designed well, taxonomies can strengthen the integrity of the market by improving market transparency - reassuring investors that they are financing assets that make an actual contribution to sustainability goals. In turn, improved market integrity boosts long-term investor interest in the sustainable finance markets. Conversely, taxonomies **are not designed** for risk management purposes or for implementing disclosure requirements; however, they do rely on, and in some cases enable, these other policy tools. For instance, by identifying the non-financial information required to determine an asset's sustainability benefits, taxonomies can help determine disclosure requirements. Yet, they also rely on the disclosure of this non-financial information to achieve their purpose. Therefore, **taxonomies must not only be well-designed but also placed within a broader, coherent policy framework** to maximize their effectiveness. How taxonomies contribute to a broader supportive policy framework is illustrated in Figure 4.

Identified in chapter 2 are four main characteristics of taxonomies to facilitate the comparative assessment of those published by the EU, China, and CBI and assemble a so-called "taxonomy of taxonomies," depicted in Figure 5. These characteristics are the (i) objective; (ii) scope; (iii) target; and (iv) output. The assessment reveals that existing taxonomies:

1. Often incorporate, or mix, several sustainability goals.
2. Provide outputs that could be improved in terms of their transparency and decision-usefulness for investors.
3. Need to make further use of sustainability performance indicators that are relevant and measurable.
4. Have insufficient verification requirements for achieved sustainability benefits, and are typically binary (e.g., 'green' vs. not 'green'), and therefore lack granularity.

Based on the findings from the comparative assessment and to provide simple, constructive guidance, the authors propose **five design principles**[xiii] for developing taxonomies. The authors contend that a principles-based approach to taxonomy design "can **greatly facilitate the comparability and interoperability** of taxonomies across different firms and markets – including emerging markets" (p. 18). The principles are:

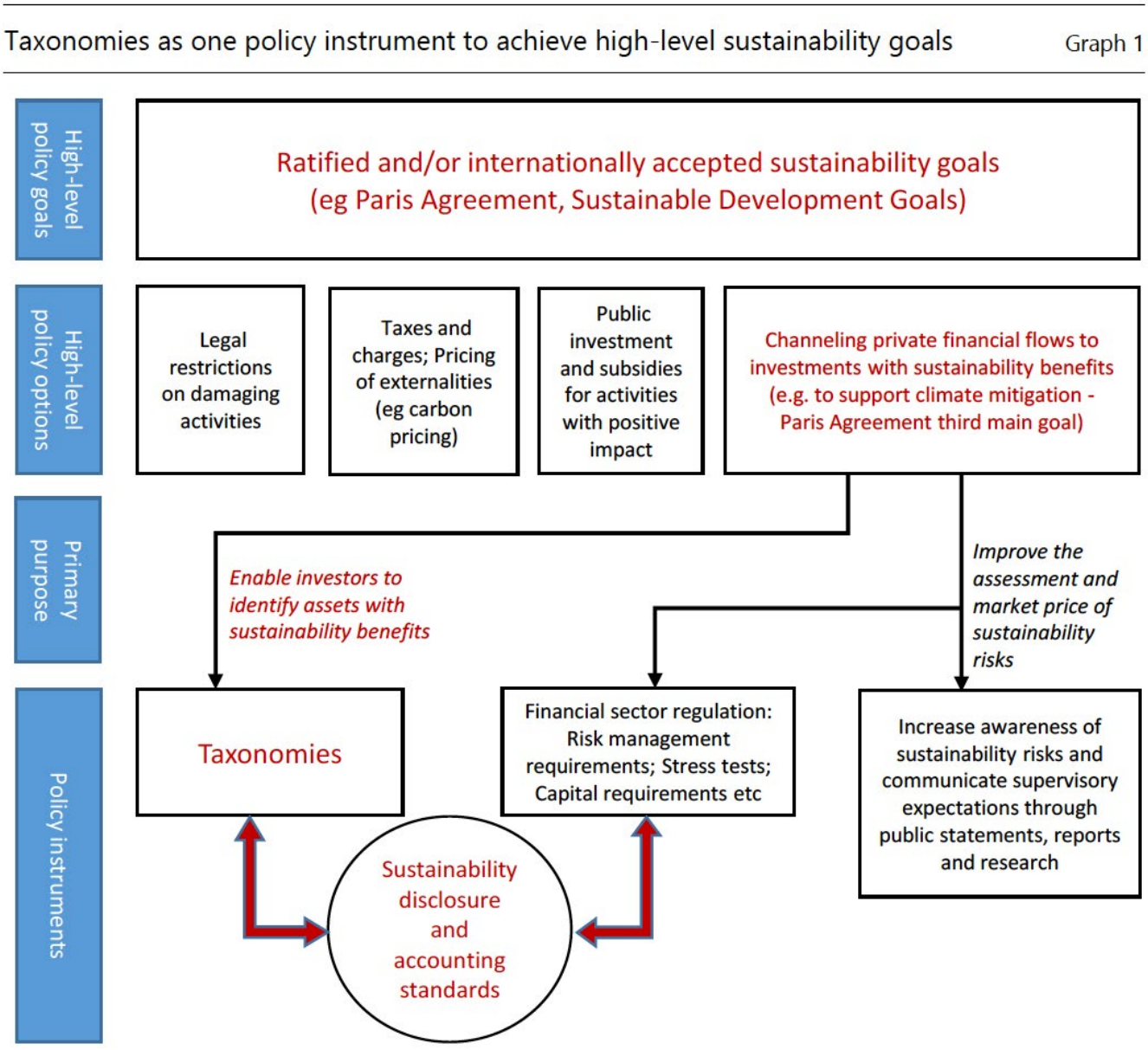
1. Explicitly align the taxonomy with high-level policy objectives.
2. Focus on a single objective.
3. Base the taxonomy on measurable outcomes.
4. Whenever possible, incorporate entity-based information.
5. Incorporate sufficient granularity, covering both high and low sustainability performance.

For more information on the proposed principles, please see Table 8. Following this discussion, the authors describe how to employ the design principles to **climate transition taxonomies**. For further information on this, please see Table 9. Finally, please see Table 10 for a more in-depth explanation of the authors' near-term policy recommendations resulting from this research.

xiii The proposed principles are not exhaustive; however, they should be viewed as complementary and would likely be ineffective if implemented in isolation. As a starting point, these principles require only basic data; however, the authors anticipate a rapid increase in the availability of sustainability-related data due to increasing sustainability disclosures and collection of data from third parties.

Report 4: *Appendix*

Figure 4: *An illustration of how taxonomies can contribute to a broader supportive policy framework*



From: *A taxonomy of sustainable finance taxonomies* (BIS Papers No. 118 & G20 Sustainable Finance Working Group Input Paper, p. 2), by T. Ehlers, D. (Nicole) Gao, and F. Packer, 2021: Bank for International Settlements. https://www.bis.org/publ/bppdf/bispap118.htm

Figure 5: *Findings from the comparative assessment of three major sustainable finance taxonomies*

		EU Taxonomy	China Taxonomy	CBI Taxonomy
Objective	Alignment with high-level policy goals	• Activity level criteria are aligned with the target of net-zero GHG emissions by 2050.	• The translation of targets set by China's Integrated Reform Plan for Promoting Ecological Progress to activity level criteria is unclear.	• Project level criteria are aligned with the levels of emission reductions required to meet the 2°C target set by Paris Agreement.
	Independence vs. co-dependency	• An economic activity must meet principles of "Substantial Contribution" and "Do No Significant Harm", and the minimum social safeguards.	• Six environmental objectives are interlinked by honouring "Do No Significant Harm" principle[11].	• GHG emission screening criteria aiming to achieve climate mitigation.
Scope	Transition & enabling Activities	• Transition and enabling components are included and are subject to review every three years. • But it is not clear how the thresholds of compliance are adjusted over time to accommodate the latest development of climate science and technology innovations.	• No transition activities are included.	• No transition activities are included (separate framework for identifying transition activities published in 2020).
	Industrial classification	• Two-level NACE codes.	• Four-level Chinese Standard Industrial Classification (CSIC).	• No reference to industrial classification code. Instead, assets are categorised into generation facilities, supply chain facilities and infrastructure.
Target	Unit of measurement	• Activity-based metrics with thresholds in line with existing EU regulations and the net-zero target.	• Activity-based metrics with thresholds in line with existing national standards.	• Asset-based metrics with thresholds in line with the 2°C target.
Output	Data availability and disclosure	• Further legislative guidance is required to address data disclosure for different types of financial products.	• Issuers are required to report use of proceeds while environmental impact reporting is encouraged.	• Issuers are required to report use of proceeds and the environmental objectives of the projects.
	Verification	• Further legislative guidance is required to address data verification for different types of financial products.	• Independent review of green credentials is encouraged, but there is not yet a standardised procedure for providing external review.	• Climate Bonds Standard & Certification Scheme is the only international third-party certification of green bonds.
	Granularity	• Binary	• Binary	• Traffic light system • Five distinct categories of transition activities identified in a separate framework.

