

PARANÁ, BRAZIL

A Territorial Approach to the Sustainable Development Goals in Paraná, Brazil



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Preface

The OECD and the state of Paraná, Brazil, are delighted to introduce the results of the policy dialogue that was conducted over 2 years with more than 100 stakeholders to foster a territorial approach to the United Nations Sustainable Development Goals (SDGs).

In today's highly uncertain policy environment, and the need to shape long-term recovery measures in response to the COVID-19 pandemic, the SDGs are more relevant than ever. They offer a valuable framework to build a more sustainable and resilient society in a shared responsibility across levels of government.

In its 2020-2023 multi-year plan, Paraná is leveraging the SDGs as a tool to reduce territorial disparities and to promote the exchange of good practices among municipalities with varying levels of development. Through a multi-stakeholder governance framework, guidelines and financial contributions, the state provides incentives to align local and regional planning systems with the 2030 Agenda. A prominent example is the partnership between Paraná's Economic and Social Development State Council (CEDES) and the State Audit Court (TCEPR) to monitor and assess the SDGs incorporation in the state's budgetary planning as well as to align policy priorities with the SDGs. However, longstanding development challenges related to health, education and safety as well as socio-economic territorial disparities, in particular between urban agglomerations and remote rural areas, have been exacerbated by the crisis, thereby increasing the sense of urgency for local and regional action.

The OECD report *A Territorial Approach to the Sustainable Development Goals in Paraná, Brazil* provides guidance on how the SDGs can be further used by the state as a tool to reduce territorial disparities within and across municipalities as well as to strengthen the state's coordination with the municipalities and the federal government. The report also advises on how to mainstream the SDGs in municipal budgetary tools, improve the data collection and monitoring of the SDGs at the local level, and engage the private sector and civil society in the implementation of the 2030 Agenda.

Throughout the policy dialogue underlying this report, we shared our experience with a variety of stakeholders in Paraná and learned from peer policymakers in the city of Moscow, Russian Federation, and the province of Córdoba, Argentina. The OECD and the state of Paraná worked with numerous municipalities and institutions from public, private and non-profit sectors to build consensus, discuss policy recommendations and scale up success stories.

Both institutions are proud of this journey and the results achieved and look forward to continued collaboration to support the implementation of the policy recommendations in the future.



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Governor of the State of Paraná, Brazil

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This report was prepared by the OECD Centre for Entrepreneurship, SMEs, Regions and Cities (CFE) led by Lamia Kamal-Chaoui, Director, as part of the Programme of Work and Budget of the Regional Development Policy Committee (RDPC). It is the result of a two-year policy dialogue with more than 100 stakeholders from public, private and non-profit sectors across all levels of government in Paraná, Brazil.

The report was drafted by a core team of OECD policy analysts comprised of Lorenz Gross and Aline Matta of the CFE, and co-ordinated by Aline Matta and Stefano Marta, Coordinator of the OECD Programme on a Territorial Approach to the SDGs, under the supervision of Aziza Akhmouch, Head of the Cities, Urban Policies and Sustainable Development Division in the CFE. The report benefitted from the statistical support of Marcos Díaz Ramírez, who provided guidance in the analysis of the local SDGs data for the state of Paraná, Brazil.

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Abbreviations and acronyms

ABES	Brazilian Association of Sanitary and Environmental Engineering (<i>Associação Brasileira de Engenharia Sanitária e Ambiental</i>)
AFD	French Development Agency (<i>Agence française de développement</i>)
AgTech	Agricultural technology
ALEP	Paraná Legislative Assembly (<i>Assembleia Legislativa do Paraná</i>)
AMP	Association of Municipalities of Paraná (<i>Associação de Municípios do Paraná</i>)
BFP	Bolsa Familia Programme
BI	Business intelligence
BNDES	Brazilian Development Bank (<i>Banco Nacional de Desenvolvimento Econômico e Social</i>)
BRDE	Far South Regional Development Bank (<i>Banco Regional de Desenvolvimento do Extremo Sul</i>)
BRT	Bus rapid transit
CEDES	Economic and Social Development State Council (<i>Conselho Estadual de Desenvolvimento Econômico Social</i>)
Celepar	Paraná State Company for Information Technology and Communication (<i>Companhia de Tecnologia da Informação e Comunicação do Paraná</i>)
CFE	OECD Centre for Entrepreneurship, SMEs, Regions and Cities
CIFAL	International Training Centre for Authorities and Leaders (<i>Centre international de formation des autorités et leaders</i>)
CNCPS	National Council for the Coordination of Social Policies (<i>Consejo Nacional de Coordinación de Políticas Sociales</i>)
CNJ	National Council of Justice (<i>Conselho Nacional de Justiça</i>)
CNODS	National Commission for the Sustainable Development Goals (<i>Comissão Nacional para os Objetivos do Desenvolvimento Sustentável</i>)
COPEL	Paraná Energy Company (<i>Companhia Paranaense de Energia</i>)
CTD-CEDES	Technical Committee for Sustainable Development of the State of Paraná (<i>Comitê Técnico de Desenvolvimento Sustentável do Estado do Paraná</i>)
EFD	Federal Development Strategy (<i>Estratégia Federal de Desenvolvimento</i>)
EIB	European Investment Bank
Embrapa	Brazilian Agricultural Research Corporation (<i>Empresa Brasileira de Pesquisa Agropecuária</i>)
ESD	Education for Sustainable Development
FCO	Midwest Constitutional Financing Fund
FDU	Urban Development Fund (<i>Fundo Estadual de Desenvolvimento Urbano</i>)
FGTS	Brazilian Government Severance Indemnity Fund for Employees (<i>Fundo de Garantia do Tempo de Serviço</i>)
FIEP	Federation of Industries of the State of Paraná (<i>Federação das Indústrias do Estado do Paraná</i>)

Fomento Paraná	Development Agency of Paraná
GVA	Gross value added
HDI	Human Development Index
HIGI	Household Income Gini Index
HLPF	High-Level Political Forum
IDEB	Index of Development of Basic Education (<i>Índice de Desenvolvimento da Educação Básica</i>)
IMAP	Municipal Institute of Public Administration (<i>Instituto Municipal de Administração Pública</i>)
IPARDES	Paraná Institute of Economic and Social Development
Ipea	Institute for Applied Economic Research (<i>Instituto de Pesquisa Econômica Aplicada</i>)
IPPUC	Curitiba Institute for Research and Urban Planning (<i>Instituto de Pesquisa e Planejamento Urbano de Curitiba</i>)
LDO	Budget Guidelines Law (<i>Lei de Diretrizes Orçamentárias</i>)
LINO-TJPR	Innovation Laboratory (<i>Laboratório de Inovação</i>)
LIODS-TJPR	Laboratory for Innovation, Intelligence and Sustainable Development Goals (<i>Laboratórios de Inovação, Inteligência e Objetivos de Desenvolvimento Sustentável</i>)
LOA	Annual Budget Law (<i>Lei Orçamentária Anual</i>)
NEET	Not in education, employment or training
PCT	Patent Cooperation Treaty
PM	Particulate matter
PPA	Multi-Year Plan (<i>Plano Plurianual</i>)
RCE	Regional Centres of Expertise
RDPC	Regional Development Policy Committee
Repar	President Getúlio Vargas Refinery (<i>Refinaria Presidente Getúlio Vargas</i>)
Sanepar	Paraná Sanitation Company (<i>Companhia de Saneamento do Paraná S.A</i>)
SDGs	United Nations Sustainable Development Goals
SEAP	State Secretariat of Administration and Social Security (<i>Secretaria de Estado da Administração e da Previdência</i>)
SEAS	Special Secretariat for Social Articulation (<i>Secretaria Especial de Articulação Social da Presidência da República</i>)
SEDU	State Secretariat of Urban Development and Public Works (<i>Secretaria de Estado do Desenvolvimento Urbano e de Obras Públicas</i>)
SEGOV-PR	Government Secretariat of the Brazilian Presidency (<i>Secretaria de Governo da Presidência da República</i>)
SEPL	State Secretariat of Planning and Structuring Projects (<i>Secretaria de Estado do Planejamento e Projetos Estruturantes</i>)
SETI	Superintendence of Science, Technology and Higher Education (<i>Superintendência de Ciência, Tecnologia e Ensino Superior do Paraná</i>)
SFM	State Financing System for Municipal Development (<i>Sistema de Financiamento de Ações nos Municípios do Paraná</i>)
SME	Small- and medium-sized enterprise
SNF	National Financial System (<i>Sistema Nacional de Financiamento</i>)
TCE-PR	Paraná State Audit Court (<i>Tribunal de Contas do Estado do Paraná</i>)
TJPR	Court of Justice of the State of Paraná (<i>Tribunal de Justiça do Estado do Paraná</i>)
TLP	Paranáguá Container Terminal (<i>Terminal de Contêineres de Paranáguá</i>)
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development

UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
VLR	Voluntary local review
VVSG	Flemish Association for Cities and Municipalities (<i>Vereniging van Vlaamse Steden en Gemeenten</i>)
WDPA	World Database on Protected Areas
YAD	Youth Action Day

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Executive summary

The state of Paraná, one of Brazil's most populated and developed states, has been aligning its public policies with sustainable development since the 1990s. More recently, Paraná has used the SDGs as a tool and framework to reduce longstanding challenges related to health, education and safety as well as to address global megatrends affecting the state such as climate change, demographic pressures and digitalisation. Despite the absence of a state-wide sustainable development plan, Paraná is aligning its Multi-Year Plan (PPA) for 2020-23 and other planning and budgeting tools with the SDGs to face the socio-economic territorial disparities across and within the municipalities. Through a multi-stakeholder governance framework, guidelines and financial contributions, the state provides incentives to align local and regional planning systems with the 2030 Agenda and address sustainable development challenges in an integrated way.

Achieving the 2030 Agenda and using the SDGs as a means to reduce territorial disparities and poverty are key political priorities for the state of Paraná. Paraná's Economic and Social Development State Council (CEDES) was entrusted with the responsibility of developing an overarching sustainable development plan and providing a vision to guide policy actions for the implementation of the SDGs in the state. To foster the implementation of the SDGs across its whole territory, Paraná is supporting municipalities in aligning their local planning with the SDGs by establishing guidelines and through a pact with 359 municipalities committed to integrating the SDGs into municipal comprehensive plans, prioritising projects and better allocating budgets in line with the 2030 Agenda.

Key findings

Paraná is using the SDGs as a means to reduce territorial disparities across the state

- GDP per capita varies considerably between municipalities in Paraná. In 2017, Paraná's average GDP per capita was BRL 37 221. It exceeded BRL 123 000 in Araucária, reached around BRL 45 000 in Curitiba, slightly less than BRL 40 000 in Ubatuba, and was about BRL 11 000 in Piraquara. Although Paraná has a high degree of urbanisation, most of its population is concentrated in a small number of municipalities with the few leading-edge companies mainly located in the Metropolitan Region of Curitiba.

Paraná's performance towards the SDGs is slightly lower than the OECD average but the state outperforms most regions in Brazil

- Paraná's strengths lie primarily in the areas of renewable energy, air quality as well as water preservation and coastal protection.
 - Ninety-four percent of the electricity production in the state is from renewable sources, over twice the average of OECD regions (41%).

- Although 14% of Paraná's population were exposed to a level of small particulate matter (PM2.5) above WHO air quality guidelines, this is considerably below the average in both OECD regions (59%) and Brazilian states (68%).
- Paraná outperforms OECD and Brazilian regions with regards to water preservation and coastal protection. Water body volumes remained stable and slightly increased between 1992 and 2015, while its share of protected coastal areas (51% in 2017) compared favourably to the average of OECD regions (20%) and Brazilian states (36%).
- Challenges exist across several dimensions of the 2030 Agenda, in particular health, education and safety:
 - In terms of health indicators, infant and child mortality rates in Paraná (at 10.3 deaths per 1 000 live births for infant mortality and 24.7 deaths per 10 000 people under 5 years of age for child mortality) are nearly twice the OECD average, while the number of hospital beds per resident is comparable to the lowest third of OECD regions.
 - Educational achievements are below the average of OECD regions. Although the share of the 25-64 age group with tertiary education (at 18%) is slightly higher than the Brazilian average (15%) it is significantly below the OECD average (30%). In addition, 30% of Paraná's young population (between 18 and 24 years old) are early leavers from education and training and enrolment rates (of the population between 15 and 19 years old) in educational institutions (68%) are below the OECD average (82%).
 - Safety is an area of concern in Paraná. In comparison to OECD regions, the state ranks among 10% of regions with the highest homicide rates (21.2 homicides per 100 000 people in 2018). In addition, only 38% of people in Paraná felt safe walking alone at night around the area they live between 2008 and 2018.
- Compared to other states in Brazil, Paraná's SDG performance is higher:
 - In comparison with other states, Paraná's strengths are education (SDG 4), labour market and economic indicators (SDGs 8 and 9) and air pollution (SDG 11), where the state outperforms on average more than 70% of other states in Brazil. Paraná is lagging behind the Brazilian average in only a few indicators such as life satisfaction (SDG 3) and co-patent applications with foreign regions (SDG 17).

While co-ordination with the federal government is challenging, Paraná has put in place a multi-actor governance framework for the implementation of the SDGs at the state and municipal levels

- Although the state of Paraná has strong partnerships in place with specific federal institutions, the dissolution of the National Commission for the Sustainable Development Goals (CNODS) in 2019 has triggered country-wide challenges for vertical coordination of the SDGs.
- At the state level, Paraná has designed a specific multi-level governance framework to implement the SDGs. The state has assigned CEDES the role to co-ordinate the work of key government institutions and to develop strategies and actions to advance the implementation of the 2030 Agenda in the state. CEDES is chaired by the governor and composed of all of the state secretaries to ensure a holistic implementation of the SDGs in Paraná.
- The State Audit Court of Paraná (TCE-PR) and the Court of Justice of the State of Paraná (TJPR) are two important actors in Paraná's SDG governance framework. The TCE-PR is involved in the monitoring of the SDG implementation in the state's budgetary planning by evaluating budget expenditures, analysing to which extent public policies in Paraná contribute to the SDGs and aligning the multi-year planning with the SDGs. The TJPR has established an innovation

laboratory, a research and science centre to foster innovation (SDG 9) and promote just, peaceful and inclusive societies (SDG 16) at the state level.

- The state of Paraná is strengthening its financial support to municipalities to help them advance the implementation of the SDGs, including through partnerships with financial institutions. For example, Fomento Paraná and Brazil's Far South Regional Development Bank (BRDE) finance sustainable development projects at the local level, although their actions are not always aligned with the policies and strategies of the state.
- Civil society, youth and state-owned enterprises play a key role in raising awareness for the SDGs in Paraná. Examples include the United Nations Conference on Trade and Development (UNCTAD) Youth Action Hub that promotes research and training on the SDGs as well as awareness-raising events and the citizen movement *Paraná nós podemos* that cooperates with local leaders and non-state institutions to implement the SDGs in Paraná.
- Several companies in Paraná align their business plans and strategies with the SDGs. The state and its Federation of Industries have therefore established a partnership to foster the implementation of SDGs in private companies and organise an SDG Award contest to promote best practices. Nevertheless, the private sector still faces challenges related to logistical infrastructure and red tape, which also impede the uptake of SDGs.

Policy recommendations

To leverage a territorial approach to the SDGs in Paraná, the state of Paraná should:

- **Upscale the use of the SDGs as a policy-making tool to reduce socio-economic disparities within and across municipalities.** The state and municipalities should further use the SDGs as a framework to align municipal priorities to tackle inequalities and poverty, including through closer collaboration with regional development banks in support of lagging regions.
- **Strengthen the state's co-ordination of policies and actions with municipalities and with the federal government on the SDGs.** The state of Paraná should intensify its co-operation with the municipalities and the federal government in order to use the SDGs as a tool to engage them in sustainable development policies and actions, including through Voluntary Local Reviews (VLRs).
- **Mainstream the SDGs in municipal budgetary tools.** In addition to aligning policies designed in the framework of its next municipal PPA with the SDGs, the state of Paraná should strengthen the use of the review process of the Municipal Comprehensive Plans and the budgetary tools to support further the municipalities in aligning them with the 2030 Agenda.
- **Leverage the State Audit Court methodology developed to monitor budgetary alignment with the SDGs at the municipal level.** The methodology would allow municipalities to oversee all public spending and identify how public investments contribute to the implementation of the SDGs. Such evidence would enable them to link ongoing public policies with the SDG targets and assess if and how foreseen budget expenditures are supporting their implementation.
- **Strengthen the data collection and statistics to measure progress on the SDGs at the local level.** The SDGs are an opportunity to overcome the state's strong reliance on census data, expand data coverage for municipalities, including in the business intelligence (BI) tool developed by the state ("BI Paraná keeping an eye on the SDGs") and collaborate with the federal and state statistical institutes on SDG indicators.
- **Further engage large companies, small- and medium-sized enterprises (SMEs) and state-owned enterprises in the implementation of the SDGs.** A platform for exchange between private companies and the state could improve networking and co-ordination to create synergies among companies and further engage companies in the SDG policies and actions implemented by the

state. CEDES could support the state by providing guidelines for companies on how to integrate the SDGs into the core business, product development and management and financial processes.

- **Strengthen the engagement of citizens in the implementation of the 2030 Agenda.** Municipalities should train their civil servants on the SDGs, with the objective of increasing the engagement of citizens and the civil society. The state of Paraná should expand the opportunities for youth to play an active role in raising awareness of the SDGs, including by providing training and volunteering opportunities for the youth on sustainability issues in local communities.

1 The SDGs as a policy tool to address territorial disparities in Paraná, Brazil

The state of Paraná has been aligning its public policies with sustainable development since the 1990s. In its 2020-23 Multi-Year Plan (PPA), Paraná leveraged the Sustainable Development Goals (SDGs) as a tool to reduce territorial disparities and promote the exchange of good practices among municipalities with varying levels of development. Through a multi-stakeholder governance framework, guidelines and financial contributions, the state provides incentives to align local and regional planning systems with the SDGs. To that end, the Economic and Social Development State Council of the State of Paraná (CEDES) was tasked to lead the localisation of the SDGs at the state level. Since 2016, CEDES has been providing guidance on how to incorporate the 2030 Agenda into local planning and municipal management.

