

Promoting public-private collaboration through the SDGs in Paraná, Brazil



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Abbreviations and acronyms

ACP	<i>Associação Comercial do Paraná</i> , Paraná's Commercial Association
Amcham	American Chamber of Commerce
BIAC	Business at OECD
BPW Curitiba	<i>Associação de Mulheres de Negócios e Profissionais de Curitiba</i> , Association of Business and Professional Women of Curitiba
BRDE	Regional Development Bank of the Far South
BRL	Brazilian real
CEDES	<i>Conselho Estadual de Desenvolvimento Econômico e Social</i> , Economic and Social Development State Council
Celepar	<i>Companhia de Tecnologia da Informação e Comunicação do Paraná</i> , Paraná State Information and Communication Technology Company
CFE	OECD Centre for Entrepreneurship, SMEs, Regions and Cities
CO₂	Carbon dioxide
COPEL	<i>Companhia Paranaense de Energia</i> , Paraná Energy Company
CSO	Civil society organisation
ESG	Environmental, social and governance
FACOP	<i>Fundação de Asseio e Conservação, serviços especializados e facilities</i> , Foundation for Cleaning, Conservation, Specialized Services and Facilities
FIEP	<i>Federação das Indústrias do Estado do Paraná</i> , Paraná Federation of Industries
GDP	Gross domestic product
GHG	Greenhouse gas
GRI	Global Reporting Initiative
IAT	State environmental agency
IBGE	<i>Instituto Brasileiro de Geografia e Estatística</i> , Brazilian Institute of Geography and Statistics
ICI	<i>Instituto das Cidades Inteligentes</i> , Institute of Smart Cities
IMAP	<i>Instituto Municipal de Administração Pública</i> , Brazilian Institute of Municipal Administration
IPARDES	<i>Instituto Paranaense de Desenvolvimento Econômico e Social</i> , Parana Institute of Economic and Social Development
ISO	International Organization for Standardization
NAPI	New Research and Innovation Arrangement
NGO	Non-governmental organisation
OECD	Organisation for Economic Co-operation and Development
PPP	Public-private partnership
R&D	Research and development
RDPC	OECD Regional Development Policy Committee
Sanepar	<i>Companhia de Saneamento do Paraná</i> , Paraná Sanitation Company
SDG	UN Sustainable Development Goal
SEBRAE	<i>Serviço Brasileiro de Apoio às Micro e Pequenas Empresas</i> , Brazilian Micro and Small Business Support Service
SGDES	<i>Superintendência Geral de Desenvolvimento Econômico e Social</i> , General Superintendent of Economic and Social Development
SMEs	Small and medium-sized enterprises
TCP	<i>Terminal de Contêiner de Paranaguá</i> , Paranaguá Container Terminal
Tecpar	<i>Instituto de Tecnologia do Paraná</i> , Paraná Institute of Technology
UN	United Nations

Executive summary

The state of Paraná, Brazil, has used the United Nations (UN) Sustainable Development Goals (SDGs) as a policymaking framework to address sustainable development challenges since 2016. More recently, the state has made private-sector engagement a strategic priority and created a Public-Private ESG Committee (hereafter the ESG Committee).

Key findings

Renewable energy production and digital connectivity are key strengths, while health, inequality and safety remain pressing challenges

- Paraná performs strongly in renewable energy, digitalisation and environmental conservation:
 - Around 94% of electricity production comes from renewable sources, far above the average of 35% in OECD regions.
 - Digital connectivity has expanded substantially, with 94% of households connected to broadband Internet in 2024, compared to 83% in OECD regions.
 - Tree cover accounts for 34% of Paraná's territory and increased by 2 percentage points (p.p.) between 2009 and 2022, in contrast to an average decline of -0.4 p.p. in OECD regions.
- At the same time, Paraná faces persistent challenges:
 - Infant mortality in Paraná is nearly twice the OECD average (10.8 per 1 000 live births compared to 5.5), while hospital bed availability and physician density remain below most OECD regions.
 - Income inequality is high, with a Gini index of disposable income of 0.46 in 2023, compared to an OECD regional average of 0.35.
 - Safety outcomes are also a concern. In 2023, Paraná recorded 18.8 homicides per 100 000 inhabitants, considerably above the OECD regional average of 1.1.
 - Although satisfaction with water quality is relatively high (85% versus 81% in OECD regions), only 70% of residents are connected to the sewerage network, lagging behind several Brazilian states.
 - Climate change impacts in Paraná are increasingly visible, with annual cooling degree days rising by 52 and heating degree days falling by 30 between 1970-1984 and 2004-2018.

Fragmented sustainability frameworks across public and private actors hinder the comparability of sustainable development efforts

- Addressing Paraná's sustainable development challenges – such as sewage management or climate change impacts – requires large-scale, long-term investment that exceeds public budget and capacity alone. This creates a strong rationale for mobilising the private sector to finance

infrastructure, deliver innovative solutions and generate employment opportunities that can also help reduce inequality.

- The state government relies primarily on the SDGs to measure sustainability, while private companies use a range of voluntary standards such as the Global Reporting Initiative (GRI) and B Corp certifications. To incentivise voluntary sustainability reporting, Paraná introduced the Climate Seal, a greenhouse gas (GHG) inventory and a repository of environmental, social and governance (ESG) good practices.
- However, the absence of a comprehensive, harmonised ESG indicator framework limits systematic performance assessment and makes it difficult to compare sustainability initiatives across public and private initiatives.

Paraná supports public-private collaboration for sustainable development through targeted instruments and an ESG Committee, but barriers remain

- The state promotes public-private collaboration for sustainable development through sector-specific programmes that combine technical assistance, financing incentives and co-ordination mechanisms, notably in agriculture, renewable energy and territorial planning.
- The private sector is engaging in sustainable development through partnerships with public institutions, universities and business associations. While companies often use the SDGs as a framework for external communication, ESG considerations more frequently guide their internal management practices. Regulatory requirements on listed firms have driven ESG adoption and generated spillovers along supply chains, although smaller firms tend to face capacity and resource constraints.
- The ESG Committee is Paraná's main platform to align government and business actions on sustainable development. Operating in an advisory capacity since 2024, it convenes state secretariats and private-sector representatives to support policy design, indicator development and reporting. However, its practical impact remains limited as it was established recently and is still consolidating.
- Paraná also mobilises private investment for sustainable development through public-private partnerships (PPPs) and investment attraction instruments. PPPs focus primarily on urban infrastructure, supported by a dedicated partnerships programme. Paraná offers tax deferrals and credit transfers to firms expanding operations in the state, with environmental and social criteria integrated into project evaluation.
- Despite these initiatives, co-operation faces persistent barriers, including a weak culture of public-private collaboration and limited awareness of sustainability, particularly among smaller firms and municipalities, capacity constraints in PPP project preparation and the lack of an overarching ESG legislation to guide activities.

Policy recommendations

- **Leverage public-private collaboration to tackle Paraná's sustainable development challenges.** Paraná could define clear priority areas for joint action aligned with its main territorial development challenges:
 - *Health:* Strengthen preventive healthcare through partnerships between companies and municipal health networks and support municipalities, hospitals and companies in adopting interoperable health information systems to track preventive-care coverage and local health risks.

- *Water and sanitation*: Use fiscal incentives to crowd in private investment to restore watersheds, scale up industrial and municipal water reuse, and expand inclusive, low-cost sanitation solutions through regulatory incentives and co-financing schemes between municipalities and the private sector.
- *Climate change*: Expand green finance instruments for sustainable agriculture, strengthen climate data partnerships and early-warning systems, and develop low-carbon industrial zones to accelerate decarbonisation and climate adaptation.
- *Inequality*: Promote inclusive economic development by linking state incentives to inclusion targets, supporting universities, start-ups and co-operatives to co-develop affordable services for low-income and rural populations, and by expanding financial inclusion through affordable credit and financial literacy programmes.
- *Safety*: Improve urban safety through public-private co-design of safer public spaces, establishing Local Safety Observatories to guide targeted interventions and expanding training and apprenticeship programmes for youth.
- **Reduce structural barriers for municipalities and private actors to access finance for PPPs** by expanding technical support to help municipalities develop bankable investment proposals and structure projects that meet ESG criteria. Training on sustainable finance and ESG integration would help close local expertise gaps among municipalities and smaller firms that often lack awareness of sustainability frameworks.
- **Set up a statewide de-risking scheme for sustainable development investments to accelerate private involvement.** The state could offer partial guarantees to mitigate financial risks that deter private participation. In return, beneficiaries would pay a modest premium to ensure shared responsibility and maintain the scheme's financial sustainability.
- **Harmonise sustainability reporting across the state.** Paraná could develop a state-wide ESG measurement framework for both public and private sectors to complement existing SDG indicators. While SDG indicators track development outcomes, an ESG framework would capture management and governance processes, assessing how public institutions and private companies integrate sustainability principles into operations and investments.

1 Measuring sustainable development challenges and opportunities in Paraná

Introduction

This paper follows up on two earlier OECD papers on SDG localisation in the state of Paraná, Brazil. The first paper, “A territorial approach to the Sustainable Development Goals in Paraná, Brazil” published in 2021, analysed Paraná’s policies to implement the UN 2030 Agenda and address longstanding challenges in health, education and safety (OECD, 2021^[1]). Building on seven key policy recommendations outlined in the 2021 paper, the second paper, “Implementing a territorial approach to the SDGs in Paraná, Brazil”, published in 2024, revisited persistent sustainable development challenges and assessed the state’s progress on implementing the OECD’s 2021 recommendations (OECD, 2024^[2]). Both papers applied the OECD Checklist for Public Action to Localise the SDGs, outlined in OECD synthesis report *A Territorial Approach to the Sustainable Development Goals* (2020^[3]), which provides a practical guide for implementing a territorial approach to the SDGs across all levels of government (see annexes). In view of the widening investment gaps in infrastructure, housing and climate action that cannot be met by public budgets alone, making effective engagement of private finance and innovation has become increasingly critical as highlighted by the OECD (2023^[4]). As a result, the checklist’s fifth pillar on engagement has emerged as a strategic priority for Paraná in recent years. In particular, the state has sought to deepen private-sector participation in sustainable development, leading to the creation of the ESG Committee in October 2021 to institutionalise this collaboration. Against that backdrop, this paper dives into Pillar 5, exploring how Paraná can leverage the SDGs and ESG frameworks to better understand and address the barriers, benefits, costs and contributions of the private sector to sustainable development.

SDG performance remains slightly below the average of OECD regions, but it continues to outperform Brazilian states on average

This chapter identifies Paraná’s main gaps in achieving the 2030 Agenda and highlights where public-private collaboration can play a catalytic role to address them. It draws on the OECD localised indicator framework for measuring distance to achieving the SDGs, allowing for international comparisons across multiple dimensions of sustainable development (Table A B.1). Based on this framework, the chapter provides an update on Paraná’s progress towards achieving the SDGs since the 2021 paper,¹ benchmarking it against around 400 regions in OECD Member countries. The analysis is structured around the “5Ps” of the 2030 Agenda (i.e. People, Prosperity, Planet, Peace and Partnerships).

Overall, Paraná's SDG performance remains slightly below the average of OECD regions, but it continues to outperform Brazilian states on average. Paraná shows notable strengths in renewable energy production (SDG 7), and digital connectivity (SDG 17). Furthermore, satisfaction with infrastructure (SDG 9) and trust in institutions (SDG 16) have improved in recent years. Agricultural land use (SDG 2) remains central to its economy, although the share of agricultural land is declining. At the same time, gender equality (SDG 5) remains limited and outcomes in health (SDG 3), tertiary educational attainment (SDG 4), innovation capacity (SDG 9) and inequality (SDG 10) continue to lag behind OECD levels despite some progress. Perception-based indicators on poverty, respect for women and environmental protection have also deteriorated. While carbon dioxide (CO₂) emissions remain below the average of OECD regions, climate impacts pose growing challenges (SDG 13) in Paraná.

People: Health, gender equality and education show space for improvement compared to OECD regions

Cropland accounts for more than half of Paraná's land area, reflecting the central role of agriculture in the state's economy (SDG 2). In 2022, cropland represented 51% of total land area, slightly lower than in 2015 (53%), but much higher than in OECD regions on average (33%). Although cropland decreased by 2.8 p.p. between 2000 and 2022, its scale highlights the importance of resilient agricultural practices and sustainable food systems to achieve SDG 2 in Paraná.

Health outcomes have improved in recent years, but continue to lag behind OECD peers (SDG 3). Infant mortality in Paraná has remained broadly stable, at 10.8 deaths per 1 000 live births in 2023, almost twice the average of OECD regions (5.5 deaths per 1 000 live births). Hospital bed capacity has increased marginally, from 23.9 to 24.2 per 10 000 inhabitants between 2019 and 2020, but remains below that of most OECD regions. By contrast, the rate of active physicians per 1 000 people has improved markedly, rising from 2.0 in 2018 to 2.8 in 2024, getting closer to the average of OECD regions (3.1). Furthermore, perceptions of health service quality have improved, with satisfaction with the availability or quality of healthcare increasing from 35% in 2008-2018 to 60% in 2019-2023. This value is still below the average of OECD regions (69%) but well above the national average (40%). Overall life satisfaction has remained stable at 6.4 on a scale from 0 to 10 in 2019-2023, compared to 6.6 in 2008-2018. These scores are similar to the average of OECD regions (6.5) and Brazilian regions (6.3).

While Paraná surpasses most Brazilian states in terms of the share of its population with tertiary education, its attainment rate is still only around half that observed across OECD regions (SDG 4). About 21% of Paraná's population aged above 25 years had completed tertiary education in 2022, up from 17.8% in 2015 (Figure A B.1). Despite that increase, and although this ratio exceeds the average of Brazilian regions (15%), Paraná still lags far behind the average of OECD regions (40%).

There is room for improvement for Paraná in SDG 5 on gender equality. The share of people who perceive that women are treated with respect and dignity declined from 28% in 2008-2018 to 22% in 2019-2023, far below the OECD average of 63%, but similar to the average of Brazilian regions (21%). Furthermore, women only held around 18% of seats in municipal councils in 2024, comparable to the 17.5% of female seats in national parliament, but far from an equal representation of men and women in local policymaking.