Note: This diagram has been included to provide an overview of the findings from the comparative assessment in this report. The purpose of the colour scheme is to demonstrate full, partial, or no alignment with the proposed design principles. The legend provided in the report does not entirely match the color scheme depicted, so the compatibility assessment is somewhat unclear. Green (assumed purple) demonstrates full alignment, yellow demonstrates partial alignment, and red indicates incompatibility with the proposed principles.

From: *A taxonomy of sustainable finance taxonomies* (BIS Papers No. 118 & G20 Sustainable Finance Working Group Input Paper, p. 6-7), by T. Ehlers, D. (Nicole) Gao, and F. Packer, 2021: Bank for International Settlements. https://www.bis.org/publ/bppdf/bispap118.htm

Table 8: *The proposed principles for designing effective sustainable finance taxonomies*

Principles	Description
Align high-level policy objectives	- Should be the guiding principle for taxonomy development. - Taxonomies that are not aligned to high-level goals, which influence the direction of policy development, could be subject to transition risks and eventually become unsustainable. - The objectives of the Paris Agreement and the UN Sustainable Development Goals may serve as sources of shared understanding between countries when linking taxonomies to policy goals. - Realistic and measurable interim targets should be established and clearly explained for policy goals that extend far into the future.
One single objective	- A taxonomy directly linked with an underlying objective will provide a clear signal to investors. Mixing several objectives can reduce the information value (i.e., information loss through aggregation) and limit the range of themed investment strategies that can be built around taxonomy-certified assets. - The authors argue that the Do No Significant Harm principle (DNSH), which is incorporated into some existing taxonomies, is challenging in practice – thresholds should be set very high, or the application of this principle should be limited to situations where measurement of the objectives for demonstrating DNSH is less difficult.
Outcome-based	- Taxonomies should be based on measurable outcomes like simple key performance indicators (KPIs) to provide investors clarity on the non-financial benefits of an asset/activity/entity. This way, investors can verify an asset's sustainability performance and directly link the taxonomy to the underlying sustainability objective. - The authors recommend using only one KPI for a given taxonomy, arguing that this provides maximum transparency and simplicity. Outcome-based taxonomies are adaptable, allowing thresholds to be adjusted for different circumstances.
Incorporate entity-based information	- To affect incentives at the entity level, entity-based information should be incorporated into the taxonomy whenever possible. Not doing so could encourage greenwashing – as firms may be able to label a particular activity as green without any change to the firm's overall carbon footprint.
Sufficient Granularity	- To determine whether an asset fits into their investment strategy, investors require a certain level of granularity. A taxonomy with binary outputs limits the range of possible investment strategies, as it may result in only capturing firms that have already achieved good environmental performance.

From: *A taxonomy of sustainable finance taxonomies* (BIS Papers No. 118 & G20 Sustainable Finance Working Group Input Paper), by T. Ehlers, D. (Nicole) Gao, and F. Packer, 2021: Bank for International Settlements. https://www.bis.org/publ/bppdf/bispap118.htm

Table 9: *The proposed design principles applied in the context of a climate transition taxonomy*

Principles	Employing in a climate transition taxonomy
Align high-level policy objectives	- In many jurisdictions, the science-based target for transition is net-zero by 2050. - This is beyond the investment horizon of many investors. Transition taxonomies can specify interim targets. For example, the EU has an interim target to reduce GHG emissions by 55% by 2030.
One single objective	- The authors feel that employing only one objective is particularly important in climate transition taxonomies. For instance, a taxonomy with multiple objectives, where one or the other could be met to qualify for a label, investors will face heightened uncertainty regarding what the non-financial benefits of the asset actually are.
Outcome-based	- Since most policy objectives are forward-looking and disclosed data is typically backward-looking, the "measurable objectives need to be translated into thresholds for KPIs that may vary over time" (p. 16). - Greenhouse gas (GHG) emissions is a natural measure for transition taxonomies. In this context, long-term emissions targets can be translated into annual targets (e.g., 5% per annum). GHG emissions should be (i) measured at the highest available scope and (ii) cover all emitted greenhouse gases to prevent loopholes and leakages[xiv].
Incorporate entity-based information	- By definition, transition taxonomies must examine progress in relation to previous activities and avoid examining activities in isolation. Therefore, transition taxonomies should convey entity-specific information so that the activities the entity is transitioning away from can be clearly documented.
Sufficient Granularity	- A sufficiently granular approach for signalling asset alignment would incorporate a labelling scheme with multiple levels for alignment and non-alignment. - Issuers achieving emissions intensity reductions at pace with the established threshold would be "fully aligned." There may also be value in incorporating a label for issuers achieving reductions that far outpace the threshold. - More importantly, is the incentivization of under-performing issuers to improve their performance. Taxonomy developers can incorporate multiple labels for sub-par performance – e.g., a category for slight decreases (0-1%) and so on. Any devised categories should be clearly communicated to ensure interoperability.

From: *A taxonomy of sustainable finance taxonomies* (BIS Papers No. 118 & G20 Sustainable Finance Working Group Input Paper), by T. Ehlers, D. (Nicole) Gao, and F. Packer, 2021: Bank for International Settlements. https://www.bis.org/publ/bppdf/bispap118.htm

xiv The authors explain leakages, or emissions exporting, as the practice of outsourcing emissions-intensive activities so that the firm's emissions appear to be lower than they truly are.

Table 10: Near-term policy recommendations for consideration by policymakers

Near-term policy recommendations	Description
Ensure that taxonomies directly correspond to an identified sustainability objective	- The authors relate this policy recommendation to the 'one objective, one taxonomy' principle above, contending that narrowly focused taxonomies directly linked to their corresponding objective involve processes for verification and certification that are less costly.
Develop transition taxonomies with a focus on Paris agreement alignment	- Reporting practices and standards for climate transition plans, interim targets, and their respective levels of alignment with the objectives of the Paris agreement must undergo further harmonization. - Transition taxonomies can promote more uniform terminologies and metrics related to a low-carbon transition. As such, they can improve the level of standardization/harmonization across markets and jurisdictions.
Provide monitoring and supervision for evolving certification and verification processes	- High-quality, consistent verification processes help to mitigate greenwashing risks. - Authorities within a given jurisdiction should provide relevant actors with uniform standards of conduct for verification and certification services. - The monitoring/supervision of credit rating agencies in the Euro area and the United States provide examples of viable models for the supervision and regulation of service providers.
Facilitate a shift (from voluntary) to mandatory impact reporting for green bonds	- Taxonomies that are outcome-based rely on the availability of data (and analysis) regarding the impact of assets or activities. - Given this, use-of-proceeds and impact reports are highly beneficial. Mandatory, uniform reporting of green bond use-of-proceeds and (annual) impact will facilitate "estimation of the promised impact of the projects financed by green bonds as well as ex-post tracking of their achievement" (p. 19).

From: *A taxonomy of sustainable finance taxonomies* (BIS Papers No. 118 & G20 Sustainable Finance Working Group Input Paper), by T. Ehlers, D. (Nicole) Gao, and F. Packer, 2021: Bank for International Settlements. https://www.bis.org/publ/bppdf/bispap118.htm

Report 5: Public Consultation Report on Taxonomy Extension Options Linked to Environmental Objectives[xv] (EU Platform)

Please note that several Updates have been included at the end of this summary.

