Private financial institution perspectives on climate and nature data

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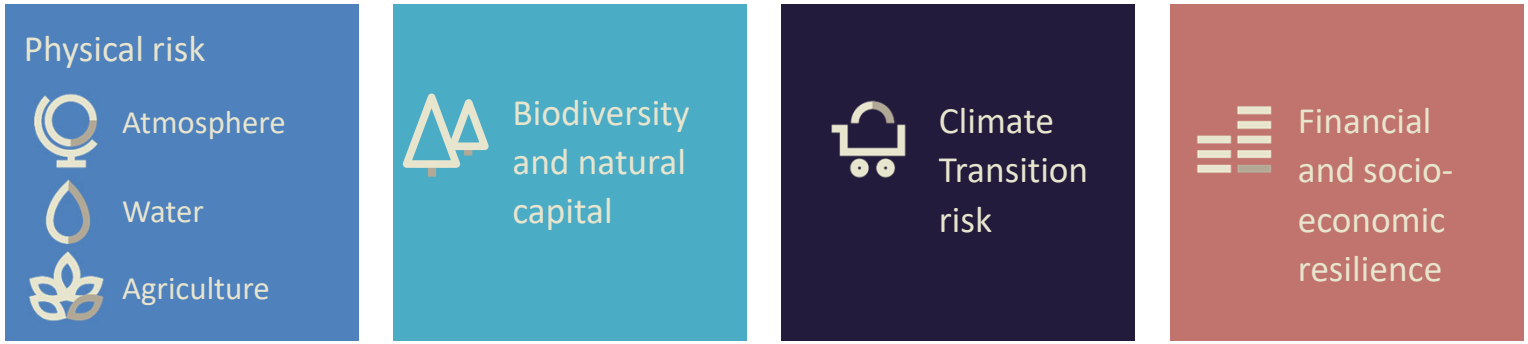
Overview

- Two case studies of NGOs and private investors collaborating to solve sustainable data challenges:
  - WWF Climate and Nature Sovereign Index
  - Assessing corporate climate transition plans
- Common challenges addressed:
  - Loss of information – traditional data sets often reflect a single common factor
  - Forward-looking information scarce despite being vital in a regime of persistent structural breaks
  - Applications:
    - Impact/KPIs
    - Engagement
    - Portfolio risk management when facing systemic risk

WWF Climate & Nature Sovereign Index

- Real-time and forward-looking projections
- Spans natural-capital and transition-risk exposures, plus ‘traditional’ climate risks
- Makes explicit the economic and financial linkages
- Taxonomy aligned to investors’ needs:



For illustrative purposes only.
Source: Ninety One and WWF. As at July 2020.

Index includes 85 indicators, including many forward-looking and novel data points

Biodiversity and natural capital

Annual deforestation trends - 10y
2y real-time deforestation trends
Total land cover change
Land cover change in protected areas
Total land cover fragmentation
Land cover fragmentation in protected areas
Total change in land productivity
Change in land productivity in protected areas
GF economic growth risk - pollination
GF economic growth risk - coastal erosion
GF economic growth risk - water yields
GF economic growth risk - forestry services
GF economic growth risk - marine fishing stocks
GF economic growth risk - other ecosystem services
Mineral rents (% GDP)
Mining Exports (% Goods Exports)
Protected area coverage % landmass
Ocean hazard index - biodiversity

Physical risk - atmospheric

Natural Hazard Risk (0-10) (10 = highest risk)
2050 GDP loss from RCP8.5 temperature change
World Bank 2050 median projected days of extreme heat under RCP 8.5
WB annual probability lethal heatwave by 2050 at RCP 8.5
Land area exposed to drought RCP 8.5 by 2050
Population exposed to drought, 2050 under RCP8.5
World Bank 2050 drought risk indicator
Ocean health index carbon storage potential
OECD Population exposure to particulate matter, µg/m3
OECD Population exposed to pollution levels above WHO guidelines, %