Paraná, Brazil: A state characterised by territorial disparities

Paraná has the fifth-largest economy among Brazilian states. Located in the south of the country, Paraná is one of the most populated and developed states in Brazil (Figure 1.1). In the Human Development Index (HDI), Paraná exhibited a score of 0.75 in 2010, which was the fifth-highest score of all 27 Brazilian federative units.¹ Paraná's economic development is fuelled by a robust agro-industrial sector and related industrial activity. Paraná is export-oriented and belongs to the ten biggest exporting states of the country overall (see Table 1.1 for an overview of Paraná's socio-economic context). In 2018, Paraná contributed 6.3% to the national gross domestic product (GDP) (IBGE, 2020^[6]). There are large productive firms in Paraná but a wide array of small and medium-sized enterprises (SMEs) account for the majority of employment in the state. The few leading-edge companies tend to be located in Curitiba and controlled from outside the country.

Figure 1.1. Location of Paraná in Latin America and Brazil



Source: Invest Paraná (2020^[7]), *Localização do Paraná* [Location of Paraná], <http://www.investparana.org.br/> (accessed on 16 October 2020).

The vast majority of Paraná's population is spatially concentrated in a few urban areas. In 2020, more than half of the state's 11 million inhabitants (54%, 6.2 million inhabitants) lived in 21 municipalities with more than 100 000 inhabitants. Another 3.21 million people, a quarter of Paraná's population, had their residence in 1 of the 161 municipalities with a population between 10 000 and 50 000 inhabitants. On the other hand, only 9% of the state's population (1.04 million people) lived in small communities with less than 10 000 inhabitants (a total of 202 municipalities) (IBGE, 2020^[21]).

Table 1.1. An overview of Paraná's socio-economic context

Territorial and demographic area	Source	Date	Araucária	Curitiba	Ubiratã	State of Paraná
Territorial area (km ²)	ITCG	2020	470 017	434 871	653 208	199 880
Demographic density (inhabitant/km ²)	IPARDES	2020	311.1	4 480.9	32.0	57.6
Degree of urbanisation (%)	IBGE	2010	92.5	100.0	85.3	85.3
Estimated population (inhabitants)*	IBGE	2020	146 214	1 948 626	20 909	11 516 840
Census population (inhabitants)	IBGE	2010	119 123	1 751 907	21 558	10 444 526
Population geometric growth rate (%)	IBGE	2010	2.4	1.0	-0.5	0.9
Elderly rate (%)	IBGE	2010	4.6	7.6	10.1	7.6
Ageing rate (%)	UNDP/IPEA/FJP	2010	18.3	37.8	48.3	33.0
Human development and income						
Human Development Index (HDI)	UNDP/IPEA/FJP	2010	0.74	0.82	0.74	0.75
Per capita Household Income Gini Index	IBGE	2010	0.46	0.57	0.48	0.54

Note: Results of the population residing on 1 April 2007, forwarded to the Federal Court of Audit on 14 November 2007. For municipalities with more than 170 000 inhabitants (Cascavel, Colombo, Curitiba, Foz do Iguaçu, Londrina, Maringá, Ponta Grossa and São José dos Pinhais), there was no population count and in these cases the estimate was considered on the same date.

* Residents on 07/01/2020.

Source: IPARDES (2019^[1]), *Perfil Avançado do Estado do Paraná [Advanced Profile of the State of Paraná]*, <http://www.ipardes.pr.gov.br/Pagina/Perfil-avancado-dos-municipios>; IBGE (2020^[2]), *Estimativas da População [Population estimates]*, <https://www.ibge.gov.br/estatisticas/sociais/populacao/9103-estimativas-de-populacao.html?=&t=resultados>; IBGE (2011^[3]), *Sinopse do Censo Demográfico 2010 [Synopsis of the Demographic Census 2010]*, <https://biblioteca.ibge.gov.br/visualizacao/livros/liv49230.pdf> (accessed on 16 February 2021); ITCG (2020^[4]), *Relatório de Cálculo de Áreas dos Municípios do Estado do Paraná - Ano 2020 [Report on the Calculation of Areas of the Municipalities of the State of Paraná - Year 2020]*, http://www.iat.pr.gov.br/sites/agua-terra/arquivos_restritos/files/documento/2020-10/relatorio_de_calculo_de_area_dos_municipios_do_parana_2020_-_final.pdf; IPEA/UNDP/FJP (2019^[5]), *The Human Development Atlas in Brazil*, <http://www.atlasbrasil.org.br/> (accessed on 16 February 2021).

The GDP per capita varies considerably between the three municipalities subject to the analysis of this report, namely Araucária, Curitiba and Ubiratã.

- In 2017, Paraná's average GDP per capita was BRL 37 221. It exceeded BRL 123 000 in Araucária, reached around BRL 45 000 in Curitiba and was slightly below BRL 40 000 in Ubiratã (IBGE, 2021^[8]).
- In Araucária and Ubiratã, the per capita GDP has doubled since 2011, while it increased by 50% in the state overall and by close to 20% in Curitiba.
- Socio-economic disparities also exist between municipalities that belong to the same metropolitan region and are located in close proximity. For instance, Araucária's per capita GDP in 2017 exceeded the one in Piraquara's (45 km away from Araucária), which was the lowest among all 399 municipalities in Paraná, by more than 10 times (IBGE, 2021^[8]).
- Per capita GDP can hide differences in the income distribution across the population of a given municipality. Despite the fact that Piraquara has historically presented a much lower per capita GDP than Araucária, the percentage of poor people registered in the Bolsa Família Programme² (*Cadastro Único*) in 2016 (57.0%) was lower than for Araucária (60.3%) (IPEA/UNDP/FJP, 2019^[5]).

Araucária is characterised by a strong presence of the oil and gas industry. Araucária is a municipality with an estimated population of 146 214 inhabitants, located around 30 kilometres southwest of Curitiba (IPARDES, 2021^[9]). Araucária had the second highest GDP per capita in Paraná and was ranked fifty-first in terms of per capita GDP among all Brazilian municipalities in 2018 (IBGE, 2020^[10]). Through its cluster of large companies active in the oil and gas sector, Araucária contributes around 4% to Paraná's GDP

(IPARDES, 2020^[11]). One example of the municipality's activity in the oil and gas sector is the Presidente Getúlio Vargas Refinery (Repar), Petrobras' largest oil refinery in Paraná, which contributes approximately 12% of the national production of petroleum products (Petrobras, 2019^[12]).

Curitiba is the capital of Paraná, the state's most populated municipality with a diverse economic structure. Curitiba has the largest industrial output (14% of its GDP) in Paraná and is the municipality with the fifth-highest total GDP (1.2% of the Brazilian GDP in 2018) in Brazil (IPARDES, 2020^[11]). Its economic activity is focused on a variety of sectors, such as services, local retail, wholesale trade and the car industry. The city is known for its urban and public transport infrastructure. The majority of Curitiba's population has access to housing, water, basic sanitation and electricity. One hundred percent of urban households have access to water and more than 94% of the sewage gets collected in Curitiba (Trata Brasil, 2019^[13]). Curitiba is the only capital in Brazil that achieved the highest score on extending basic sanitation to the whole population of the municipality in the 2019 Ranking of Universalization of Sanitation organised by the Brazilian Association of Sanitary Engineering (ABES) (Paraná State News Agency, 2019^[14]). The city also has a robust model for solid waste management and possesses more than 30 preserved green areas open to the public.

Ubiratã, a municipality characterised by a strong presence of the agricultural sector, has made progress to reduce income inequalities since the early 2000s. Ubiratã has consolidated agriculture and farming as its economic bases producing mainly corn, soy and poultry. The municipality is located around 500 kilometres from Curitiba in the central-western region of Paraná. It has an estimated 20 909 inhabitants and is surrounded by small municipalities that are also characterised by a strong presence of agricultural activity. The Gini Index (0.46) has decreased by more than 17% between 2000 and 2010, indicating a reduction in income inequality.

Among the three municipalities, Curitiba has a significantly higher HDI than Araucária and Ubiratã but also a higher degree of inequality. The HDI displays the socio-economic differences between the municipalities' state of development. The municipality with the highest score in the HDI among the 3 is Curitiba (0.82 in 2010). Araucária and Ubiratã exhibit values of around 0.74. The higher state of development however also coexists with a higher degree of inequality in Curitiba compared to the other municipalities. Curitiba's per capita Household Income Gini Index (HIGI) of 0.57 exceeds the state average of 0.54 and even more so the HIGIs of Ubiratã (0.48) and Araucária (0.46) (IPARDES, 2019^[11]).

Average salaries in the three pilot municipalities differ considerably, notably for women. The city of Curitiba is the municipality with the highest average hourly salary. In 2019, the city's average hourly salary for men was BRL 25.6. It was thus slightly higher than the corresponding figure in Araucária (BRL 24.4) and more than twice as high as in Ubiratã (BRL 13.1). Income disparities are particularly pronounced for women's salaries. In Ubiratã, women earn on average BRL 10.0, while the average female wage in Curitiba is BRL 23.0 (IPARDES, 2020^[15]). These disparities between female salaries in the different municipalities exist in all sectors but they are particularly pronounced in the services sector.

Policies and strategies for the 2030 Agenda in Paraná

Sustainable development as a policy priority in the state of Paraná

Paraná has implemented several strategies to promote sustainable development. Since the 1990s, the state has been actively working on the Brazilian Agenda 21 to align its public policies with sustainable development. The state created, among others, an organisational committee to align municipal and state government programmes with the thematic axes of global, Brazilian, state and local Agenda 21 priorities. Furthermore, in February 2004, the state established the Permanent Forum of Agenda 21 Paraná. The forum was composed of representatives from governmental and non-governmental institutions with the objective to define, systematise and implement the state agenda's actions and policies regarding

sustainable development. In addition to its commitment to the Agenda 21 and the UN Millennium Declaration, Paraná has developed sustainable development indicators, which have been used in the state since 2007.

More recently, Paraná has been working to strengthen the localisation and dissemination of the 2030 Agenda through the implementation of a crosscutting strategy with municipalities. The state of Paraná decided to implement the SDGs as a tool to reduce territorial disparities and to promote the exchange of good practices among municipalities at different levels of development. One example of Paraná's commitment to the SDGs and the integration of the 2030 Agenda into its policy planning is the Sustainable Development Plan for the Coastline of Paraná. The plan projects a future for the coastal region where the SDGs will be achieved in the seven municipalities along Paraná's coastline. The objective of the plan is to provide a successful example of the implementation of the SDGs that will encourage further sustainable development projects and actions in the region.

Paraná is planning to develop a dedicated Sustainable Development Plan by the end of 2022, under the leadership of CEDES. Such a Sustainable Development Plan is expected to build a long-term vision for the state in line with the SDGs, based on existing plans, initiatives and forward-looking strategies and actions to advance the implementation of the 2030 Agenda in Paraná.

As Brazilian municipalities are preparing their multi-year planning for the 2022-25 period, the state of Paraná has an opportunity to support them in aligning local government planning instruments with the SDGs. The PPA is the state public administration's main planning tool and defines the policy priorities for the next four years. As part of its elaboration process, the government usually organises several public hearings to discuss the new PPA. These hearings are a tool for dialogue and consultation used by the state to involve its citizens.

Aligning the budgetary planning with the SDGs

Paraná is working to mainstream the SDGs in its medium-term planning and budgeting tools. To that effect, Paraná is aligning its PPA for 2020-23 and other tools for planning and budgeting with the SDGs (Box 1.1). The state is developing actions to improve the monitoring and evaluation systems of policies based on: i) better alignment of the PPA with the SDGs through a participatory process; ii) better allocation of the state's annual budget; and iii) the adoption of monitoring tools to track progress on the implementation of the SDGs. For instance, the state organised several public hearings during 2019 to discuss the new PPA to engage citizens in the planning process and vision setting for the next four years. At the municipal level, the three pilot municipalities Araucária, Curitiba and Ubatuba are taking measures to include the SDGs in the Annual Budget Law (LOA) and Budget Guidelines Law (LDO). Araucária already aligned its annual budget with the SDGs. Although not explicitly mentioned in Curitiba's and Ubatuba's LOAs and LDOs, the SDGs were mapped and related to both municipalities' objectives.

Box 1.1. Planning and budgeting instruments in Brazil

The legal framework of the budgetary process in Brazil is primarily laid out in the 1988 Constitution, putting the main responsibilities of creating and controlling the budget on the executive. Article 165 of the constitution establishes Brazil's budgetary framework, which is comprised of three budgetary instruments, namely the PPA, the LDO and the LOA (OECD, 2017^[16]). These instruments apply to the federal government, states and municipalities in the same way. The legislative branch is also a key player in defining and approving the planning and the annual budget.

The Multi-Year Plan (PPA)

The PPA is the planning tool of the public administration for the following four years starting in the second year of the president's, governor's or mayor's term until the end of the first year of the successor's first term. For states, the PPA also serves as the basis for the definition of priorities and actions by the state government. The PPA establishes objectives and goals for the public administration. It also guides the preparation of the state LDO and the LOA.

The Budget Guidelines Law (LDO)

The LDO defines the goals and priorities of the state government and determines how resources are transferred to public and private entities. It guides the preparation of annual budgets in accordance with the goals established in the PPA. It allows the state to monitor the achievement of objectives defined in previous years and, if applicable, suggests adjustments to ensure a fiscal balance.

The Annual Budget Law (LOA)

The LOA is responsible for predicting revenues, setting expenses and indicating programmes and actions to be carried out. The law provides budgets and information on the state's administrative units including their two main purposes: i) the justification and estimation of revenues; and ii) the fixing and detailing of expenses. The budget included in the LOA allows assessing the economic situation of the state.

Source: OECD (2017^[16]), *Brazil's Federal Court of Accounts: Insight and Foresight for Better Governance*, <https://dx.doi.org/10.1787/9789264279247-en>; OECD (2003^[17]), "Budgeting in Brazil", *OECD Journal on Budgeting*, Vol. 3/11, <https://www.oecd.org/brazil/40139608.pdf>; Government of Paraná (2019^[18]), *Manual Técnico Orçamentário [Budget Technical Manual]*, http://www.portaldatransparencia.pr.gov.br/arquivos/File/planejamento_orcamento/ManualTecnicoOrcamentario2019.pdf; Government of Paraná (2019^[19]), *Portal da Transparência [Transparency Portal]*, <http://www.transparencia.pr.gov.br/pte/assunto/2/63?origem=4>.

The key role of the municipalities in the 2030 Agenda

The state of Paraná works closely with the local governments to provide guidance on how to incorporate the 2030 Agenda into their planning and municipal management. In the state of Paraná, 359 out of the 399 municipalities have already been engaged in the implementation of the SDG through the signature of a pact with the state, in partnership with the Association of Municipalities of Paraná (AMP), whereby they commit to advance the 2030 Agenda. Municipalities hold critical prerogatives that are SDG-related and are required to design and implement a Municipal Comprehensive Plan, which can provide an opportunity for local governments to align their policy planning with the SDGs (Box 1.2). In Paraná, 396 (99%) of the municipalities have already developed such a plan. Paraná's urban development state agency PARANACIDADE is another key actor that supports the municipalities in the state with the implementation of the SDGs through guidelines on urban, regional and institutional development aligned with the SDGs (Box 1.3).

Box 1.2. Municipal Comprehensive Plans in Brazil

Defining the use of space to promote inclusive growth

Brazilian municipalities with more than 20 000 inhabitants are legally obliged to develop a *Plano Diretor Municipal* (Municipal Comprehensive Plan), in accordance with the City Statute (Brazilian Law 10,257/2001). Municipalities hold critical prerogatives that are SDG-related and the Municipal Comprehensive Plan should address critical urban development issues linked to the SDGs, such as rapid demographic growth, property speculation and environmental degradation. In addition, it regulates the use of municipal space. It defines the areas where industries and economic activities shall expand

in order to provide the municipality with the advantages of economies of scale and greater competitiveness (SDG 8 and 9). It can also promote a better offer of public services at lower costs by providing guidance on public procurement strategies.

Beyond that, a Municipal Comprehensive Plan defines the areas of social housing, supports the preservation of environmental areas and defines the areas where land use may be intensified. It foresees spaces for micro and small businesses (SDG 8 and 9) and provides guidance on where to build schools (SDG 4), hospitals (SDG 3), squares (SDG 11), roads (SDG 9 and 11) and landfills (SDG 12). This planning tool helps to identify properties and economic activities and allows the private sector to plan and run its business in specific areas of the municipality. A Municipal Comprehensive Plan also outlines the areas where water and natural resources are available (SDG 6) and defines areas for industrial development (SDG 9). Furthermore, it also enables the municipality to take measures to reduce or compensate for environmental impacts (SDG 13). Finally, it traces the profile of historical properties and real estate, indicating a possible usage for tourism purposes. The plans have to be reviewed every 10 years.

Source: Government of Brazil (2005^[20]), *Caderno de Debate e Sustentabilidade Agenda 21: Articulando Planos nos Municípios [Debate and Sustainability Agenda 21 Notebook: Articulating Plans in Municipalities]*, https://www.mma.gov.br/estruturas/agenda21/_arquivos/caderno_planos.pdf.

Box 1.3. Paraná is providing support for urban development state policies and its Municipal Plans

The role of PARANACIDADE to support municipalities with the Municipal Comprehensive Plan terms of reference

Established in 1996,³ Paraná's urban development state agency PARANACIDADE has the purpose of fostering urban, regional and institutional development in favour of Paraná municipalities, following state urban policy guidelines, and encouraging them to participate in the formulation of state urban policy and Paraná financing system design to support them. PARANACIDADE has developed a Strategic Action Plan 2021 based on the Ten Principles of the UN Global Compact.⁴ Focusing on SDGs 11, 16 and 17, one of the objectives of the plan is to promote municipal development by promoting training and regular meetings with government partners (state, municipalities, civil society actors and international organisations) to raise awareness of the 2030 Agenda and better prepare them to implement the SDGs and access financing opportunities.