Author: Platform on Sustainable Finance[xvi] (an EU advisory body, the 'Platform')

Overview

This report primarily centres around the Platform's proposed preliminary recommendations for extending the EU Taxonomy for Sustainable Activities (the 'Taxonomy'). The reason for extension being that "sustainable finance initiatives to date have neither significantly increased transition finance nor driven sufficiently ambitious environmental transitions" (p. 8). These recommendations are valuable and warrant examination; however, the contextual conditions informing them are specific to the European Union, its unique approach to taxonomy development, and the current state of the EU Taxonomy. Given this, along with the exploratory status of taxonomy development in Canada (via SFAC) at this time, the informational value of the report summarized here is the insights it provides into the taxonomy development process of a first-mover (the EU). Key takeaways include:

1. Taxonomies with **a binary classification scheme may not be sufficient in supporting high-level policy objectives** because they do not capture multiple levels of environmental performance.
2. Incorporating **multiple performance spaces improves market clarity and understanding** by enabling clearer distinction of activities based on their environmental performance.
3. **Legislative frameworks as a legal basis for taxonomy development require careful consideration**, being mindful of the flexibility the custodian may require for making future adjustments to the taxonomy that maximize its effectiveness.

Objectives

The public consultation report was published by the Platform to gather public feedback that will inform the group's continued work on developing the Taxonomy. The Platform sought feedback on their preliminary observations and recommendations for extending the Taxonomy beyond its current scope of environmentally sustainable economic activities and expects to publish a final report sometime during Q1 2022.

Approach

The report first puts forth a rationale for extending the scope of the current Taxonomy. Next, the report outlines a conceptual framework for extension. Chapters 5 and 6 explain, outline arguments for and against, and describe several implementation options for extending the Taxonomy to include significantly harmful (SH) activities and no significant impact (NSI) activities. Finally, the Platform summarizes areas of further work they intend to engage on this topic and reviews the 15 preliminary recommendations.

Key Takeaways

A binary taxonomy design may neither be broad enough nor sufficiently granular in its approach to effectively increase sustainable finance to levels capable of driving ambitious environmental transitions. The Platform,

xv Platform on Sustainable Finance. (2021). Public Consultation Report on Taxonomy extension options linked to environmental objectives (p. 58). European Commission. https://finance.ec.europa.eu/publications/call-feedback-draft-reports-platform-sustainable-finance-social-taxonomy-and-extended-taxonomy_en

xvi Not to be confused with the International Platform on Sustainable Finance (IPSF), the Platform on Sustainable Finance (PSF) is a permanent expert group of the European Commission governed by the Commission's horizontal rules for expert groups. All information related to PSF and its activities can be found on their website and the Register of Commission Expert Groups.

along with the European Commission, maintains that the Taxonomy is not a binary classification but is often misinterpreted as such. This confusion has led to concerns that users will mistakenly consider any activities not classified as 'green' by the Taxonomy as being environmentally 'unsustainable.' Regardless of whether the Taxonomy is genuinely binary or not, its current scope only extends to activities capable of demonstrating a high standard of environmental performance and lacks any differentiation for activities that do not meet the established technical screening criteria. Two major market concerns (restricted access to capital and fear of a green bubble) related to the Taxonomy's perceived binary nature are identified in the report.[xvii]

Incorporating multiple performance spaces can foster improved clarity and understanding of the environmental performance of activities (and portfolios of activities). In turn, an 'extended' taxonomy can more effectively support improved transition strategies and access to financing. With this understanding, the Platform proposes a preliminary framework for extending the EU Taxonomy to incorporate two additional performance spaces to improve differentiation of activities by environmental performance – Significantly Harmful (SH) activities and No-Significant Impact (NSI) activities (see Table 13). The pros and cons for an SH and NSI extension gathered during stakeholder dialogues are shown in Table 11 and Table 12 respectively. To enable a broader recognition of 'valid' transitions within the SH extension, the Platform has recommended defining the Taxonomy's existing performance space that falls in between the thresholds for Substantial Contribution (SC) and Do No Significant Harm (DNSH criteria is technically equivalent to SH) by officially labelling it the "intermediate performance" space. Figure 6 illustrates how the additional performance spaces could improve clarity.

The European experience demonstrates that, ideally, if a regulatory approach is deemed appropriate, governments must carefully consider the legislative framework that provides the legal basis for the taxonomy's development and implementation. For instance, the framework should adequately account for the taxonomy's ultimate intended scope. While understanding that not all variables can always be accounted for, as evidenced by these first-mover experiences, legislative frameworks could incorporate flexibility when possible and empower the taxonomy's custodian to make necessary changes when additional implications of the taxonomy's design become apparent. In theory, the EU Taxonomy Regulation includes what the Platform considers to be the principal building blocks for an SH/Intermediate performance extension because the Taxonomy's design already incorporates what effectively amounts to three environmental performance levels (see Table 14). However, the current Taxonomy Regulation "does not allow for creating any other category of activities than 'environmentally sustainable economic activities'" (p. 32). As a result, the Platform has made recommendations for extending toward SH and NSI that do not require legislative changes in addition to the recommendations that would more formally recognize these extensions but would require such changes.

xvii (1) Restricted access to capital: Given the Taxonomy's current design, there are concerns that corporates which are actively pursuing transitions towards more sustainable business models, but whose activities fall short of meeting the 'substantial contribution' requirement will experience restricted access to capital. (2) **'Green Bubble'**: Recent estimates put the volume of taxonomy-aligned finance at 1-5% of all financial assets. There is concern within investment markets that ever-increasing demand for financial products carrying sustainable labels, combined with investors seeking the narrow supply of taxonomy-aligned assets, will lead to a 'green bubble.'

Report 5: *Appendix*

Table 11: *General pros and cons from stakeholder dialogues regarding extending the Taxonomy to Significant Harm activities*

Pros	Cons
- An SH-extension will help identify and prioritise the economic activities for which the urgent transition towards better environmental performance has to be supported to avoid significant harm. - An SH-extension would increase the transparency, completeness of environmental performance levels of activities and provide an encouraging description for activities with intermediate performance levels between SC and SH. - An SH-extension and associated "Intermediate" area would improve framing, understanding and communication of transitions and transition plans on activity level, while improving the ability of corporates to develop strategies and investment plans to meet environmental objectives. - An SH extension is a prerequisite to help markets define and develop efficient instruments for financing the transition out of SH. - An SH extension may enhance risk management frameworks of both banks/investors and supervisory authorities as it can be assumed that SH-activities are most exposed to transition risk. Financing of associated transition plans can reduce risks. - An SH extension could be used by policy makers to provide subsidies to the decommissioning of harmful activities and monitor changes in capital flows. - An SH extension could provide clarity that other activities in an investment portfolio, even if not yet included in the Taxonomy, are not in the SH category.	- An SH extension may be perceived as a departure from the positive spirit of the Green Taxonomy which aims to encourage companies to move towards sustainable activities. - An SH extension may risk negatively impacting the ability of high carbon intensity sectors and companies carrying out harmful activities to raise finance for transition and to innovate (blacklisting risk). - An SH extension could create "stranded assets by legislation", or at least increase transparency on risks that are already there, thus increasing transition risk. - SH could impact the financing of companies with a high share of turnover deriving from harmful activities. Difficulties could arise linked to specific banks which frequently lend to such companies, impacting on both retail customers and on the wholesale markets. - An SH-extension may disadvantage EU companies vs. non-EU jurisdictions which would call for further efforts for alignment internationally. - An SH-extension may increase complexity, reporting burden, and may affect usability and proportionality dimensions.