Physical risk - water

Population impacted by riverine flood risk (0-5) (5=highest risk)
Population close to sea level
Climate central projection of economic cost of Sea Level Rise
Freshwater withdrawal as % total water assets (Aquastat)
Water productivity ($ GDP per unit water, Aquastat)
WWF Water Risk Filter - drought risk
WWF Water Risk Filter - basin flooding risk
WWF Water Risk Filter - water quality measure
WWF Water Risk Filter - ecosystem risk
Access to sanitation WDI
Projected 2050 extreme rainfall deviation
Ocean health index - clean water score
Ocean health index - Coastal Protection

Physical risk - agriculture

Agriculture, Forestry & Fishing, Value Added (% GDP)
Agricultural Exports (% Goods Exports)
Employment in Agriculture (% Total)
Rural Population (% Total)
IFPRI/Harvard modelling of climate impact on crop volume production
Population growth % (2050 vs 2020)
Sustainable Nitrogen Management (100 = target)
Prevalence of undernourishment (% population)
Global food security index
Ocean health index - marine food security
World Bank 2050 growing season change

Bold = forward-looking/real time

Transition risks

Oil rents (% GDP)
Natural Gas rents (% GDP)
Fuel Exports (% Goods Exports)
OECD environmentally aligned tax % GDP
OECD environmentally aligned tax % revenue
Coal Rents (% GDP)
Net Energy Imports (% Energy Use)
Carbon intensity (CO2 Emissions per $1k of GDP)
Carbon intensity (GHG Emissions per $1k of GDP)
Demand-based CO2 emissions per capita, t per capita
Production-based CO2 productivity, USD/kg CO2
Ex-Hydro Renewables Production (% total electricity production)
Hydro Production (% total electricity production)
Production from Hydrocarbons (% total electricity production)
Climatescope score on renewable energy potential
Green complexity index - proximity density
Number of environmental patents, thousand patents relative to PPP GDP
Ocean health index - livelihoods
Ocean health index - tourism