Planet: Despite CO₂ emissions below OECD levels, Paraná experiences the impacts of climate change

Satisfaction with water quality is high, but only 70% of households in Paraná are connected to the sewerage network (SDG 6). Between 2019 and 2023, 85% of Paraná residents reported satisfaction with water quality, above both the average of OECD regions (81%) and regions in Brazil (75%). Overall, water bodies covered 2.7% of the territory in 2022, reflecting a modest increase since 2000 (around 0.2 p.p.), in

contrast to the slight decline observed across OECD regions (-0.1 p.p.). Although access to piped water is nearly universal (99.6%), only 70% of the population are connected to the sewerage network, which is the sixth highest rate in Brazil but lagging behind the state of São Paulo (91.3%), the Federal District (86.22%) and the state of Rio de Janeiro (84.38%) (Government of Paraná, 2024^[5]).

Paraná's per capita CO₂ emissions remain below OECD regions, but rising vehicle use, declining environmental satisfaction and climate impacts are raising growing challenges (SDGs 12 and 13). In 2021, Paraná's CO₂ emissions per capita (in tonnes of CO₂ equivalent per person) stood at 6.1 tonnes, close to the average of Brazilian regions (6.2), but significantly below OECD regions on average (10.8), indicating lower CO₂ intensity (Figure A B.2). However, motorisation is increasing rapidly, which can drive emission levels up. Motor road vehicles per 100 people rose from 65 to 77 between 2019 and 2024, well above the average of OECD regions (54). Moreover, satisfaction with efforts to preserve the environment fell from 44% in 2008-2018 to 33% in 2019-2023, below the average of OECD regions (47%) and Brazilian regions (40%). At the same time, climate-related indicators reflect the impact of global warming in Paraná. Cooling degree days (needed to maintain an average building indoor temperature of 22 degrees Celsius) rose by 52 between 1970-1984 and 2004-2018, the same value as for OECD regions on average. Over the same period, heating degree days fell by almost 30, much lower than for OECD regions on average (157 days). However, satisfaction with air quality in Paraná improved from 78% in 2008-2018 to 80% in 2019-2023, in line with the average of OECD regions (78%), and above the average of regions in Brazil (67%).

Paraná has reversed earlier declines in tree cover, strengthening progress towards ecosystem protection (SDG 15). Tree cover accounts for 34% of Paraná's land area, comparable to OECD levels. However, while OECD regions registered a slight decrease in tree cover of -0.4 p.p., Paraná reversed a previous downward trend and increased its tree cover share by more than 2 p.p. between 2000 and 2022. This reversal supports broader environment-related SDGs, given that forest protection, or alternatively, tree restoration, is one of the most effective strategies for climate change mitigation (Bastin et al., 2019^[6]).

Prosperity: Paraná leverages renewable energy and unemployment rates have declined

Electricity production in Paraná is largely based on renewable sources (SDG 7). As of 2017, 94% of electricity produced in Paraná came from renewable sources. Fossil fuels (5.8%) and coal (0.3%) only played minor roles. In comparison, in OECD regions, renewable sources represent only 35% of electricity production and fossil fuels account for more than half. By 2024, COPEL, an electric utility with minority public ownership by the government of Paraná, achieved its goal to produce energy exclusively using renewable sources, notably hydropower, wind and solar.

Unemployment rates in Paraná have decreased considerably (SDG 8). Paraná's unemployment rate fell from 8.2% in 2018 to 4% in the first quarter of 2025, slightly below the average of OECD regions (5.1%) (Figure A B.3). However, youth unemployment remains high at 8.1% among 18-24 year-olds. Overall employment rates in Paraná remain below those in OECD peer regions, reaching 63% in 2025 compared to 70% in OECD regions. Furthermore, real gross domestic product (GDP) growth in Paraná has been positive in recent years, at an annual average of 3.3% between 2021 and 2024.² Income inequality in Paraná is high with a Gini index of disposable income of 0.46. Despite falling from 0.48 to 0.46 between 2013 and 2023 and being the fourth lowest among Brazilian states and below the national average of 0.52, Paraná's Gini index is well above the average of OECD regions (0.35).

Perceptions of public infrastructure have improved significantly (SDG 9). Satisfaction with roads and highways rose from 46% in 2008-2018 to 71% in 2019-2023, exceeding both OECD regions (65%) and Brazilian regions (52%) on average. Likewise, satisfaction with public transport increased from 53% to 68% over the same period, similar to the average of OECD regions (64%) but exceeding Brazilian peers (53%). Nevertheless, transport-related mortality rates in Paraná remain high, at almost 23 deaths per 100 000 people in 2023, more than double the average of OECD regions (9.4). At the same time,

satisfaction with housing affordability rose from 45% in 2008-2018 to 49% in 2019-2023, in line with OECD regions (50%) and Brazilian regions (48%) on average.

Peace and Partnerships: Safety remains a challenge, while digital connectivity has improved

Despite recent improvements, the homicide rate in Paraná remains high (SDG 16). In 2023, Paraná registered about 18.8 homicides per 100 000 inhabitants, down from 21.2 homicides in 2018. However, it is one of the indicators where the gap to OECD regions is the largest, considering that the average homicide rate in OECD regions is 1.1 (Figure A B.4). At the same time, perceptions of safety have improved in Paraná in recent years. The share of residents who feel safe walking alone at night increased from 39% in 2008-2018 to 52% in 2019-2023. While still falling short of the OECD average of 70%, this considerably exceeds the average of regions in Brazil (45%). The share of population reporting assault or mugging also fell from 8% to 5%, close to the OECD average of 4% and below the Brazilian average (7%).

Trust in institutions has strengthened. Trust in the judicial system and courts rose from 39% in 2008-2018 to 50% in 2019-2023, close to the average of OECD regions (53%). Trust in the national government increased from 36% to 47%, slightly above the average of OECD regions (44%), while trust in the local police force reached 66%, compared to 73% in OECD regions on average and 60% in Brazilian regions. However, perceptions of corruption remain widespread, at 71% on average in 2019-2023, higher than the OECD regional average of 65%.

Most of Paraná's residents consider their state a good place to live for minorities, the lesbian, gay, bisexual, transgender and queer people community and migrants. The share of population who consider their state a good place to live for ethnic minorities increased from 83% in 2008-2018 to 90% in 2019-2023, and for gay and lesbian people from 67% to 81%. Both values are considerably higher than in OECD regions on average, where the respective shares are 75% and 70%. Perceptions regarding migrants and racial and ethnic minorities are also positive, since, in 2019-2023, 87% of people in Paraná believed their state is a good place for them to live in, up from 83% in 2008-2018. The share of population believing Paraná is a good place to live for migrants stands at 90%, higher than in OECD regions on average (75%).

In terms of partnerships for sustainable development (SDG 17), Paraná shows declining international collaboration, in co-patent applications but strong digital progress. International collaboration on patents has deteriorated, with the share of co-patent applications involving foreign partners declining from 42% in 2015 to 30% in 2022. While below the average of Brazilian regions (47%), the share is considerably higher than in OECD regions on average (18%). By contrast, digital connectivity has expanded substantially over the past decade, with broadband access rising from only half of households connected in 2013 to 94% in 2024, exceeding the average of OECD regions (83%).

Sustainability measurement in Paraná is characterised by a fragmentation of frameworks used by the public and private sectors

Public and private-sector entities rely on a wide range of sustainability measurement and reporting frameworks. While the analysis above highlights areas where Paraná has advanced and where further effort is needed to achieve the SDGs, strengthening ways to track, report and compare sustainability performance is essential to guide these efforts. Measurement and reporting are critical tools for both public and private entities to enhance transparency and assess progress towards their sustainability targets (OECD, 2025^[7]). Globally, there is a diversity of existing frameworks with over 600 reporting provisions in place across jurisdictions (BIAC, 2025^[8]).

In Paraná, the SDGs serve as the main sustainability framework used by the state government, while private-sector entities use a mix of frameworks. Some rely on ESG criteria, others have adopted the SDGs, and many combine both, using ESG as an internal compass and the SDGs to guide their external engagement. An OECD survey of around 30 public and private entities in Paraná confirm this overlap: 89% of respondents reported integrating the SDGs, 86% ESG criteria and 82% both. However, respondents also highlighted several challenges in integrating SDGs and ESG concepts into their organisation's strategies and policies. Most respondents identified fragmented data and reporting systems (93%), limited awareness of SDG and ESG frameworks (89%), followed by the lack of co-operation between public and private sectors (61%) as well as insufficient funding (54%) and regulatory barriers (54%).

Beyond SDGs and ESG frameworks, several organisations in Paraná report on their sustainability activities by using voluntary international frameworks. For example, such frameworks include the GRI and International Organization for Standardization (ISO) 14001 for environmental management systems. Furthermore, at least 15 public, private and third sector entities in Paraná are signatories of the UN Global Compact, a voluntary UN initiative through which companies commit to implementing sustainability principles and to taking steps to align with UN goals (UN, 2025^[9]). By contrast, the use of official ESG ratings for companies in Paraná provided by specialised rating agencies (such as S&P) or ESG research and rating providers (such as Sustainalytics) remains limited, making it challenging to compare the sustainability performance of different private-sector actors. Examples of the few Paraná-based companies that have been assigned ESG ratings include COPEL and sanitation utility Sanepar.

GRI standards are a voluntary ESG reporting framework commonly used by state-owned and public-private companies in Paraná. These standards are designed to help public and private companies report on their impacts on the economy, the environment and society, with a focus on identifying material topics, including issues like human rights and environmental due diligence (GRI, 2025^[10]). GRI standards are also the most commonly used voluntary standards globally. According to a recent Business at OECD (BIAC) survey, 61% of respondents reported using them compared to 44% using the SDGs (2025^[8]). In Paraná, the port of Paranaguá, for example, has been using GRI standards for its sustainability reporting since 2021 as a means to provide greater transparency on its activities.

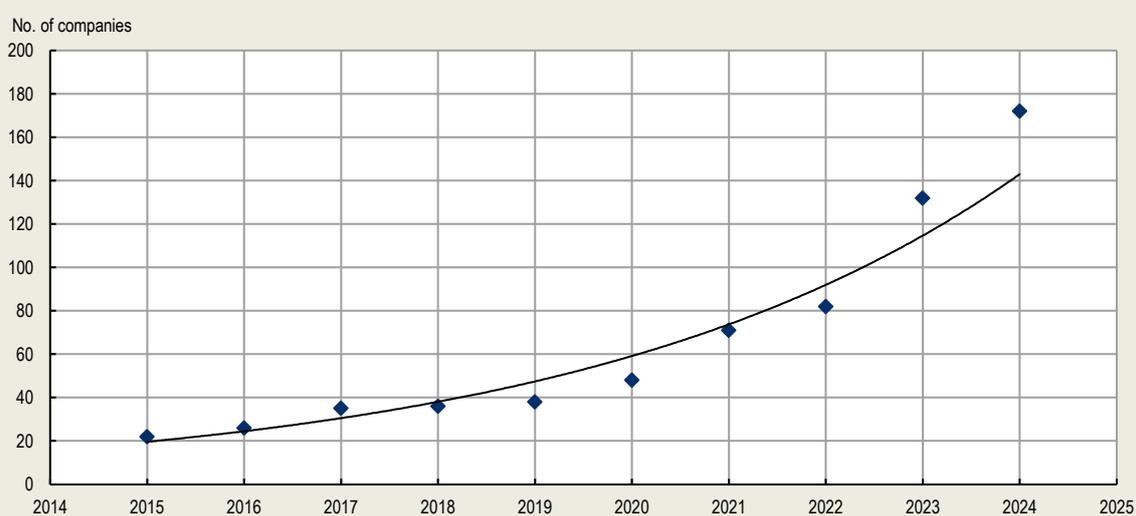
Another sustainability certification used by several companies in Paraná is the B Corp certification. While the GRI and other ESG frameworks are based on self-reporting, B Corp certification entails a third-party evaluation. Companies that meet certain standards of social and environmental performance, accountability and transparency and closely align with ESG principles receive the certification (B Lab, 2025^[11]). As of October 2025, Brazil counted 573 B Corp companies with 16 based in Paraná, a relatively low number considering Paraná's share in Brazil's GDP (6.1% in 2022). The Brazilian Micro and Small Business Support Service (SEBRAE) has supported between one-third and half of Paraná's B Corp certifications, but limited awareness among businesses and consumers remains a key barrier to further growth of certifications, with low public recognition and weak consumer demand.

Paraná has an established SDG indicator framework; however, the absence of a comprehensive, harmonised ESG indicator framework limits systematic performance assessment. The Paraná Institute of Economic and Social Development (IPARDES), a public research institution linked to the State Secretariat for Planning, compiles a wide range of indicators for all state secretariats but does not produce any official ESG indicators. Overall, co-ordination between SDG and ESG measurement remains limited in Paraná, and the coexistence of multiple voluntary frameworks highlighted above complicates the comparability of sustainability performance across sectors. In response, the state of Paraná introduced the Paraná Climate Seal in 2015 to enhance coherence and comparability across sustainability actions undertaken by public and private entities (Box 1). Furthermore, Paraná has published annual ESG reports since 2021, but these reports remain largely descriptive and do not provide a comprehensive indicator set, targets or benchmarks to assess overall ESG performance.

Box 1. The Paraná Climate Seal: A GHG inventory and repository of ESG good practices

Since 2015, the state of Paraná has awarded the Paraná Climate Seal to public and private entities that voluntarily measure, disclose and reduce their carbon footprint. The Climate Seal serves as the state's public GHG emissions registry and as a signalling mechanism to recognise ESG best practices as well as the results of emissions monitoring and mitigation efforts. It also aims to increase the transparency of sustainability activities of the public and private sectors and enhance visibility among investors and suppliers by aligning with market benchmarks. Participating organisations are classified from A to D (with A being the highest score) based on self-reported information. Participation has increased over time. In 2024, 185 organisations reported their GHG emissions to the state, including 167 private companies, 5 government agencies and 13 municipalities (Figure 1).

Figure 1. Number of companies reporting GHG emissions and ESG practices through the Paraná Climate Seal, 2015-2024



Among certified organisations in 2024, 54% achieved an A rating, 27% a B rating, 15% a C rating and 3% a D rating. Together, they reported more than 5 000 sustainability actions. In terms of ESG categorisation, most activities (46%) were undertaken in the environmental category, followed by social (36%) and governance (18%). Most actions contributed to SDG 13: Climate action, followed by SDG 3: Good health and well-being (711) and SDG 12: Responsible consumption and production (595).

Source: Government of Paraná (2025^[12]), "Selo Clima Paraná [Paraná Climate Seal]", <https://www.sedest.pr.gov.br/Pagina/Selo-Clima-Parana-1>.

