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Sustainability reporting: Conceptual foundations and connectivity between financial and non-financial reporting

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of Applied Sciences

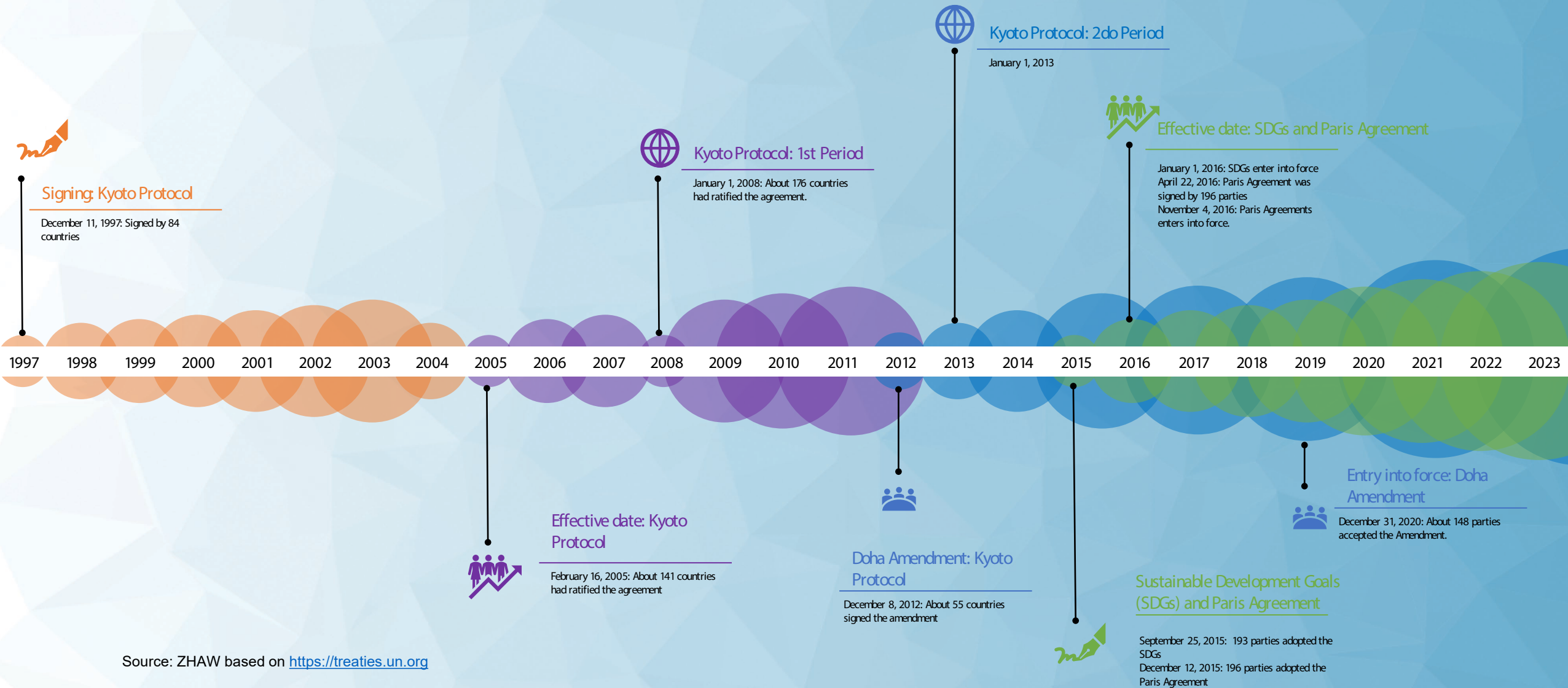
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Agenda

1. Background
2. The rationale for developing a sovereign climate and nature information framework.
3. Benefits of preparing and presenting sovereign climate and nature information
4. Potential risks of preparing and submitting sovereign climate and nature reports
5. Connectivity/link between financial and non-financial reporting
6. State-owned enterprise case: Ecopetrol - Colombia
7. Challenges for Public Sector Accounting (PSA)
8. Country Case: Switzerland