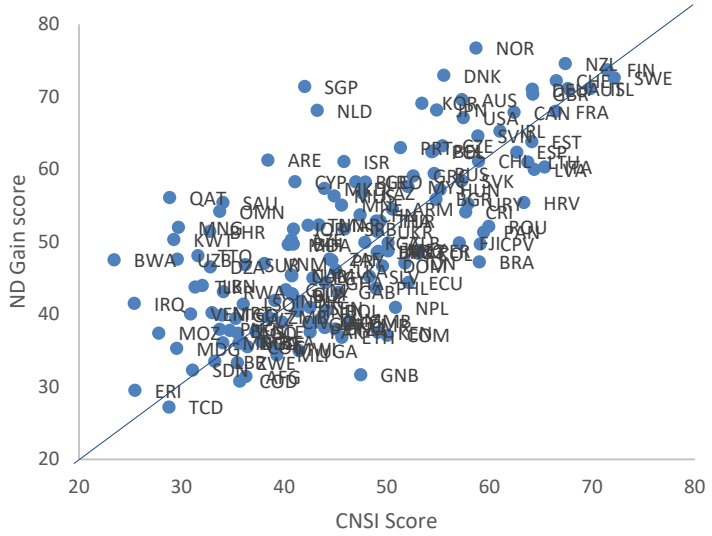
Resilience

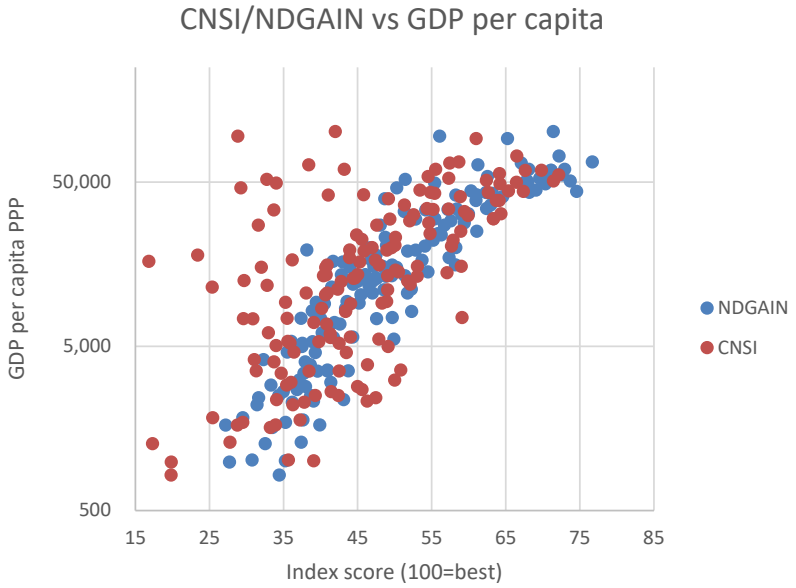
Gross government debt/GDP
Headline deficit 2021 IMF WEO
External debt/reserves
Government interest/revenue
External interest/CA receipts
WDI Subsidy + transfers % total government spending
Urban population living in slums (% Total)
Rural Population (% Total)
Aid Dependency (0-10) (10 = highest risk)
External Health Expenditure (% Total)
Age Dependency Ratio (% Working age population)
Physical Infrastructure (0-10) (10 = highest risk)
WRF Operational water risk
Disaster Risk Reduction (0-10) (10 = highest risk)

Source: Ninety One, Jan 2021

How does it compare to other climate risk indices?

CNSI latest climate modelling + transition risks, highlights greater dispersion in climate related risks

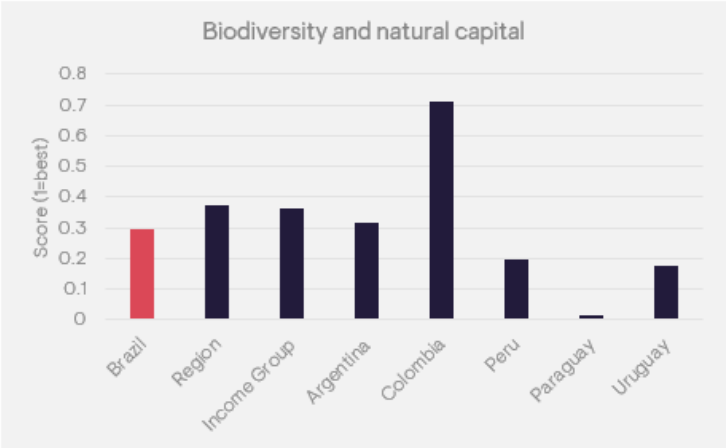


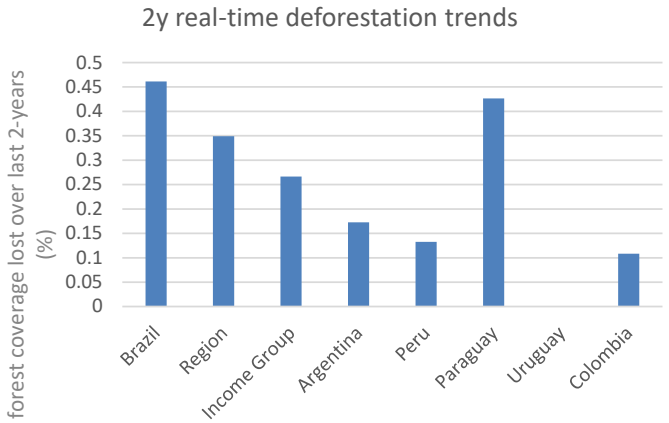


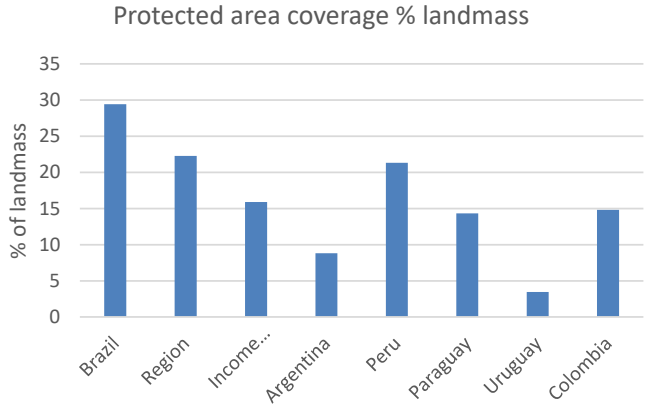
Climate risks still correlated with income levels, but much less so than traditional indices