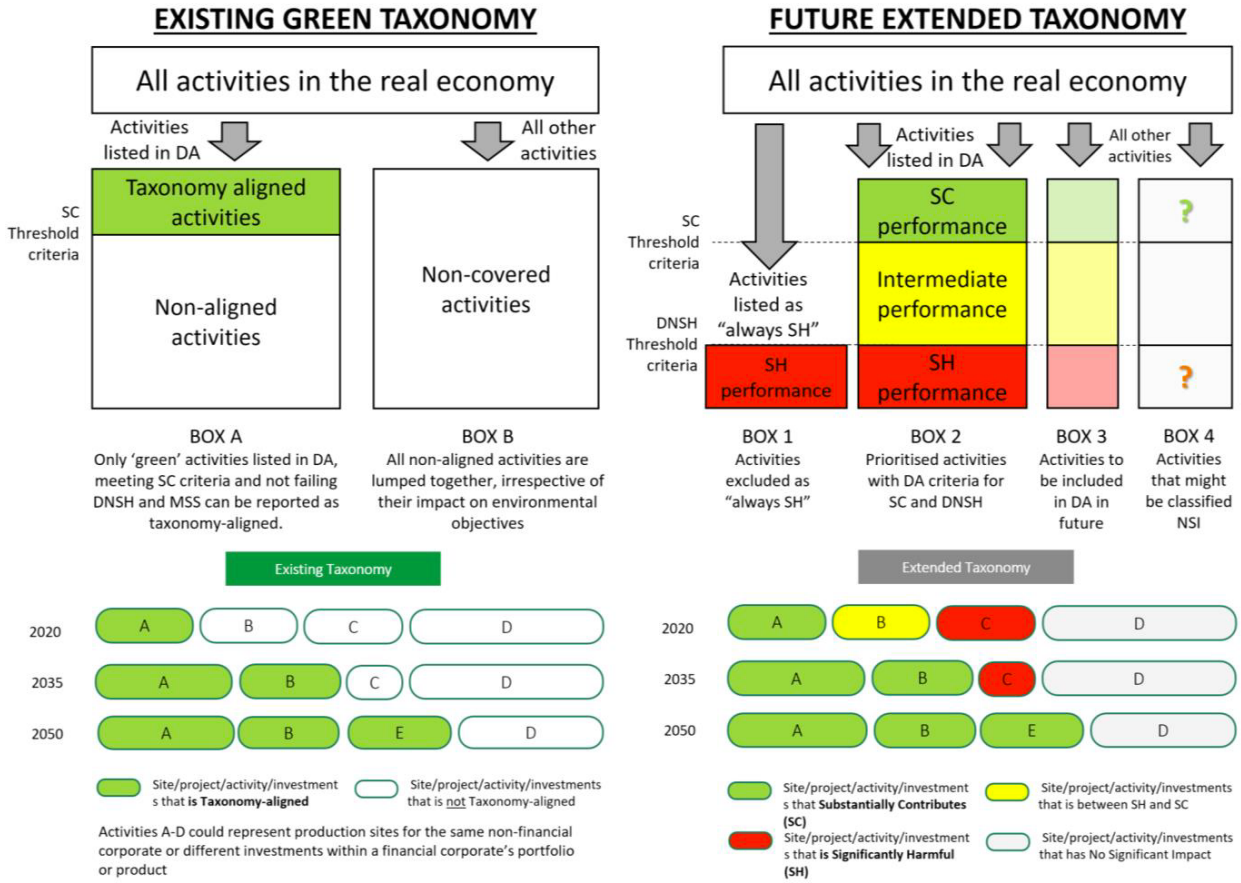
From: *Public Consultation Report on Taxonomy extension options linked to environmental objectives*, by the Platform on Sustainable Finance, 2021: European Commission. https://finance.ec.europa.eu/publications/call-feedback-draft-reports-platform-sustainable-finance-social-taxonomy-and-extended-taxonomy_en

Table 12: *General pros and cons from stakeholder dialogues regarding extending the Taxonomy to No Significant Impact activities*

Pros	Cons
- Mitigates the risk of NSI activities being compared unfavourably to green investments by markets, even when their environmental impact may be far lower than green activities in some high impact sectors. - Supports the greening of all parts of the economy by bringing low impact sectors clearly into the discussions on sustainable finance and supporting finance for green capex and opex in these sectors. - Potentially improves access to finance for low impact sectors and activities. - May be helpful for investment portfolio risk diversification. - May allow corporates to take a 'whole business' view of transition needs and support them in the greening of their supply chain. - Allows for emphasis on climate-resilience in small businesses which are often the most vulnerable to climate change impacts. Without NSI, these activities could be left behind in access to finance for adaptation as well as other important green actions such as energy efficiency of the buildings, electric vehicles etc.	- Potential complexity when looking to define all activities and questionable benefits compared to market-led ESG labelling. - Usability considerations would prioritise developing an SH taxonomy first, including DNSH criteria for otherwise low impact activities, in which case an NSI taxonomy may not be needed. - The logic of the taxonomy argues against the revenues of NSI activities ever being counted as green, only the green capex/opex expenditure of the entities that conduct those activities. In principle, "Green services" could be included within the existing taxonomy. - Scientific basis may not be well defined for all sectors. - Potential challenge of choosing which sectors to develop criteria for first and then how to maintain a list of NSI activities up to date in the dynamic services sector. - Some doubts as to whether NSI exists when all 6 objectives are considered, and whether any activity should be classified as NSI without having to check DNSH criteria.

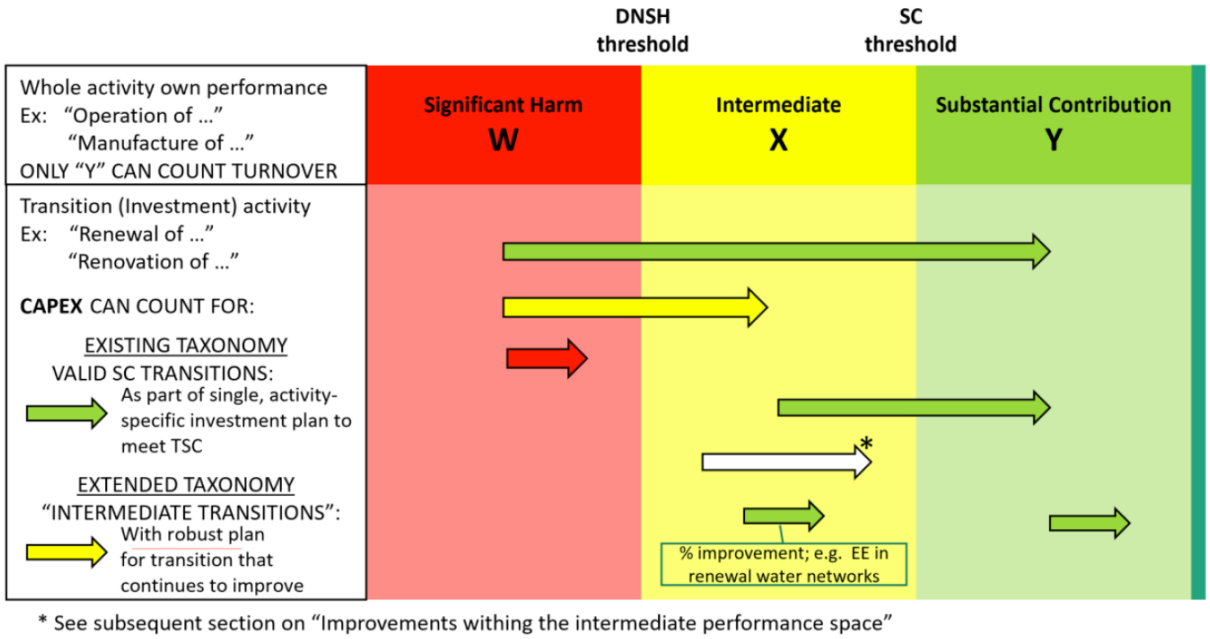
From: *Public Consultation Report on Taxonomy extension options linked to environmental objectives*, by the Platform on Sustainable Finance, 2021: European Commission. https://finance.ec.europa.eu/publications/call-feedback-draft-reports-platform-sustainable-finance-social-taxonomy-and-extended-taxonomy_en

Figure 6: *Illustration of how extending the existing Taxonomy would foster improved market clarity and understanding of the environmental performance of activities*



From: *Public Consultation Report on Taxonomy extension options linked to environmental objectives* (p. 16), by the Platform on Sustainable Finance, 2021: European Commission. https://finance.ec.europa.eu/publications/call-feedback-draft-reports-platform-sustainable-finance-social-taxonomy-and-extended-taxonomy_en

Figure 7: *Illustrates how additional performance levels enable additional 'valid' transitions.*



In Figure 7, green arrows represent 'green transitions,' which are transitions into the Substantial Contribution performance space and are already recognized under the current Taxonomy. Amber arrows represent 'intermediate transitions.' Defining the SH performance space and officially identifying the 'middle' space as 'intermediate performance' allows for recognizing valid, intermediate activity-level transitions out of the SH space and into the Intermediate space. Red arrows represent performance improvements within the SH space and are not valid transitions. The white arrow represents performance within Intermediate performance. The Platform intends to recommend recognizing this improvement as a valid transition, but with stipulations – this has not yet been developed and is not discussed in detail.