Background



Source: ZHAW based on <https://treaties.un.org>

Background

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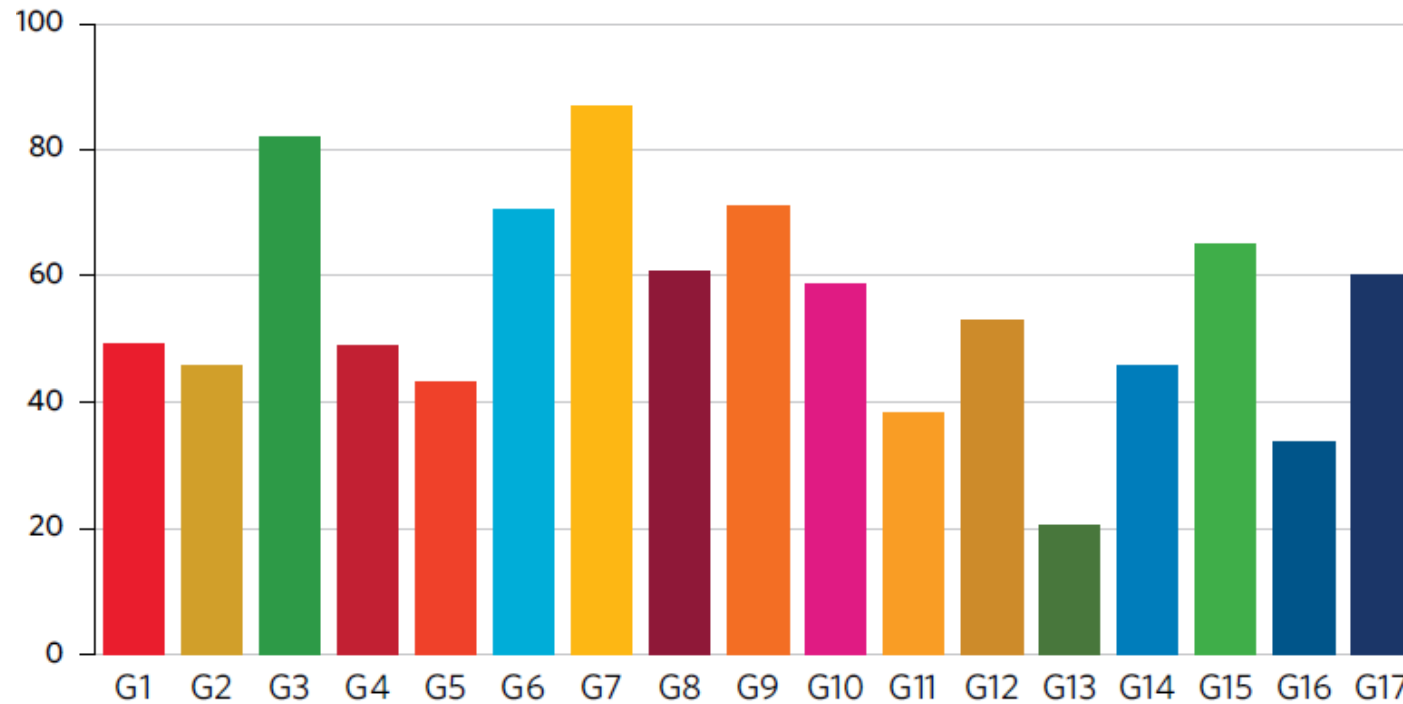


Background

Significant data gaps still exist in terms of geographic coverage, timeliness, and level of disaggregation in SDG monitoring