2 Policies and governance frameworks to foster public-private collaboration for sustainable development in Paraná

Public and private actors are engaged in Paraná's sustainable development through sectoral activities that lack co-ordination

Building on the gaps identified in Chapter 1, this chapter examines how Paraná's current policies and governance frameworks seek to address these challenges through public-private collaboration.

Paraná promotes sustainable development through a set of different sectoral programmes involving public and private sectors

The state of Paraná promotes sustainable development through a set of different programmes and projects involving public and private sectors. These combine fiscal incentives, technical assistance and public-private collaboration. Thematically, they cover a range of policy areas relevant for the state's sustainable development agenda (Table 1). These include agriculture, one of the main economic activities in the state, renewable energy, territorial planning, infrastructure, innovation and environmental restoration, in line with several of the territorial development challenges pointed out in Chapter 1.

Table 1. State government policies and programmes to foster public-private collaboration for sustainable development in Paraná

Policy area	Programme	Activities
Agriculture and local value chains	Sustainable Regional Vocations	Launched in 2020, Paraná Invest's Sustainable Regional Vocations programme promotes sustainable economic development and public-private collaboration in Paraná by upgrading the value chains of small agricultural producers linked to territorially specific traditional products such as mate, banana and manioc. Delivered with over 30 public and private partners, it supports innovative production, processing and marketing practices through technical assistance and pilot projects, aiming to strengthen local livelihoods, thereby reducing the risk of illegal exploitation of the Atlantic Forest (Invest Paraná, 2025 ^[13]). Complementary activities include business incubation, sustainable tourism promotion and bioeconomy training seeking to diversify local economies and reduce regional inequalities. In addition, the Secretariat of Agriculture supports farming co-operatives through training, market access facilitation and financial support to encourage sustainable practices, biodiversity protection and efficient water use (OECD, 2024 ^[2] ; Government of Paraná, 2025 ^[14]).

Policy area	Programme	Activities
Renewable energy	RenovaPR	RenovaPR is a state-level programme designed to incentivise private companies to contribute to renewable energy generation in rural areas of Paraná. Implemented by the Secretariat of Agriculture and the Rural Development Institute, the programme provides financial and technical incentives for farmers and rural enterprises to invest in solar, biogas and small hydro systems (Government of Paraná, 2025 ^[15]). Through subsidised credit, the state reduces interest rates and financing risks to improve the economic viability of clean energy investments. The programme also offers technical assistance, training and a registry of certified service providers to ensure quality and facilitate market development. By linking cost reduction and competitiveness with environmental performance, the programme encourages private actors to adopt more sustainable business practices. Since its launch in 2021, RenovaPR has supported more than 10 000 renewable energy projects in rural properties, mobilising approximately BRL 5.8 billion (EUR 930 million) in investment and enabling over 38 000 new distributed generation connections across the state (Government of Paraná, 2025 ^[16]).
Territorial planning and infrastructure	Productive Paraná	The State Secretariat for Planning has put in place the Productive Paraná project to foster sustainable development across the state. Co-ordinated by a state management council, the project brings together local and state governments alongside representatives of the private sector to support municipalities in fostering integrated local development across four axes: i) people; ii) productive systems; iii) infrastructure; and iv) governance and management, for example through workshops with representatives from public and private sectors and civil society. Its goal is to bring state agencies closer to local needs, promote government programmes, prioritise the allocation of financial resources based on regional proposals and enhance the impact of investments on local development in line with the SDGs. In addition, the project establishes regional governance structures involving local businesses to support the implementation and monitoring of these local development plans (Government of Paraná, 2025 ^[17]).

Sources: Invest Paraná (2025^[13]), “Vocações Regionais Sustentáveis do Paraná [Sustainable Regional Vocations Programme Paraná]”, <https://investparana.org.br/vocacoes-regionais-sustentaveis-do-parana/>; OECD (2024^[2]), “Implementing a territorial approach to the SDGs in Paraná, Brazil”, <https://doi.org/10.1787/dad3d094-en>; Government of Paraná (2025^[14]), “Coopera Paraná”, <https://www.agricultura.pr.gov.br/CooperaPR/>; Government of Paraná (2025^[15]), “Paraná Energia Rural Renovável [Paraná Rural Renewable Energy]”, <https://www.agricultura.pr.gov.br/Pagina/Parana-Energia-Rural-Renovavel/>; Government of Paraná (2025^[16]), “Paraná alcança marca de 1 gigawatt de energia em geração distribuída no meio rural [Paraná reaches the mark of 1 gigawatt of energy in distributed generation in rural areas]”, <https://www.comunicacao.pr.gov.br/noticias/aen/65d7e8e4-0c3b-4502-bc8c-5f01cc7530dc>; Government of Paraná (2025^[17]), “Paraná Produtivo [Productive Paraná]”, <https://www.boaspraticasods.pr.gov.br/Iniciativa/Parana-Produtivo>.

Despite the existence of different programmes, Paraná faces several challenges in fostering effective public-private collaboration, including siloed approaches and the lack of harmonised sustainability frameworks. Building strong relationships between the public and private sectors in Paraná remains difficult, as collaboration is not yet a standard mode of operation and stakeholders often operate in silos. According to an OECD survey on promoting public-private collaboration for sustainable development in Paraná, only about half (57%) of respondents from the public and private sectors reported being aware of existing mechanisms for collaboration to advance sustainable development in the state (see Annex B for more information about the survey). A further challenge is the lack of harmonised sustainability frameworks between the public and the private sector. For example, many (especially small) businesses that the State of Paraná co-operates with have limited awareness or understanding of how to integrate ESG principles into their activities. Beyond that, sustainability objectives are not yet fully embedded across the state’s economic and investment programmes. Furthermore, the state of Paraná currently has no specific ESG legislation that could provide overarching guidance and strategic co-ordination of its various sustainability-related activities.

Paraná’s municipalities show uneven progress in engaging the private sector for sustainable development

Municipalities in Paraná are at different stages of aligning local policies with the SDGs and ESG principles. Larger urban centres tend to have more structured governance systems and planning tools that integrate sustainable development frameworks such as the SDGs into procurement and monitoring processes, often supported by master plans and dedicated reporting frameworks. By contrast, smaller and

medium-sized municipalities tend to focus more on building institutional capacity, strengthening dialogue between public and private actors, and, in some cases, revising local legislation to create incentives for sustainable investment.

Engaging the private sector and attracting investments is a key policy priority for the municipality of Curitiba, particularly in the energy sector. Curitiba leverages public procurement to engage the private sector in sustainability, e.g. by electrifying its municipal vehicle fleet and contracting food suppliers that adopt sustainable waste management practices. In 2023, Curitiba launched an eight megawatt solar energy project installed on a former landfill and bus terminals to enhance energy resilience and reduce emissions, which it uses to collect gender-disaggregated employment data and promote women's participation in the solar workforce (C40 Cities, 2023^[18]). In parallel, Curitiba provides SDG- and ESG-related training for public servants and is developing its first municipal ESG report in collaboration with the Municipal Institute of Public Administration and SEBRAE. However, Curitiba still faces challenges in raising awareness of the private sector on sustainable development and proposing concrete support measures.

The municipalities of Londrina and Maringá use their strategic planning documents to foster public-private collaboration for sustainable development. In Londrina, the municipal comprehensive plan, set up in 2022, has been a key tool to engage the private sector in sustainable development through its collaborative governance model, bringing together 13 topics under an umbrella framework. This model facilitates co-operation between public and private actors across sectors such as industrial, environmental and tourism activities and tracks key performance indicators linked to the 17 SDGs. However, its more long-term planning document, the 2040 Master Plan, highlights weak public and private investment capacity in research and development (R&D) and a lack of support mechanisms such as investment funds as barriers to innovation in the municipality (City of Londrina, 2021^[19]). Another example is the municipality of Maringá, which has mapped the contribution of its different projects to the SDGs and classified them into different ESG principles. As part of its activities, the municipality also engages in public-private collaboration efforts, including through its first public-private partnership established in 2022 to modernise public lighting infrastructure (GIZ, 2022^[20]).

The municipality of Matelândia and the city of Paranaguá engage the private sector in their economic development through dedicated councils and committees. Paranaguá has adopted the 2030 Agenda through a municipal decree requiring municipal departments to align their work with the SDGs. Paranaguá has also introduced legislation to stimulate private investment and job creation by offering tax and land-acquisition incentives.³ However, administrative complexity and limited resource availability remain challenges. In the rural municipality of Matelândia, a management committee brings together representatives from the public sector, private sector, academia and civil society to better co-ordinate economic development policies. Some co-operatives, especially export-oriented animal protein producers, have integrated the SDGs into their operations, but broader public-private partnerships on sustainable development remain limited due to information asymmetries, limited technical capacity and the perception among companies that sustainability practices entail costs rather than competitive advantages.

Uptake of sustainability practices in the private sector is driven by regulation and market pressures, but diffusion remains uneven

ESG adoption in Brazil at large and in Paraná is the strongest among publicly traded companies, largely due to regulatory requirements. Under a resolution by the Brazilian Securities and Exchange Commission, all listed companies are required to publish sustainability reports that disclose information on their ESG impacts, starting from 1 January 2026; voluntary adoption of these reporting practices has been allowed since 2024 (Brazilian Securities and Exchange Commission, 2023^[21]). Among members of business associations, export-oriented companies are the most advanced in integrating sustainability into

their operations, including through dedicated reporting, largely driven by market expectations and regulatory requirements. This progress has created a trickle-down effect, with suppliers adopting sustainable practices in response to decarbonisation demands of larger firms. This is crucial as small and medium-sized enterprise (SME) participation in value chains, access to finance and overall competitiveness increasingly depend on businesses' ability to measure, report on and improve sustainability performance as highlighted by the OECD (2022^[22]). Sustainable supply chains also offer a tool for SMEs to bridge skills and technology needed for their transformation (OECD, 2023^[23]).

In Paraná, large private and co-operative enterprises are engaging in partnerships with public institutions to support sustainable development. This engagement reflects the growing role of the green economy in the state's economic structure, which accounts for a substantial share of value added (Box 2). For example, the port operator TCP has initiated a collaboration with the Federal University of Paraná to develop a master plan for insular communities around Paranaguá. The University of the State of Paraná helped TCP design its decarbonisation plan, leading to the establishment of a traineeship programme for university students. Similarly, the agri-food co-operative Frimesa Cooperativa Central partners with the state government and academic institutions on environmental management, waste treatment and water preservation projects, while aligning its corporate governance and reporting with the UN Global Compact and GRI standards. Another example is the forestry company Águia Florestal, which collaborates with the environmental protection unit of the military police of Paraná on environmental education programmes and the State Secretariat of Agriculture on applying circular economy principles for affordable housing.

Box 2. The green economy in Paraná

According to IPARDES, the green economy, largely driven by the private sector, generated almost a third (32.9%) of Paraná's GDP in 2020. This corresponds to BRL 140 billion (EUR 22 million), based on a taxonomy of the Brazilian Federation of Banks and Brazilian Institute of Geography and Statistics (IBGE) data, which defines the green economy as an economic model that aims to improve people's well-being while reducing environmental risks and promoting the rational use of natural resources. While the primary sector and utilities in Paraná are almost entirely classified as green as a result of the absence of environmentally harmful activities (such as logging of native forests, hunting, extraction of non-planted palm heart, or production of charcoal from native vegetation), only about 29% of industrial output qualifies as green due to the prominence of high-emission sectors (such as oil refining and automobile manufacturing).

Source: IPARDES (2024^[24]), "O Cálculo do Produto Interno Bruto da Economia Verde Paranaense [Paraná's Green Economy reaches R\$ 140 billion and already represents 32.9% of GDP]", https://www.ipardes.pr.gov.br/sites/ipardes/arquivos_restritos/files/documento/2024-04/PIB_Economia_Verde_do_PR.pdf.

In Paraná, private-sector participation in ESG is motivated by both internal reasons (such as improving corporate governance) and external reasons (such as fundraising and sales opportunities). Respondents to an OECD survey conducted with public and private-sector representatives in Paraná highlighted that better governance and transparency were seen as the top benefit of integrating ESG strategies (39%), followed by enhanced sustainability and environmental protection (32%) and improved economic opportunities and market access (21%). While the SDGs are considered a more tangible framework for external communication, many businesses use the ESG framework internally. Several companies in Paraná reported using both frameworks. However, implementing the SDGs is particularly challenging for small companies in Paraná, partially due to lower profit margins, and because they often do not recognise the competitive advantage of engaging in sustainable development activities. Some businesses still conflate philanthropy (such as charitable

donations or short-term social actions) with sustainability projects that have clear objectives, measurable outcomes and long-term impact.

Business associations and universities act as key intermediaries for ESG adoption and public-private collaboration in Paraná

Several business associations support companies in Paraná in engaging in sustainable development activities. Business associations in Paraná provide a wide range of support mechanisms to help companies engage in sustainable development, including awareness raising, training and capacity building, peer-learning platforms, recognition schemes and guidance on ESG and SDG reporting (Table 2). These initiatives play an important role in diffusing sustainability concepts, particularly among SMEs. However, they are largely developed independently by individual associations and tend to operate in parallel rather than as part of a structured or co-ordinated support ecosystem. As a result, similar instruments such as awards, fora, training programmes and ESG working groups are often replicated across associations, limiting complementarities, scalability and the potential to systematically align private-sector efforts with statewide sustainability priorities.