From: *Public Consultation Report on Taxonomy extension options linked to environmental objectives* (p. 25), by the Platform on Sustainable Finance, 2021: European Commission. https://finance.ec.europa.eu/publications/call-feedback-draft-reports-platform-sustainable-finance-social-taxonomy-and-extended-taxonomy_en

Table 13: *The proposed activity types make up the working definitions of both the SH and NSI extensions.*

Significantly Harmful Activities	- Activities for which improving their environmental performance to a level that avoids significant harm **is not technologically possible**. I.e., incapable of transitioning to a low-carbon, environmentally sustainable performance level. From a future perspective, these activities **can only be decommissioned**. - Only one activity has been identified under this category in the Taxonomy Regulation – Article 19.3 identifies power generation from solid fossil fuels and expressly excludes it from the green Taxonomy.
	- Activities with performance levels that fail DNSH technical screening criteria stipulated in the existing Delegated Acts. From a future perspective, these activities can **either be decommissioned or undergo a transition towards improved environmental performance**. - The SH extension would help enable these activities to demonstrate valid 'intermediate' transitions in addition to the existing 'green' transition.
NSI activities are activities which…	- Do not possess the potential of making a substantial contribution to any of the six environmental objectives. AND - Are not at risk of causing significant harm to any of the six environmental objectives.
	OR - Are already included in Annex 2 (climate change adaptation) of the existing Delegated Act as activities that may potentially substantially contribute to climate adaptation. AND - No DNSH criteria have been set for the activity for the other five environmental objectives

From: *Public Consultation Report on Taxonomy extension options linked to environmental objectives*, by the Platform on Sustainable Finance, 2021: European Commission. https://finance.ec.europa.eu/publications/call-feedback-draft-reports-platform-sustainable-finance-social-taxonomy-and-extended-taxonomy_en

Table 14: The existing Taxonomy incorporates what effectively amounts to three environmental performance levels, which provides a conceptual basis for an SH/Intermediate space extension (to a degree) without requiring additional legislation.

Substantially Contributing to one environmental objective (SC)	- 'Green' performance. Demonstrated by meeting the technical screening criteria for substantial contribution to the environmental objective in question.
Significant Harm to an environmental objective (SH)	- Through the technical criteria established for satisfying the Do No Significant Harm Principle, the Taxonomy Regulation essentially defines the Significant Harm (SH) performance level as: failing DNSH criteria = significant harm, i.e., DNSH and SH criteria are technically the same.
Doing no significant harm nor substantially contributing to the environmental objective.	- Activities with environmental performance that do not reach the SC technical criteria and do not fail the DNSH technical criteria. - The Intermediate performance space.

From: *Public Consultation Report on Taxonomy extension options linked to environmental objectives*, by the Platform on Sustainable Finance, 2021: European Commission. https://finance.ec.europa.eu/publications/call-feedback-draft-reports-platform-sustainable-finance-social-taxonomy-and-extended-taxonomy_en

Updates

The report states that the Platform is required to publish a final report with updated recommendations (based on feedback to this proposal) by the end of December 2021. On December 13, 2021, an announcement posted on the Platform's website explained that the Commission granted an extension into Q1 2022 to allow for the Platform to account for three additional target areas.

After extensive lobbying from some EU Member States, the Commission published a Complementary Delegated Act to the current Climate Delegated Act (covering mitigation and adaptation) of the Taxonomy in January 2022. Briefly summarized here, the Complementary Delegated Act adds certain natural gas and nuclear 'transitional' activities to the current Taxonomy. The addition has proved to be controversial. The Platform on Sustainable Finance has itself taken issue with the addition of nuclear and natural gas activities as proposed by the Commission and provided a detailed formal response.

Note that the report summarized here was published in July of 2021 and precedes the Commission's proposal of the Complementary Delegated Act. The Platform's final recommendations have not been published and no extensions to the Taxonomy's scope of activities has been adopted at this time, i.e., the addition of nuclear and natural gas activities has been made within the existing scope of the Taxonomy, which, per the Taxonomy Regulation, is 'environmentally sustainable economic activities.'

Report 6: Improving Compatibility of Approaches to Identify, Verify and Align Investments to Sustainability Goals[xviii] (UN-DESA/IPSF)

Author: United Nations - Department of Economic and Social Affairs (UN-DESA) and the International Platform on Sustainable Finance (IPSF).

Overview

The report summarized here provides an in-depth overview of approaches for identifying, verifying, and aligning (hereafter 'aligning') investments with sustainability goals. From the report, it is clear that, on their own, alignment approaches for sustainable finance may improve clarity and transparency within markets. However, **enhanced clarity and transparency are necessary but not sufficient conditions** for ensuring the credibility of sustainable investment products and strategies. **Alignment approaches must also be highly consistent.** While not the sole solution, the ability of taxonomies to provide detailed, science-based, publicly available definitions of 'green' or 'sustainable' render them foundational to many approaches and tools that help align investments with sustainability goals. Given this, e**nhancing the interoperability of taxonomies is vital**, as interoperable taxonomies could help to catalyze broader improvements to inter-relatedness and interoperability across alignment approaches. Jurisdictions and markets engaging in taxonomy development should carefully consider their approach, ensuring that the taxonomy's substance is coherent with existing approaches.

Objectives

The primary aims are to review existing approaches for aligning investments that contribute to sustainability goals and explore how the consistency, interoperability, and transparency of approaches can be improved while acknowledging the specificities of localities.

Approach

Part 1 is an overview and analysis of the existing public and market-based frameworks and approaches for aligning investments with sustainability goals. Part 2 identifies and describes what the authors consider to be the main challenges to implementing consistent, comparable, and interoperative global frameworks. Finally, Part 3 outlines (a) seven high-level principles for countries/jurisdictions and markets to consider when developing coherent approaches for aligning investments with sustainability; and (b) 10 recommendations for enhancing the interoperability and comparability of approaches and tools for sustainable investment.

Key Takeaways

Increased attention must be paid towards improving the interoperability within and the inter-relatedness (i.e., consistency) across the variety of approaches for aligning finance with sustainability goals. Efforts to develop these approaches have proliferated rapidly. Continuing these efforts in relative isolation from one another risks generating market fragmentation. The challenges associated with increased fragmentation risk undermining the original aims of developing the approaches in the first place.

To improve consistency and interoperability, it is first essential to understand the differences within - and the relationship between - alignment approaches. The report covers approaches that, at a high level, can be loosely categorized along three dimensions. Figure 8 helps to illustrate the inter-dependence of these approaches.

xviii United Nations - Department of Economic and Social Affairs, & International Platform on Sustainable Finance. (2021). Improving compatibility of approaches to identify, verify and align investments to sustainability goals: Input paper for the G20 Sustainable Finance Working Group (SFWG). https://g20sfwg.org/#document_repository

1. The 'core' approaches – high-level definitional frameworks for sustainable investment, operationalized by approaches in the remaining two dimensions.
2. Tools for determining and verifying 'green' or 'sustainable' eligibility.
3. Standards and labels.

While taxonomies[xix] are not the sole focus of this report, **a significant shift has occurred in their development towards more detailed, top-down approaches**. The authors focus particular attention on reviewing taxonomies resulting from this shift. The review finds that taxonomies of this nature[xx] exhibit three common features.

1. **Highly detailed and clear.** Taxonomies are informed by, and build upon, 'core' definitional framework approaches – providing more detail and clarity, often at the economic activity level.
2. **Science-based.** Incorporating credible eligibility approaches to 'define' aligned activities or assets.
3. **Publicly available.** Since they are not based on proprietary methodologies, they can become commonly accepted and applicable to various use-cases.

Publicly available taxonomies with these elements can provide robust, common definitions of 'green' or 'sustainable' for the purposes of investment. Figure 9 illustrates how other approaches can operationalize and benefit from such a definition. By improving upon and informing other alignment approaches, **taxonomies are a valuable tool for improving transparency within sustainable finance markets**.

However, like other approaches, taxonomies to date have been primarily developed in isolation from one another, posing fragmentation risks. The stocktake reveals four common elements to consider for taxonomy development: (a) objectives, (b) coverage and granularity, (c) use and application, and (d) the approach to defining eligibility. Table 15 has more detail. Decision-making during taxonomy development related to these four elements can result in very different taxonomies, leading to inconsistencies. Since taxonomies are increasingly developed for and apply in individual national or regional jurisdictions, other alignment approaches may be underpinned by different taxonomies. **Therefore, it is critical to improve the interoperability of taxonomies. Consistent, comparable taxonomies will be conducive to catalyzing improved interoperability within, and inter-relatedness across a broad spectrum of alignment approaches.** At this time, assessing interoperability and comparability of taxonomies is challenging due to the still-nascent status of their development globally. Nonetheless, the lower section of Table 15 includes some relevant findings.