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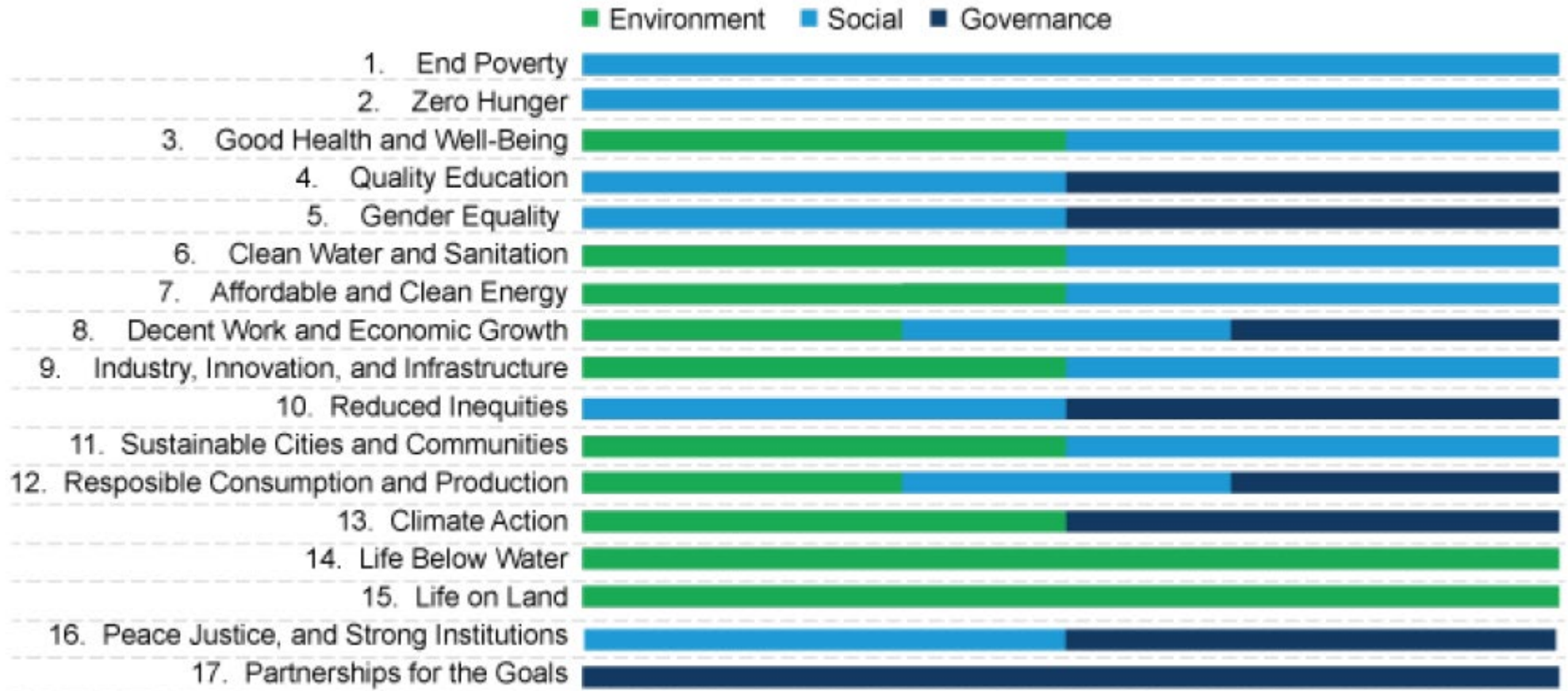
Proportion of countries or areas with available data since 2015, by Goal (percentage)



Background

Public and private sector entities should adapt their policies and operational terms to address ESG (Environment, Social, and Governance) factors implied by the SDGs.

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Background

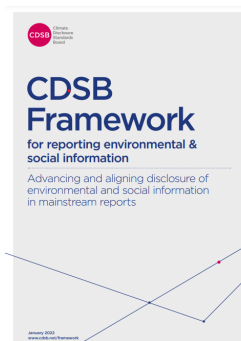
In the private sector, there are a variety of frameworks for disclosing ESG and climate information to different users, for example:

*Task Force on Climate-related Financial Disclosures –
Financial Stability Board (FSB)*



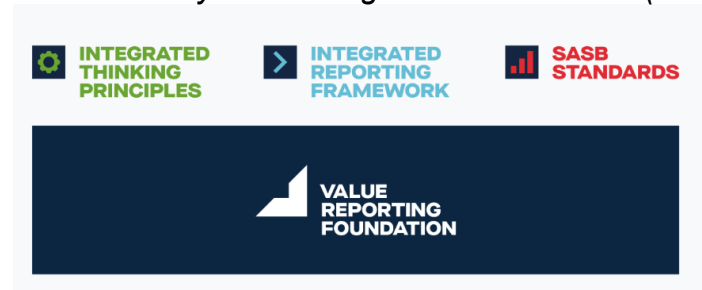
Source: <https://www.fsb-tcfid.org/> [downloaded 29.05.2023]

CDSB Framework - Climate Disclosure Standards Board (CDSB)



Source: <https://www.cdsb.net/> [downloaded 29.05.2023]

*Value Reporting Foundation -
(Before International Integrated Reporting Council (IIRC) y
Sustainability Accounting Standards Board (SASB))*