Table 2. Business associations' support for companies in Paraná to engage in sustainable development activities

Association	Activities
American Chamber of Commerce (Amcham)	Amcham, with its Paraná branch, serves as an intermediary between public and private sectors. Its main sustainability activities include: i) the promotion of its Decarbonisation Hub to connect start-ups, companies, the public sector and research institutions to co-develop actions to foster a low-carbon economy; ii) its sustainability recognition programme Eco Award targeting companies that adopt responsible business practices focused on sustainability; iii) programming and networking opportunities that address innovation, sustainability and governance-related issues; and iv) an ESG forum as a meeting point for companies. Amcham also provides training to support companies in advancing ESG processes and mentoring for young professionals (Amcham, 2025 ^[25]).
BPW Curitiba	BPW Curitiba, an organisation of businesswomen, has carried out several actions to promote gender equality in partnership with the State Secretariat for Women, Racial Equality, and the Elderly in the State of Paraná, including lectures and workshops across municipalities to provide guidance and training for women, including those facing violence and inequality. The association also awards an SDG seal to female-led companies that have a positive impact on the SDGs.
LIDE	LIDE, an association of large businesses in Paraná, has been organising an annual ESG forum that gathers up to 500 business executives, policymakers and sustainability experts to discuss and showcase ESG strategies and initiatives. It also set up an ESG committee with around 40 members from different economic sectors to facilitate discussions, share best practices and foster collaboration on ESG topics, and produced a booklet outlining good practices.
Paraná's Commercial Association (ACP)	The ACP has established a Council for Sustainability, which serves as a platform for companies to engage in discussions and projects around sustainable development. Since 2023, the council has been organising several knowledge-sharing workshops for members on topics such as circular economy, reverse logistics, diversity and inclusion, and climate change using the SDGs as a guiding framework. Furthermore, as part of its annual Sustainability Awards, designed to recognise sustainable business practices in the state, the ACP, in collaboration with a private consulting firm, offers individualised feedback to companies on their sustainability performance, assessing gaps and providing recommendations for future action. Another relevant initiative in support of sustainable development is the creation of the ACP Technical Working Group on ESG to help companies understand and integrate ESG principles into their business activities, including through the publication of an e-book (ACP, 2023 ^[26]).
Paraná Federation of Industries (FIEP)	Since 2016, FIEP has been organising an annual SDG Award to promote best practices of the private sector and civil society organisations (CSOs) aligned with the SDGs. Organisations compete in four categories: environmental, social, governance and sustainable partnerships with civil society. Projects must be at least one year old and align with an SDG. They are evaluated on impact, beneficiaries and coherence with the 2030 Agenda. Selected projects receive a seal to highlight their contribution to sustainable development. An annual SDG conference organised by FIEP complements the award and helps private-sector entities in Paraná adopt sustainable business practices. In addition, FIEP has carried out mentorship programmes to help companies advance their ESG agendas, including by supporting them in sustainability reporting using GRI standards.

Sources: Amcham (2025^[25]), "ESG", <https://www.amcham.com.br/index/esg>; ACP (2023^[26]), "ACP assina Termo de Compromisso para a logística reversa de baterias de chumbo ácido [ACP signs Term of Commitment for the reverse logistics of lead acid batteries]", <https://acpr.com.br/acp-assina-termo-de-compromisso-para-a-logistica-reversa-de-baterias-de-chumbo-acido>

Several universities and educational institutions have integrated the SDGs and ESG into their curricula. For example, UniSENAI Paraná offers a postgraduate programme focused on corporate sustainability, particularly ESG to train university graduates and professionals in developing ESG strategies and tools (UniSENAI Paraná, 2025^[27]). Similar approaches are applied across middle schools and high schools run by Sesi Paraná, the Paraná-level entity of Brazil's Industrial Social Services. Universidade Positivo has adopted ESG guidelines and set up a workstream on education for sustainable development, including ESG and SDG training courses for academic staff. However, universities face persistent challenges in financing dedicated sustainable development projects.

New Research and Innovation Arrangements (NAPIs), established in 2019 by the Araucária Foundation, are a key platform for collaboration between public sector, private sector and academia. In partnership with the Secretariat for Science, Technology and Higher Education of Paraná, these arrangements aim to foster co-operation between academia, private sector and the state government to address regional challenges and promote sustainable development through sciences, technology and innovation (Araucária Foundation, 2019^[28]). The main objectives include promoting collaborative research and knowledge transfer through joint projects among universities, research centres and the private sector and supporting regional development by aligning research with the state's development needs (Araucária Foundation, 2019^[28]). The NAPIs focus on five strategic areas: i) agribusiness; ii) renewable energy; iii) health and biotechnology; iv) digital transformation; and v) social innovation, using the SDGs as a guideline for project selection.⁴ In recent years, NAPIs have helped foster a stronger collaboration between public and private sectors, academia and non-governmental organisations (NGOs). For example, NAPIs have supported partnerships to accelerate R&D on mycelium-based alternative proteins, contributing to SDG 12: Responsible consumption and production, and to bring together universities and other partners to document climate change impacts in Paraná and develop related policy recommendations (Government of Paraná, 2024^[29]; Mendonça et al., 2025^[30]). Nonetheless, private-sector partners often operate on shorter planning cycles that may not align with the long-term orientation of academic research. Another key challenge in the academic sector is the absence of a comprehensive mapping of university-led projects, which limits co-ordination and may lead to duplicated efforts.

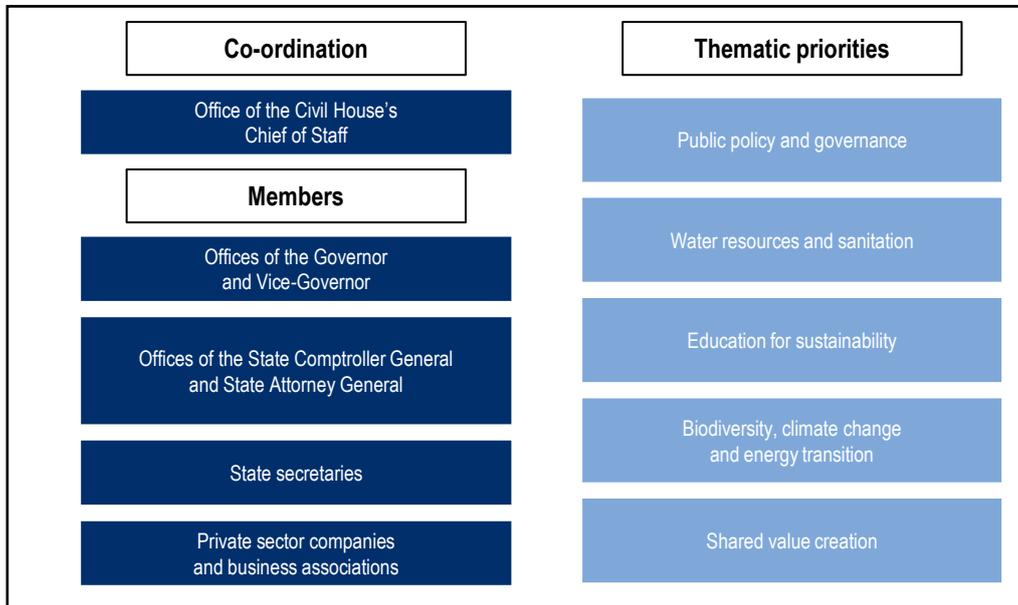
Public-private ESG co-ordination is institutionalised through a committee but still maturing

To bring greater coherence and strategic direction to its efforts to engage the private sector in sustainable development, Paraná has set up a dedicated ESG Committee. This ESG Committee is Paraná's main framework to foster public-private collaboration on sustainable development recognising the key role that the private sector can play in fostering sustainable economies as highlighted by the *OECD Guidelines for Multinational Enterprises on Responsible Business Conduct* (OECD, 2023^[31]). The committee aims to formulate guidelines and policy proposals, promote alignment of actions between the state government and the private sector and support the implementation of ESG practices to address the state's socio-environmental challenges. It is also responsible for identifying information and data relevant for the ESG agenda to inform policy and project development, as well as for preparing sustainability reports and ESG monitoring (Government of Paraná, 2025^[32]).

The committee convenes representatives from state secretariats and private-sector companies to serve the state in an advisory capacity. The Civil House co-ordinates the work of the committee, which consists of 21 state secretaries, other public institutions and 15 companies from the private sector, alongside business and CSOs (Figure 2). Private-sector companies are selected based on their sustainability reporting practices, the alignment of their business activities with the 2030 Agenda and performance in the state's public registry of GHG emissions (Figure 2). While private-sector representatives contribute voluntarily by providing technical input, data and insights to inform discussions and decisions, they do not hold decision-making power (Government of Paraná, 2025^[32]). Although the

ESG Committee was formally established in 2021, it only became operational in June 2024, following the setup of its governance structure and selection of members.

Figure 2. Structure of the Public-Private ESG Committee



In addition, the committee serves as a mechanism to strengthen ESG literacy across state secretariats. It puts particular emphasis on the social and governance dimensions, as some secretariats tend to associate sustainability and ESG criteria primarily with environmental issues. Companies interviewed during the OECD missions participate in the ESG Committee mainly to contribute to the state's sustainability agenda, strengthen dialogue and collaboration with public institutions, benefit from peer learning and further integrate global frameworks such as the SDGs into their strategies and reporting mechanisms. For smaller firms, participation offers visibility and credibility, while larger corporations benefit from closer alignment with state initiatives and recognition for their sustainability performance.

The ESG Committee has mapped key workstreams across five thematic areas and initiated the development of a state materiality matrix⁵ to guide future ESG indicators and reporting. Its work is organised around five thematic areas: i) public policy and governance; ii) water resources and sanitation; iii) education for sustainable development; iv) biodiversity, climate change and energy transition; and v) shared value creation, complemented by a cross-cutting theme on ESG indicators (Government of Paraná, 2025^[33]). These areas primarily address the environmental dimension of sustainable development, while also partially covering social and governance aspects, including some challenges such as education and climate action outlined in Chapter 1. As part of an initial diagnostic, the ESG Committee identified a broad set of priority workstreams, encompassing approximately 25 pillars and 250 specific topics. Examples include efforts to streamline administrative procedures, improve environmental and sanitary management, alongside initiatives to advance environmental education and clean energy. In addition, the committee has started to develop a materiality matrix to guide its future actions. Indicators proposed as part of the materiality matrix align with other reporting instruments, such as the Brazilian State Competitiveness Ranking, the government's Multi-Year Plan as well as international frameworks such as the Carbon Disclosure Project and GRI. In parallel, the ESG Committee is strengthening the state's sustainability framework through training and capacity-building activities for members.

Despite this progress, the ESG Committee faces several challenges related to governance to fulfil its objectives. The absence of an established methodology for developing ESG indicators for the public sector in Paraná, combined with its broad policy remit, complicates the prioritisation and sequencing of activities across diverse thematic areas. Moreover, structured collaboration mechanisms between state secretariats and the private sector are still being consolidated. While the committee has created a space for dialogue, it does not yet build on longstanding partnerships or established routines of intersectoral co-operation, although stakeholders interviewed during OECD missions reported that the committee has already contributed to a better mutual understanding.

Stakeholder engagement also remains uneven. Participation by private companies can be constrained by competing corporate priorities and a cautious approach to engagement with public authorities, to avoid a potential perception of political affiliation. Moreover, among the 15 companies and associations represented in the ESG Committee, the vast majority are headquartered in Curitiba, raising questions about the committee's representativeness in relation to the state's economic structure and territorial diversity. Finally, as most initiatives currently remain at a diagnostic and planning stage, the ESG Committee's practical impact on policy implementation and public-private collaboration has so far been limited.

Paraná leverages financial and fiscal instruments to crowd in private investment for sustainable development, but co-ordination and incentives remain fragmented

The role of public institutions is critical in fostering a sustainable transition of the economy by shaping incentives and investment frameworks (OECD, 2022^[22]). Paraná deploys a wide range of financial and fiscal instruments to engage the private sector in sustainable development, including fiscal transfers, investment incentives, PPPs and sustainable procurement. Together, these instruments have significant potential to crowd in private investment and steer economic activity towards environmental and social objectives, which is critical in a context of tight fiscal environments for the public sector (OECD, 2023^[4]). In practice, however, in Paraná, sustainability considerations are unevenly embedded across instruments and often remain secondary to economic or operational objectives. While some mechanisms explicitly reward environmental performance or align financing with the SDGs, incentives are fragmented, co-ordination across policy areas remains limited and uptake varies strongly across municipalities, sectors and firm sizes. Capacity constraints, territorial disparities and the predominance of voluntary or compliance-based approaches further limit the extent to which these instruments influence investment decisions. The following section examines the design, implementation and limitations of Paraná's main financial and fiscal tools.

Paraná uses financial and fiscal incentives to attract private-sector engagement in sustainability

The Paraná Competitivo programme, launched in 2011, is the state's primary mechanism for investment attraction and fiscal incentives. It offers tax deferrals, credit transfers and other benefits to firms establishing or expanding operations in Paraná. The programme integrates environmental and social considerations into its technical evaluation, alongside criteria related to job creation and value-chain development. Recent regulations provide preferential treatment to renewable energy, energy storage and grain storage projects, particularly in less developed municipalities. Yet, sustainability remains a secondary objective, embedded mainly as a requirement for legal compliance or as a positive scoring factor, while the programme's main objective is focused on economic expansion and competitiveness (Invest Paraná, 2025^[34]).

The government of Paraná has put in place the ICMS Ecológico, a fiscal transfer mechanism that rewards municipalities for environmental stewardship. Under this scheme, a share of the state's value-added tax is redistributed to municipalities that maintain protected areas or safeguard water resources. Because eligible units include private nature reserves, private landowners and organisations can contribute to municipalities' eligibility for these transfers. Some of these reserves are established or managed by firms or environmental NGOs as part of conservation strategies. In practice, this creates incentives for municipalities to recognise or support privately managed reserves. In the first half of 2025, the state redistributed around BRL 316 million (EUR 50 million) through the ICMS Ecológico (Government of Paraná, 2025^[35]). Yet the potential of the scheme to effectively engage private conservation actors remains underused. As highlighted by Mattar et al. (2023^[36]), the owners of 80% of a sample of 132 private reserves in Paraná did not receive any direct benefit from the ICMS Ecológico. This reflects a broader challenge, as many municipalities still lack structured support or payment for ecosystem-services schemes that could channel part of their revenues back to private reserve owners.

Furthermore, in August 2025, the government of Paraná set up a Green Bank platform, which aims to channel private investment into environmental and low-carbon projects across the state. Through the platform, companies can voluntarily contribute financial resources or support projects aligned with their ESG commitments, with an initial target of mobilising between BRL 50 million and BRL 100 million per year (EUR 8 million to EUR 16 million) (Government of Paraná, 2025^[37]). In addition, the Paraná Mais Verde programme promotes reforestation, biodiversity restoration and environmental education across the state, with voluntary participation from private actors (Government of Paraná, 2025^[38]). Implemented alongside other state environmental initiatives, Paraná Mais Verde has for example contributed to the distribution of over 12 million native tree seedlings statewide. However, while the two programmes encourage private-sector participation in environmental restoration, their design currently relies on voluntary contributions that resemble traditional corporate social responsibility rather than mechanisms influencing core investment or production decisions.