PARANACIDADE's Comprehensive Plan terms of reference are aligned with the SDGs and are based on the 2006 State Urban Development Act (Law 15,229). This act established the Comprehensive Plan's scope, to be considered by Paraná municipalities, which includes:

- Collection of data, diagnoses and guidelines regarding both urban and rural reality, considering environmental, socio-economic, socio-spatial and public infrastructure as well as services and institutional aspects.
- Guidelines and proposals, establishing municipal urban and rural sustainable development policies and a permanent planning system.

- Urban legislation: Comprehensive Plan, urban perimeter, urban land parcelling, urban and rural land occupation and use control, street network, building code, code of ordinance and urban instruments as proposed by the City Statute.
- Investment Plan, according to Comprehensive Plan's priorities, as a tool for municipal capital budgeting.
- Monitoring and controlling system of Comprehensive Plan implementation based on indicators.
- Urban planning and managing administrative unit within local public administration.

Source: Government of Brazil (2005^[20]), *Caderno de Debate e Sustentabilidade Agenda 21: Articulando Planos nos Municípios [Debate and Sustainability Agenda 21 Notebook: Articulating Plans in Municipalities]*, https://www.mma.gov.br/estruturas/agenda21/arquivos/caderno_planos.pdf; Purim, M., F. Caetano and J. Meira (2018^[21]), "The annulment of urban perimeter as a technical tool for urban planning: The unsustainability of the cities in the Brazilian state of Parana".

Araucária

In 2018, the municipality of Araucária designed an institutional framework to implement the SDGs. The government of Araucária stipulated that its local administration should align its programmes, plans, goals and actions to the SDGs. A framework encompassing all municipal secretariats and governmental bodies of the local administration provides guidance on the use of the SDG indicators (Government of Araucária, 2018^[22]). In addition, it promotes actions to engage local civil servants, entrepreneurs, and citizens to meet the goals and targets of the 2030 Agenda, such as night cycling activities and neighbourhoods' cleaning. A Municipal Development Goals Commission carries out studies on the SDGs and develops action plans, monitoring tools, periodic reports and communication to support SDG implementation. It is also responsible for identifying, systematising and disseminating existing good practices and initiatives on the 2030 Agenda.

Araucária is making progress on the SDGs related to poverty reduction, infrastructure and education. In the state's municipal development ranking, which considers the GINI and Human Development indices, Araucária moved from the 114th position in 2000 to the 54th position 10 years later with improvements in educational achievements and longevity. Despite its progress on poverty reduction (SDG 1 No Poverty), the city still faces social pressures due to large areas of irregular settlements where most people living in poverty are concentrated (Campina da Barra, Capela Velha and Tupi). The city has implemented measures to improve its public transportation system and is renovating its rural roads to achieve SDG 9 Industry, Innovation and Infrastructure. Araucária also has an agreement with the Justice Court on childhood education to build early childhood education centres as a contribution to SDG 4 Quality Education.

Araucária still needs to improve its environmental performance. The municipality greatly relies on the oil industry. Reducing the current dependence on the petrochemical industry will therefore be a key pillar in the necessary transition given that the municipality has the ambition to become a national reference for innovation, notably in the area of biotechnology. As a starting point, Araucária has established environmental zones that require protection from the effects of urbanisation and the use of pesticides. Nonetheless, the city is facing a high degree of water pollution in the Iguaçu River, through sewage, pollutants and waste from the surrounding metropolitan regions. Although the coverage of domestic sewage collection and treatment has improved, the pollution also affects its tributaries rivers Barigui and Passaúna that delimit the urban area of Araucária. Therefore, the Water Quality Index (IQA) of the Iguaçu River at the Araucária Sewage Treatment Plant has not improved over the past years and remained at low levels (ANA, 2019^[23]).

Curitiba

The municipality of Curitiba is continuously working towards building a sustainable and innovative city. The municipality has been recognised as a national reference for innovative solutions since the 1970s and continues to have a creative innovation system in place, qualifying itself as a “smart city” (Box 1.4). In 2019, the government launched a new project at Vale do Pinhão (Pinhao Valley), aiming to promote well-being by diversifying the economy in the area. Curitiba is also implementing a plan to guide the development of the city until 2035 (“Curitiba 2035: Building the Curitiba of the future”). In 2019, Curitiba formally adopted the 2030 Agenda as a guideline for public policies and established the Municipal Programme for the local implementation of the 2030 Agenda (Law 15538, 2019). This programme involves initiatives to strengthen the strategic role of urban planning and design and to guide investments to address environmental, social health and economic challenges (Government of Curitiba, 2019^[24]). More specifically, the Municipal Programme for the Implementation of the 2030 Agenda approved in October 2019 (Government of Curitiba, 2019^[24]) aims to:

- Integrate all sectoral policies needed to achieve the SDGs.
- Encourage the exchange of good practices related to the SDGs.
- Monitor the performance of the city regarding its progress on the SDGs.
- Promote the integration, multi-sectoral dialogue and articulation between governmental levels, civil society and other local stakeholders.

Box 1.4. Spotlight on Curitiba as a smart city

Curitiba has been recognised in Brazil as one of the front-runners in the area of smart and innovative city development with a strong public infrastructure. In 1974, Curitiba developed the first bus rapid transit (BRT) system in Brazil, a system of bus corridors that significantly improved the way citizens move across the city. The city is also providing its residents with free access to the Internet in some public spaces, such as squares, schools, public buildings, shopping malls and on some bus lines. Furthermore, Curitiba is developing projects such as Fab Labs,⁵ urban farms, applications to help citizens navigate through the city and innovation hubs including the Vale do Pinhão (Pinhao Valley) or Bom Negócio (Good Business).



Curitiba has been emerging as a hub for technology and innovative companies in recent years. The city is promoting a “smart city movement” to build an innovation ecosystem to foster smart solutions aligned with the implementation of the SDGs. Among other things, it was selected as the most connected and smart city in Brazil by the Connected Smart Cities Ranking 2018. An example of Curitiba’s activities is the restoration of an entire community in Caximba in the south of Curitiba, which is the largest socio-environmental project in the city. The project’s goal is to recover an area with 1 296 vulnerable

families living under difficult circumstances. The set of actions to make the neighbourhood “smart” will count on the implementation of the flood containment dam, a park, a defined area for urbanisation, road network infrastructure alongside transportation, electricity, sanitation and water supply infrastructure. New technologies are expected to be implemented in Novo da Caximba, as a system of autonomous (sustainable) houses that will reuse rainwater and be supplied by solar energy from photovoltaic plates to be installed on the roofs of houses. Another project involves the launch of the first public co-working space in Brazil, freely accessible to all citizens and powered by 96 solar panels. The municipality is now installing 430 solar panels in the City Hall. In order to measure the impact of those policies on the achievement of the SDGs and to ensure that technology benefits all citizens, the Curitiba Institute for Research and Urban Planning (IPPUC) and the Municipal Institute of Public Administration (IMAP) use a set of 123 indicators divided into 3 axes (solidarity, sustainability and responsibility) to monitor mobility, environment, energy, technology, innovation, economy, education, health, safety and governance.

Note: Input from the presentations of Curitiba (Brazil) during the 1st OECD Roundtable on Smart Cities and Inclusive Growth.

Source: OECD (2020^[25]), *Smart Cities and Inclusive Growth - Building on the Outcomes of the 1st OECD Roundtable on Smart Cities and Inclusive Growth*, https://www.oecd.org/cfe/cities/OECD_Policy_Paper_Smart_Cities_and_Inclusive_Growth.pdf.

Curitiba is focusing on building social engagement, education and human resources capacity within its own administration. Since 2004, CONCITIBA, a collegiate body of local urban policymakers that brings together representatives of the public sector and organised civil society, has been working on the design, implementation and monitoring of urban policy. The new programme on the implementation of the 2030 Agenda focuses on assisting and supporting the mechanisms of social participation, including the articulations between the different sectors of the local economy on the 2030 Agenda. In addition to the work of CONCITIBA, the government of Curitiba is creating partnerships to promote capacity building for public servants, for instance through a Training Centre for Municipal Authorities and Leaders and professional development programmes in partnership with the United Nations. The government also established the programme Veredas Formativas (Formative Paths), which offers training for education professionals working in the metropolitan region of Curitiba. The Municipal Secretariat of Education is including the SDGs in the municipality’s education policies and each training course aims to raise the participants’ awareness on the SDGs and their link to the education curriculum. Currently, all training options in the programme Veredas Formativas include one or more SDGs. Beyond that, the Municipal Secretariat of Education’s support addresses different schools and their professionals in order to ensure that the 2030 Agenda is included and implemented locally. The municipality considers the secretariat’s actions aimed at implementing the SDGs to be a key strategy as the educational process reaches entire school communities – education professionals, children, students and family (Government of Curitiba, 2020^[26]).

Curitiba is investing in health and food security but faces challenges regarding the environment, infrastructure and land use. To ensure food security (SDG 2), the government of Curitiba is investing in urban agriculture, family warehouses and popular restaurants (initiatives targeted towards lower-income families that sell food and essential household items and offer meals for a reduced price of BRL 2). Although the municipality is considered a positive example when it comes to environmental protection (SDG 15 Life on Land) and urban mobility (SDG 11 Sustainable Cities and Communities), Curitiba still faces problems with floods during the rainy season, solid waste management, public transportation and car dependency. The government is also facing housing supply and quality challenges, especially as informal settlements with disadvantaged neighbourhoods increase.

Ubiratã

Ubiratã is aligning its programmes and actions with the SDGs. The city developed its Municipal Comprehensive Plan in 2016 based on several public hearings, which resulted in 429 proposals along 13 socio-economic and environmental axes. Ubiratã identified existing programmes, projects and actions in all policy areas for which the local government is responsible (education, health, social assistance, work and income, urbanisation, security, leisure, sport, environment and others) and analysed their alignment with the SDGs. Building on the analysis, the government elaborated an Action and Investment Plan aligned with and connected to the SDGs, as well as with the existing Municipal Comprehensive Plan and actions. The municipality is using the indicators available on the Sustainable Cities Program platform to monitor progress on the SDGs.⁶ There is a set of 260 indicators that provide metrics to compare data and assess local reality. These indicators are categorised into thematic areas and linked to 13 axes⁷ that consider, for instance, topics related to health, culture and urban mobility (Municipality of Ubiratã, 2019^[27]).

Ubiratã is also strengthening its municipal planning capacity, transparency and partnerships. The city is working to comply with rules and regulations on contract management, bidding, internal control mechanisms and financing to improve the municipal public management and government transparency. Strategic partnerships with Itaipu Binacional, System S⁸ as well as the state and federal government contribute to the achievement of SDG 17 (Sustainable development through global partnerships). However, the city needs a more skilled workforce in terms of both employees and entrepreneurs. For that reason, the municipality pursues the objective to create a business district to attract investors and entrepreneurs who can contribute to the development of the city and surrounding areas. The government sees opportunities in the industrial and service sectors, focusing on agricultural products, technology and construction.

Box 1.5. Why a territorial approach to the SDGs?

The 2030 Agenda was not designed specifically for cities and regions but they play a crucial role to achieve the SDGs. The OECD estimates that at least 105 of the 169 targets underlying the 17 SDGs will not be reached without proper engagement and co-ordination with local and regional governments as cities and regions have core responsibilities that are central to sustainable development and well-being (e.g. water services, housing or transport). They also discharge a significant share of public investment (60% in OECD countries), which is critical to channel the required funding to meet the SDGs. Although the SDGs provide a global framework, the opportunities and challenges for sustainable development vary significantly across and within countries, regions and cities. However, they are also an integral part of the solution as the varying nature of sustainable development challenges, therefore, calls for place-based solutions tailored to territorial specificities, needs and capacities. Place-based policies incorporate a set of co-ordinated actions specifically designed for a particular city or region and stress the need to shift from a sectoral to a multi-sectoral approach, from one-size-fits-all to context-specific measures and from a top-down to a bottom-up approach to policymaking. Based on the idea of policy co-ordination across sectors and multi-level governance, whereby all levels of government and non-state actors should play a role in the policy process, they consider and analyse functional territories, build on the endogenous development potential of each territory and use a wide range of actions (OECD, 2019^[28]).

The SDGs can help to advance conceptually the shift towards a new regional development policy paradigm and provide a framework to implement it because:

- The 2030 Agenda provides a long-term vision for strategies and policies with a common milestone in 2030, while acknowledging that targeted action is needed in different places since their exposure to challenges and risk vary widely, as does their capacity to cope with them.
- The interconnected SDG framework allows the promotion of policy complementarities and the management of trade-offs across goals. Indeed, the SDGs enable policymakers to address the social, economic and environmental dimensions of sustainable development concomitantly, building on the synergies and taking interlinkages into account.
- The SDGs allow to better implement the concept of functional territories, a common framework that neighbouring municipalities can use to strengthen collaborations and co-ordinate actions.
- The SDGs can be used to promote multi-level governance and partnerships, including the engagement of various stakeholders in the policymaking process.

OECD's analytical framework for A Territorial Approach to the SDGs

The OECD has identified four critical megatrends influencing the achievement of the SDGs in cities and regions: i) demographic changes, in particular urbanisation, ageing and migration; ii) climate change and the need to transition to a low-carbon economy; iii) technological changes, such as digitalisation and the emergence of artificial intelligence; and iv) globalisation and the related geography of discontent. The SDGs provide a framework for cities and regions to respond systemically to such global megatrends. The proposed OECD framework foresees three key areas, policies and strategies, actors and tools, for cities and regions to implement a territorial approach to the SDGs.

Policies and strategies

Cities and regions can use the SDGs as a means to shift from a sectoral to a multi-sectoral approach, both in the design and in the implementation of their policies. The SDGs can help to bring various departments of a local administration together to strengthen the collaboration in policy implementation. Regional policy aims to effectively address the diversity of economic, social, demographic, institutional and geographic conditions across cities and regions. It also ensures that sectoral policies are co-ordinated with each other and meet the specific needs of different regions and provides the tools that traditional structural policies often lack in order to address region-specific factors that cause economic and social stagnation (OECD, 2019^[28]).

Tools

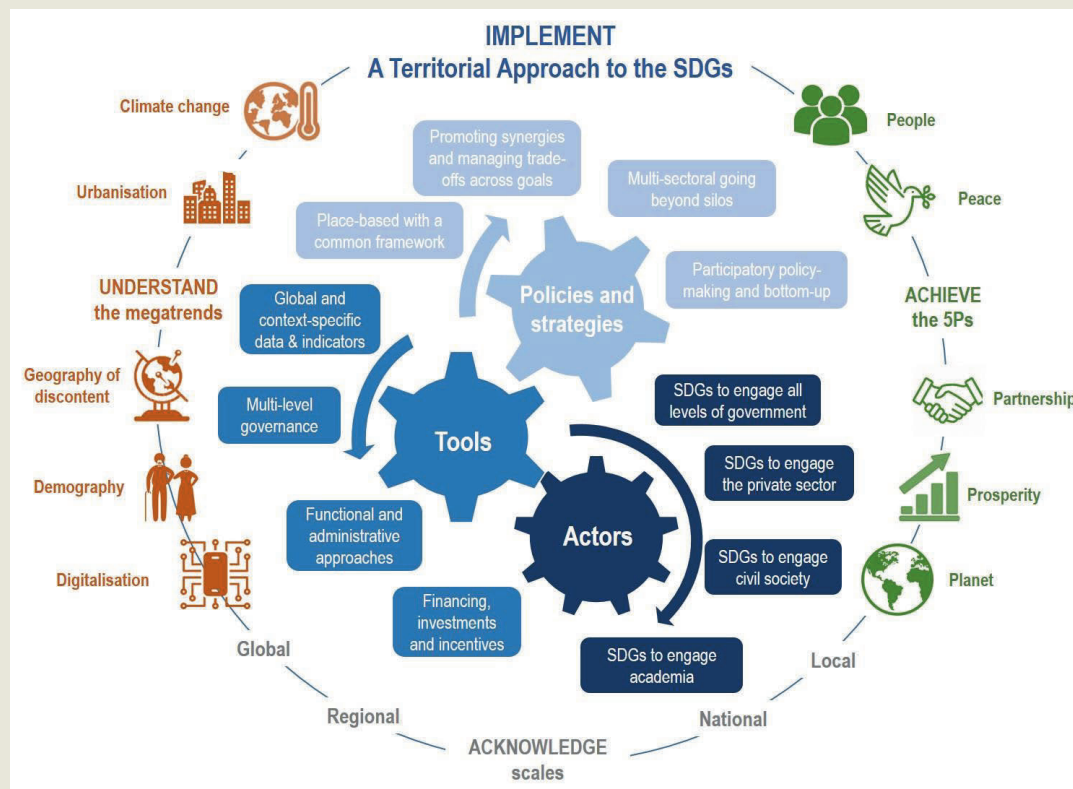
The effective implementation of a territorial approach to the SDGs implies the combined use of a variety of tools. This span from a solid multi-level governance system to global and context-specific data for evidence-based policies. They also consist in combining functional and administrative approaches to address territorial challenges and opportunities beyond borders, as well as investment and incentives, in particular for the private sector to contribute. Multi-level governance represents a key tool to promote vertical co-ordination (across levels of government) and horizontal co-ordination (across ministries and departments) – both within the local, regional and national governments and between the governments and other key stakeholders. National governments can also use the SDGs as a framework to promote policy coherence across levels of government, align priorities and rethink sustainable development through a bottom-up approach.