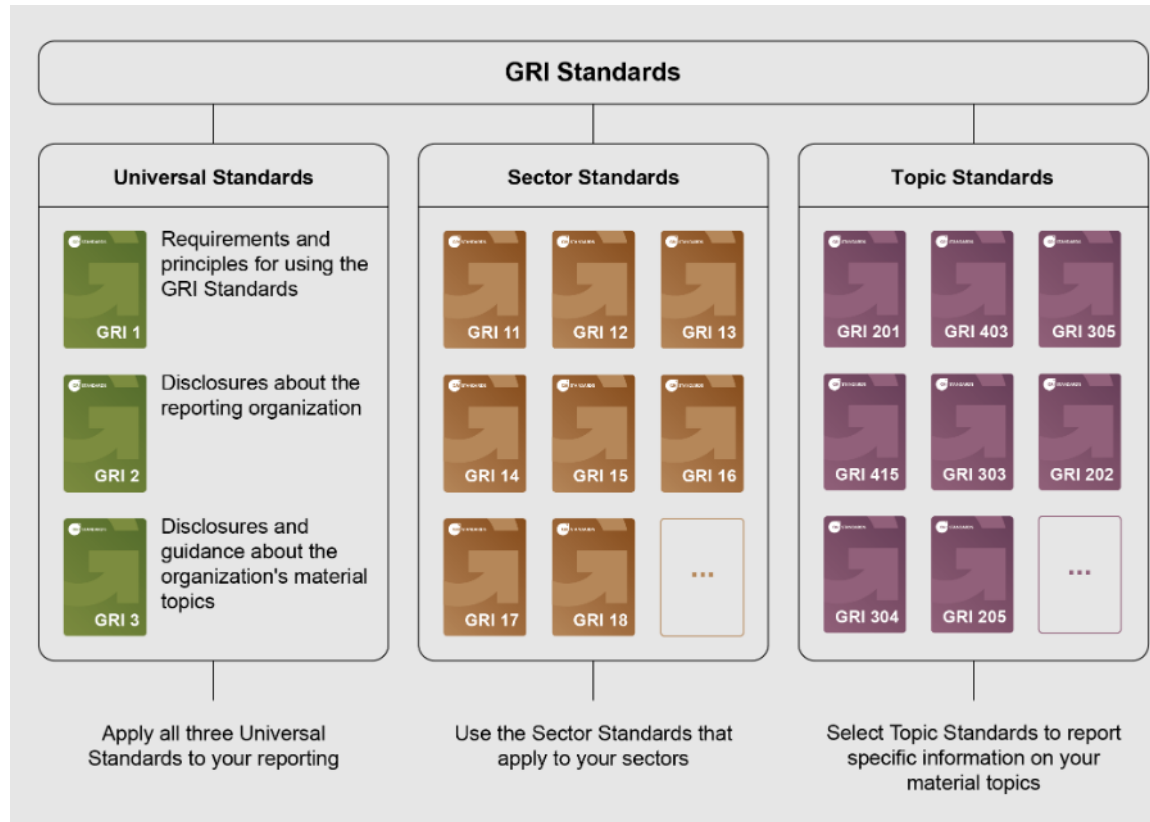


Source: <https://www.valuereportingfoundation.org/> [downloaded 29.05.2023]

Background

In the private sector, there are a variety of frameworks for disclosing ESG and climate information to different users, for example:

Global Reporting Initiative (GRI)



Background

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Compilation of standards in the private sector

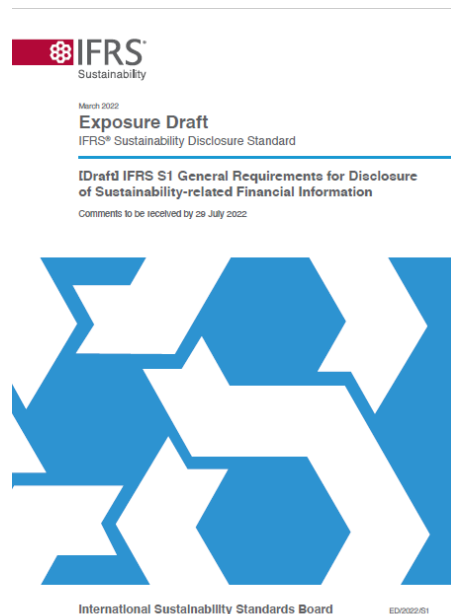
- The IFRS Foundation announces the creation of the International Sustainability Standards Board (ISSB) during the United Nations Climate Change Conference (COP26) in Glasgow (Scotland) in November 2021.
- They made the decision to compile the VRF and CDSB in June 2022 (achieved on August 1, 2022).
- But they will not compile the GRI, because of its wide use.

Background

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International Sustainability Standards Board (ISSB)

The ISSB's mission is to develop standards that will result in a comprehensive, high-quality global foundation of sustainability information focused on the needs of investors and financial markets.