A dedicated mechanism for PPPs is in place, but capacity constraints limit its effectiveness

PPPs are a central mechanism through which the state of Paraná and its municipalities work together with the private sector. PPPs can play a critical role in mobilising private investments towards achieving the SDGs (UNECE, 2023^[39]). In Brazil, the legal framework for PPPs was established in 2004, initially limiting subnational participation through a minimum project value threshold, which was reduced from BRL 20 million (EUR 3.2 million) to BRL 10 million (EUR 1.6 million) in 2021. Since then, several PPPs in Paraná have focused on public lighting and smart city initiatives as well as sewerage services and the construction of new schools. While the state's PPP laws address procedural, financial and institutional aspects, they do not explicitly mandate sustainability or ESG requirements. The legal framework for PPPs is complemented by sectoral legislation, including an innovation law promoting co-operation among public institutions, research organisations and private entities (Government of Paraná, 2024^[40]; Government of Paraná, 2024^[41]) and a law implementing the State Solid Waste Plan of Paraná, enabling support to municipalities for PPPs in regional waste management (Government of Paraná, 2021^[42]). The state also complements these laws with broader support for sustainable business practices in renewable energy, circular economy and innovation, including through the introduction of a biodiversity credit system.

Paraná has set up a dedicated partnerships programme as the state government's main mechanism for managing PPPs. It aims to enhance the efficiency and quality of public services, attract private investment and provide a coherent legal and institutional framework for long-term collaboration with the private sector (Government of Paraná, 2025^[43]). The programme supports the identification, development and standardisation of PPP to ensure consistent approaches to risk allocation, feasibility assessment and transparency across sectors with a focus on structuring PPPs and service concessions in areas such as education, urban infrastructure, tourism and sanitation. For example, a PPP with Sanepar

has provided sewerage services in 16 municipalities in the metropolitan region of Curitiba and the coastal areas of Paraná with an additional 3 PPPs underway to expand sanitation infrastructure in a total of 112 further municipalities across the state. To reduce investor risk, Paraná established a PPP Guarantee Fund in 2012 to de-risk infrastructure projects in sectors such as water, sanitation and waste (Government of Paraná, 2025^[44]). In April 2025, however, the state updated its PPP framework and revoked the legal provisions governing the fund, introducing a system of project-specific guarantee accounts and other financial instruments for risk mitigation (State of Paraná, 2025^[45]).

Despite these efforts, PPP implementation faces bottlenecks in the project preparation phase. Many municipalities lack the capacity to conduct feasibility studies and draft tender documents as highlighted by Carvalho and Reyes-Tagle (2022^[46]), often relying on limited internal resources or private consultants, causing initiatives to stall before the tendering stage. These challenges are compounded by weak local regulatory frameworks and a lack of awareness about the substantial long-term financial commitments that PPPs entail (World Bank, 2018^[47]). For instance, a major highway concession PPP in Paraná was terminated after the State Court of Auditors identified fiscal and procedural irregularities, illustrating how insufficient project preparation and oversight can undermine implementation even at the state level (State Court of Auditors of Paraná, 2018^[48]). In addition, Brazil's fiscal responsibility framework caps PPP-related budgetary commitments safeguarding public finances but also restricting access to federal guarantees and funding mechanisms. In practice, this means that only wealthier and more experienced states and municipalities can structure viable PPP programmes (World Bank, 2022^[49]). In response, Paraná has launched a dedicated institutional capacity-building initiative on economic-financial modelling of PPPs for state secretariat staff, aiming to strengthen technical expertise required for new PPPs (Government of Paraná, 2023^[50]).

Paraná has started implementing sustainability provisions in public procurement

Brazil's framework for sustainable public procurement builds on several legal instruments. Public procurement can help advance the SDGs by fostering a more resource-efficient economy, driving innovation, supporting SMEs and promoting social values, notably in areas such as buildings, food and catering, vehicles, computers and other energy-consuming products (OECD, 2025^[51]). In Brazil, public procurement accounted for more than 15% of GDP in 2023 compared to 12.7% across the OECD on average (OECD, 2025^[52]), underlining its potential as a key driver for sustainable development. Since 2021, its public procurement system has explicitly recognised sustainable national development as a guiding principle and an objective of public procurement. It also allows for including environmental sustainability criteria in the parameters that determine performance-based remuneration for contractors (Brazilian Federal Court of Accounts, 2025^[53]).

At the state level in Paraná, Paraná has adopted several regulations to operationalise these federal principles. A 2020 law amended Paraná's general procurement legislation to require that suppliers take responsibility for reverse logistics embedding life-cycle management into public purchasing (Legislative Assembly of Paraná, 2022^[54]). In addition, a 2022 decree requires that procurement processes in Paraná be preceded by a preliminary technical study assessing cost-effectiveness, feasibility and relevant environmental and sustainability impacts (Government of Paraná, 2022^[55]). The judiciary in Paraná is already monitoring sustainable public procurement practices, while this is not yet the case in other state institutions (Box 3).

Box 3. Tracking of sustainable public procurement across the judiciary in Paraná

Paraná's state court monitors sustainable public procurement through its Sustainable Logistics Plan. The plan tracks several indicators related to procurement and contracting, including the number and share of contracts incorporating sustainability criteria, as well as the proportion of total tendered value awarded through such procedures. In 2021, 26% of contracts signed by the judiciary contained sustainability clauses. This share increased to 55% in 2022 and fell to 39% in 2023, before rising sharply to nearly 80% in 2024. In value terms, 81% of total tendered amounts in 2024 were awarded through procedures with sustainability criteria, up from 74% in 2021, already exceeding the 2026 objectives of 80% of tendered value and 25% of contracts to meet sustainability criteria.

Source: Paraná State Court (2025^[56]), *Plano de Logística 2021-2026 (3a Edição)* [Sustainability Logistics Plan 2021–2026 (3rd Edition)], https://www.tjpr.jus.br/documents/d/sustentabilidade/pls_tjpr_3.

Development banks and the state's investment promotion agency support the public and private sectors in pursuing sustainable development objectives

Regional development banks and the state's investment promotion agency play a key role in supporting public and private entities in fostering sustainable development activities. Public financial support plays a critical role in enabling the private sector, notably SMEs, to access an expanding range of tailored financing solutions that integrate climate and other environmental considerations as highlighted by the OECD (2025^[57]). In Paraná, a range of institutions, including the public financial institution Fomento Paraná, the Regional Development Bank of the Far South (BRDE), Invest Paraná and the co-operative financial institution Sicredi, are actively aligning their strategies, funding instruments and support programmes with the SDGs. These entities provide targeted financing and technical assistance to municipalities, co-operatives and businesses, particularly in areas such as renewable energy, sustainable infrastructure, female entrepreneurship and ESG capacity building. Together, they provide an important bridge between state policy priorities and private investment. However, their impact is uneven, reflecting differences in institutional mandates, territorial reach, sectoral focus and persistent constraints in scaling sustainable finance to smaller municipalities and firms.

Sicredi Cooperative and Fomento Paraná primarily focus on expanding access to finance and ESG capacity among co-operatives, SMEs and disadvantaged municipalities. Sicredi supports ESG integration in Paraná's co-operative sector through training and capacity-building initiatives such as the ESG+Coop programme, developed with co-operative organisations and academic partners, to facilitate the integration of ESG principles into business strategies.⁶ Furthermore, Sicredi has entered a partnership with the state government to provide subsidies to rural food producers to reinforce sustainable agriculture and is one of the main funders of the Investment Fund for Agro-Industrial Value Chains of Paraná, a credit rights fund structured by Fomento Paraná and designed to finance infrastructure and value-adding projects in agribusiness, with an investment potential exceeding BRL 2 billion (EUR 320 million) (Sicredi, 2024^[58]). Fomento Paraná, operating as the state's development agency, has set up specific funding options for municipalities for activities aligning with the SDGs, such as co-working spaces, green buildings and renewable energy production facilities with more than 90% of its credit operations contributing to the 2030 Agenda (OECD, 2024^[2]). Fomento Paraná also provides preferential loans for disadvantaged municipalities, microcredit for small enterprises (reaching around 9 000 beneficiaries in 2024) and dedicated support for women entrepreneurs through its Women's Bank programme which has benefitted more than 20 000 female entrepreneurs (OECD, 2024^[2]).

The BRDE and Invest Paraná play a complementary role by structuring and attracting sustainable investment and supporting municipal investment readiness. The BRDE has developed a taxonomy to align its projects with the SDGs and secure international funding from institutions such as the Inter-American Development Bank and the World Bank to assist municipalities in achieving the SDGs in Paraná (OECD, 2024^[2]). In 2024, about 82% of BRDE credit contracts, which totalled BRL 6 billion (approximately EUR 1 billion), supported the achievement of one or more SDGs. This includes notably SDG 2: Zero hunger (35%), SDG 8: Decent work and economic growth (19%), SDG 10: Reduced inequalities (13%), and SDG 12: Responsible consumption and production (10%), which together accounted for over 77% of financial volumes, reaching 383 (96%) of municipalities in Paraná in 2025 (BRDE, 2025^[59]; Government of Paraná, 2026^[60]). Through its Green Bank project, 1.5% of the bank's profits are re-directed into the BRDE's Green and Equity Fund, which currently supports three flagship projects⁷ with socio-environmental and climate impact (BRDE, 2025^[61]). Invest Paraná, the state's investment promotion agency, supports municipalities with lower development indicators through its Invest Cities programme to attract investment, and improve the business environment and attractiveness for investors, including through a self-assessment guide, best practice sharing and networking opportunities (Invest Paraná, 2025^[62]). Moreover, its Sustainable Solutions Acceleration programme identifies and promotes sustainable products and services from companies in Paraná through a repository of sustainable solution projects in construction, waste and circular economy, and technologies for industrial applications (Government of Paraná, 2020^[63]). The programme provides local and state actors, investors, private companies and NGOs with access to vetted tools and solutions in the repository (Invest Paraná, 2024^[64]).

3 Policy recommendations

Building on dialogue with a wide range of stakeholders in Paraná, the key recommendations outlined in this chapter provide the state with strategic directions and a menu of options for their implementation. While some measures can be taken by the state itself in the short run, others require joint efforts across different levels of government and other stakeholders, notably the private sector.

Leverage public-private collaboration to tackle Paraná's key sustainable development challenges

Enhancing public-private collaboration can be a key tool for Paraná to foster sustainable development in the state. In particular, Paraná could define clear priority areas for joint action to address its main territorial development challenges, namely: i) health; ii) water resources and sanitation; iii) inequality; iv) biodiversity, climate change and energy transition; and v) safety. These five priorities should be periodically reassessed to ensure they target the most relevant sustainable development challenges of the state. This assessment could build on the state's SDG indicator framework and, over time, be complemented with the ESG indicators developed by the ESG Committee. To ensure continuity and long-term commitment to sustainable development, Paraná could embed public-private collaboration as a central element into a statewide Sustainable Development Plan, which the state is mandated to develop. Mainstreaming the collaborative approach into the state's long-term planning framework could help align investments, innovation and regulatory action with sustainable development objectives. Some concrete measures that Paraná could implement are presented below:

- **Health (SDG 3)**
 - Promote workplace health partnerships between companies and municipal health networks to strengthen preventive care and well-being. Building on existing occupational health programmes provided by Sesi Paraná, companies could host vaccination campaigns, health screenings and mental health initiatives for employees to improve preventive-care coverage and local health outcomes. The state could recognise participating companies through a Healthy Workplace certification, endorsed by the ESG Committee, to encourage wider private-sector engagement for public health.
 - Leverage Paraná's NAPIs to strengthen health innovation and preventive care. A NAPI focused on health and well-being could connect universities, hospitals, co-operatives and private companies to develop applied research and pilot projects in areas such as telemedicine, maternal and child health and digital health systems. Embedding these initiatives into research and training agendas would help expand access to quality healthcare, improve health outcomes and build a skilled workforce for the state's health sector.
 - Support municipalities, hospitals and companies in adopting interoperable health information systems and shared data standards to track preventive-care coverage, workplace health trends and local health risks. Building on NAPI initiatives, a unified health data platform could connect municipal health units and public and private health providers to improve early detection of diseases and guide public health campaigns.

- **Water resources and sanitation (SDGs 6, 14)**
 - Leverage the ICMS Ecológico fiscal transfer mechanism that rewards municipalities for environmental stewardship to crowd in private co-investment, allowing municipalities to use part of their transfers as matching funds to launch or expand payment for ecosystem services schemes that engage companies, farmers and co-operatives in watershed restoration and protection measures.
 - Introduce regulatory incentives such as differentiated tariffs for treated wastewater reuse, and mobilise financial support through Fomento Paraná, the BRDE and the state's System for Financing Actions in Municipalities⁸ to co-fund sanitation infrastructure for the collection, treatment and final disposal of sanitary sewage, and drainage and stormwater management, e.g. through the newly established State Water Resources Fund. These measures could include tertiary treatment and distribution infrastructure and promote industrial and municipal water reuse mechanisms, with Sanepar and private firms co-developing circular water systems in industrial zones, and large urban areas such as Curitiba, Londrina and Maringá.
 - Expand access to sanitation through inclusive and low-cost solutions such as modular or nature-based treatment systems and pilot projects, e.g. constructed wetlands, in collaboration between municipalities, Sanepar and SMEs. Paraná could use the Municipal Finance System to manage and co-finance these projects and provide technical support for local operators.
- **Biodiversity and climate change (SDGs 7, 13, 15)**
 - Introduce or expand existing green finance instruments such as sustainability-linked loans or green credit lines for farmers and co-operatives that adopt sustainable agricultural practices offered by the BRDE, including through preferential interest rates or performance-based bonuses tied to measurable environmental outcomes.
 - Set up data-sharing partnerships between technology firms, research institutes, the state and its municipalities to strengthen early-warning systems and climate vulnerability mapping, e.g. as part of the ongoing NAPI focused on climate change adaptation. Leveraging local meteorological data and AI-based forecasting could improve disaster preparedness, guide resilient infrastructure planning, complement ongoing efforts in ecosystem restoration and reforestation, and protect supply chains and communities from climate-related risks, in particular in the agricultural sector.
 - Develop low-carbon industrial zones as part of the Paraná Competitivo programme to incentivise firms to invest in renewable energy production, circular business models and energy efficiency upgrades through tax incentives, fast-track licensing and technical support to implement ESG reporting and emission monitoring systems.
- **Inequality (SDG 10)**
 - Encourage inclusive employment and entrepreneurship by linking state incentive programmes such as Paraná Competitivo to measurable inclusion targets, e.g. firms that hire and train young people, women or workers from disadvantaged groups could receive preferential scoring in public procurement. Industry associations such as FIEP could offer joint mentoring programmes for SMEs to design such inclusive hiring and training plans as part of their ongoing sustainability activities.
 - Launch a programme to support universities, start-ups and co-operatives in co-developing goods and services that expand access for low-income and rural populations to affordable housing, digital connectivity and sustainable mobility (e.g. modular or low-cost housing technologies using recycled materials, satellite-based connectivity systems for remote areas and shared electric micro-mobility or solutions for smaller towns). The programme could provide participants with applied research funding, technical mentoring provided by Fundação Araucária and Fomento Paraná, and matchmaking with potential investors and municipalities.