Actors

A participatory policymaking and bottom-up process is one of the core elements of a territorial approach to the SDGs. Shifting from a top-down and hierarchical to a bottom-up and participatory approach to policymaking and implementation is key for the achievement of the SDGs. The 2030 Agenda requires a more transparent and inclusive model that involves public as well as non-state actors to co-design and jointly implement local development strategies and policies. The SDGs provide cities and regions

with a tool to effectively engage in multi-stakeholder dialogues with actors from the private sector, civil society, as well as schools and academia.

Figure 1.2. The OECD analytical framework for A Territorial Approach to the SDGs



Source: OECD (2020^[29]), *A Territorial Approach to the Sustainable Development Goals: Synthesis Report*, <https://doi.org/10.1787/e86fa715-en>.

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Notes

¹ In total, Brazil consists of 26 states and a federal district.

² In 2003, the Bolsa Família Programme (BFP) was set and its objectives were to contribute to the social inclusion of families constrained by extreme poverty by providing immediate relief to their situation and to stimulate improvements to their education and health, in order to cease the intergenerational cycle of poverty reproduction. It was necessary to unify existing sectoral programmes of cash transfer, consolidate the Unified Registry for Social Programs (*Cadastro Único para Programas Sociais*, CadÚnico), create a federal strategy for its management, monitor the conditionality and ensure supply and access to basic services (IPEA, 2014_[32]).

³ In its 1989 State Constitution, Paraná established guidelines to urban policy that are more specific than those in the federal constitution. The constitution stipulates that Paraná's municipalities with a population of less than 20 000 inhabitants will receive technical assistance from an urban development state agency to set general rules for urban land occupation, aiming to ensure the cities and private property's social function. The state agency entrusted with this mission is the Autonomous Social Service PARANACIDADE, created by 1996 State Law (11,498), which is linked to the State Secretariat of Urban Development and Public Works (SEDU) under a management contract.

⁴ The Ten Principles of the United Nations Global Compact are derived from: the Universal Declaration of Human Rights, the International Labour Organization's Declaration on Fundamental Principles and Rights at Work, the Rio Declaration on Environment and Development, and the United Nations Convention Against Corruption. Businesses should i) support and respect the protection of internationally proclaimed human rights; ii) make sure that they are not complicit in human rights abuses; iii) uphold the freedom of association and the effective recognition of the right to collective bargaining; iv) ensure the elimination of all forms of forced and compulsory labour; v) ensure the effective abolition of child labour; vi) ensure the elimination of discrimination in respect of employment and occupation; vii) support a precautionary approach to environmental challenges; viii) undertake initiatives to promote greater environmental responsibility; ix) encourage the development and diffusion of environmentally friendly technologies; x) work against corruption in all its forms, including extortion and bribery (UN Global Compact, 2020_[31]).

⁵ Fab Labs are laboratories for digital development and prototyping in which students, companies and the community will be able to share knowledge and put innovative projects and ideas into practice (<https://www.curitiba.pr.gov.br/noticias/prefeitura-inaugura-o-primeiro-fab-lab-publico-da-cidade/49749>).

⁶ See <https://www.cidadessustentaveis.org.br/indicadores>.

⁷ The thirteen axes considered by the city of Ubatuba are: i) Local action for health; ii) Common natural goods; iii) Responsible consumption and lifestyle options; iv) Culture for sustainability; v) From local to global; vi) Local economy; vii) Dynamic, creative and sustainable; viii) Education for sustainability and quality of life; ix) Equity, social justice and culture of peace; x) Local management for sustainability; xi) Governance, better mobility, less traffic; xii) Urban planning; and xiii) Design and city indicators.

⁸ System S is a grouping of nine parastatal institutions without lucrative purposes that received legal authorisation from the Brazilian government to collect mandatory contributions for the development and maintenance of the Autonomous Social Service.

2 Sustainable development challenges and opportunities in Parana, Brazil

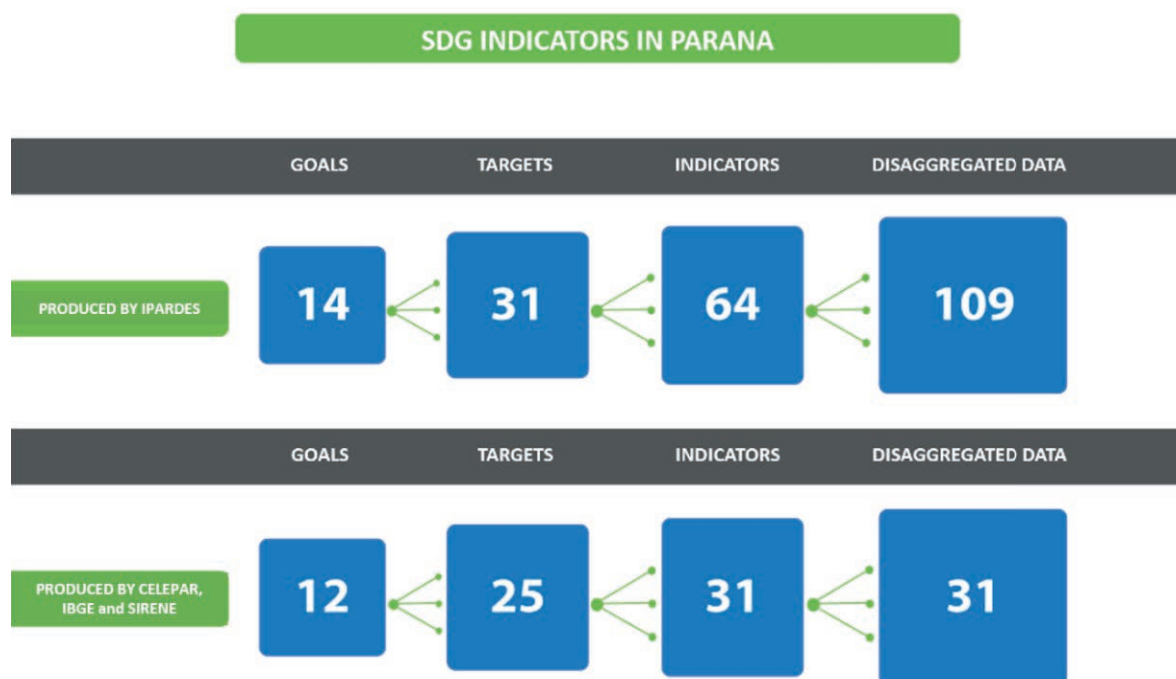
Paraná's performance is above the average of OECD regions in several environmental and labour market indicators related to the SDGs, in terms of the preservation of water bodies and coasts, air quality, electricity generation from renewable sources, part-time jobs and youth unemployment. Moreover, Paraná belongs to the top performers in comparison to the other Brazilian states regarding the SDGs on energy, the labour market, infrastructure, and innovation. Nonetheless, Paraná is lagging behind most OECD regions in the areas of health, education, sustainable cities and communities, as well as personal safety. Paraná is using the SDGs as a framework to address persistent challenges to long-term sustainability, notably environmental protection, climate change, demographic pressures and digitalisation. To that effect, it has developed a framework of 64 indicators at the municipal level and 31 indicators at the state level to track progress across 14 SDGs.

Measuring the distance to the SDGs in the state of Paraná, Brazil

SDG indicator framework in the state of Paraná

The state of Paraná is currently measuring progress on 45 targets across 14 SDGs through 64 indicators at the municipal level (under the responsibility of the Paraná Institute of Economic and Social Development [IPARDES]) and 31 indicators at the state level. These indicators are calculated with data from national surveys that are published regularly. If survey data is not available, the indicator framework uses administrative data collected by official state bodies and proxies at the state level. The state is working to ensure the consistency and applicability of these indicators at the local level (Figure 2.1). The state-level indicators are managed by several institutions, such as the Brazilian Institute of Geography and Statistics (*Instituto Brasileiro de Geografia e Estatística*, IBGE), the Ministry of Science, Technology and Innovation, and the National Water Agency. Furthermore, the government is developing subnational indicators for the new Municipal Action Financing System. This new financing model aims to focus urban and regional development actions towards inclusiveness and equality. It involves partners such as PARANACIDADE and the Far South Regional Development Bank (BRDE).

Figure 2.1. Overview of Paraná's SDG indicator framework



Note: Based on the Tier Classification for Global SDG indicators of July 2020.

Source: IPARDES/Celepar (forthcoming^[11]), *Paraná Strategy with an Eye on the SDGs - State of the Art*.

Paraná engages with municipalities and technical institutions to develop local SDG indicators that can improve public policies. In partnership with the Paraná State Company for Information Technology and Communication (Celepar) and the Paraná Institute of Economic and Social Development (IPARDES), the state has developed a business intelligence tool named *BI Paraná de Olho nos ODS* ("Paraná keeping an eye on SDGs"), a platform responsible for mapping, tracking and monitoring indicators related to the SDGs. The platform is made up of dashboards (interactive graphics) that facilitate the visualisation of different scenarios regarding sustainable development. Its objective is to contribute to political decision-making and

the development of more evidence-based public policies with a focus on the SDGs. This digital platform serves as the connecting point between the government, researchers from state universities and start-ups working on the SDGs. Based on the tool, the government is planning to provide information that will help the state and the municipalities develop a diagnosis to identify their priority SDGs. It also features a digital platform to share good practices in the state, which aims to contribute to disseminating initiatives related to the SDGs from all sectors in the state (Figure 2.2). Another digital monitoring platform is being developed by Itaipu Binacional, a state-owned enterprise active in renewable energy by the West Platform 2030 in partnership with the United Nations Development Programme (UNDP). This software will include 67 environmental indicators and monitor the progress on the SDGs in the western region of Paraná.

Figure 2.2. The business intelligence application “Paraná keeping an eye on SDGs”



Source: IPARDES/Celepar (forthcoming^[11]), *Paraná Strategy with an Eye on the SDGs - State of the Art*.

Despite the efforts of the government, some data gaps remain. Such gaps relate in particular to SDG 10 Reduced Inequalities, SDG 12 Sustainable Consumption and Production and SDG 14 Life Below Water, for which the state does not yet collect data, but also for SDG 1 No Poverty, SDG 2 No Hunger, SDG 7 Affordable and Clean Energy, SDG 13 Climate Action and SDG 15 Life on Land, where Paraná only captures one indicator per SDG. For other SDGs such as SDG 14, methodologies to define indicators to measure SDGs progress at the local level are still under development.

One of the challenges the state of Paraná is facing is the availability of recent data. Considering that the latest national census dates back to 2010, more up to date and comparable data is needed in order to

calculate additional SDG indicators at the local level. To advance the data collection and allow for the monitoring of the SDGs, Paraná resorts to data from administrative registers, provided by official institutions of the state government. In addition, Brazil does not have an official poverty line. Therefore, the Technical Committee for Sustainable Development of the State of Paraná (CTD-CEDES) is using the poverty lines of the Brazilian Income Transfer Programme (Bolsa Família Programme) to analyse the spatial distribution of poverty in the state.¹

OECD localised indicator framework for measuring distance to the SDGs

The OECD localised indicator framework for the SDGs allows for international comparisons across several dimensions of sustainable development. Building on this framework, the following section provides a first overview of the performance of the state of Paraná towards the SDGs, compared to around 400 OECD regions.² The structure of the section follows the five critical dimensions or 5Ps of the 2030 Agenda (i.e. People, Prosperity, Planet, Peace and Partnerships) and is based on a selection of 63 indicators covering relevant aspects of 16 out of the 17 SDGs. Further information on the methodology of the assessment can be found in Box 2.1.

Figure 2.3. The 17 Sustainable Development Goals



Source: UN (2020^[2]), *Sustainable Development Goals*, <https://sustainabledevelopment.un.org/?menu=1300>.

Box 2.1. OECD methodology for measuring cities' and regions' distance to the SDGs

The OECD has developed a framework to localise the SDG targets and indicators and measure the distance of regions and cities to reaching each of the 17 SDGs. This consensual, comparable and standardised framework allows to benchmark performances within countries and across regions and cities to support public action across levels of government. In the context of OECD countries, around 105 out of the 169 SDG targets have been identified as very relevant for regions and cities. Through an extensive literature review and expert consultation, the 169 SDG targets from the UN indicator framework have been classified by their level of relevance for subnational levels of government (place-relevant) and for advanced economies (OECD-relevant). Subsequently, a subset of these SDG targets has been selected on the basis of its applicability to the context and specificities of OECD countries. The result is a selection of 105 SDG targets and 135 indicators for OECD regions and cities (also

referred to as the “subnational SDG targets”). With its 135 indicators, the OECD localised framework covers at least 1 aspect of each of the 17 SDGs for both regions and cities. Nevertheless, the coverage in terms of indicators and targets is higher for regions than for cities. Although the set of indicators aims to cover the broad spectrum of all 17 SDGs, the coverage in terms of indicators also varies widely across SDGs.

In order to evaluate the achievements of a city or region on the SDGs, the OECD localised framework defines end values with the purpose of shedding light on the global trends in OECD regions and cities in their progress towards reaching the SDGs, based on available indicators and with the objective of providing technical guidance for governments on a possible way to use the SDG indicator framework as a tool to advance local development plans and sustain evidence-based policies. By defining end values for 2030, regions and cities can assess where they stand today and seize how much distance they have to travel in order to reach the intended end value. When they are not inferable from the UN framework, the OECD defines end values for indicators based on the knowledge of experts in the field or, alternatively, based on the best performance of regions and cities in that indicator. The OECD localised indicator framework attributes end values to 88% of its indicators, of which 65% are defined using the criteria of “best performers”. The framework also normalises the SDG indicators from 0 to 100 – where 100 is the suggested end-value of an indicator to be achieved by 2030 – and aggregates headline indicators that belong to the same SDG to provide an index score towards reaching each of the 17 SDGs. The distance to the target or goal is the number of units the index needs to travel to reach the maximal score of 100 (Figure 2.4).

Selection of indicators used to assess the state of Paraná’s achievements on the SDGs

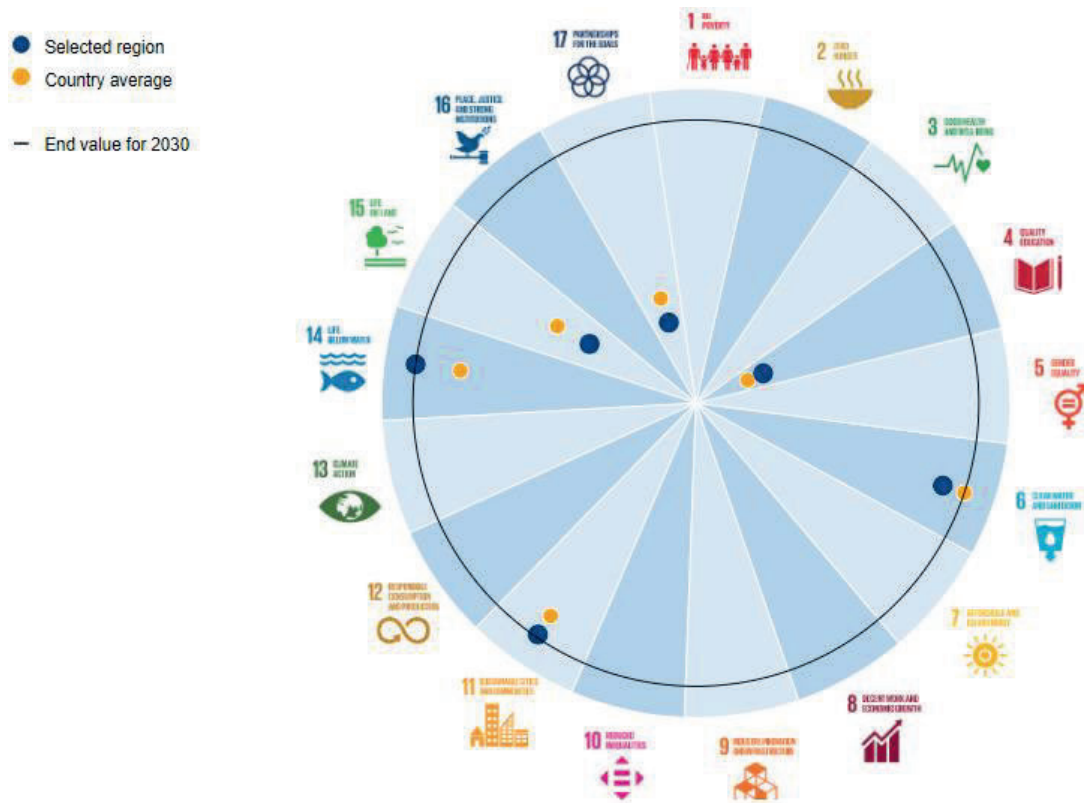
The indicators of the OECD localised indicator framework used for the analysis of the state of Paraná were chosen based on the availability of data for the region and a context-relevance assessment of the indicators conducted by the region’s representatives. Such assessment consisted in a survey on the different SDG indicators proposed by the OECD whereby the representatives of the state of Paraná assessed how relevant the indicator is to help to measure the SDGs at the local level in their city (from 0 to 5; where 0 stands for “Not relevant” and 5 stands for “Very relevant”). The most relevant indicators were then prioritised for the purpose of this report. However, the analysis also considers some indicators with a lower relevance rating to provide complementary information on specific policy areas. As Brazil is not a member country of the OECD, the availability of comparable data for the state of Paraná for some of the SDGs is limited. Therefore, 14 of the 63 indicators consider data provided by the state of Paraná that are comparable to the OECD localised indicator framework (see the various tables in this chapter for more details).

Source: OECD (2020^[3]), *A Territorial Approach to the Sustainable Development Goals: Synthesis Report*, <https://doi.org/10.1787/e86fa715-en>; OECD (2020^[4]), *OECD Regional Statistics (database)*, <http://dx.doi.org/10.1787/region-data-en>.

Overall, Paraná's performance on the SDGs is slightly lower than in OECD regions on average, but the state outperforms the majority of regions in Brazil. Indicators, where Paraná exhibits particularly good results compared to the average of OECD regions are those related to water such as the preservation of water bodies (SDG 6) and coastal protection (SDG 14), air quality (SDG 11), electricity generation from renewable sources (SDG 7) and a low share of part-time employment incidences as well as low youth unemployment (SDG 8). Moreover, the state is perceived as a good place to live for homosexual people and ethnic minorities (SDG 16).