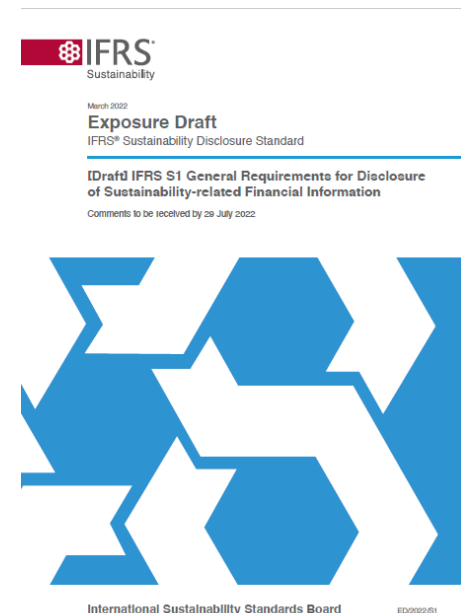
Background

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Exposure Draft IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information

- Objective: To disclose information about sustainability-related risks and opportunities to users in order to assess the value of companies and decide to provide resources to it.
- Scope: Information on sustainability-related risks and opportunities.
- Core content: Disclosures on:
 - Governance
 - Strategy
 - Risk management; and
 - Metrics and targets.

On track for completion in Q2/2023.



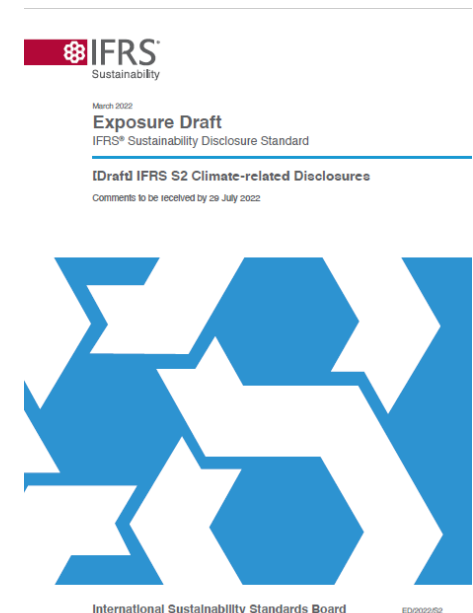
Background

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Exposure Draft IFRS S2 Climate-related Disclosures

- Objective: To disclose information on sustainability-related risks and opportunities to users in order to:
 - Assess business value,
 - Understand how the entity's use of resources and corresponding inputs, activities, outputs and outcomes support the entity's response and strategy to manage its significant climate-related risks and opportunities; and
 - Assess the entity's ability to adapt its planning, business model, and operations to significant climate-related risks and opportunities. climate-related
- Scope: Information on climate-related risks and opportunities.
- Core content: Climate-related disclosures, on
 - Governance
 - Strategy
 - Risk management; and
 - Metrics and targets.

On track for completion in Q2/2023.



Source: <https://www.ifrs.org/> [downloaded 29.05.2023]

The rationale for developing a sovereign climate and nature information framework.

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May attract capital and have spillover effects on national policy formulation to countries presenting this information



There is a growing demand for climate and nature-related financial information from investors



Existing information does not meet the needs of investors and other stakeholders

Benefits of preparing and presenting sovereign climate and nature information

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Users	Potential benefits
Governments	<ul style="list-style-type: none">• Improved access to capital from a wide range of investors.• Internal compression of climate and nature-related risks, bringing benefits in governance and cost of capital.• Endow the country with the ability to shape the narrative on risk and opportunity management.• Increased country capacity to identify, prioritize and invest public capital in ways that enhance resilience.• Lead by example to help disseminate private sector sustainability reporting.
Investors	<ul style="list-style-type: none">• Increased ability to price climate and nature-related risks more accurately.• Increased ability to identify opportunities for investment in adaptation and resilience projects and services.• Increased information with which to collaborate with governments to foster improved risk management and opportunity utilization.
Other users	<ul style="list-style-type: none">• Better information on credit risks affecting the country, subnational entities and companies.• Better visibility on the measures taken by countries to improve their resilience and attract investor capital.

Source: ZHAW based on Sovereign Climate and Nature Reporting (World Bank, 2022)

Potential risks of preparing and submitting sovereign climate and nature reports

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Users	Potential risks
Governments	<ul style="list-style-type: none">• Capital outflows when climate or nature-related risks are formally identified.• Scenarios harmonized with reporting frameworks may differ from governments' own views on future emissions trajectories.• Despite attractive investment plans, human or technical capacity may be limited and access to capital may cause countries to underinvest in key areas.
Investors	<ul style="list-style-type: none">• Abandonment of assets in areas facing higher climate and natural risks.• Increased visibility of opportunities may attract more investor interest and capital, driving up prices for these investment targets and reducing financial returns.
Other users	<ul style="list-style-type: none">• Difficulty in raising capital by sub-national entities and pressure on companies to disclose and explain to their investors how they manage these risks.• Current players, who see the current system as working - it just needs more political will - may see problems with adding more paperwork rather than more investment capital.