- Expand financial inclusion and equitable access to sustainable finance for vulnerable communities. Building on existing initiatives by Fomento Paraná and the BRDE, Paraná could strengthen access to affordable credit, micro-insurance and financial literacy for informal workers, small rural producers, women-led enterprises and co-operatives in disadvantaged regions. This could include the expansion of Fomento Paraná's microcredit and Women's Bank programmes as well as integrate financial education components.
- **Safety (SDG 16)**
 - Support public-private collaboration for safer and more inclusive public spaces. Companies could work with municipalities to identify risk areas and support improvements such as better lighting, safe transport access and community awareness campaigns on violence. By doing so, companies can help protect their workforce and strengthen trust within local communities. The state could facilitate these partnerships through local development fora or public safety committees bringing together municipal, business and community representatives.
 - Encourage companies to collaborate with municipalities and universities in Paraná to establish local safety observatories that analyse crime data, identify high-risk zones and design targeted prevention projects. Businesses could contribute relevant logistics or mobility data (e.g. about freight routes or accident-prone areas), co-fund small-scale infrastructure improvements (such as better lighting or signage near industrial areas to help protect employees) and co-design safety initiatives with local communities.
 - Foster violence prevention and youth inclusion through training schemes. Public authorities, companies and vocational institutions such as the National Service for Industrial Training and FIEP could organise training, mentorship and apprenticeship opportunities for at-risk youth in vulnerable neighbourhoods based on existing projects such as Sesi's ViraVida programme, a social inclusion and youth development initiative to support adolescents and young people in vulnerable situations. By linking safety policies with inclusive employment programmes, the state could address social drivers of crime and help prevent violence.

Indicators to monitor the implementation of the recommendation

- **Health:** number of companies participating in workplace health partnerships with municipal health units; total R&D funding mobilised for health-innovation and preventive-care projects; number of public and private entities connected to the health data platform.
- **Water:** number of industrial and municipal water reuse projects implemented or under development; volume of treated wastewater reused as a share of treated wastewater; number of households or communities newly connected to improved sanitation.
- **Climate change:** total volume of green credit lines; number of planning or investment decisions supported by climate-risk or vulnerability maps; total investment mobilised in renewable energy, circular economy or efficiency projects under the Paraná Competitivo programme.
- **Inequality:** number/share of new jobs created for young people, women or disadvantaged groups; number of projects developed that benefit vulnerable, low-income or rural populations; number of participants trained in financial literacy programmes.
- **Safety:** number of local safety observatories established; change in citizen perception of safety in targeted areas; number of training sessions or workshops on vocational training and violence prevention for participating youth.

Relevant international example

In Italy, the region of Emilia-Romagna has established a Pact for Work and Climate to steer its transition towards a fair, innovative and climate-neutral economy. Signed in 2020 by more than 60 partners including

the regional government, business associations, trade unions, universities and CSOs, it commits the region to implementing the SDGs through a shared, long-term strategy. The pact promotes ecological and digital transitions, supports innovation, job creation and skills development, and sets the goal of achieving climate neutrality by 2050. It is based on a participatory and shared governance approach, engaging the partners in defining commitments and responsibilities to guide regional action.

Support the ESG Committee's transition from diagnostic to actions

While the ESG Committee has a broad mandate and thematic scope, clearer targets and measurable outcomes would help make it more effective. The state government could establish a multi-year strategic plan for the committee outlining specific outputs, such as the design of new public-private initiatives or the publication of an annual sustainability report. To track progress, the ESG Committee could adopt a set of performance indicators covering both process and impact (e.g. number of joint projects launched, new policies implemented that leverage public-private collaboration). Furthermore, in view of its co-ordination and advisory mandate, the committee should evolve from its current stage of diagnostic work toward actively supporting the government in the design of sustainable development policies, including enhancing the private sector's contribution to the state's territorial development objectives. The ESG Committee could more systematically integrate private-sector representatives into the agenda-setting process to ensure that policy initiatives reflect business realities and offer meaningful opportunities for private-sector contributions to sustainable development.

To strengthen stakeholder engagement and reinforce its quadruple helix approach involving government, industry, academia and civil society in policymaking, Paraná could consider expanding membership in the ESG Committee to include additional CSOs and academic representatives, while ensuring balanced participation from companies operating in different parts of the state to reflect diverse regional needs and capacities. The state could also strengthen the committee's role in financing and resource mobilisation by inviting representatives of development banks and financial institutions to participate. In addition, the committee could promote the exchange of good practices and case studies between members, illustrating how businesses contribute to the SDGs and how collaboration with the public sector can amplify these impacts. Such knowledge-sharing activities through workshops, community-based events or onsite field visits could serve as a capacity-building tool for both public and private actors and complement existing training courses. Finally, Paraná could consider incentivising the replication of the ESG Committee model at the municipal level, fostering horizontal learning, peer-to-peer exchange and alignment between state and municipal sustainable development agendas.

Indicators to monitor the implementation of the recommendation

- number of policies and projects suggested by the committee
- case studies or good practice examples disseminated
- publication of an annual objectives and work plan as part of a multi-year strategic plan and sharing of performance indicators achieved.

Relevant international example

In Germany, the city of Mannheim has developed a Local Green Deal to accelerate the transition towards climate neutrality and sustainability by 2030, aligned with the European Green Deal and its Mannheim 2030 mission. It establishes formal "deals" between the municipality and territorial stakeholders including businesses, public enterprises, CSOs and citizens who commit to joint actions in areas such as energy, mobility, circular economy and urban nature. Co-ordinated by a dedicated transition team, Mannheim's Local Green Deal integrates existing municipal strategies and fosters cross-sector collaboration through

the House of Change, a hub for co-design and citizen engagement. By 2024, it had concluded over 120 partnerships and developed more than 300 climate-related measures.

Harmonise sustainability reporting across Paraná through the creation of a statewide ESG measurement framework for the public and private sectors

The state of Paraná could develop an ESG measurement framework as a complementary tool to its existing SDG indicators. While its SDG indicators track development outcomes, an ESG framework would capture management and governance processes, i.e. how public institutions and private companies integrate sustainability principles into their operations, decision making and investments. The ESG framework could thus serve as part of Paraná's broader sustainable development monitoring architecture, focusing on institutional practices and enablers such as strategic planning, governance quality, risk management, transparency, environmental compliance and stakeholder engagement. It should aim to translate SDG targets into practical management metrics, helping both public and private entities incorporate ESG standards into their operations and risk management. For example, while SDG indicators for SDG 13 in Paraná measure the number of people affected by natural disasters, corresponding ESG metrics could assess whether agencies and companies integrate climate-risk analysis into investment decisions or publicly disclose environmental performance.

The resulting evidence should help inform strategic planning, guide investment prioritisation and support performance reviews of public programmes. The framework could also operationalise the ESG Committee's mandate to prepare an annual ESG report. To ensure comparability and complementarity, Paraná could align its ESG indicators with established international standards such as the GRI and assign those indicators to the three ESG dimensions (economic, social, governance), linking them directly to corresponding SDGs. A dedicated working group as part of the ESG Committee, involving relevant data-producing actors (e.g. companies from the private sector, the state's environmental agency IAT and the State Court of Auditors) could design the framework, define indicators and co-ordinate data collection across public agencies and private partners. The development of the framework could be accompanied by efforts to strengthen data interoperability and address skills gaps by building capacity for ESG reporting within public agencies and private companies.

Indicators to monitor the implementation of the recommendation

- number of ESG indicators defined and validated by the ESG Committee
- number of public and private actors reporting ESG data through the new framework
- number of SDG targets mapped to at least one ESG indicator.

Relevant international example

In Canada, the city of Toronto's ESG Performance Report offers an example of a local government applying an ESG reporting framework to public-sector operations. First published in 2022 and updated annually, the report outlines how Toronto integrates ESG considerations into its governance, strategic planning and financial management. It is structured around the three ESG dimensions and aligns with recognised international standards, including the GRI and the Sustainability Accounting Standards Board. Toronto's ESG report covers topics such as climate resilience, energy efficiency, diversity and inclusion, fiscal transparency and risk management, demonstrating how sustainability principles are embedded across municipal services and investment decisions. By publishing ESG disclosures, Toronto aims to enhance accountability and communicate progress to citizens and investors.

Reduce structural barriers for municipalities and private actors to access finance for PPPs

The state of Paraná could reduce the structural barriers that continue to limit municipalities, co-operatives and SMEs from accessing existing credit and investment instruments by enhancing project preparation, technical assistance and co-ordination among development and financial institutions. As pointed out above, many municipalities lack the technical and financial capacity to secure external financing and develop feasibility studies and tender documents for PPPs, causing initiatives to stall before reaching implementation. The state of Paraná could expand technical support to help municipalities develop bankable investment proposals, conduct feasibility and cost-benefit analyses, and structure projects that meet ESG eligibility criteria. Tailored training and advisory programmes on sustainable finance, credit risk and ESG integration could be jointly developed, for example by Fomento Paraná, the BRDE, SEBRAE and the ESG Committee, expanding existing technical assistance to structure PPPs offered by the BRDE. This could help strengthen local expertise both among municipalities and smaller firms that often lack awareness of sustainability frameworks. In parallel, targeted capacity-building efforts could help SMEs and co-operatives better understand and adopt ESG principles, develop investment proposals and meet the requirements of sustainable finance instruments.

Furthermore, the state could promote the creation of a digital platform matching local project proposals with development banks, investors and potential co-financing partners. By serving as a hub for information on available credit lines, funding opportunities and ESG eligibility requirements, such a platform would help municipalities and enterprises identify suitable instruments and connect with potential partners to co-finance projects. Finally, the development of standardised ESG eligibility and reporting guidelines could help harmonise sustainability standards across institutions and reduce transaction costs. By improving project readiness and building technical capacity, Paraná could help channel more capital into addressing Paraná's sustainable development challenges, including in thematic areas underrepresented in the BRDE's portfolio, including social goals such as SDG 3: Good health and well-being and SDG 4: Quality education.

Indicators to monitor the implementation of the recommendation

- number of municipal and state-level officials trained in project preparation, sustainable finance or ESG integration
- number of bankable projects prepared with technical assistance support
- number of matches or co-financing partnerships facilitated through the platform.

Relevant international example

In France, the *Banque des territoires* provides an integrated model for improving subnational access to sustainable finance. It combines financial instruments (loans, equity, guarantees) with tailored advisory and technical assistance for local governments and public enterprises. Through its network of regional offices, it helps municipalities structure investment projects, conduct financial and legal analyses, and identify suitable funding sources. It also operates a digital platform, which allows local governments to search for and connect with relevant grants, credits and co-financing opportunities. Projects are assessed against national priorities such as ecological transition, social cohesion and territorial development, supported by standardised procedures and methodologies for project preparation and reporting.

Set up a statewide de-risking scheme for sustainable development investments in Paraná

To accelerate private investment in projects that contribute to the SDGs, the government of Paraná could establish a de-risking scheme for sustainable development investments. The scheme would aim to reduce financial risks for companies and municipalities investing in priority areas such as renewable energy, sanitation, energy efficiency, circular economy, sustainable mobility and digital infrastructure. Under the scheme, the state could offer partial guarantees, insurance mechanisms or performance-based compensation to mitigate financial risks that currently deter private participation (e.g. underperformance of new technologies, lower-than-expected demand). In return, beneficiaries would pay a modest premium or guarantee fee to ensure a shared responsibility and to maintain the scheme's financial sustainability. Projects could be assessed based on how they advance specific SDG targets to ensure that public risk-sharing directly supports Paraná's sustainable development priorities. The State Secretariat for Planning and the SGDES could provide strategic oversight and direction, while the ESG Committee could serve in an advisory capacity. Fomento Paraná, in co-ordination with the BRDE, could be responsible for financial implementation and jointly identify eligible sectors and projects, assess risks and expected SDG impacts and ensure transparent reporting on both financial and sustainability outcomes. To strengthen the pipeline of viable projects, a share of resources collected through the scheme could fund technical assistance and feasibility studies.

Indicators to monitor the implementation of the recommendation

- amount of public capital allocated to the de-risking scheme
- amount of private investment mobilised through the de-risking scheme
- number of projects supported under the scheme.

Relevant international example

In Belgium, the government of Flanders has set up an incentive scheme to de-risk investments towards more sustainable cleantech energy technologies. For instance, a guarantee scheme for businesses in the geothermal sector helps the government invest in projects on cleantech energy technologies. If it turns out after drilling that the estimated energy production is not achieved, the government can pay back some of the costs. The companies contribute to the scheme by paying a premium. The latter helps deal with the significant investment required for drilling for geothermal resources by lowering investment risks.

Support the private sector in integrating the SDGs into core operations, ESG frameworks and corporate governance

Many companies in Paraná, particularly SMEs, lack the technical capacity and practical guidance to translate the SDGs into effective management tools such as an ESG framework and measurable business outcomes. The state government could establish a programme to help businesses use the SDGs to develop or strengthen their ESG practices by embedding sustainability objectives into corporate strategy, governance and reporting. The programme would link the strategic direction provided by the SDGs with the management systems and performance metrics of ESG, enabling companies to turn global sustainability goals into operational standards.