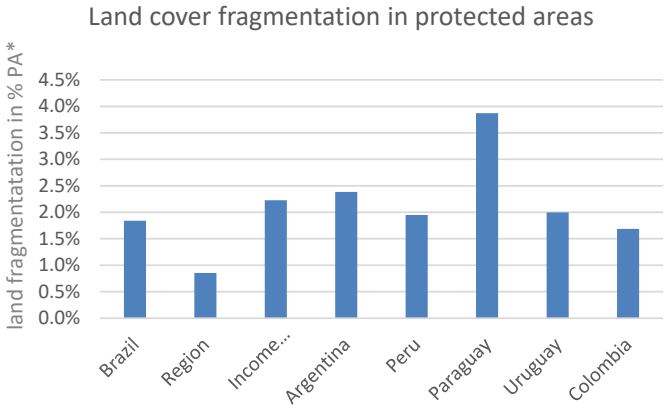
Source: Ninety One, WWF, Notre Dame Global Adaptation Initiative, Haver. Jan 31 2020

Brazil – Biodiversity & Natural Capital and selected indicators



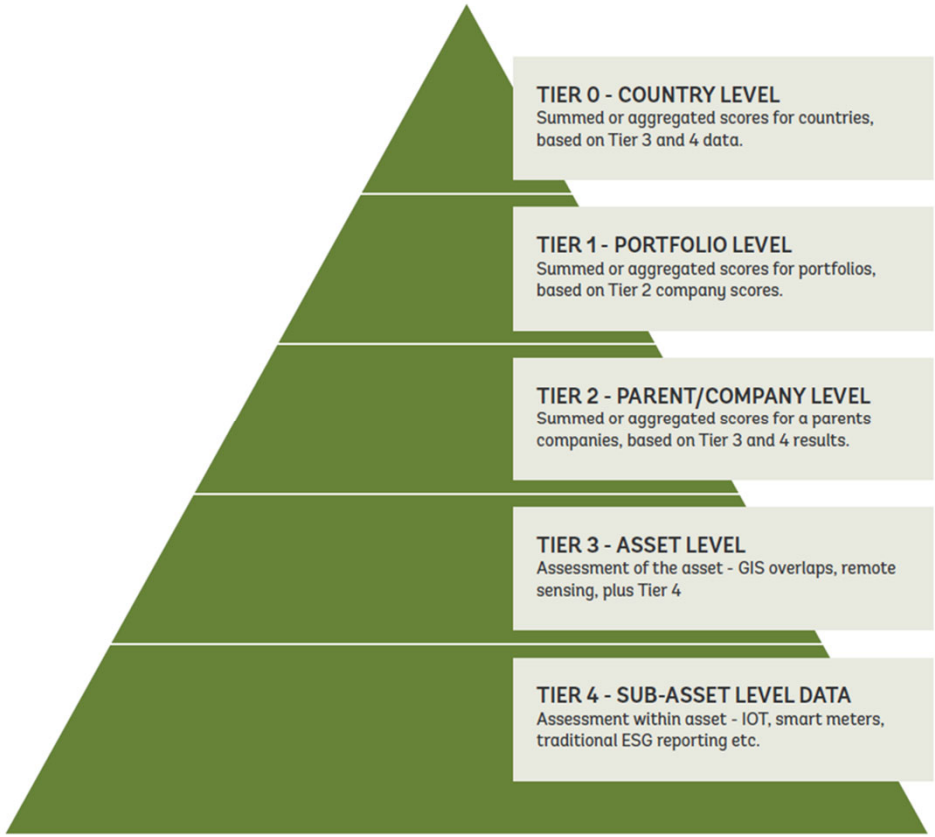






*over five year period to end 2015

Geo-spatial ESG: project ,corporate, portfolio and sovereign risk analysis



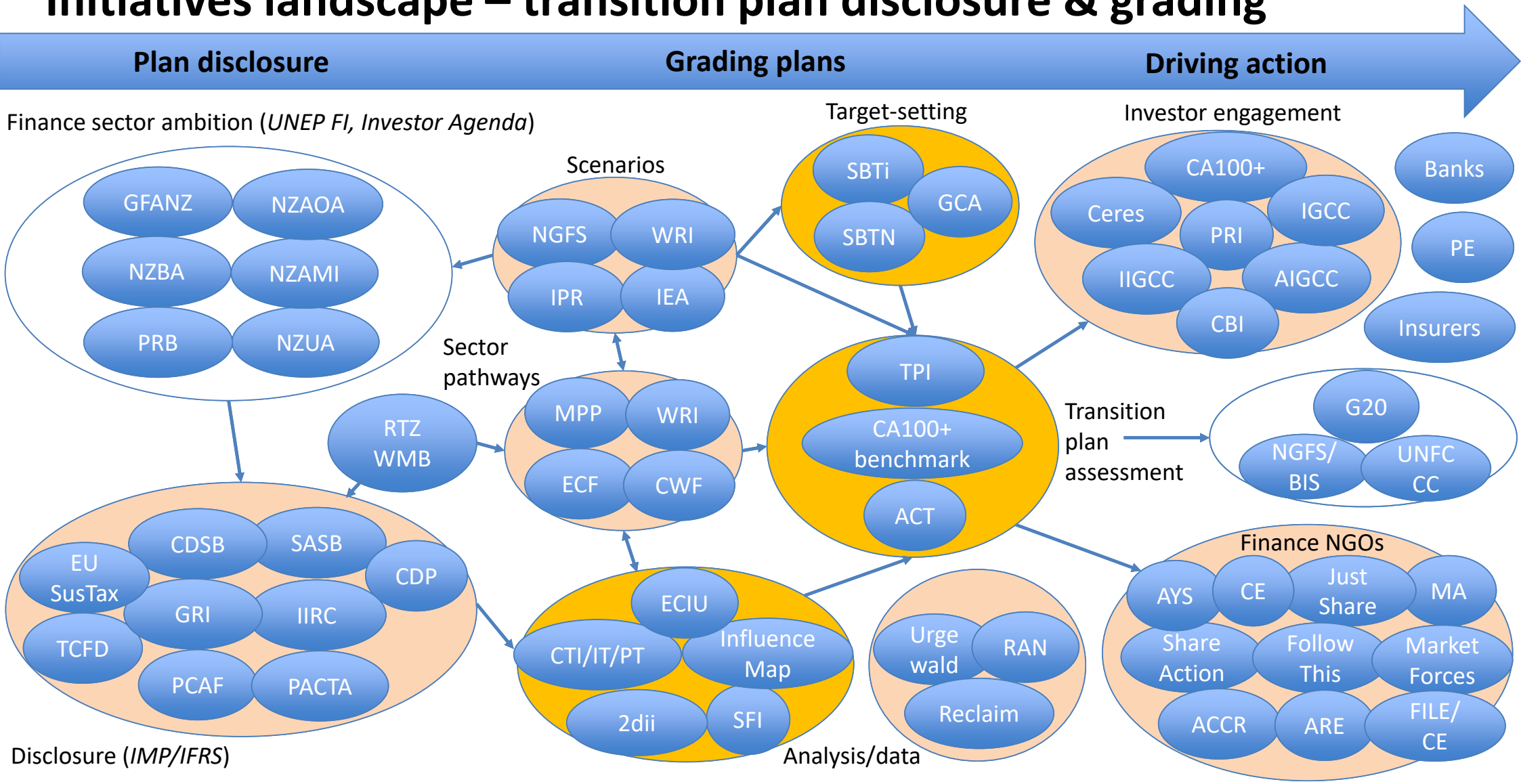
Source; WWF