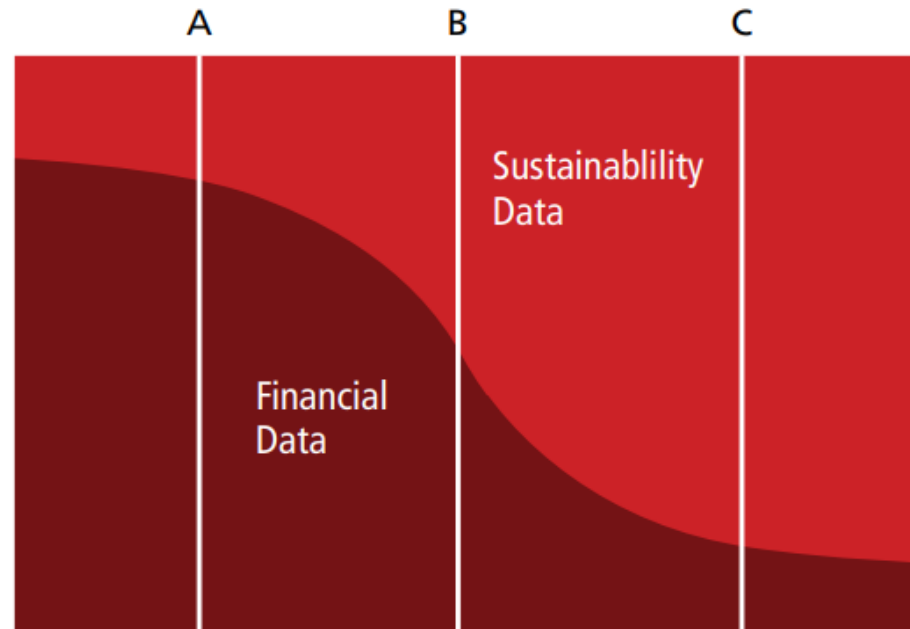
Source: ZHAW based on Sovereign Climate and Nature Reporting (World Bank, 2022)

Connectivity/link between financial and non-financial reporting

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A materiality threshold may be reached for either sustainability or financial reasons, or for both. For some issues, sustainability aspects predominate. For others, financial considerations are of primary importance. For still others, both may be equally important. (Lydenberg, 2012)

MATERIAL DISCLOSURE



Source: Lydenberg (2012) <https://iri.hks.harvard.edu/>

State-owned enterprise case: Ecopetrol - Colombia

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Our company | **TESG** | **Investor Relations** | **Stakeholders** | **EN**

¿Qué estás buscando?

Management and Sustainability Reports

3 dic. 2021

Ecopetrol publishes annually information on its financial position and environmental, social and governance (ESG) issues for the immediately preceding period. The Integrated Report responds to relevant regulations and the highest global ESG standards.

- TCFD Task Force on Climate-Related Financial Disclosures (TCFD)**
 - Year [2021 español](#) | [2021 English](#)
 - Year [2020 español](#) | [2020 English](#)
- CDP Climate Change and Water Security (CDP)**
 - [2021 Climate Change](#)
 - [2021 Water Security](#)
- World Economic Forum Stakeholder Capitalism Metrics (SCM)**
 - [PDF download](#)
- Metrics Report - Sustainability Accounting Standards Board (SASB)**
 - [2022](#)

State-owned enterprise case: Ecopetrol - Colombia

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2.2 Impact of climate-related opportunities and risks on the Company's business, strategy and financial planning

The Company is aware of the challenges of quantifying the financial and strategic impacts of the aforementioned risks and opportunities, and how these are reflected in the Company's strategy and financial planning in the short, medium and long-term. Therefore, the Ecopetrol Group has made progress in the analysis of the most relevant opportunities and risks and their probability of occurrence. This does not imply the absence of future analyses of

other climate-related risks and opportunities, considering that this exercise requires the availability of information and climate change scenario analysis.

An indicative estimate of the financial benefits of the Company's prioritized climate-related opportunities aligned with the 2040 Strategy is presented below (see Table 3).