The programme should go beyond general awareness raising or broad guidance by offering targeted, company-specific feedback and support for translating SDG priorities into concrete ESG metrics, management processes and business practices. The programme could be based on the example of a

similar programme implemented in the Basque Country (Spain) and follow a three-phase approach. First, companies would complete a self-assessment, mapping how their strategy, governance, operations, supply chain, workforce and reporting relate to SDG targets and ESG dimensions. Second, an external assessment and assessor pool, composed of trained professionals from the private sector, academia and co-operatives, would validate such self-assessments, provide feedback and connect companies to technical or financial support mechanisms (e.g. those provided by Fomento Paraná and the BRDE). Third, based on this feedback, companies could start integrating SDG and ESG objectives into existing strategic planning, reporting and performance systems and identify indicators for follow-up. A pilot cohort of private companies across key sectors could test and refine the methodology before wider rollout. The ESG Committee could support the dissemination of the programme by incorporating the framework into its agenda, organise workshops on how to use it, interpret results and prepare plans to align corporate activities with the SDGs and ESG frameworks. A similar programme could also be developed for municipalities, particularly smaller ones with capacity gaps, to strengthen their ability to localise the SDGs, translate them into local development plans and train local officials on how to engage the private sector through SDGs and ESG as complementary tools for partnership and investment.

Indicators to monitor the implementation of the recommendation

- number of companies participating in the programme
- number of companies aligning their business operations with ESG principles as a result of their participation in the programme
- number of firms that produced a sustainability action plan or roadmap following participation

Relevant international examples

In Spain, the Basque Foundation for Advanced Management (EUSKALIT) promotes sustainable and competitive management practices among public and private entities. In collaboration with over 100 stakeholders, it has developed a framework to integrate the SDGs into corporate management systems, combining a 50-question self-assessment and an external evaluation by trained assessors. To support implementation, EUSKALIT established the SDG and Advanced Management Club, a public entity backed by the Basque Government, connecting around 60 members and 1 500 assessors to promote SDG-oriented management across organisations. Complementing these efforts, the Basque Government created Euskadi 2030 Gunea, a pilot group of 17 organisations from diverse sectors, which developed a practical SDG implementation guide to help Basque organisations align operations with the 2030 Agenda.

Annex A. OECD survey

Survey overview

Box A A.1. OECD survey on promoting public-private collaboration for sustainable development in Paraná, Brazil

Between 31 October 2024 and 6 February 2025, the OECD conducted a survey across actors involved in sustainable development policies in the state of Paraná, Brazil. The main objective of the survey was to assess how public-private collaboration can help advance sustainable development policies in Paraná, notably by leveraging the framework of the SDGs and ESG considerations. Respondents include 28 institutions from the public and private sectors, public companies and civil society (see Table A A.2 for full list of respondents).

Table A A.1. Survey structure

Main topic	Subtopic
Familiarity with SDGs and ESG concepts	Familiarity with SDGs
	Familiarity with ESG
Integration of SDGs and ESG into policies	Integration of SDGs into policies
	Integration of ESG into policies
Benefits and barriers of integrating SDGs and ESG into policies	Primary benefits of integrating SDGs into policies and strategies
	Primary benefits of integrating ESG into policies and strategies
	Main barriers to integrating ESG and SDGs into policies and strategies
	Successful strategies and initiatives that integrate ESG and SDGs into one single strategy or plan
Mechanisms for collaboration	Existing mechanisms for collaboration among the public sector, private sector, academia and civil society to advance SDGs in Paraná
	Existing mechanisms for collaboration among the public sector, private sector, academia, and civil society to advance ESG in Paraná
Impact measurement	Measuring SDG impact
	Measuring ESG impact
Ways forward	Actions or strategies to improve the integration of ESG and SDGs in one single strategy in Paraná
	Role of the state government
	Role of the private sector
	Role of academia
	Role of civil society

Table A A.2. List of survey respondents

	Institution	Sector
1	<i>Associação de Indicadores em Direitos Humanos para o Desenvolvimento (AiDH)</i> Association of Human Rights Indicators for Development (AiDH)	Civil society
2	<i>Associação de Mulheres de Negócios e Profissionais de Curitiba (BPW Curitiba)</i> Association of Business and Professional Women of Curitiba (BPW Curitiba)	
3	<i>Câmara Americana de Comércio (Amcham)</i> American Chamber of Commerce (Amcham)	Private sector
4	<i>Comitê Técnico Público Privado de ESG - Diretoria de Articulação Estratégica e Acompanhamento Fiscal</i> Public-Private ESG Technical Committee – Directorate of Strategic Coordination and Fiscal Monitoring	Public sector
5	<i>Companhia de Saneamento do Paraná (Sanepar)</i> Paraná Sanitation Company (Sanepar)	Mixed capital company (publicly traded company with both public and private shareholders)
6	<i>Companhia de Tecnologia da Informação e Comunicação do Paraná (Celepar)</i> Paraná State Information and Communication Technology Company (Celepar)	
7	<i>Companhia Paranaense de Energia (COPEL)</i> Paraná Energy Company (COPEL)	
8	<i>Fundação de Asseio e Conservação, serviços especializados e facilities (FACOP)</i> Foundation for Cleanliness and Conservation, Specialised Services and Facilities (FACOP)	Civil society
9	<i>Frimesa Cooperativa Central</i> Frimesa Central Cooperative	Private sector (co-operative)
10	<i>Grupo Marista (Associação Paranaense de Educação e Cultura)</i> Marista Group (Paranaense Association for Education and Culture)	Private sector
11	<i>Grupo Potencial</i> Potencial Group	
12	iCities	
13	<i>Instituto Municipal de Administração Pública (IMAP)</i> Brazilian Institute of Municipal Administration (IMAP)	Public sector
14	<i>Instituto das Cidades Inteligentes (ICI)</i> Institute of Smart Cities (ICI)	Public-private non-profit
15	<i>Instituto de Tecnologia do Paraná (Tecpar)</i> Paraná Institute of Technology (Tecpar)	Public sector
16	<i>Mondelez Brasil LTDA</i> Mondelez Brazil Ltd.	Private sector
17	<i>Paranacidade, Serviço Social Autônomo</i> Paranacidade – Autonomous Social Services	Public sector
18	<i>Portos do Paraná</i> Ports of Paraná	
19	<i>Prefeitura do Município de Londrina</i> Municipality of Londrina – City Government	
20	<i>Renault do Brasil</i> Renault Brazil	Private sector
21	<i>Secretaria de Estado da Mulher, Igualdade Racial e Pessoa Idosa</i> State Secretariat for Women, Racial Equality and the Elderly	Public sector
22	<i>Secretaria de Estado da Saúde do Paraná</i> Paraná State Health Department	
23	<i>Secretaria de Estado do Desenvolvimento Sustentável</i> State Secretariat for Sustainable Development	
24	<i>Secretaria de Indústria, Comércio e Serviços</i> State Secretariat for Industry, Commerce and Services	
25	<i>Sistema FAEP/SENAR-PR</i> Federation of Agriculture of the State of Paraná, National Rural Learning Service	Private sector
26	<i>Sistema FIEP</i> Paraná Federation of Industries (FIEP)	
27	<i>Terminal de Contêiner de Paranaguá (TCP)</i> Paranaguá Container Terminal (TCP)	
28	Top Eggs	

Annex B. Additional material

Box A B.1. OECD Checklist for Public Action to Localise the SDGs

The OECD Checklist for Public Action is directed to governments at all levels to facilitate the implementation of a territorial approach to the SDGs. The checklist provides action-oriented recommendations around five main categories:

- **Planning, policies and strategies:** Use the SDGs to define and shape local and regional development visions, strategies and plans, and re-orient existing ones. Cities and regions should use the SDGs to address local challenges that require a holistic approach, such as clean forms of urban mobility, affordable housing, gender equality, access to green spaces, balanced urban development, clean water and sanitation, air quality, solid waste management, territorial inequalities or service delivery.
- **Multi-level governance:** Use the SDGs as a framework to align policy priorities, incentives and objectives across all levels of government as well as to manage trade-offs and promote synergies across policy areas. In particular, regions and cities should be engaged in the process of Voluntary National Reviews to reflect progress at the subnational level and address regional disparities. Voluntary Local Reviews can also drive better multi-level governance of the SDGs and shed light on local initiatives.
- **Financing and budgeting:** Mainstream the SDGs in budgeting processes to ensure adequate resources are allocated for the implementation of the 2030 Agenda and to foster policy continuity across political cycles. Governments should allocate financial resources based on the identified place-based policy priorities and local challenges, and use the SDGs framework to foster multi-sectoral programmes and priorities.
- **Data and information:** Leverage SDGs data and localised indicator systems to guide policies and actions for better quality of life, and to showcase the performance and positive stories of cities and regions. In particular, for more comprehensive assessment and policy responses, cities and regions should combine data and indicators at different scales, including administrative boundaries (unit for political and administrative action) and functional approaches (economic geography of where people live and work).
- **Engagement:** Use the SDGs as a vehicle to enhance accountability and transparency through engaging all territorial stakeholders, including civil society, citizens, youth, academia and private companies, in the policymaking process. Cities and regions should use a combination of various tools to engage local stakeholders, such as awareness-raising campaigns and networking opportunities, but also de-risking investments in SDG solutions through grants or loans, as well as a fiscal incentive for innovative solutions towards sustainability.

Source: OECD (2020^[3]), *A Territorial Approach to the Sustainable Development Goals: Synthesis report*, <https://doi.org/10.1787/e86fa715-en>.

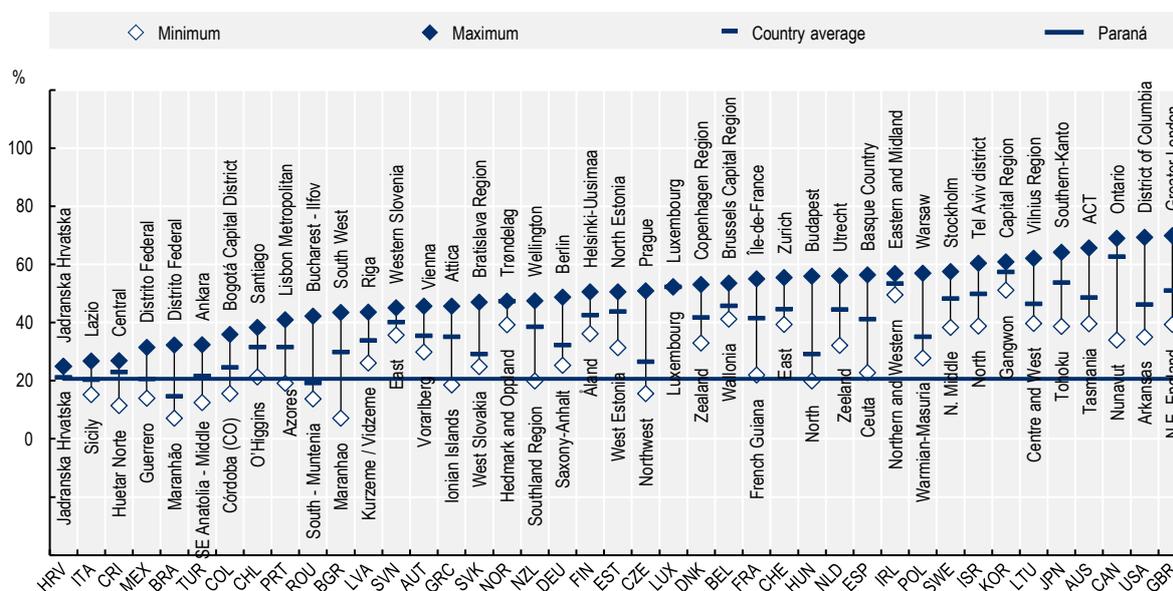
Box A B.2. Environmental, social and governance metrics

ESG metrics are indicators used to evaluate how a business performs in relation to various sustainability factors. When these metrics are compiled into ratings or scores, they offer an assessment of how a company, asset or financial product performs within sustainability indices. This includes examining both the entity’s exposure to ESG-related risks and impacts, as well as how effectively it manages these risks, impacts and potential opportunities.

ESG data and ratings are primarily used to guide a variety of investment and voting decisions. They help investors identify significant sustainability-related impacts, risks and opportunities, reduce exposure to both financial and non-financial risks, and support strategies such as excluding or favouring certain assets. In recent years, ESG investing has become a leading form of sustainable finance for long-term value amid public-sector initiatives to reach the objectives of the Paris agreement and the SDGs. ESG data also inform shareholder engagement, help set executive compensation and ensure compliance with sustainable finance regulations. In corporate finance, ESG metrics are used to monitor how well sustainability goals are being met, especially in relation to the use of funds from green, social or sustainability bonds. Increasingly, companies themselves use ESG data to manage sustainability performance, including across their supply chains, and to benchmark their ESG standing against industry peers.

Sources: OECD (2021^[65]), *ESG investing and climate transition: Market Practices, Issues and Policy Considerations*, <https://doi.org/10.1787/a2fc6c39-en>; OECD (2025^[66]), *Behind ESG ratings: Unpacking sustainability metrics*, <https://doi.org/10.1787/3f055f0c-en>; OECD (2024^[67]), *Global Debt Report 2024: Bond Markets in a High-Debt Environment*, <https://doi.org/10.1787/91844ea2-en>; European Commission (2024^[68]), “ESG rating activities”, https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/esg-rating-activities_en.

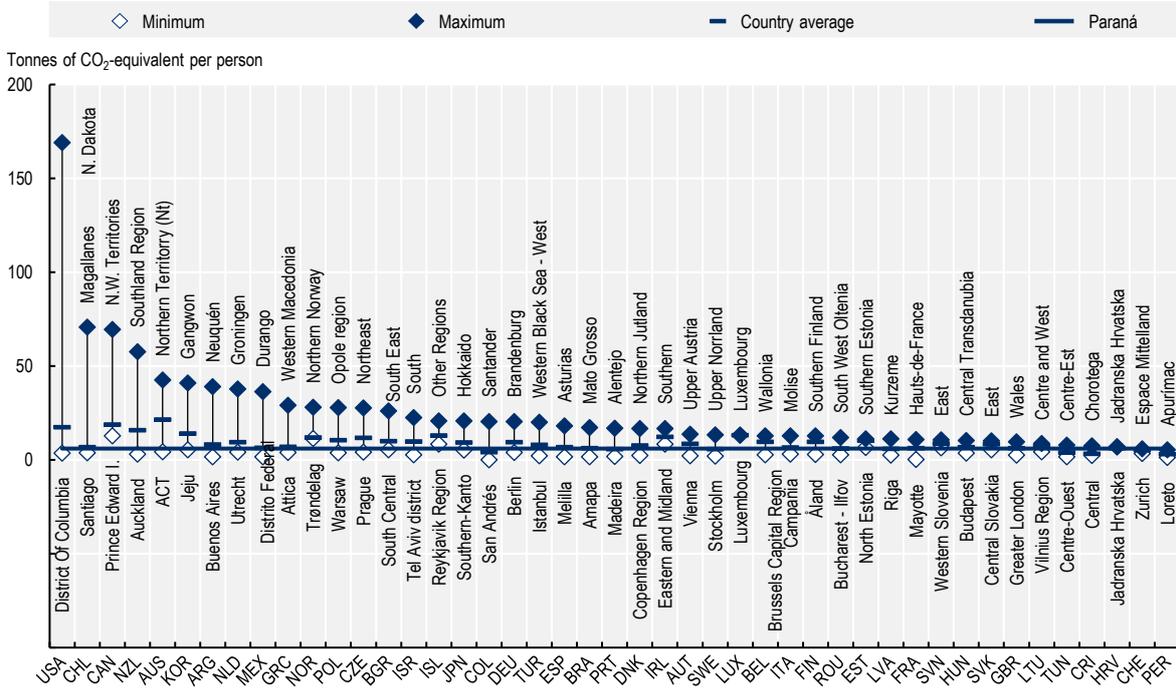
Figure A B.1. Share of population from 25 to 64 years old with at least tertiary education, 2022



Note: Brazil, except Paraná (2015); Latvia (2018); New Zealand (2020); Chile, Colombia, Japan, Korea, Türkiye (2020); Australia, Estonia, United States (2021).