In a number of areas, Paraná has space for improvement in comparison to the majority of OECD regions. This is the case for indicators related to health (SDG 3), education (SDG 4), sustainable cities and communities (SDG 11) and safety (SDG 16), where Paraná mainly belongs to the bottom third compared to OECD regions. In relation with other Brazilian states, however, Paraná's achievements appear much more positive, particularly in education (SDG 4), labour market and economic indicators (SDG 8 and SDG 9) and air quality (SDG 11), where the state outperforms on average more than 70% of other states in Brazil. Paraná is lagging behind the Brazilian average in only a very small number of indicators such as life satisfaction (SDG 3) and co-patent applications with foreign regions (SDG 17).

Figure 2.4. Paraná and the SDGs – Distance to the end values for available SDGs indicators








Note: Index from 0 to 100 (100 is the end value: black circumference); Darker dot: State of Paraná's result; Lighter dot: Country average of Brazilian TL2 regions. For more details about the methodology to build SDG indexes, see OECD (2020_[3]).

Source: OECD (2020_[5]), *Measuring the Distance to the SDGs in Regions and Cities (visualisation tool)*, <http://www.oecd-local-sdgs.org/>. (accessed on 18 October 2020)

People: Vast areas of cropland but health and education are two important challenges

Around 40% of Paraná's population is satisfied with the state's efforts to deal with poverty. The fight against poverty is an integral part of the 2030 Agenda as reflected by SDG 1 No Poverty. In Paraná, the population's satisfaction with efforts to deal with poverty – 38% between 2008 and 2018 – indicates a performance similar to the averages of OECD regions (37%) and Brazilian regions (37%). Nevertheless, about 60% of the states in Brazil exhibited higher satisfaction rates than Paraná, indicating a potential to catch up with the national top performers Piauí (55%), Tocantins (48%) and Paraíba (47%). When analysing poverty, housing conditions are another important factor to consider as poor housing conditions resulting from low income can affect aspects of child development and elements of adult health among others (Tunstall et al., 2013^[6]). The OECD localised indicator framework for the SDGs therefore uses the number of rooms per person as an indicator measuring possible overcrowding conditions of households. In Paraná, people had around 2.1 rooms at their disposal in 2013 compared to the average of OECD regions of 1.8 rooms. In only one out of four OECD regions, people had a larger number of rooms available than in Paraná.

Table 2.1. OECD indicators used to assess the dimension People in the state of Paraná

SDG	Indicator	Source
	Percentage of the population satisfied with efforts to deal with poverty	OECD based on Gallup World Poll (2019)
	Rooms per person	OECD Regional Database
	Change in cropland (from 1992 to 2015, percentage points)	OECD Environment Database
	Cropland as a percentage of the total area in 2015	OECD Environment Database
	Infant mortality rate (number of deaths of children one-year-old or younger per 1 000 live births)	IPARDES
	Under-5 mortality rate (deaths per 10 000 population)	OECD Regional Database
	Satisfaction with life as a whole (from 0 to 10)	OECD based on Gallup World Poll (2019)
	Transport-related mortality rates (deaths per 100 000 people)	DATASUS
	Active physicians rate (active physicians per 1 000 people)	IPARDES
	Hospital beds rate (hospital beds per 10 000 people)	DATASUS, IBGE
	Percentage of people satisfied with the availability or quality of healthcare	OECD based on Gallup World Poll (2019)
	Percentage of the population from 15 to 19 years old enrolled in public or private institutions	OECD Regional Database
	Percentage of early leavers from education and training, for the 18 to 24 years old population	OECD Regional Database
	Percentage of the population from 25 to 64 years old participating in education and training	IBGE
	Percentage of the population from 25 to 64 years old with at least tertiary education	OECD Regional Database
	Gender gap in the rate of young population (from 18 to 24 years old) not in education, employment or training (NEET) (percentage points)	OECD Regional Database
	Percentage of the population that believe women are treated with respect and dignity in their country	OECD based on Gallup World Poll (2019)
	Gender gap in part-time employment incidence (female-male, percentage points)	OECD Regional Database

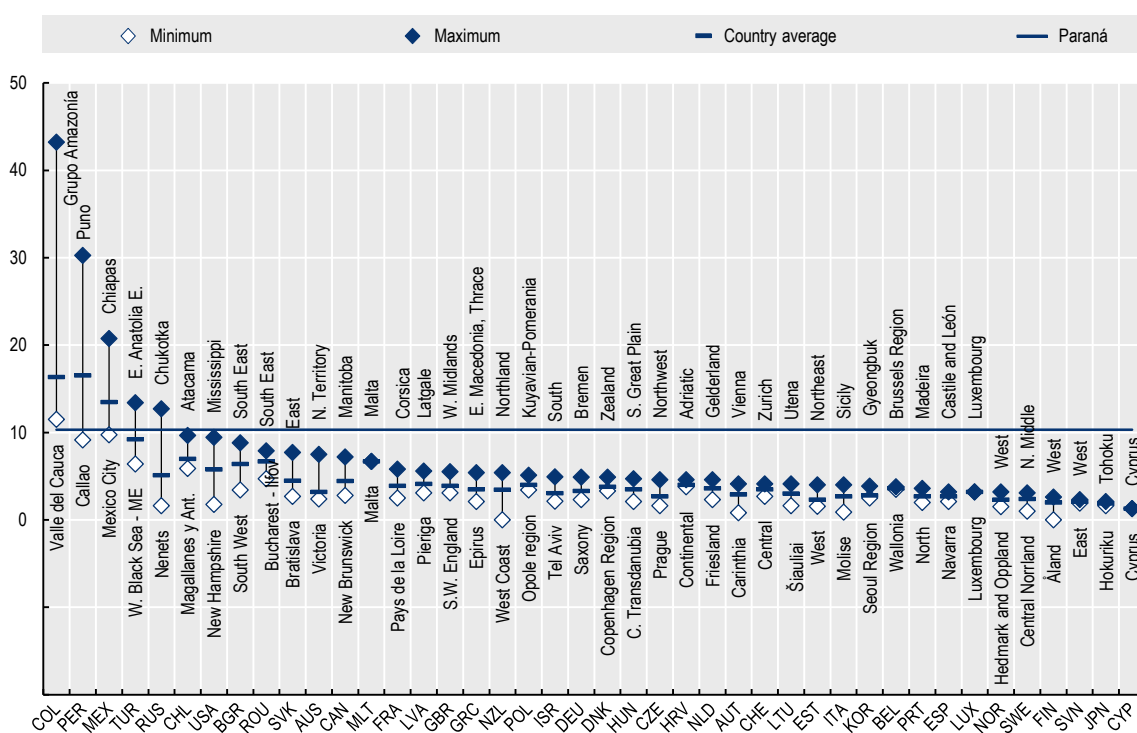
Source: OECD (2020^[3]), *A Territorial Approach to the Sustainable Development Goals: Synthesis Report*, <https://doi.org/10.1787/e86fa715-en>.

Paraná possesses vast areas of cropland compared to the majority of OECD regions. Another goal of the 2030 Agenda is to end hunger and ensure food security by 2030 (SDG 2). Efficient food production systems and the implementation of resilient agricultural practices are important factors that can contribute to the achievement of this goal. This is of particular relevance for Paraná whose agricultural sector is one of the key contributors to the regional gross domestic product (GDP). In 2015, around 53% of the area of Paraná

was cropland, underlining the strong presence of agricultural activity in the state. Only less than one-fourth of OECD regions exhibits such a high share of cropland. In contrast to the majority of OECD regions, where cropland areas have been shrinking over the past decades, the cropland area in Paraná has remained approximately the same between 1992 and 2015, which corresponds to the suggested end value.

Infant and child mortality rates in Paraná exceed the average of OECD regions close to twofold. Ensuring good health and well-being for people (SDG 3 Good Health and Well-being) is at the core of the 2030 Agenda. For Paraná, it is a challenging policy area with space for improvement compared to the average of OECD regions. Paraná exhibits higher infant and child mortality rates than the average of OECD. Despite some improvements over the past years, Paraná's infant mortality rate in 2018 (10.3 deaths per 1 000 live births) was still almost twice as high as the average of OECD regions (5.9 deaths per 1 000 live births) (Figure 2.5). Preliminary figures for 2020, however, indicate a further decrease to 9.3 deaths per 1 000 live births. Similarly, child mortality rates for the 0 to 4 years old population in 2016 (24.7 deaths per 10 000 people in the same age group) exceeded the OECD regional average (11.8 deaths) by close to 2 times.³ In comparison with the average of Brazilian states, the state's achievements appear more positive. In 2016, Paraná was among the 10% of states in Brazil with the lowest child mortality rates. Nevertheless, there is a considerable gap to the suggested end value of 6.3 or fewer deaths, based on the best-performing OECD regions. The transport-related mortality is also higher than in OECD regions on average. In 2017, the state of Paraná registered 22.5 transport-related mortalities compared to the OECD average of 9.4. In order to reach the suggested end value of 4.7 based on best-performing regions, Paraná would thus need to significantly reduce its traffic-mortality rate. As of now, only 2% of OECD regions exhibit higher transport-related mortality rates than Paraná. The average life expectancy at birth overall (77.7 years in 2018) is also slightly lagging behind the average of OECD regions (79.6 years).

Figure 2.5. Infant mortality rate (number of deaths of children one-year-old or younger per 1 000 live births), 2017



Note: Peru, 2013; Australia, United States, 2015; Chile, Colombia, New Zealand, 2016; Russia, 2018; Paraná, 2018.

Source: OECD (2020^[4]), *OECD Regional Statistics (database)*, <http://dx.doi.org/10.1787/region-data-en>.

The number of active physicians and hospital beds per resident is among the third lowest of OECD regions. While the indicators of mortality and life expectancy are related to health outcomes, the OECD also considers indicators that measure the necessary input to improve these health results, such as the number of active physicians and the hospital bed rate. With 2 active physicians per 1 000 people in 2018, Paraná had a slightly lower rate than the average of OECD regions (2.8 active physicians per 1 000 people). Around 75% of OECD regions show higher rates for this indicator. The hospital bed rate in Paraná reveals further potential to expand capacities in healthcare. In 2019, the state registered around 24 hospital beds available per 10 000 people. The corresponding average of OECD regions was considerably higher – 41 hospital beds. In total, 70% of OECD regions have larger hospital beds capacities per capita than Paraná.

Satisfaction with healthcare in Paraná is comparatively low but satisfaction with life as a whole exceeds the average of OECD regions. Reflecting Paraná's achievements in various health-related indicators, the satisfaction rate with the availability and quality of healthcare in the state shows space for improvement. Between 2008 and 2018, on average 35% of Paraná's population stated to be satisfied with the availability and quality of healthcare. This level of satisfaction puts Paraná among the bottom 5% compared to OECD regions, while it is consistent with the average satisfaction with healthcare in Brazilian states (34%). When looking at the satisfaction with life as a whole using self-reported survey data from Gallup World Poll, Paraná exhibits above-average results in comparison with OECD regions. Between 2008 and 2018, the inhabitants of Paraná rated their satisfaction with life with an average of 6.6 points on a scale of 0 to 10. The satisfaction was thus slightly higher than the regional OECD average of 6.5. Once more, the comparison with Brazilian states presents a slightly different picture. In two out of three Brazilian states, people stated a higher average satisfaction with life between 2008 and 2018 than in the state of Paraná.

Thirty percent of Paraná's young population are early leavers from education and training. SDG 4 aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. Its first target is to ensure that all girls and boys complete free, equitable and quality primary and secondary education. In order to measure this target, the OECD localised indicator framework uses the proxy indicator of the population's share enrolled in a public or private educational institution (for the 15-19 year-old population). In 2015, around 68% of Paraná's population aged 15 to 19 years old were enrolled in public or private institutions, a rate similar to the average of Brazilian states (69%). In comparison to the average of OECD regions (82%), Paraná is lagging close to 14 percentage points behind. What is more, around 30% of young people between 18 and 24 years old did belong to the category of early leavers from education and training in 2013, an important indicator to measure the achievement of SDG Target 4.4 to increase substantially the number of youth and adults who have relevant skills for employment. The corresponding average for regions in the OECD (16.8%) was considerably lower. Nevertheless, Paraná's performance appears more positive in comparison with Brazilian states. In around two-thirds of states, the rate of early leavers from education and training was higher than in Paraná. Overall, the quality of education in Paraná ranks among the highest in comparison to other Brazilian states. In 2019, Paraná was the fourth-best ranked state regarding the quality of its high school education according to the Index of Development of Basic Education (IDEB) up from its seventh rank in 2017. If federal and state schools are added to the ranking, Paraná belongs to the top three performers regarding educational achievements in Brazil.

In terms of higher education, Paraná is among the top performers in Brazil despite lagging behind the average of OECD regions. As of 2015, around 18% of the state's population from 25 to 64 years old had successfully completed tertiary education, which corresponds to a higher share than in 90% of Brazilian states. On the other hand, Paraná has some room to catch up with the majority of OECD regions. In OECD regions, on average, more than 30% of the population between 25 and 64 years old has a tertiary education degree. With its 7 state universities, 39 campuses and 60 distance-learning centres present in almost 100 of its 399 municipalities, Paraná possesses good prerequisites in terms of educational institutions to build on. In order to capture the objective of SDG 4 Quality Education to promote lifelong learning, the OECD localised indicator framework for the SDGs uses the indicator of the share of the population from

25 to 64 years old participating in education and training. Lifelong learning is important to improve educational outcomes, mental well-being and boost innovation and productivity. In 2018, around 9% of people in Paraná in that age group participated in training and education. This share exceeds the corresponding rates in more than 50% of OECD regions. Due to the large disparities across OECD regions, it is nonetheless considerably lower than the regional OECD average (16%), indicating some potential to catch up. One example through which Paraná tries to promote further education is the Superintendence of Science, Technology and Higher Education (SETI) programme University Without Borders. As part of the programme, SETI organises activities related to innovation and skills development for people in 332 of Paraná's municipalities, particularly those with a low Human Development Index (HDI) and high poverty rates, aiming to improve their quality of life (SETI, 2021^[7]).

There is a considerable gender gap in the rate of young people not in education, employment and training. SDG 5 focuses on achieving gender equality. Gender equality plays an important role with regards to the previous paragraphs on education. As pointed out, around 30% of young people leave training education and training earlier than foreseen. What is more, this indicator has an important gender component. In Paraná, the gender gap in the rate of the young population not in education, employment and training (NEET), an indicator that captures part of the exclusion young women face in education and the labour market, reached 13.2 percentage points in 2013. As a comparison, more than 80% of OECD regions had a smaller gender gap for the NEET population averaging at around 5 percentage points. Paraná thus has a considerable gap to close to the end value of 0 percentage points. The contrast between the situation in OECD regions and states in Brazil is striking. While Paraná lags behind the OECD average, the state belongs to the top 25% in Brazil. Furthermore, 57% of students enrolled in higher education institutions in Paraná were female in 2019 (55% if looking at universities only) (INEP, 2021^[8]).

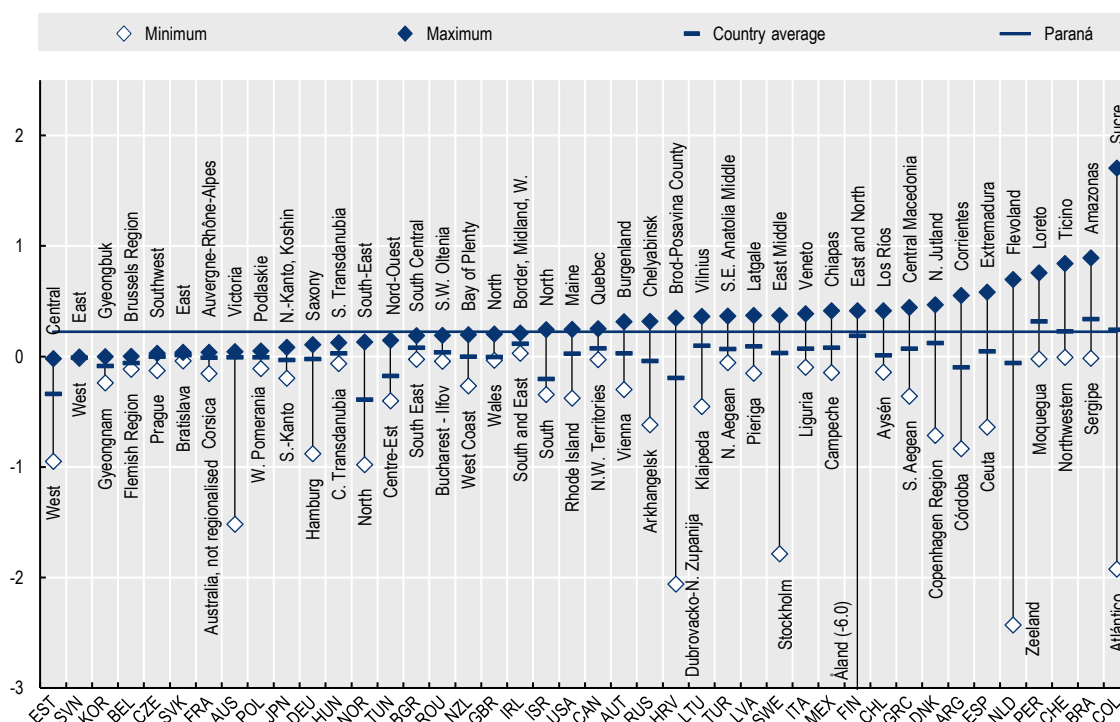
Less than 30% of the population in Paraná believed that women are treated with respect and dignity in their country. The OECD indicator framework uses the share of the population that believe women are treated with respect and dignity in their country to capture part of the essence of Target 5.1, which aims at ending all forms of discrimination against all women and girls everywhere. Between 2008 and 2018, on average less than 30% of the population in Paraná believed that women are treated with respect and dignity in their country. In comparison, this rate was lower than in 90% of OECD regions. Paraná's result leaves a significant gap to the OECD average of 66% and to the suggested end value of 100%. The national Brazilian average of 27% suggests that Paraná's results for this indicator have to be seen in a national context and point out a more structural issue. On a positive note, the gender gap in part-time employment incidence (8.7 percentage points) in 2013 was significantly smaller than on average in OECD regions (17.3 percentage points). Here, Paraná ranks among the 30% of OECD regions with the smallest gender gap, slightly above the Brazilian national average (of 7.8 percentage points) however. The indicator of part-time employment partially accounts for the precariousness of female workers with respect to men as intra-household inequalities often push women, more than men, towards part-time jobs (in the labour market) and unpaid housework. Reducing the gap in part-time jobs could reflect a more balanced distribution of quality jobs between men and women.