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State-owned enterprise case: Ecopetrol - Colombia

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Table 03.
Main financial benefits of the climate-related opportunities

Opportunity category	Description	Probability	Magnitude of impact	Estimated EBITDA contribution of the EG in 2040
Products and services	Take advantage of gas outlook as a transition fuel, the need for logistics and transportation for other fuels and energies, and the growing demand for lower-emission petrochemical.	Very probable	Medium	Between USD 1,000 and 1,800 million
Products and services	Development of low carbon hydrogen projects (blue, green, white).	Very probable	Medium	Between USD 300 and 500 million
Products and services	Development of CCUS projects.	Probable	Medium	Between USD 1,000 and 1,500 million
Products and services	Implementation of NCS projects	Probable	Medium - Low	Between USD 200 and 250 million
Access to new markets	Transmission and toll roads business (ISA)	Very probable	Medium	Between USD 3,000 and 4,000 million

Note: Indicative figures

State-owned enterprise case: Ecopetrol - Colombia

Table 04.
Main estimated financial impacts of the prioritized climate-related risks

Risk category	Description	Probability	Magnitude of impact	Estimated financial impact*
Acute physical risk	Climate variability phenomena have the greatest impact on Ecopetrol's infrastructure and operations. The "El Niño" phenomenon is characterized by: (i) lack of rainfall, which can drastically decrease the flows of surface water bodies, affecting both the use of fresh water and wastewater discharges due to the reduction in the dilution potential of the bodies receiving the water; (ii) increased temperatures, which causes heat waves and could have a direct impact on the health of our workers and cause an increase in epidemics and diseases; and, (iii) the potential negative impact on energy supply due to the decrease in the level of the rivers that feed the country's hydroelectric generation system.	Very probable	High in the economic dimension	>USD 50 million (in a three-year period)
Emerging regulatory risk	Increase in the Mines and Energy sector's emission reduction ambitions, above its current 29% contribution to 51% of Colombia's NDC by 2030, which would result in additional pressure for the Ecopetrol Group to increase its target by the same proportion, which would amount to an additional 2.4 MtCO ₂ e by 2030.	Low probability	High on the economic dimension	>USD 90 million (by 2030)
Technological risk	Failure to achieve competitiveness and resilience of the Oil & Gas business and the Company's assets concerning the energy transition in terms of costs, production and commercialization of hydrocarbons and profitable products, which comply with regulations and market requirements, due to limited access to technology.	Very low probability	Ver high on the economic dimension	Between USD 350 and \$400 million (in a three-year period)

*Information estimated at July 31, 2022. Indicative figures.

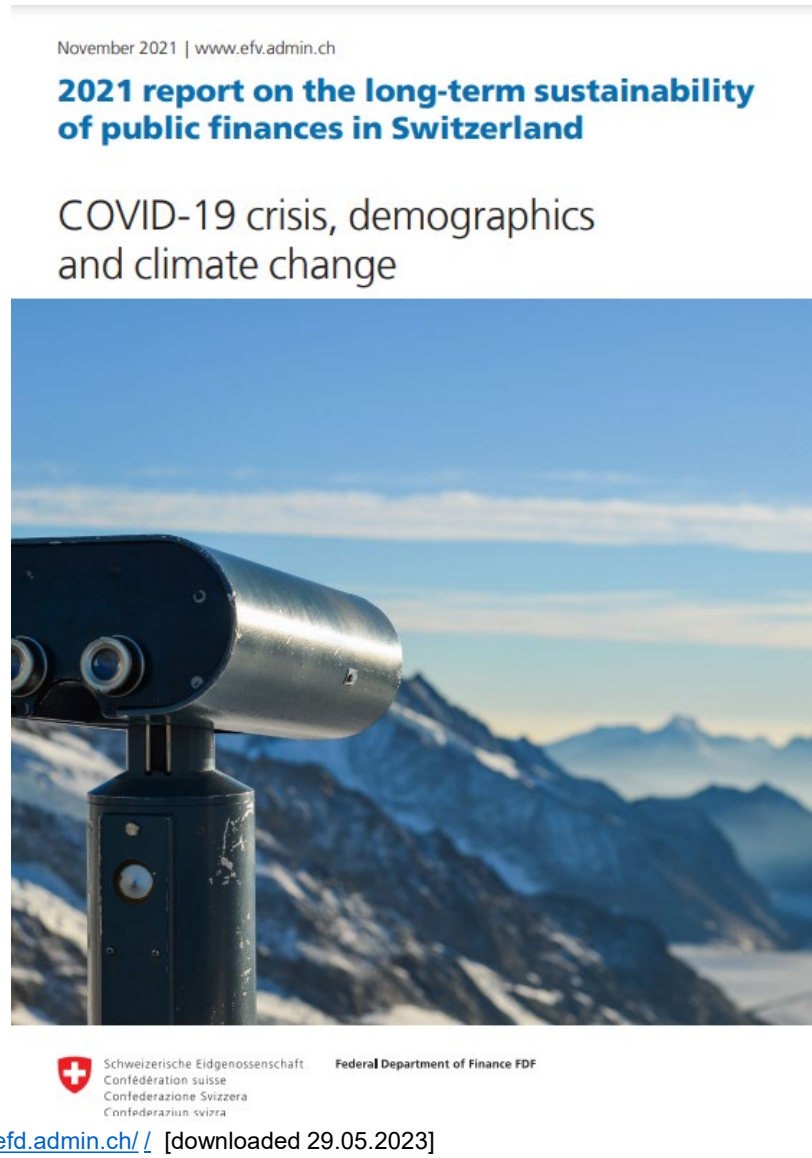
Challenges for Public Sector Accounting (PSA)