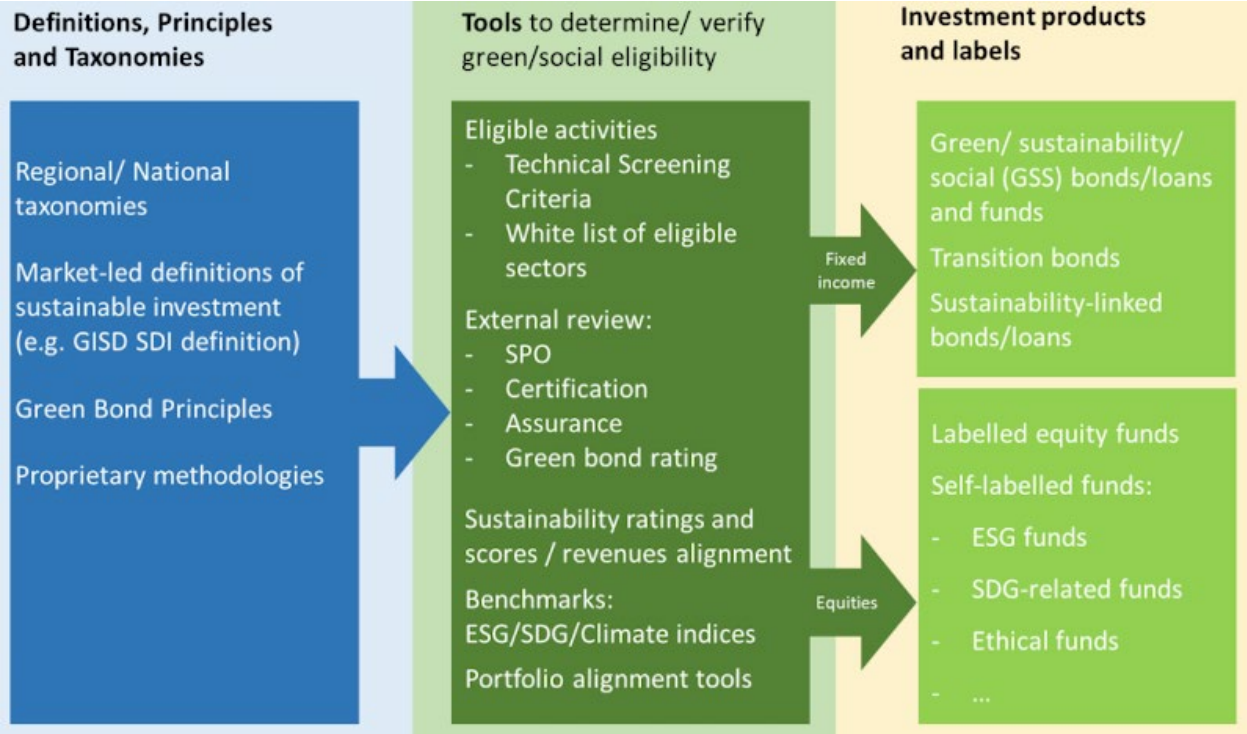
With improving the interoperability of approaches in mind, the report authors first propose seven principles for developing coherent approaches for aligning investments with sustainability goals. Finally, there are ten recommendations for improving the interoperability and comparability of approaches. Table 17 describes, in detail, both the principles and four recommendations related to taxonomy development.

xix In the context of this report, a 'green' or 'sustainable' taxonomy is defined as "a classification system that identifies activities, assets or revenue segments that deliver on key environmental objectives based on eligible conditions set out by the taxonomy" (p. 9).

xx While taxonomies developed by public authorities are becoming increasingly common, it is important to note that detailed, top-down approaches can result from either public- or private-led development efforts.

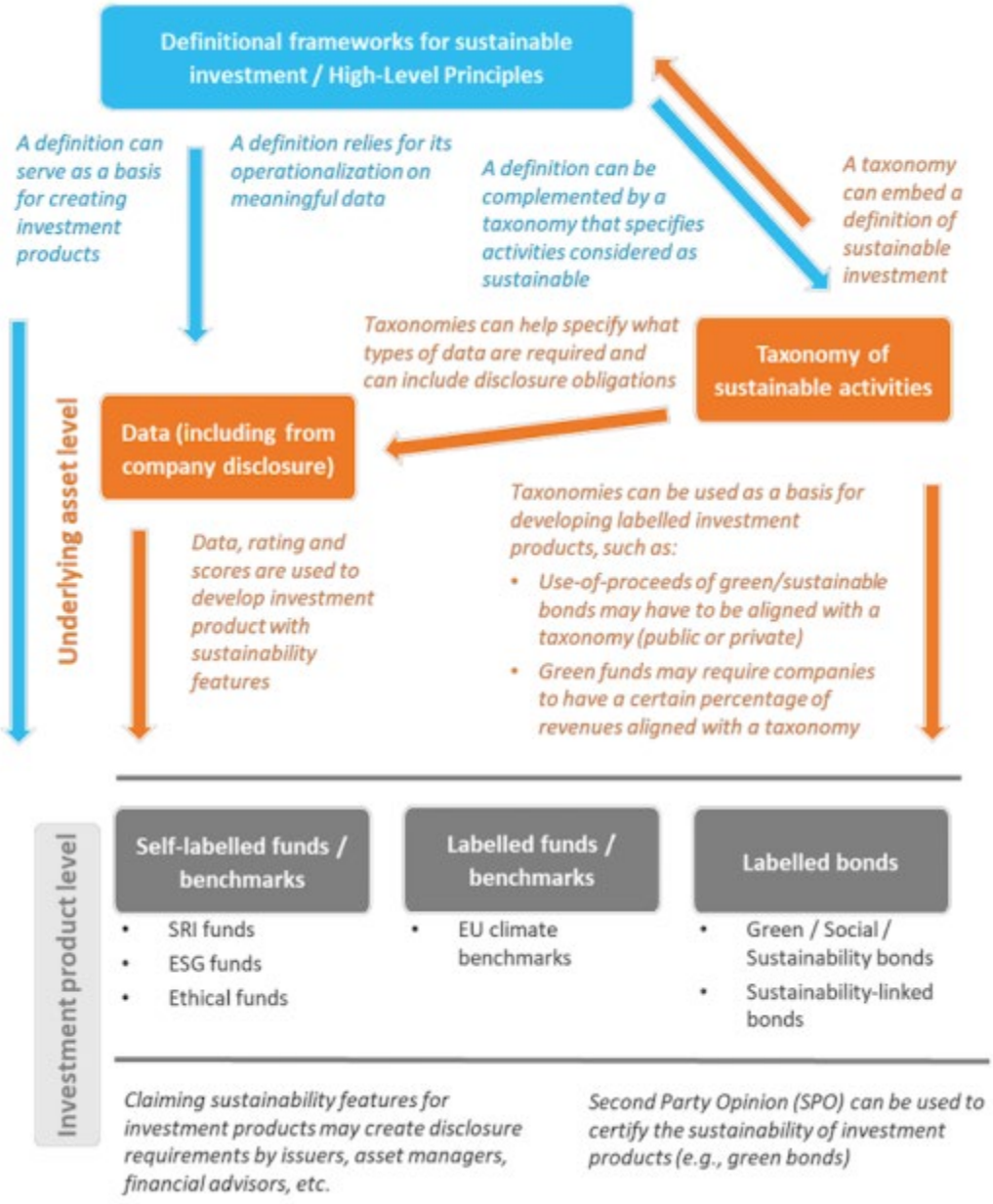
Report 6: *Appendix*

Figure 8: *Alignment approaches and their different dimensions.*



From: *Improving compatibility of approaches to identify, verify and align investments to sustainability goals* (G20 Sustainable Finance Working Group Input Paper, p. 12), by the United Nations – Department of Economic and Social Affairs & the International Platform on Sustainable Finance, 2021. https://g20sfwg.org/wp-content/uploads/2021/09/G20-SFWG-DESA-and-IPSF-input-paper.pdf

Figure 9: *Illustrates the inter-relatedness of various alignment approaches for sustainable investments.*



From: *Improving compatibility of approaches to identify, verify and align investments to sustainability goals* (G20 Sustainable Finance Working Group Input Paper, p. 40), by the United Nations – Department of Economic and Social Affairs & the International Platform on Sustainable Finance, 2021. https://g20sfwg.org/wp-content/uploads/2021/09/G20-SFWG-DESA-and-IPSF-input-paper.pdf

Table 15: *Key takeaways from the individual and comparative stocktake of existing and emerging taxonomies.*