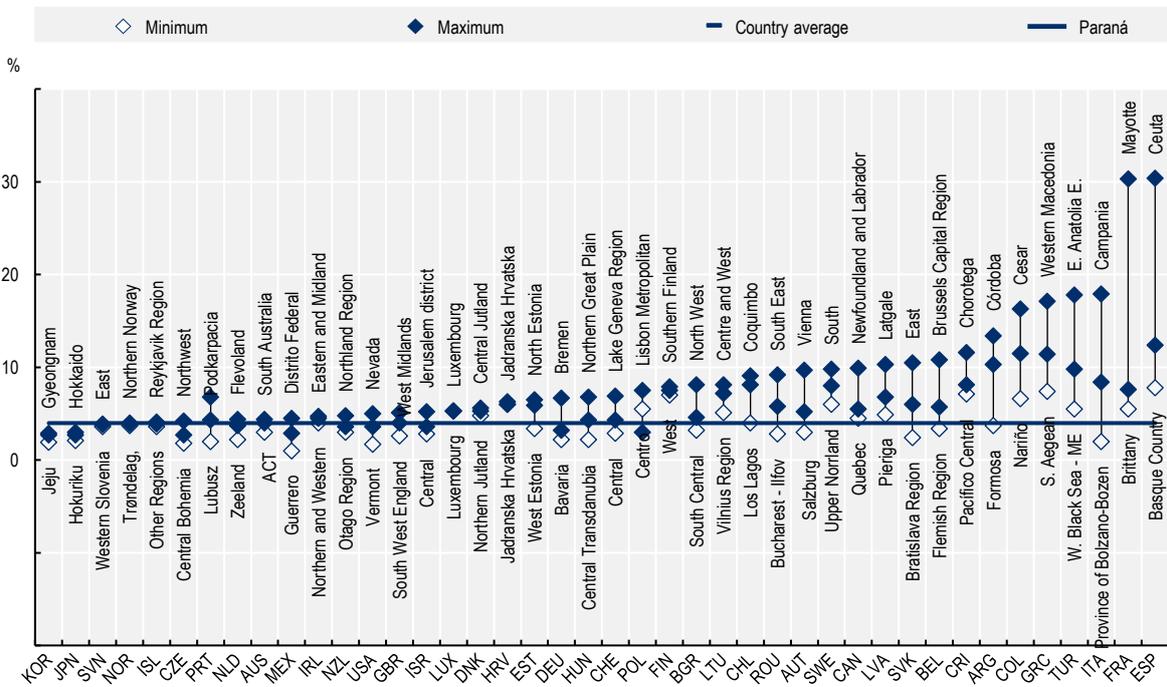
Source: OECD (2025^[69]), *Measuring the Distance to the SDGs in Regions and Cities (visualisation tool)*, <http://www.oecd-local-sdgs.org> (accessed on 24 October 2025).

Figure A B.2. CO₂ emissions per capita, 2022



Source: OECD (2025^[69]), *Measuring the Distance to the SDGs in Regions and Cities (visualisation tool)*, <http://www.oecd-local-sdgs.org> (accessed on 24 October 2025).

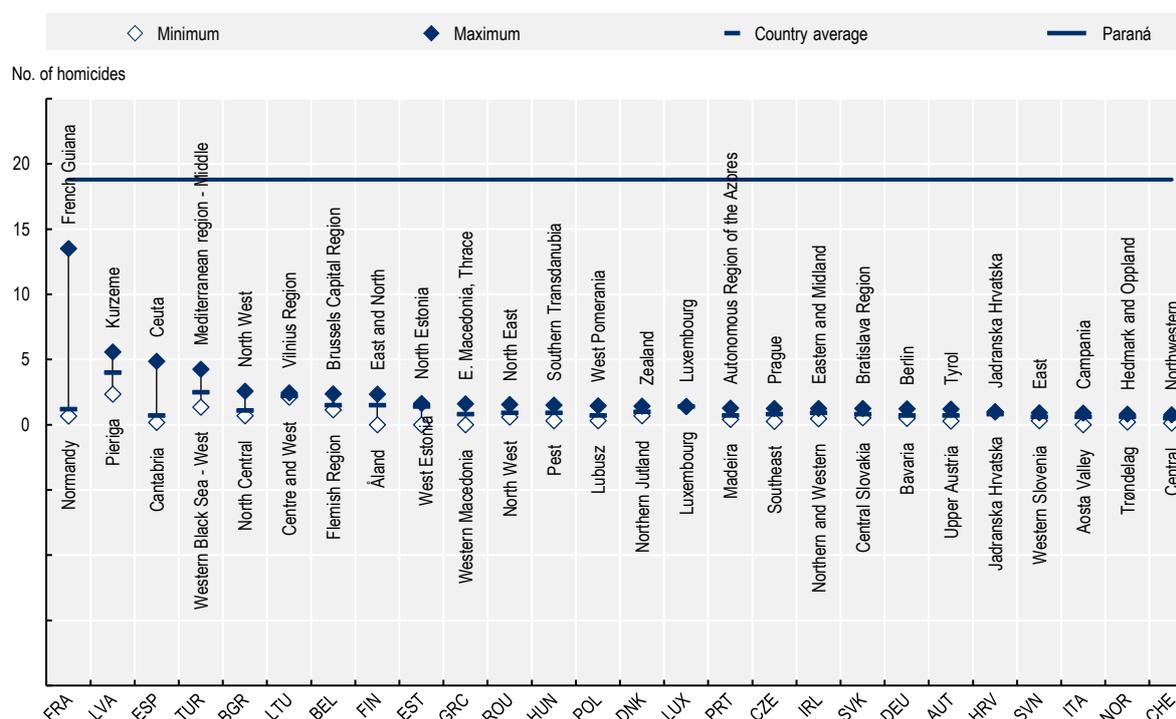
Figure A B.3. Unemployment rate (%), 2023



Note: Croatia (2019); Argentina (2020); Norway (2021); Colombia, Costa Rica, Italy (2022); Paraná (Q1 2025).

Source: OECD (2025^[69]), *Measuring the Distance to the SDGs in Regions and Cities (visualisation tool)*, <http://www.oecd-local-sdgs.org> (accessed on 24 October 2025).

Figure A B.4. Homicides per 100 000 persons, 2022



Note: Germany (2019); Paraná (2023).

Source: OECD (2025^[69]), *Measuring the Distance to the SDGs in Regions and Cities (visualisation tool)*, <http://www.oecd-local-sdgs.org> (accessed on 24 October 2025).

Table A B.1. Indicators used to assess sustainable development progress in Paraná

SDG	Dimension	Indicator	Source
2	People	Change in cropland (from 2000 to 2022, percentage points)	OECD Environment Database
		Cropland as a percentage of total area in 2015	
3	People	Satisfaction with life as a whole (from 0 to 10)	OECD based on Gallup World Poll
		Percentage of people satisfied with the availability or quality of healthcare	OECD Regional Database
		Hospital beds rate (hospital beds per 10 000 people)	OECD Database on Regions, cities and local areas
		Infant mortality rate (number of deaths of children one year old or younger per 1 000 live births)	IPARDES
		Active physicians rate (active physicians per 1 000 people)	IPARDES
4	People	Percentage of population aged above 25 years of age with at least tertiary education	IBGE
6	People	Percentage of population who believe women are treated with respect and dignity in their country	OECD based on Gallup World Poll
		Proportion of seats held by women in municipal councils (%)	IPARDES
6	Planet	Percentage of population satisfied with quality of water	OECD based on Gallup World Poll
		Change in water bodies (from 2000 to 2022, percentage points)	OECD Environment Database
		Water bodies as percentage of total area in 2022	
		Share of households with piped water supply	IBGE
		Share of households connected to the sewage network	

SDG	Dimension	Indicator	Source	
	Prosperity	Percentage of total electricity production that comes from renewable sources	OECD based on Global Power Plant Database	
		Percentage of total electricity production that comes from fossil fuels (natural gas and oil, excluding coal)		
		Percentage of total electricity production that comes from coal		
	Prosperity	Employment rate (%)	IPARDES	
		Unemployment rate (%)	IBGE	
		Real GDP per capita growth (%)	IPARDES	
	Prosperity	Percentage of population satisfied with roads and highways	OECD based on Gallup World Poll	
		Percentage of population satisfied with affordability of housing		
		Percentage of population satisfied with the quality of public transportation systems		
		Transport-related mortality rates (deaths per 100 000 people)	IPARDES	
	Prosperity	Gini index (income inequality, from 0 to 1)	IBGE	
	Prosperity	Percentage of population satisfied with quality of air	OECD based on Gallup World Poll	
	Planet	Number of motor road vehicles per 100 people	IBGE	
		Percentage of population satisfied with the effort to preserve the environment	OECD based on Gallup World Poll	
		CO ₂ emissions per capita (tonnes of CO ₂ -equivalent per person)	OECD Database on Regions, cities and local areas	
		Change in cooling degree days needed to maintain an average building indoor temperature of 22 degrees Celsius, from 1970-1984 to 2004-2018	OECD based on Historical Global-Gridded Degree-Day Database	
		Change in heating degree days needed to maintain an average building indoor temperature of 22 degrees Celsius, from 1970-1984 to 2004-2018		
		Change in tree cover (from 1992 to 2015, percentage points)	OECD based on Gallup World Poll	
		Tree cover as a percentage of total area in 2015	OECD Environment Database	
Artificial areas as a percentage of total area in 2015				
	Planet	Artificial areas as a percentage of total area in 2015	OECD Environment Database	
		Peace	Homicides per 100 000 persons	IPARDES
		Peace	Percentage of population who have been assaulted or mugged in the previous 12 months	OECD based on Gallup World Poll
			Percentage of population who feel safe walking alone at night around the area where they live	
			Confidence in judicial system and courts	
			Percentage of population who believe corruption is spread throughout the government in the country	
			Percentage of population who have confidence in the national government	
			Percentage of population who have confidence in the local police force	
			Percentage of population who believe their place of residence is a good place to live for migrants	
			Percentage of population who believe their place of residence is a good place to live for gay or lesbian people	
Percentage of population who believe their place of residence is a good place to live for racial and ethnic minorities				
	Partnership	Share of Patent Cooperation Treaty co-patent applications that are done with foreign regions (in percentage of co-patent applications)	OECD Database on Regions, cities and local areas	
		Percentage of households with broadband Internet access	IBGE	

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Notes

¹ The indicator framework was first published in 2020 to localise SDG targets and indicators and measure the distance of regions and cities to reaching each of the 17 SDGs covering more than 100 indicators. The framework was updated in autumn 2024 to reflect the latest data available and provide a renewed assessment of cities’ and regions’ progress towards achieving the SDGs. In addition to the updates, around

14 indicators at the functional urban area level and 2 at large regions (TL2) level were deprecated, while another 5 got replaced by new indicators.

² Values for 2023 and 2024 are estimates.

³ Companies in industry, commerce or services that create more than 50 formal direct jobs may be eligible for municipal service tax reductions, discounts of up to 90% on land acquisition and other benefits such as property tax or real-estate transfer tax exemptions (Municipality of Paranaguá, 2021^[70]).

⁴ Every NAPI has to contribute to at least one of the SDGs.

⁵ A materiality matrix is a strategic tool companies use to identify and prioritise the sustainability issues that matter most both to their business success and to their stakeholders. It helps determine which economic, environmental and social topics are material, meaning they have a significant impact on the company's operations, reputation or financial performance, or are viewed as important by key stakeholders such as investors, customers, employees and communities (CSB, 2019^[71]).

⁶ As of mid-2025, the programme had offered 32 training sessions engaging 54 co-operatives in Paraná, which led to the creation of an ESG manual tailored to the co-operative sector, which has been disseminated to various institutions.

⁷ One flagship project supports 16 research initiatives on socio-environmental and climate issues with the Araucária Foundation and the Secretariat for Science, Technology and Higher Education of Paraná, another promotes nature-based income generation and conservation in the Atlantic Forest region with the Boticário Group Foundation, and a third, in partnership with State Secretariat for Sustainable Development, certifies private natural heritage reserves committed to biodiversity conservation.

⁸ Paraná uses a Municipal Finance System (*Sistema de Financiamento de Ações nos Municípios*), a state mechanism designed to strengthen municipal capacity and channel resources toward sustainable urban development. It is administered by the State Secretariat for Cities, with the Paraná State Development Agency (Fomento Paraná) acting as the financial agent and Paranacidade as the technical and operational agent, serving as the interface between the state government and municipalities. Through this system, municipalities submit investment proposals aligned with local development plans and state or national priorities, including the SDGs. Paranacidade provides technical assistance, helping municipalities prepare feasibility studies, engineering designs and environmental assessments. Fomento Paraná manages credit operations and financial execution. Once projects are approved, resources are released through loans or transfers that are monitored to ensure compliance with fiscal and environmental standards. In practice, this framework allows municipalities of all sizes, in particular smaller ones, to access financing, expertise and institutional support that would otherwise be beyond their reach. The system's structure promotes vertical co-ordination with local governments identifying needs, while the state validates, co-finances and oversees implementation, yet with little private-sector participation in municipal lending, which is limited in Brazil.

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