Planet: Strengths in water-related indicators and coastal protection but high car dependency and low satisfaction with environmental protection

Indicators of SDG 6 Clean Water and Sanitation are one of the strengths of Paraná. Water as the basis of human life is one of the preconditions of human development. The UN has therefore reflected its importance in SDG 6, which has the objective to ensure the availability and sustainable management of water and sanitation for all. In Paraná, inland waters cover around 1.6% of the state's area. As SDG 6 acknowledges that the protection of water-related ecosystems is crucial for sustainable water supply management, halting the loss in water bodies is fundamental to ensure the future availability of water resources. Between 1992 and 2015, the volume of water bodies in Paraná slightly increased by about 0.2 percentage points (Figure 2.6). Paraná thus performs better than 90% of OECD regions when it comes

to water resources preservation. It is worth noting that this indicator captures very few of the essence of SDG 6. Thus, it should be used only as a starting point to advance on the measurement of sustainable management of water at the local level. The OECD localised indicator framework therefore also considers the indicator of satisfaction with water quality as a proxy to capture some elements of Target 6.3, which aims at improving water quality globally. Between 2008 and 2018, around 87% of Paraná’s population stated to be satisfied with the quality of water, which is a higher share than both the average of OECD regions (81%) and the average of Brazilian states (74%). In fact, Paraná is the state in Brazil that exhibits the highest satisfaction rate for this indicator.






Figure 2.6. Change in the volume of water bodies, from 1992 to 2015, percentage points



Source: OECD (2020⁽⁴⁾), *OECD Regional Statistics (database)*, <http://dx.doi.org/10.1787/region-data-en>.

The state of Paraná is characterised by a high rate of motor road vehicles per capita. SDG 12 Responsible Consumption and Production emphasises the urgent need to disconnect economic growth from intensive resource use in order to reduce the human negative impact on the planet. Relating to consumers’ and producers’ material footprint, which should be reduced as much as possible to protect natural resources and to limit pollution, the OECD localised indicator framework uses the number of motor road vehicles per 100 people to capture one of the key aspects of responsible consumption and production. In 2019, the state of Paraná registered more than 65 motor road vehicles per 100 people living in the state. In contrast, the average of OECD regions is significantly lower (40 motor road vehicles). A high number of motor road vehicles also relates to the use of fossil fuels and CO₂ emissions, which is one of the main drivers of climate change.

Table 2.2. OECD indicators used to assess the dimension Planet in the state of Paraná

SDG	Indicator	Source
	Percentage of the population satisfied with the quality of water	OECD based on Gallup World Poll (2019)
	Water bodies as a percentage of the total area in 2015	OECD Environment Database
	Change in water bodies (from 1992 to 2015, percentage points)	OECD Environment Database
	Number of motor road vehicles per 100 people	DETRAN-PR
	Percentage of the population satisfied with efforts to preserve the environment	OECD based on Gallup World Poll (2019)
	Coastal area as a percentage of the total area	OECD based on Natural Earth Database
	Protected coastal area as a percentage of the total coastal area	OECD based on Natural Earth Database, and World Database on Protected Areas (WDPA)
	Change in tree cover (from 1992 to 2015, percentage points)	OECD Environment Database
	Tree cover as a percentage of the total area in 2015	OECD Environment Database
	Terrestrial protected areas as a percentage of the total area	OECD based on WDPA

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

Paraná is lagging behind the majority of OECD regions regarding the satisfaction with efforts to preserve the environment but performs similar to the average of other Brazilian states. A change in production and consumption patterns can also have a beneficial effect on the achievement of SDG 13 Climate Action, which has the objective to take urgent action to combat climate change and its impacts. In Paraná, the satisfaction with efforts to preserve the environment is not very pronounced. Between 2008 and 2018, around 44% of the population stated to be satisfied with efforts to preserve the environment. Paraná thus ranks among the bottom 30% of OECD regions whose average satisfaction rate was 52%. In the national context, Paraná belongs to the average performers regarding this indicator considering that the average of Brazilian regions was 43% and that 56% of Brazilian states reached higher satisfaction rates than Paraná.

Paraná has a higher degree of coastal protection than more than 90% of OECD regions. Conserving and sustainably using the oceans, seas and marine resources for sustainable development (SDG 14 Life Below Water) is another objective of the 2030 Agenda. By applying geospatial analysis techniques to the International Union for Conservation of Nature (IUCN) World Database on Protected Areas (WDPA), the OECD has modelled both the share of coastal areas of a region or city and the share of that coastal area⁴ that is protected according to the WDPA (Mackie et al., 2017^[9]). In Paraná, where 5% of the territory fall under the category of coastal area using the above-mentioned methodology, the share of protected coastal areas was about 51% of the total coastal area in 2017, mostly due to the Superagui National Park. Compared to the average of OECD regions (20%) and Brazilian states (36%), this value stands out. Moreover, it already exceeds the suggested end value for 2030 (42%) based on the regions with the highest degree of coastal protection.

Paraná has a high degree of coastal protection, but overall biodiversity protection and forest protection are lagging behind a majority of OECD regions. In order to measure the achievements on SDG 15 about life on land, the OECD localised indicator framework uses the indicators of tree cover loss (from 1992 to 2015, in percentage points) and terrestrial protected areas as a percentage of total area. Both indicators reflect the main purpose of SDG 15 Life on Land, which is to protect and restore territorial ecosystems, by combatting deforestation and desertification. While the indicator of tree cover loss intends to capture the extent of deforestation (Haščič and Mackie, 2018^[10]), the second indicator seizes the efforts to protect biodiversity (see Mackie et al. (2017^[9]) based on the WDPA). While the share of coastal protection considerably exceeds the average of OECD regions, this does not hold for the degree of terrestrial

protection in the state overall. In 2017, less than 9% of the territory of Paraná had a status of protected area compared to an average of 19% in OECD regions and 30% in Brazilian states. As of 2015, trees covered around 32% of the area of Paraná following a slight decline of about 1.1 percentage points between 1992 and 2015. Paraná thus ranks among the bottom 30% with the highest tree cover loss compared to OECD regions. The comparison with other states in Brazil shows a different picture. The average tree cover loss in Brazilian state in the 1992-2015 period was close to 4 percentage points, mainly resulting from significant tree cover losses in Pará (-10 percentage points), Mato Grosso (-11 percentage points) and Rondônia (-21 percentage points). As a consequence, Paraná ranks in the top 40% of states. The large decrease in tree cover in Brazilian states also holds implications for the achievement of other environment-related SDGs considering that protecting forests, or alternatively the restoration of trees, is one of the most effective strategies for climate change mitigation (Bastin et al., 2019^[11]).

Prosperity: Clean energy and air quality but catch-up potential in labour market, innovation and infrastructure indicators

A vast majority of the electricity produced in the state comes from renewable sources. In 2017, the share of electricity production from renewable sources was around 94%, thus already reaching the suggested end value of about 83% based on best-performing OECD regions. In addition, it exceeded the average of OECD regions that produce electricity from renewable sources (41%) more than twofold. Consequently, the share of electricity coming from fossil fuels (natural gas and oil, excluding coal, 5.8%) and coal (0.2%) was comparatively low and close to the suggested end value of 0%. The share of electricity production in Paraná that comes from nuclear power was 0%.





With around 60% of its workforce having completed secondary education, Paraná outperforms most Brazilian states but lags behind the average of OECD regions. Sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all (SDG 8 Decent Work and Economic Growth) are seen as means to contribute to a transformation towards a more sustainable economy. One of the prerequisites to reach that goal is a well-educated workforce. In Paraná, around 58% of the workforce had completed at least secondary education in 2018. Paraná is thus considerably lagging behind the average of OECD regions (73%). On the other hand, the state is ahead of more than 90% of Brazilian states, where on average less than 50% of the workforce have completed at least secondary education.

Paraná has a high firm creation rate but the net creation rate and employment associated with newly created firms are lower than in the majority of OECD regions. Entrepreneurship can be a means to contribute to full and productive employment. In Paraná, the firm creation rate⁵ reached 14.5% in 2017. This puts Paraná among the 20% of top performers in comparison with OECD regions, where the average firm creation rate reached 11.2%. Yet, the newly created firms do not account for a large share of employment overall. In 2017, newly created firms accounted for 4% of jobs in Paraná. The corresponding average in OECD regions was 6%, which indicates that the new firms in Paraná are on average rather small in size compared to those in OECD regions. Moreover, the net firm creation rate in Paraná – firm birth rate minus firm death rate – is close to zero. In 2017, it reached 0.2% compared to an average of OECD regions of 1.8%. Overall, Paraná is lagging behind around two-thirds of OECD regions regarding this indicator. In order to increase the number of firm creations in Paraná, the state has started to establish several technology parks. The current ten parks offer services and infrastructure for companies active in the technology sector, with the aim of stimulating and strengthening their competitiveness and provide spaces for collaboration between universities, research centres and the private sector. The establishment of an additional eight parks is currently in progress.

Unemployment rates in Paraná are slightly higher than in OECD regions on average while part-time employment is much less widespread. SDG 8 Decent Work and Economic Growth also highlights the necessity to ensure decent work conditions for all in order to eradicate all kinds of deprivations.

Unemployment and part-time employment are two main aspects to be considered in that regard. In 2018, the unemployment rate in Paraná (8.2%) was slightly higher than in OECD regions on average (7.6%). Paraná was thus lagging behind about two-thirds of OECD regions but the gap to the OECD average was rather small. However, the gender gap in the unemployment rate of 2.6 percentage points in 2018 was among the highest 20% in comparison to OECD regions. Part-time employment that comes with more flexibility for employees but also leads to lower salaries and a higher risk of poverty for the part-time employed is not widespread in Paraná. In 2013, only around 8% of the employees in Paraná were part-time employed compared to the average of OECD regions of close to 18%. These figures mirror a national pattern of a low share of part-time employment considering that the average part-time employment rate in the Brazilian states was only 7.7% in the same year.

Table 2.3. OECD indicators used to assess the dimension Prosperity in the state of Paraná

SDG	Indicator	Source
	Percentage of total electricity production that comes from renewable sources	OECD based on World Resources Institute
	Percentage of total electricity production that comes from coal	OECD based on World Resources Institute
	Percentage of total electricity production that comes from fossil fuels (natural gas and oil, excluding coal)	OECD based on World Resources Institute
	Percentage of total electricity production that comes from nuclear power	OECD based on World Resources Institute
	Employment rate associated with newly created firms (%)	OECD Regional Database
	Firm creation rate (%)	OECD Regional Database
	Net firm creation rate (%) (firm birth rate minus firm death rate)	IBGE
	Percentage of the labour force with at least secondary education	IBGE
	Gender gap in the unemployment rate (percentage points)	OECD Regional Database
	Part-time employment incidence (%)	OECD Regional Database
	Unemployment rate (%)	IBGE
	Percentage of young population (from 18 to 24 years old) NEET	IBGE
	Youth unemployment rate (%)	OECD Regional Database
		Percentage of the population satisfied with roads and highways
Gross value added (GVA) in manufacture (ISIC rev4) as a percentage of GDP		OECD Regional Database
Manufacturing employment as a percentage of total employment		IBGE
Patent applications (PCT) per 1 000 000 people		OECD Regional Database
Percentage of the labour force with at least tertiary education		IBGE
	Percentage of the population satisfied with the affordability of housing	OECD based on Gallup World Poll (2019)
	Percentage of the population satisfied with the quality of public transportation systems	OECD based on Gallup World Poll (2019)
	Difference between built-up area growth rate and population growth rate (percentage points)	OECD Regional Database
	Exposure to PM2.5 in µg/m ³ , population-weighted (micrograms per cubic metre)	OECD Regional Database
	Percentage of people exposed to more than 10 µg/m ³ (micrograms per cubic metre) of PM2.5	OECD Regional Database
	Percentage of the population satisfied with the quality of air	OECD based on Gallup World Poll (2019)

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

Around one-fourth of Paraná's youth is neither in education, nor employment or training. Another core challenge raised by SDG 8 Decent Work and Economic Growth is the integration of youth into the labour market. In many regions in the OECD, youth unemployment is persistently higher than overall unemployment. This is also the case for Paraná. Its youth unemployment rate of 11.2% in 2013 is

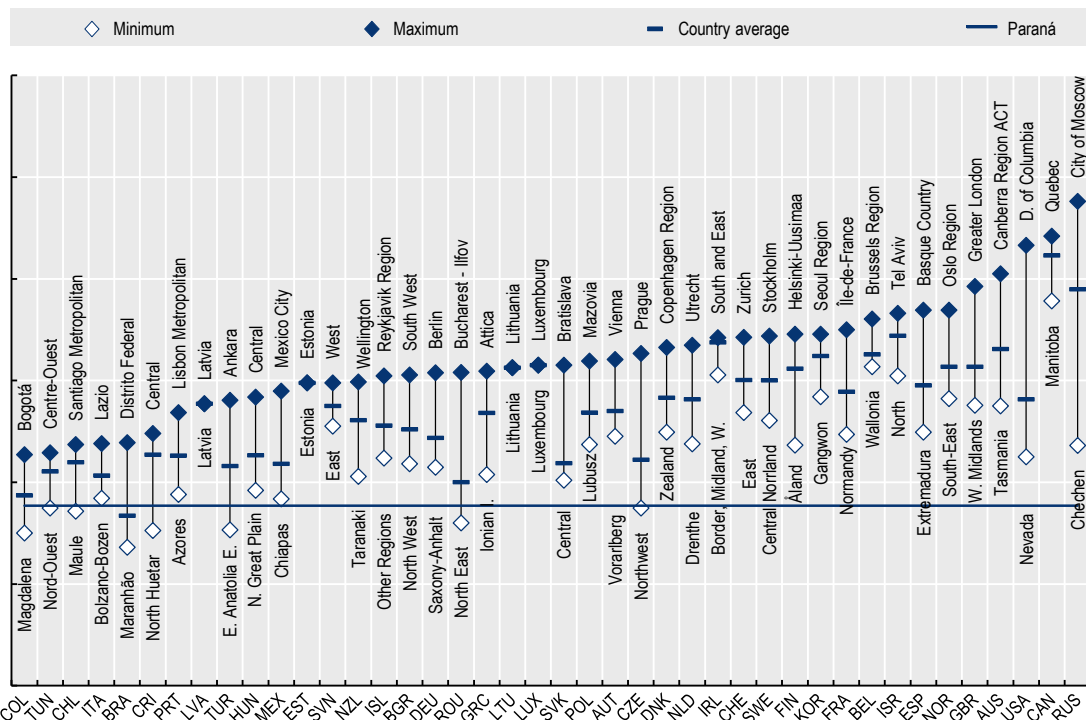
nevertheless lower than in two-thirds of OECD regions. In OECD regions, the average youth unemployment was around 17%. However, with 21% of Paraná's young population from 18 to 24 years old not in education, employment or training, the state belongs to the bottom third with the highest share of NEET compared to OECD regions. Nonetheless, Paraná shows higher performance in this indicator than more than three-fourths of states in Brazil, where the average share of young NEET is around 24%.

Manufacturing plays an important role in Paraná's economy. SDG 9 Industry, Innovation and Infrastructure recognises the key role of innovation in industries to favour sustainable development and has the objective to build resilient infrastructures and promote sustainable industrialisation. Against that background, Paraná can be characterised as an industrial region. In 2018, manufacturing employment accounted for close to 22% of total employment and the GVA in manufacture (ISIC rev4) represented around one-fifth of the regional GDP. The corresponding averages of OECD regions were considerably lower with the share of manufacturing employment being 12.5% and the manufacturing GVA accounting for 14% of GDP. Paraná also belongs to the 20% of states in Brazil with the highest share of manufacturing employment and GVA. The OECD localised indicator framework furthermore considers the share of the population satisfied with roads and highways in order to account for Target 9.1 to develop quality, reliable, sustainable and resilient infrastructure. Between 2008 and 2018, 46% of people in Paraná stated to be satisfied with roads and highways. While this figure corresponds to the national average, it is lower than in 80% of OECD regions, where the average satisfaction rate was around 63%. This points out some potential space for improvement regarding Paraná's road transport infrastructure.

Paraná is among the best-performing states in Brazil regarding tertiary education degrees and patent applications but lags considerably behind the average of OECD regions. SDG 9 Industry, Innovation and Infrastructure also emphasises the role of research and development (R&D) as expressed through Target 9.5 "to enhance scientific research and encourage innovation and substantially increasing the number of research and development workers" (UN, 2020^[2]). The OECD localised indicator framework for the SDGs uses the indicator of patent applications (Patent Cooperation Treaty) per 1 000 000 people as a proxy to account for this target. In Paraná, the patent application rate was at 3.3 patents per 1 000 000 people in 2014, which is considerably lower than the average of OECD regions (84 patents) and the suggested end value based on the performers (208 patents). On the other hand, Paraná's performance belongs to the top quarter of Brazilian states although some gaps to the highest performing states of São Paulo (7 patents) and Santa Catarina (10.2 patents) exist. Higher education degrees can be a beneficial factor for innovation. In the case of Paraná, the share of tertiary education degrees mirrors its performance regarding patent application. Compared to OECD regions, its 20% of tertiary education degrees among the labour force belongs to the bottom fifth of regions (Figure 2.7). At the same time, this figure is 1 of the 2 highest achievements among Brazilian states, only surpassed by the federal district with 28% of tertiary education degrees.