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- **Stakeholders include investors, but there are many more who may be even more relevant (e.g. citizens, international organizations).**
- **Other public entities (e.g. ministries of environment) already present periodic and standardized reports. Consequently:**
- **The focus should be on General Purpose Financial Reporting (GPFR).**
 - **Linking financial and sustainability information**
 - **Based on financial data and sustainability data**
 - **In collaboration with other public sector entities, to avoid redundancy (or even contradiction).**
 - **At least initially, it will not be possible to automate these PGFRs.**

Country case: Switzerland

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Country case: Switzerland

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4 Effects of climate change on public finances

4.1 Introduction

Climate change is becoming increasingly visible. According to the latest report issued by the United Nations Intergovernmental Panel on Climate Change (IPCC): "It is unequivocal that human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred".³⁰ However, assessing the long-term effects of unbridled climate change is a complex and uncertain exercise. Estimates of the global cost involved range from 2.1% to 23% of annual global GDP in 2100.³¹ Nonetheless, there is universal agreement that progressive climate change will lead to more frequent and intense extreme weather events including droughts, flooding and forest fires. Higher temperatures and rising sea levels can also change entire regions and influence living conditions. This can necessitate significant investment to adapt to the new conditions.

An ambitious, efficient and coordinated climate policy is needed to mitigate and adapt to the effects of climate change. Both climate change itself and the adjustment it requires can cause macroeconomic turbulence and contribute to financial market upheaval. As a result, supervisory authorities and central banks have started using climate risk analyses and climate stress tests to estimate the potential consequences for financial stability.³² However, the impact of climate change on public finances has received relatively little attention to date.

An initial attempt to outline initial conceptual correlations between climate change and public finances was made in the 2016 long-term outlook report on public finances. In recent years, the international community has also started examining these correlations in greater depth.³³ The next section builds on that work and aims to provide a qualitative assessment of the findings thus far in the context of an official sustainability report as regards public finances.

³⁰ See IPCC (2021).

³¹ See Nordhaus (2017) and Burke et al. (2015).

³² See Network for Greening the Financial System (NGFS, 2019) and Financial Stability Board (2020).

³³ See Baur et al. (2021) and Baur and Bruchez (2021) for an overview.

Some of the effects are positive, such as new tourism opportunities in summer and lower heating costs; while others are negative, for example heatwaves affecting health and productivity. The aggregate effect is mainly negative. The overall negative economic impact is estimated at 0.43% of total consumption in 2060. However, the authors do stress that it is not possible to take account of all the effects. The potentially most significant gaps relate to the consequences of extreme weather events and the effects stemming

from Switzerland's relations with the rest of the world.

Ways in which climate change influences public finances

In the absence of a comprehensive quantification of the economic effects of climate change in Switzerland, there are no values assigned to the impacts on public finances.³⁶ However, the main ways in which climate change affects public finances in Switzerland can be presented and prioritised. Table 13 provides an overview of the main budget items in question.

Table 13: Budget items affected by climate change

Receipts	Public expenditure
<ul style="list-style-type: none">• Greenhouse gas levies• Mineral oil tax• Revenue from enterprises affiliated with the Confederation• Other taxes (VAT, income tax, etc.)	<ul style="list-style-type: none">• Infrastructure protection• Energy efficiency of public buildings• Subsidies to mitigate climate change• Subsidies to adapt to climate change and repair the damage caused• R&D financing• Negative emissions financing• Foreign aid in the area of climate change

³⁶ The UK Office for Budget Responsibility, OBR, 2021 has attempted to quantify the consequences of climate change for the United Kingdom's public finances. Similar quantitative evaluations are also available for Germany (Infras and Ecologic, 2009) and Austria (Bachner and Bednar-Friedl, 2019). See also Baur et al. (2021) for further discussion.

Thank you!