Core elements of existing and emerging taxonomies	
Objectives	- So far, taxonomies typically have covered a range of environmental objectives. Some taxonomies use ISIC, but not all. There has been limited progress on incorporating social elements. - Incorporating multiple objectives can be a complex undertaking. Many taxonomies use mitigation and adaptation as starting points.
Coverage and granularity	- Many taxonomies are based, at least in part, on existing sector classification systems, which tend to have a broad number of sectors, with more detail at activity or sub-sector levels. - Sector-level categories usually include energy, industry/manufacturing, agriculture, transport, water, waste, buildings, and ICT.
Use and application	- Use and application are typically governed by who is developing the taxonomy and the purpose it serves. There is a mix of mandatory and voluntary approaches. - Application may be narrow, such as only applying to green bonds; or more comprehensive and applicable to various use-cases.
Eligibility approach	- The two primary methodologies that have emerged are the catalogue, and technical screening criteria approaches. A third approach, principles-based, is less common—more information on this is in Table 16.
Key points from the comparative exercise	
- The environmental objectives are broadly consistent: avoiding greenwashing, promoting green industries, alignment with Paris Agreement. This suggests that existing taxonomies have significant overlap – for instance, most taxonomies include climate change mitigation and adaptation.	
- The Chinese and EU Taxonomies are frequently used as a starting point for other national taxonomy development efforts. This is encouraging, as the use of existing methodological approaches will help to facilitate comparability and interoperability of taxonomies globally.	
- Low-hanging fruit: Many areas across taxonomies will likely be functionally equivalent despite different approaches. E.g., consistency between included activities (renewables, electrified transport) - Other areas are complex: Sectors that rely heavily on local regulation and directives, such as buildings, are difficult to compare.	
- Eligibility features can be challenging to assess and harmonize. Any eligibility features relying on local legislation are inherently challenging to harmonize globally. This will likely be the case for features like DNSH. There could be a mechanism to assess functional comparability (the report does not provide any suggestions).	

From: *Improving compatibility of approaches to identify, verify and align investments to sustainability goals* (G20 Sustainable Finance Working Group Input Paper), by the United Nations – Department of Economic and Social Affairs & the International Platform on Sustainable Finance, 2021. https://g20sfwg.org/wp-content/uploads/2021/09/G20-SFWG-DESA-and-IPSF-input-paper.pdf

Table 16: *Approaches for assessing the eligibility of activities or assets included in taxonomies.*

Catalogue ('whitelist' in summary)
- The catalogue approach lists eligible economic activities and projects – it is not technology-neutral. Instead, activities and assets included in these listings are to be understood as 'green' and, therefore, eligible. - As a result, this approach uses 'green' as the starting point for activity inclusion. Therefore, it covers green components of specific segments rather than the whole economy. - Examples: China, Mongolia, Russia
Technical Screening Criteria (TSC)
- Taxonomies with a TSC approach provide screening criteria for determining activity-level eligibility. This approach can be technology-neutral, as thresholds can be applied across technologies. - For instance, in theory, any type of power generation could be eligible under a TSC approach so long as it meets the prescribed thresholds (EU = 100g CO2). - Examples: EU, likely: Chile and Colombia
Principles-Based
- With this (uncommon) approach, taxonomies tend to resemble high-level definitional frameworks such as the Green Bond Principles rather than taxonomies. They provide a set of principles for assessing activities. - Examples: Malaysia, Japan

From: *Improving compatibility of approaches to identify, verify and align investments to sustainability goals* (G20 Sustainable Finance Working Group Input Paper), by the United Nations – Department of Economic and Social Affairs & the International Platform on Sustainable Finance, 2021. https://g20sfwg.org/wp-content/uploads/2021/09/G20-SFWG-DESA-and-IPSF-input-paper.pdf

Table 17: *(a) Principles for countries/jurisdictions and markets for developing coherent approaches to identify and align investments with sustainability goals. (b) The four recommendations pertaining specifically to jurisdictions seeking to implement a taxonomy. The remaining six recommendations, applying to all approaches, begin on Page 36 of the report.*

(a) Definitions and taxonomies should…

- **Ensure a positive contribution to support SDGs.** A positive contribution to at least one of the 17 SDGs, rather than just defining sustainable investment as ESG risk management.
- **Incorporate 'Do No Significant Harm.'** Ensuring that an activity's contribution to an SDG is not achieved at the serious expense of other SDGs.
- **Be science-based.** Objective in nature – supported by clearly defined, interoperable metrics and thresholds aligned with the best available science.
- **Be dynamic.** Undergo regular reviews and updates to reflect changing markets, technological innovations, and changing domestic or international policies and priorities.
- **Be transparent and verified**, relying on:
  - Transparent and robust methodologies for identifying sustainable investment opportunities;
  - Proper disclosure by investment managers and financial advisors marketing sustainable investment products and strategies;
  - Independent verification mechanisms
- **Contain a fuller coverage of SDGs.** Expanding coverage over time to include other aspects of the SDGs (assuming an initial focus on climate).
- **Create a comprehensive assessment.** Consider the entire impact of an investee entity's activities - from its operational activities, and from the value chain and usage of its products and services.

(b) Jurisdictions Implementing Taxonomies

- **Consistent language.** Sustainable finance taxonomies with a common language will have a shared basis that enhances comparability and interoperability.
- Recommendation: Use the International Standard Industrial Classification (ISIC). Different activity classification methods will make comparability more difficult and entail costly translation efforts.
- **Share and collaborate.** National and regional taxonomy efforts should be shared and compared in international fora.
- The International Platform on Sustainable Finance is one such forum where some taxonomy collaboration is already underway.
- **Don't unnecessarily reinvent the wheel.** Jurisdictions could adopt common taxonomies, which would help with mutually identifying common criteria and support cross-border green capital flows.
- **Regional cooperation.** Collaborate regionally on developing unified taxonomies. Multilateral development banks can play an instrumental role in regions with a large number of relatively small economies such as Africa, Latin America, and Central Asia.

From: *Improving compatibility of approaches to identify, verify and align investments to sustainability goals* (G20 Sustainable Finance Working Group Input Paper), by the United Nations – Department of Economic and Social Affairs & the International Platform on Sustainable Finance, 2021. https://g20sfwg.org/wp-content/uploads/2021/09/G20-SFWG-DESA-and-IPSF-input-paper.pdf

Report 7: Sink or Swim: Transforming Canada's economy for a global low-carbon future[xxi] (CICC)

Author: Rachel Samson, Jonathan Arnold, Weseem Ahmed, and Dale Beugin – Canadian Climate Institute (formerly, Canadian Institute for Climate Choices).

Overview

As a country, **Canada faces significant risks associated with a low-carbon global transition** that the authors argue is accelerating in its pace and level of ambition. Addressing these transition risks, which are socioeconomic in nature, requires concerted efforts by Canadian governments to:

1. Be bold and proactive in developing forward-looking economic strategies and plans for the transition that will help to secure long-term economic prosperity.
2. Ensure that the people and communities most vulnerable to the effects of the low-carbon transition are not worse off as a result – including:
    a. Those who have traditionally prospered but will be made vulnerable due to disruption in Canada's carbon-intensive sectors, and
    a. Historically disadvantaged people and communities.

This report does not focus on taxonomies; however, a fundamental consideration for taxonomy development is accounting for national/local realities and policy priorities. If a Canadian taxonomy is developed, some of the country-specific context critical to informing such an effort - including the necessary incorporation of (or linking to) **just transition concepts and robust consideration for Indigenous Peoples** - is articulated in this report. Moreover, this report highlights certain aspects of regional differences in terms of their transition vulnerability, a potentially important consideration.

Objectives

The report authors aimed to (1) assesses the implications that the economic transformation underway globally will have on Canada; and (2) articulate the strategies that will allow Canada to manage the risks it faces, seize transformational opportunities, and keep pace with the global economic transition by driving clean and inclusive growth.

Approach

In Chapter 2, the authors discussed the transition implications for Canada by framing the global low-carbon transition and examining the stakes for Canada within this context. Chapter 3 assesses Canada's transition readiness. Chapter 4 discusses Canada's growth opportunities. Chapter 5 examines the transition in the context of people and communities. Chapter 6 articulates the need for improved market transparency and the need for better data and metrics. Finally, Chapter 7 identifies the four priority areas for government action.