Satisfaction rates with housing affordability and quality of public transportation systems are below the OECD average but exceed the national average. With more than half of the world's population living in cities, achieving SDG 11 Sustainable Cities and Communities to create sustainable cities and communities and making them inclusive, safe and resilient can have a significant impact on people's lives. Housing plays an important role in that regard as expressed in SDG Target 11.1, which aims to ensure access for all to adequate, safe and affordable housing and basic services. Between 2008 and 2018, around 44% of Paraná's population stated to have been satisfied with the affordability of housing compared to the average of OECD regions of close to 53%. More than 70% of OECD regions exhibited a higher satisfaction rate than Paraná. In comparison with other Brazilian states, Paraná slightly exceeds the regional average of 42% but is lagging behind a majority of states. In addition, only 53% of Paraná's population is satisfied with the quality of public transportation systems, an indicator to measure SDG Target 11.2 to provide access to safe, affordable, accessible and sustainable transport systems. While the average of OECD regions is 60%, the satisfaction rate with the public transportation system in Paraná is, however, higher than in more than 70% of states in Brazil and exceeds the national average of 48%.

Figure 2.7. Percentage of the labour force with at least tertiary education, 2017



Note: Iceland, 2012; Brazil, 2013; Tunisia, 2014; Australia, Chile, Costa Rica, Mexico, Russia, 2015; Canada, Colombia, South Korea, Israel, New Zealand, United States, 2016

Source: OECD (2020^[4]), *OECD Regional Statistics (database)*, <http://dx.doi.org/10.1787/region-data-en>.



In Paraná, the built-up area and population are growing at very similar rates. The OECD further captures sustainable urbanisation through the indicator of the difference between built-up area growth and population growth rates. The end value for this indicator is set at zero, suggesting that to achieve sustainable urbanisation in the long term, the built-up area rate should follow the growth path of the population. While the population growth rate is higher than the built-up area growth rate in a majority of Latin American regions, this phenomenon cannot be observed in Paraná. In 2014, the difference between the two values was around zero percentage points indicating a balanced urban development.

Air pollution levels comply with air quality guidelines suggested by the World Health Organization (WHO). Pollution is one of the main concerns in densely populated areas around the world. SDG Target 11.6, therefore, envisages reducing the adverse environmental health risks of cities, including air pollution. In Paraná, air pollution levels are lower than in OECD regions on average. In 2017, the average annual level of exposure to small particulate matter with a diameter of 2.5 microns or less (PM_{2.5}) – which can cause cardiovascular and respiratory disease and cancers – was 9.2 µg/m³ (population-weighted, micrograms per cubic metre). Air pollution levels in Paraná were thus below the WHO air quality guideline value of 10 µg/m³ average annual exposure – which is also the suggested end value for 2030 (WHO, 2018^[12]). Overall, only around 14% of Paraná's population were exposed to a level of PM_{2.5} above the WHO air quality guidelines. This corresponds to a significantly lower share of the population than in both the average of OECD regions (59%) and the average of Brazilian states (68%). Correspondingly, close to 80% of Paraná's population stated to be satisfied with the quality of air between 2008 and 2018, around 9 percentage points more than the Brazilian average and around the average of OECD regions (80%).

Peace and Partnership: A good place to live for minorities whilst overall safety is a challenge

Paraná's results in the Peace dimension are mixed. State representatives considered all the OECD indicators for SDG 16 Peace, Justice and Strong Institutions to be highly relevant to help to measure the SDGs in regions and cities. In terms of its own achievements, Paraná exhibits mixed results. On the one hand, its population perceives the state to be a good place to live for ethnic minorities and homosexual people. On the other hand, Paraná is facing some challenges regarding the perception of safety, confidence in courts and the judicial system as well as the national government if compared to the average of OECD regions. In the Brazilian context, the achievements of Paraná regarding SDG 16 are similar to the national average.

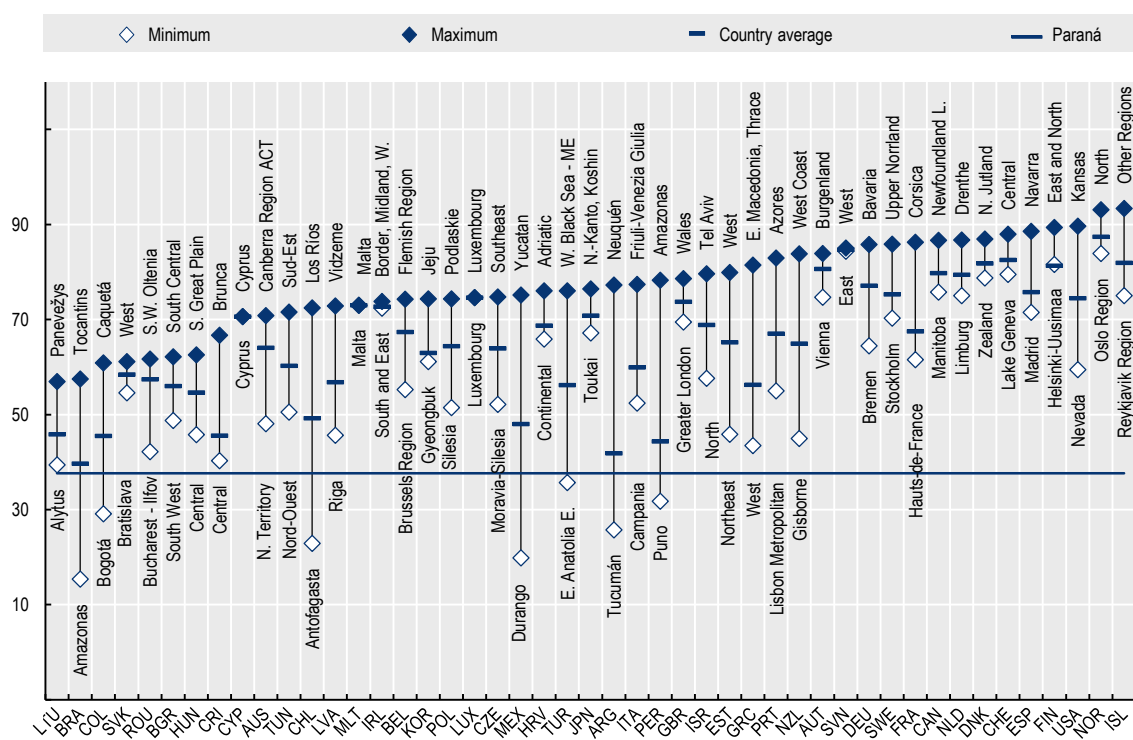
Table 2.4. OECD indicators used to assess the dimensions Peace and Partnership in the state of Paraná

SDG	Indicator	Source
	Homicides per 100 000 persons	IPARDES
	Percentage of the population that feel safe walking alone at night around the area they live	OECD based on Gallup World Poll (2019)
	Percentage of the population that have been assaulted or mugged in the previous 12 months	OECD based on Gallup World Poll (2019)
	Confidence in the judicial system and courts	OECD based on Gallup World Poll (2019)
	Percentage of the population that believes corruption is spread throughout the government in the country	OECD based on Gallup World Poll (2019)
	Percentage of the population that has confidence in the national government	OECD based on Gallup World Poll (2019)
	Voter turnout	TSE
	Percentage of the population that believes their place of residence is a good place to live for gay or lesbian people	OECD based on Gallup World Poll (2019)
	Percentage of the population that believes their place of residence is a good place to live for racial and ethnic minorities	OECD based on Gallup World Poll (2019)
	Share of PCT co-patent applications that are done with foreign regions (in % of co-patent applications)	OECD Regional Database
	Percentage of households with broadband Internet access	OECD Regional Database

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

Safety is a challenging policy area for the state of Paraná. The SDGs cannot be achieved if people's safety is not ensured in every region and city. This is reflected in SDG 16 Peace, Justice and Strong Institutions, which has the objective to promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels. Safety is an area of concern in Paraná. In comparison to OECD regions, the state ranks among the bottom 10% of regions with the highest homicide rates. In 2018, the state registered 21.2 homicides per 100 000 people. In comparison, OECD regions exhibit an average rate of 5.3 homicides per 100 000 people. Furthermore, between 2008 and 2018 around 8% of the population stated to have been assaulted or mugged in the previous 12 months. This is more than twice the level registered in OECD regions on average but corresponds to the average of states in Brazil. In addition, in the same period, less than 40% of people in Paraná felt safe walking alone at night around the area they live (Figure 2.8). Paraná thus ranks among the bottom third of regions with the lowest perception of safety at night in comparison to OECD regions. The state is also slightly lagging behind the average of Brazilian states (41%) in terms of that indicator.

Figure 2.8. Percentage of the population that feel safe walking alone at night around the area they live, 2008-18



Source: OECD (2020^[4]), *OECD Regional Statistics (database)* based on Gallup World Poll, <http://dx.doi.org/10.1787/region-data-en>.

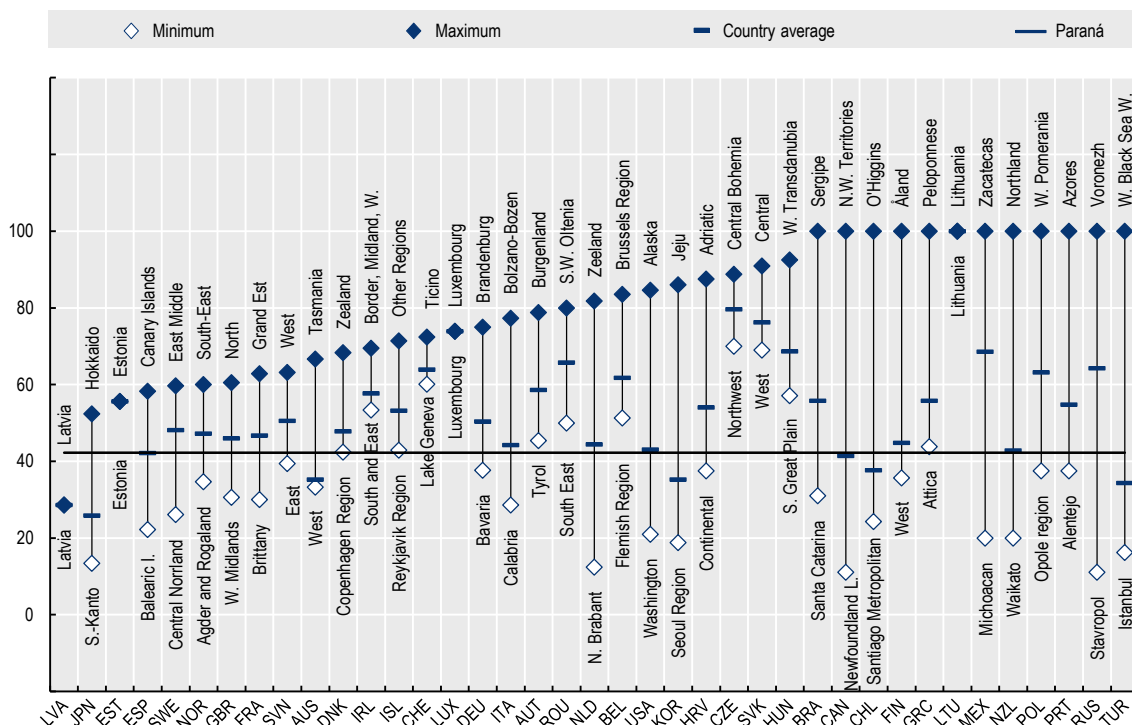
A vast majority of Paraná residents consider their state to be a good place to live for ethnic minorities as well as homosexual people. Personal safety and a life without discrimination, in particular for minority groups such as migrants or gay and lesbian people, are essential for a peaceful and just society. Here, the state of Paraná exhibits high performance in indicators obtained from self-reported survey data. Between 2008 and 2018, 83% of Paraná's respondents agreed with the statement that their state is a good place to live for racial or ethnic minorities, which is significantly above the average of OECD regions (66%) and exceeds the national average of Brazilian states (78%) as well. Overall, only 12% of OECD regions registered a higher rate of openness towards racial and ethnic minorities. What is more, between 2008 and 2018, around two-thirds of people in the state of Paraná believed that their place of residence is a good place to live for gay or lesbian people, a share significantly above the average of OECD regions (53%). The value also exceeds the average of Brazilian states, which was 64% for the same period.

According to survey data from Gallup World Poll, less than half of respondents in Paraná have confidence in the judicial systems and the federal government. SDG 16 Peace, Justice and Strong Institutions also promotes justice for sustainable development through institutions. Between 2008 and 2018, around 40% of respondents in Paraná stated to have confidence in the judicial system and courts, which roughly corresponds to the average of Brazilian states (41%). In comparison to OECD regions, Paraná is however slightly lagging behind, considering that the average rate of confidence in the judicial system and courts in OECD regions is about 10 percentage points higher. Similarly, the share of the population with confidence in the federal government (35.5% on average between 2008 and 2018) was slightly below the average of OECD regions (40%) and similar to the average of states in Brazil (36.4%). Another indicator that captures the progress on SDG 16 Peace, Justice and Strong Institutions is the voter turnout. Paraná's voter turnout in the last federal election (in 2018) of 83% was remarkably high compared to the average of OECD regions, however, these results should consider that voting is mandatory in Brazil (while it is voluntary in

most OECD countries). Finally, it should be noted that more than 7 in 10 people in Paraná (71.8%) believe that corruption is spread throughout the government in the country. This figure slightly higher than the national average (69.8%) and exceeds the average of OECD regions by close to 10 percentage points, indicating some challenges with regard to trust and transparency.

Regarding indicators for SDG 17 on Partnerships for the SDGs, Paraná is lagging behind the majority of OECD regions with regards to co-patent applications done with foreign regions and broadband connectivity. As the SDGs are a shared responsibility both within and across countries. SDG 17 Goals aims to strengthen the means of implementation and realise the global partnership for sustainable development. In order to measure how advanced a region is on the pathway to achieving that goal, the OECD uses the indicators of the share of co-patent applications with foreign regions (in percentage of co-patent applications) and the percentage of households with broadband Internet access. The former reflects how knowledge sharing between regions can enhance access to innovation and foster sustainable development. The latter captures the use of “enabling-technologies” (Target 17.8) that favours the emergence of new sustainable development models and partnerships between stakeholders and citizens. In 2013, more than 50% of households in Paraná had access to broadband Internet, which is among the highest values of states in Brazil. Yet, the share is relatively low when compared to the average of OECD regions (74%). In terms of the share of patent collaborations, Paraná belongs to the bottom 30% in comparison with OECD regions. Around 42% were filed together with foreign regions in 2015 (Figure 2.9). In comparison to Brazilian states, Paraná ranked among the 15% of states with the lowest number of co-patent applications. The average share of PCT co-patent applications filed with foreign regions in Brazilian states was about 56% indicating a potential for Paraná to catch up with its peers.

Figure 2.9. Share of PCT co-patent applications that are done with foreign regions, in percentage of co-patent applications, 2015



Source: OECD (2020^[4]), *OECD Regional Statistics (database)*, <http://dx.doi.org/10.1787/region-data-en>.

The SDGs to respond to interlinked sustainability challenges and megatrends

The SDGs provide a forward-looking vision for Paraná to consider, anticipate and respond to some global changes and trends that impact and shape the policy environment. The OECD has identified three critical megatrends influencing the achievement of the SDGs in Paraná: i) demographic changes, in particular, urbanisation, ageing and migration; ii) environmental protection, climate change and the need to transition to a low-carbon economy; and iii) technological changes, such as digitalisation. The impact of these megatrends on people and societies on Paraná is context-specific and therefore requires place-based policies to effectively respond, minimise their potential negative impact on regional disparities and capture the opportunities related to those trends locally.

Paraná's economic performance largely depends on agriculture. Paraná's economy is mainly focused on exports of basic products, especially soybeans and poultry. Together, they account for more than 40% of the state's total exported value, thus playing an important role for SDG 2 Zero Hunger on Food Security (Comex, 2019^[13]). In the past, the main destination for these products has been China whose economic expansion over the last two decades has greatly favoured the economic development in Paraná. However, demand from China has been slowing down and could lead to a reduction in grain prices in the next decade (Comex, 2019^[13]). Considering its comparative advantage and strong presence in the agribusiness, such a reduction in grain prices could have a considerable impact on Paraná's economy. This impact could be particularly pronounced if the state does not adjust and diversify its production taking into account the megatrends of an increasingly globalised and technological economy. On the other hand, reduced grain prices could also lead to increased demand from other countries particularly when considering that global food demand will continue to grow during this century as the world's population is still increasing.

Paraná's strong presence in the agricultural technology sector can be a means to consolidate its position in the global agribusiness market. According to Embrapa, the Brazilian Agricultural Research Corporation, there is a large demand for new agricultural technologies to sustain the pressures on the global market for agricultural products. The growth of private investment for agricultural innovation and new technologies, a second digital revolution leading to an increased processing capacity, cheaper sensors, new biotechnologies and access to agronomic data in large quantities to be used to support decision-making practices were listed as some of the opportunities to take advantage of improving technology in the agribusiness sector (Embrapa, 2018^[14]). Paraná is already very active in the agricultural technology sector. Out of 1 125 agricultural technology (AgTech) start-ups identified by Embrapa in its 2019 AgTech Radar, more than 100 were based in Paraná – 39% of all AgTech start-ups in the south of Brazil and the second-most of all states in the country (Dias, Jardim and Sakuda, 2019^[15]). Taking advantage of its growing AgTech sector and technologies such as Big Data and artificial intelligence can provide synergies between SDG 2 Zero Hunger and SDG 9 Industry, Innovation and Infrastructure and will play an important role for Paraná in order to secure its position in the global agribusiness market but also generate additional employment opportunities (SDG 8 Decent Work and Economic Growth). Similar adjustments in the industry and services sectors such as the incorporation of new technologies and the adaptation to new consumption trends will also be crucial elements for economic success in the coming years.