Essential disclosure in a corporate climate action plan

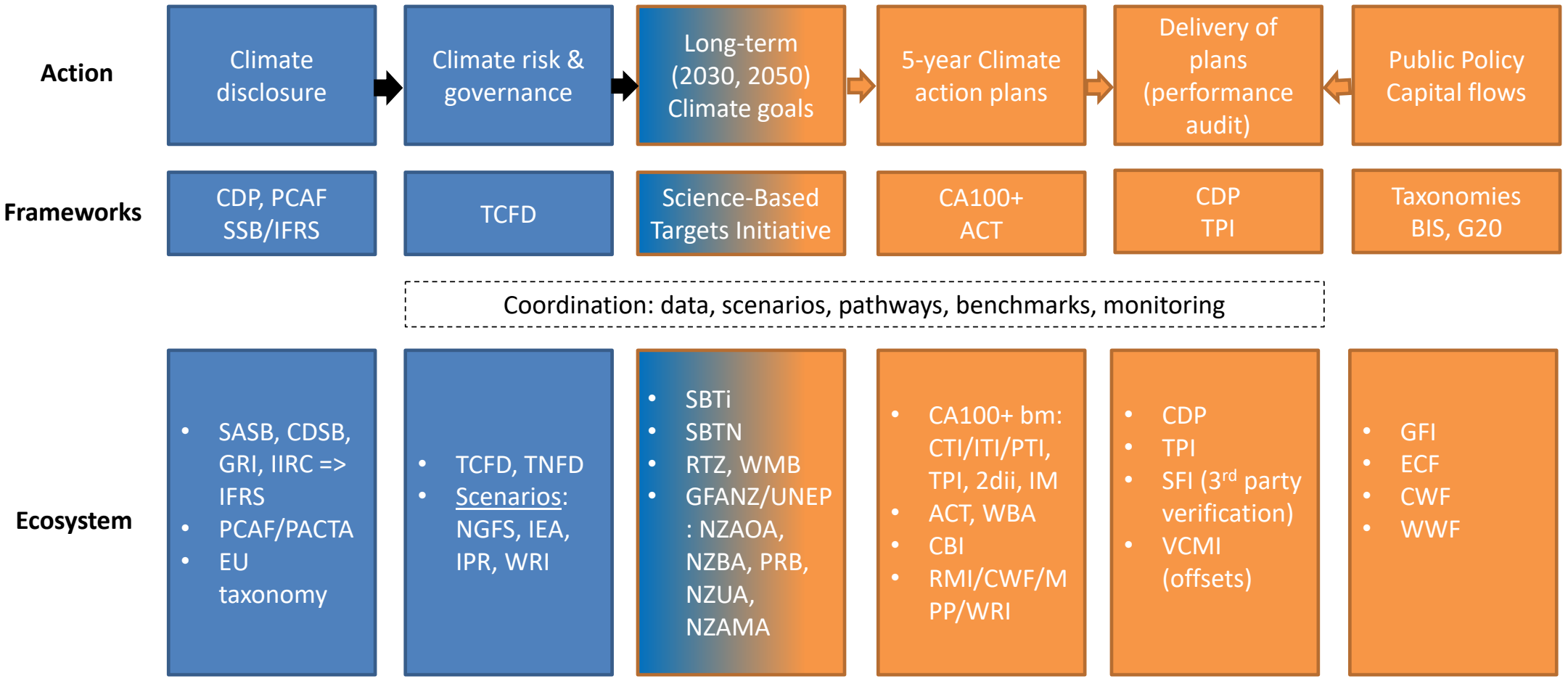
- Short-term targets required: 5 year and 5-10 year plan*
- Average absolute Scope 1-3 emissions reduction of 7-8% pa to 2030
- Phase out fossil fuel use and production, no financing of new supply
- Executive compensation, strategy and lobbying aligned with plan*
- Necessary capex commitments*
- End deforestation, credible use of offsetting only if strictly necessary
- Independent auditing of emissions*
- Annual performance reporting to shareholders

* Indicator included in CA100+ net-zero company benchmark: https://www.climateaction100.org/progress/net-zero-company-benchmark/

Initiatives landscape – transition plan disclosure & grading



Climate action plans are key to financing the transition



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