Key Takeaways

Confronted with an accelerating global low-carbon transition, **Canada faces significant transition risks**. Canada's transition vulnerable sectors attract greater than 60% of foreign direct investment and are responsible for more than 70% of Canada's goods exports. To put this into even greater perspective – together, in 2019, the combined export and investment value generated by these sectors amounted to nearly $300 billion.

xxi Samson, R., Arnold, J., Ahmed, W., & Beugin, D. (2021). Sink or Swim: Transforming Canada's economy for a low-carbon future. Canadian Institute for Climate Choices. https://climateinstitute.ca/reports/sink-or-swim/

Despite this, Canada and its governments are not ready. At this time, the report argues that moving too slowly poses a greater competitive risk to Canada than moving too quickly, with **Canadian economic success depending on investments for catalyzing large-scale, transformative change**.

The authors identify three main transition drivers that will impact company profitability through the transition.

1. **Demand Creation.** Certain products will experience growing global demand. Demand-creation sectors represent 'clear opportunity' through the transition.

2. **Carbon Costs.** Driven by government policy and border measures, carbon costs decrease profitability. However, these costs can be partially offset by reducing emissions and the passing of costs on to customers. These 'potential opportunity' sectors will face higher costs but not necessarily a noticeable increase or decline in demand. Therefore, their profitability will be dependent on their ability to reduce their emissions (and reduce costs).

3. **Demand Decline.** Certain products will face shrinking global demand, which will reduce profitability. There are 'limited opportunity' sectors that face either carbon costs combined with declining demand or very extreme demand declines.

These transition drivers provide a helpful framing to articulate certain Canadian transition imperatives. Figure 10 illustrates these dimensions in further detail.

1. Enabling greater investment towards companies active in 'clear opportunity,' demand-creation sectors. Canada has hundreds of promising companies, but many struggle to attract investment to finance their growth.

2. Companies active in 'potential opportunity' sectors that will not necessarily be impacted by demand growth or decline but face carbon costs are transition vulnerable. These companies must make investments necessary to ensure profitability through transition, such as reducing emissions intensity.

3. Companies active in 'limited opportunity' sectors will likely experience demand decline and carbon costs and will need to shift into new lines of business.

There are also important **social dimensions related to a low-carbon transition that cannot be overlooked**. The level of Canada's transition readiness will directly impact:

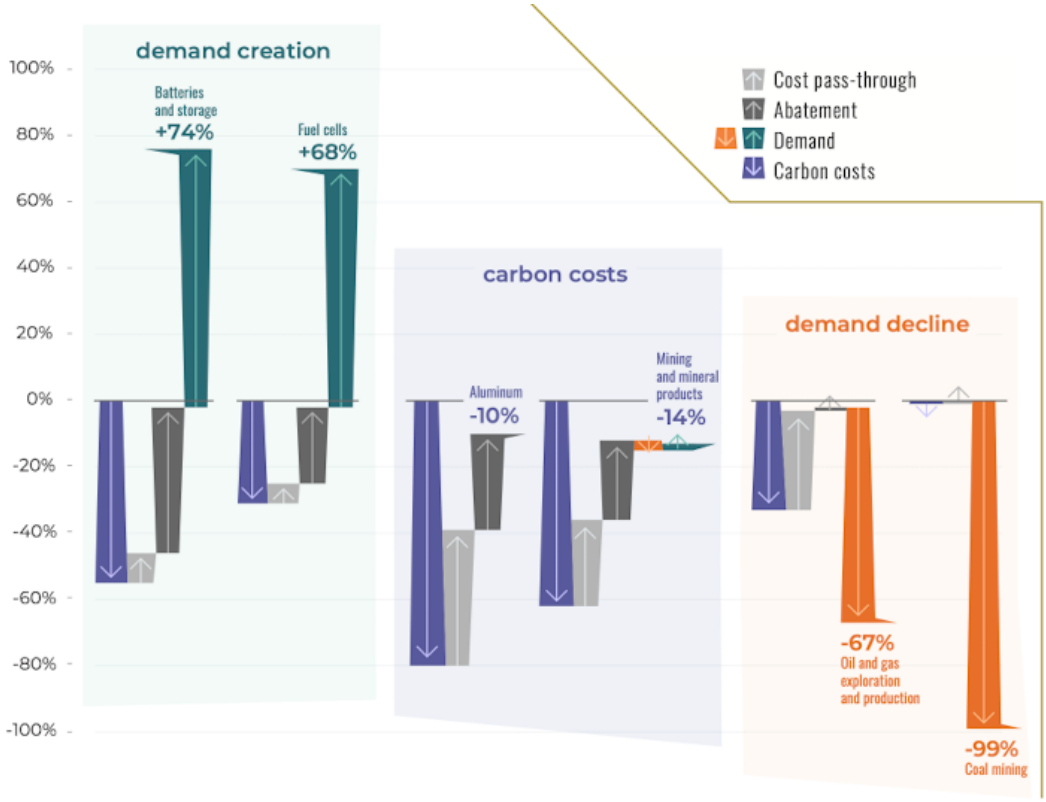
1. The ability of Canadian workers in transition-vulnerable sectors to keep their jobs or find new ones. There are workers in transition-vulnerable sectors in every province and territory. In absolute terms, Ontario has the most workers in transition-vulnerable sectors. By share of workforce, Alberta, at 9.1%, has the most.

2. The ability to avoid or mitigate broader impacts to service sectors and government tax revenue on account of communities with high shares of employment in transition-vulnerable sectors. An analysis by the authors looking at Canadian communities with over 10,000 people finds over 50 such communities where greater than 3% of employment is in transition-vulnerable sectors. The community of Wood Buffalo in Alberta has the highest share of employment (29%).

In light of the report's findings, the authors outline four priorities for government action, arguing that these areas represent where government action is most needed if Canada is to navigate the low-carbon transition successfully. Table 18 describes these priorities.

Report 7: *Appendix*

Figure 10: *The authors identified the three dominant drivers of profit change: demand creation, carbon costs, and demand decline.*



Source: Canadian Institute for Climate Choices (2021c), based on modelling and analysis commissioned from Planetrics. Notes: This figure breaks down the major drivers that determine the future profitability of companies through low-carbon transition. It shows the decomposition of the difference in profitability between the baseline scenario and the 1.5-degree scenario for a selection of sectors in 2050, based on all equities operating in the Canadian market. Results are similar for Canadian equities operating in the international market, though fewer companies and sectors are captured.

From: *Summary Report: Sink or Swim: Transforming Canada's economy for a low-carbon future* (p. 13), by R. Samson, J. Arnold, W. Ahmed, and D. Beugin, 2021: Canadian Institute for Climate Choices. https://climateinstitute.ca/reports/sink-or-swim/

Table 18: *The four priorities for government action most needed for Canada's successful navigation of the low-carbon transition*

Four Priorities for Government Action
- Prioritize forward-looking decisions making. Decision-making of governments as it relates to relevant policy (e.g., carbon pricing, procurement, regulations) should be explicitly accounting for the future competitive benefits resulting from near-term policy actions. o Implementation example: A zero-emission vehicle mandate. See page 87 of the report for further information.
- Emphasize future-fit innovation and economic development. Public investments and tax incentives should be rebalanced towards activities that face barriers to private investment but demonstrate export and growth potential. o Implementation example: A future-fit fund. See page 91 of the report for further information.
- Develop local and people-focused transition plans. Detailed transition plans should be developed to support the overall well-being of workers and communities, with collaboration between Federal, provincial, territorial, municipal, and Indigenous governments. o Implementation example: A community transition plan. See page 96 of the report for further information.
- Mandate the disclosure of climate-related metrics that are decision-useful. There is a need for better disclosure metrics, improved coverage of large private companies, financial product oversight, and Indigenous metrics, to name a few. Broad collaboration between the federal government - led by Privy Council in partnership with SFAC, securities and financial regulators, provincial and territorial governments, standards associations, and Indigenous organizations is needed to accelerate the development of quantitative, comparable metrics, standards, and certifications at the company - and product-level that measure climate, environmental, social, and Indigenous performance. o Implementation example: ESG standards and certification. See page 101 of the report for further information. o Note: Taxonomies are mentioned in this context as a response to addressing concerns about the lack of consistency in product labelling and certifications.

From: *Sink or Swim: Transforming Canada's economy for a low-carbon future*, by R. Samson, J. Arnold, W. Ahmed, and D. Beugin, 2021: Canadian Institute for Climate Choices. https://climateinstitute.ca/reports/sink-or-swim/