Climate change could greatly affect agricultural production in Paraná. The state currently benefits from its climate and agricultural conditions such as the rainy season, soils and temperatures. Paraná's high productivity rates are extremely relevant for the national agricultural production. Paraná accounts for more than 17% of the country's grain harvest, even though occupying only 2.3% of the Brazilian territory. The agricultural production of Paraná has a great influence on the conservation of natural resources, mainly soil, air and water, and plays an important role in the preservation of the environment connecting SDG 2 Zero Hunger with SDG 13 Climate Action. Paraná's agriculture can certainly help in mitigating climate change, mainly by incorporating carbon in the soil via organic matter. Policymakers have started to require farmers to contribute to mitigating climate change. For instance, there are rules in the state that each producer must preserve at least 20% of the native vegetation on their property to favour biodiversity.

Nevertheless, there are many challenges related to climate change and agricultural activities as producers also need to be financially efficient. It has to be noted that all environmental conservation actions that farmers must carry out, such as crop rotation or the building of terraces, have to be financed by their own resources (Paraná State News Agency, 2018^[16]). In that context, farmers in Paraná benefit from the widespread cultivation of a zero-tillage agriculture that reversed the historically accelerating degradation of soil organic matter and soil structure by abandoning conventional tillage, thus improving soil physical and chemical characteristics. Initially explored in Paraná, the zero-tillage philosophy and technologies is now practised on more than 50% of the annual crop area in Brazil (De Freitas and Landers, 2014^[17]).

Paraná's population growth and urbanisation rate are expected to change in the next decades, which will have effects on inequalities and future labour market conditions in the state. Demographic forecasts expect the growth rates of Paraná's population to decrease from annual growth of 0.78% in the period between 2010 and 2020, to 0.57% in the current decade and 0.28% in the 2030-40 period (IPARDES, 2019^[18]). According to the Brazilian Institute of Geography and Statistics, the urbanisation rate in Paraná already amounted to 85.3% in 2010 and more than 50% of the population was concentrated in only 20 of the 399 municipalities. The high degree of urbanisation and concentration of the population in a small number of municipalities can continue to pose challenges to municipal public systems and increase inequalities. By 2030, the urbanisation rate is expected to reach 92%. This will create a higher demand for services and urban infrastructure (SDG 11 Sustainable Cities and Communities), which can only be provided if the different levels of government – national, subnational and local – collaborate to promote equitable and equal access to these services to the entire population, seeking to avoid increased inequalities between different sections of the population.

The digital divide hinders Paraná's inclusive development. The state of Paraná is facing an increasing digital divide whereby vulnerable people such as the elderly or poor citizens have low access to digital opportunities. This can result in enhanced disparities with potential negative impacts on education levels (SDG 4 Quality Education), access to the labour market for certain groups of the society and economic growth (SDG 8 Decent Work and Economic Growth). In 2016, only 67.2% of the population of Paraná had access to the Internet, with 93.5% accessing it via cell phone and 27.1% accessing the Internet exclusively via cell phone (IBGE, 2016^[19]). The digital divide is already a challenge when it comes to developing skills, organising more complex value chains to increase competitiveness, strengthening comparative advantage and increasing state participation in international markets that go beyond agricultural products (Figure 2.10). The state of Paraná has developed the strategic map for information and communication technology (ICT) in Paraná that aims to make the state the main ICT business centre in Latin America by 2035, which could have potentially beneficial impacts on educational outcomes, innovation and global competitiveness (SDG 4 Quality Education, SDG 8 Decent Work and Economic Growth and SDG 9 Industry, Innovation and Infrastructure).

Figure 2.10. Digitalisation challenges for the state of Paraná



Source: Government of Paraná (2018^[20]), “2016-2035 Paraná Information and Communication Technology Governance”, Curitiba, December 2016, Governance of ICT, PR/Assespro-SEBRAE/PR, Decree no. 3758 of March 31, 2016.

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Notes

¹ The Bolsa Família Programme distinguishes between poverty and extreme poverty. Families are considered to live in poverty when their income is between BRL 89.01 and BRL 178.00 per person per month. The threshold for extreme poverty is set at a per capita income of up to BRL 89 per person per month (Caixa Econômica Federal, 2020^[21]).

² The OECD defines large regions (TL2) as the first administrative tier of subnational governments. TL2 regions also include “administrative cities” that belong to the first administrative tier of subnational government.

³ It has to be noted that the OECD refers to the mortality rate per 10 000 people while the equivalent value in Paraná’s own database (<http://www.ipardes.gov.br/imp/index>) of around 12 is based on the mortality rate per 1 000 live births.

⁴ Going beyond administrative boundaries, the coastal area is here defined as the overlap between the regional or city area and a buffer of 50 km from the coastline (this can include the area of regions or cities without a coastline but within 50 km from it).

⁵ Firms entering the market minus firms leaving the market divided by the total number of number of firms.

3

Multi-level governance and stakeholder engagement for the SDGs in Paraná, Brazil

Paraná has designed a specific institutional framework to implement the Sustainable Development Goals (SDGs), co-ordinated by the Economic and Social Development State Council of the State of Paraná (CEDES) in co-operation with several technical institutions to support the implementation of the 2030 Agenda. Paraná has furthermore strengthened the financial support scheme and established partnership agreements with the majority of its 399 municipalities to implement the SDGs. The State Audit Court of Paraná is a key actor in that context, contributing to the monitoring and evaluation of the SDGs in the state's budgetary planning. Paraná also strives to engage youth, civil society actors and the private sector, despite challenges related to logistical infrastructure, red tape and lack of data.

Multi-level governance to implement the SDGs in Paraná

Co-ordination with the federal government

The Brazilian Multi-Year Plan (*Plano Plurianual*, PPA) provides high-level guidance for the federal, state and municipal levels of governments in Brazil. As pointed out in Chapter 1, the PPA is the main instrument for Brazil's medium-term planning of government action. The last *Multi-Year Plan 2016-2019* consisted of a series of programmes, goals, targets and initiatives to drive development, productivity and social inclusion. Between 2016 and 2019, the federal government applied a systemic and integrated approach to connect the SDGs through mapping and linking the SDG targets and indicators to the PPA and federal government planning. The PPA also aimed to improve the state's operational capacity and performance to increase the quality of public services and spending, to improve transparency, communication and social participation, and to prevent and fight corruption. Over 2016-2019, these efforts contributed to aligning the medium-term vision of government action with the implementation of commitments related to the SDGs. The 2016-19 PPA represented a systemic and cross-cutting vision to co-ordinate the government's efforts to achieve the SDGs.

However, the new PPA 2020-23 established by the federal government no longer refers to nor aligns with the 2030 Agenda. Although insufficient to implement the 2030 Agenda in Brazil, the PPA is an important instrument to guide the government actions in the mid-term, and should be complemented by a longer term national strategy to guide SDGs implementation across sectors and levels of government. In 2020, in order to establish such a long-term instrument to provide guidance for public policies in Brazil, the federal government created the Federal Development Strategy (EFD) for the period 2020-31 (Decree 10.531/2020). The new strategy, however, does not mention the 2030 Agenda explicitly, although its content can be related to the SDGs. Despite the absence of dedicated federal guidelines on how to achieve the 2030 Agenda or how to engage states and municipalities, a series of workshops are carried out as part of the SDG Target Project (*Projeto Metas ODS*), to define priority targets for each SDG and key initiatives across federal agencies. The project, led by the Special Secretariat for Social Articulation (SEAS) of the Government Secretariat of the Brazilian Presidency (SEGOV-PR), aims to prioritise global goals taking into account the national circumstances in Brazil. It was launched in early 2021 and is expected to evaluate the performance of federal government initiatives for sustainable development.

The state of Paraná is, however, co-operating with a few federal institutions on the implementation of the SDGs, such as the Brazilian Agricultural Research Corporation (Embrapa). Two of Embrapa's 42 research centres are located in Paraná: Embrapa Forests in Colombo, near Curitiba, and Embrapa Soybean in Londrina, in the northern area of the state. One of Embrapa Forests' initiatives, the Roads with Araucárias project (payment for ecosystem services project for small-scale rural producers) carried out in the states of Paraná and Santa Catarina is for instance listed on the United Nations (UN) SDG Partnerships Platform. Furthermore, the state collaborates with the national statistics institute (*Instituto Brasileiro de Geografia e Estatística*, IBGE) and the Institute for Applied Economic Research (Ipea) to develop local indicators.

Despite ad hoc partnerships between Paraná and specific federal institutions, there is no strong federal guidance and coordination on the multi-level governance of the SDGs. Although a National Commission for the Sustainable Development Goals (CNODS) was established in 2016 as a governance body to internalise, disseminate and advance the implementation of the 2030 Agenda across different levels of government, the private sector, academia and civil society in Brazil, it was dissolved in 2019. A new coherent set of policies, actions and frameworks is needed to strengthen vertical co-ordination between the federal government, states and municipalities.

Paraná's multi-level governance framework

At the state level, Paraná has designed a specific multi-level governance framework to implement the SDGs. The state has assigned CEDES the role to co-ordinate the implementation of the SDGs as the primary body responsible for the regional governance of the 2030 Agenda implementation. The council is a multi-sectoral collegiate body with advisory and strategic support functions. CEDES is chaired by the governor and composed of all state secretaries (Figure 3.1) as well as three independent professionals in the area of sustainable development or members of civil society movements active on the SDGs. CEDES' main functions are to:

1. Advise the government on strategies, instruments and projects that contribute to economic growth, social development and environmental protection.
2. Design, approve and monitor the Sustainable Development Plan of the State of Paraná.
3. Strengthen communication and co-ordination between governmental and non-governmental entities on the implementation of public policies.

Besides supporting specific projects, CEDES' main activities follow five strategic axes: i) dissemination; ii) governance; iii) planning and budgeting; iv) localisation of the SDGs at municipal level; and v) monitoring. Since 2016, CEDES has been working on establishing and strengthening technical multi-sectoral partnerships between municipalities, the private sector and academia to implement policies that are aligned with the SDGs. Beyond frequent informal exchanges among its members, CEDES has never had a formal gathering and the three independent professionals are yet to be nominated by the governor.

In addition to the development of the Sustainable Development Plan for the State of Paraná, CEDES is mainly responsible for co-ordinating the work of key government-based institutions to develop action strategies to advance the implementation of the 2030 Agenda in the state. Together with IPARDES, CEDES supports the formulation, implementation, monitoring and evaluation of public policies through a set of indicators tailored and designed to monitor the implementation of the SDGs at the local level. CEDES also co-operates with Celepar, the Paraná State Company for Information Technology and Communication, which has developed tools to support the state and municipal managers in the systemic visualisation of SDG indicators. Academia representatives, the private sector, civil society, the Paraná State Audit Court (TCE-PR) and the Paraná State Justice Court (TJPR) are also collaborating with CEDES to implement the 2030 Agenda. In addition, CEDES has a focal point in each state secretariat and in each state university, and hosts technical committees whose work is guided by the 5Ps of the 2030 Agenda. There are also plans to have a focal point – a municipal employee – in each of the 399 municipalities in the state. Beyond CEDES, other institutions such as PARANACIDADE, the state's urban development body, deal directly with municipalities by promoting and implementing non-exclusively state activities related to the economic and institutional development. PARANACIDADE also manages public funds for urban, regional and institutional development, in particular the Paraná State Urban Development Fund (FDU).

Figure 3.1. Paraná state secretaries engaged in CEDES' SDG coordination activities



Note: Decree No. 1482 from 29 May 2019 that establishes the State Council of Economic and Social Development of the State of Paraná – CEDES as a collegiate advisory and strategic support body to the State Governor, member of the unit of the Civil House.

Source: Government of Paraná (2019^[1]), Decree No. 1482/2019, <https://www.legislacao.pr.gov.br/legislacao/pesquisarAto.do?action=exibir&odAto=220739&indice=1&totalRegistros=2&dt=31.6.2019.10.1.18.695>.

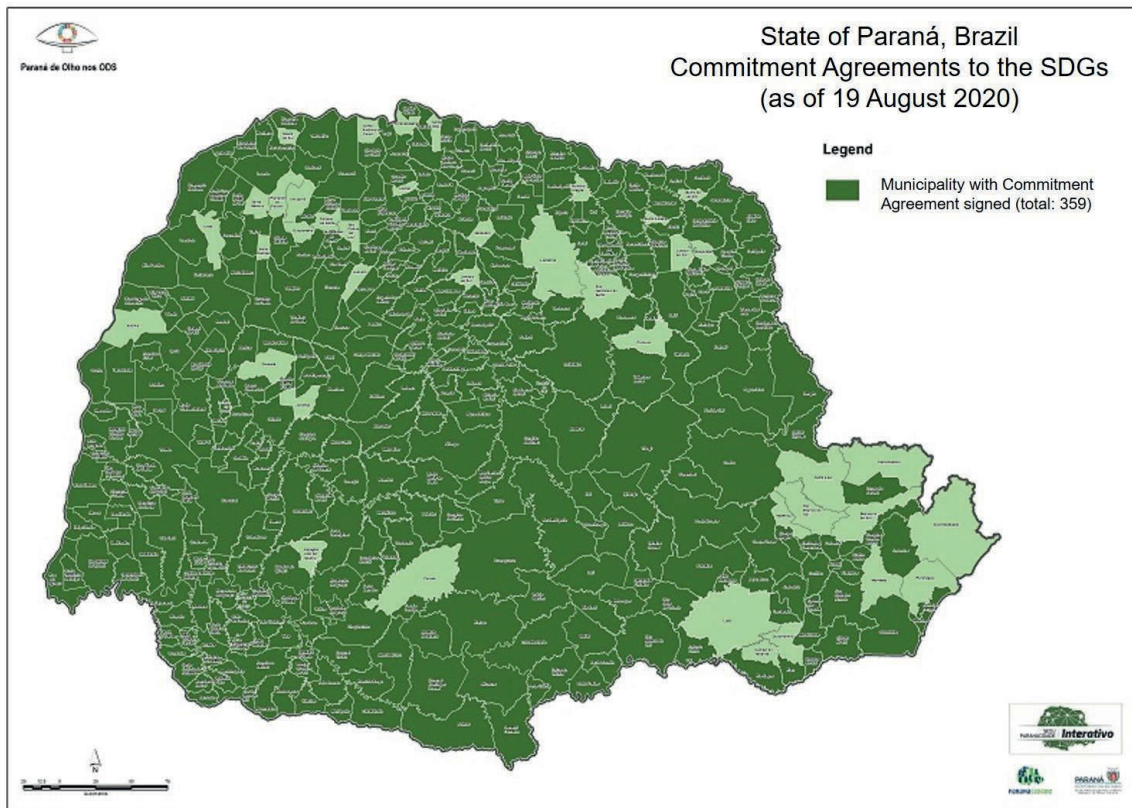
The state of Paraná is strengthening its financial support to municipalities to help them advance the implementation of the SDGs. Through Paraná's State Financing System for Municipal Development (SFM), municipalities in the state can access specific funding dedicated to institutional strengthening programmes and investments for urban infrastructure.¹ The state is also working to identify local, national and international partners that can expand the funding base to support municipalities in their efforts to achieve the SDGs. Fomento Paraná, a state-owned financial institution and Brazil's Far South Regional Development Bank (BRDE) work closely with PARANACIDADE to provide financial support for sustainable development projects in the state. Fomento Paraná's mission is to promote sustainable development through technical and financial support. In addition, PARANACIDADE established a partnership with the BRDE to facilitate the municipalities' access to financial resources. Regulated by the Brazilian Central Bank, Fomento Paraná and the BRDE are part of the national financial system and follow the Central Bank guidance on the promotion of sustainability. In 2020, the Central Bank launched a new sustainable agenda to promote sustainable finance, adequate management of socio-environmental risks and climate in the

National Financial System (SNF) and to integrate sustainability criteria in the Central Bank decision-making process.

The BRDE reaches more than 90% of the municipalities in the south of Brazil and 70% of the BRDE's funds stem from federal sources such as the Brazilian Development Bank (BNDES), the Federation of Industries of the State of Paraná (FIEP), the Midwest Constitutional Financing Fund (FCO) and the Brazilian Government Severance Indemnity Fund for Employees (FGTS). The BRDE also receives international funding from the European Investment Bank (EIB) and the French Development Agency (AFD). Its goal is to work towards the creation of value-added for rural producers, municipalities and companies of all sizes that are developing projects aligned with the SDGs. Recently, the BRDE has developed new financing initiatives for the SDGs. In 2020, the BRDE and the AFD entered into a EUR 70 million contract to allocate funds to projects in line with the SDGs in the states of Paraná, Rio Grande do Sul and Santa Catarina. However, some municipalities face a fiscal and budget crunch, which adds to the lack of technical and managerial capacity. This is particularly the case when it comes to accessing financial resources from both Fomento Paraná and the BRDE, a challenge which is also exacerbated by red tape, complex rules and administrative processes, which delay access to and use of state funding.

The state of Paraná has established partnership agreements with the majority of its municipalities to implement the SDGs. As of August 2020, 359 out of the state's 399 municipalities (Figure 3.2) and 16 out of 19 regional associations had engaged with the state to develop a municipal capacity-building strategy on the SDGs. Since the beginning of 2016, CEDES has mobilised the mayors of these 359 municipalities through partnership agreements to incentivise the SDGs implementation in their municipalities. This initiative is generating awareness and guiding actions towards the SDGs on how the municipalities can align their municipal planning tools to the SDGs, how to better allocate their budget to achieve the 2030 Agenda and how to communicate the strategic role of the SDGs framework to each stakeholder. There is also a strategic partnership between the UN Development Programme (UNDP), the state of Paraná, the municipalities in the western part of the state and the state-owned company Itaipu Binacional, which runs a hydroelectric power plant that is one of the world's largest generators of renewable clean energy. The project has the objective to foster the territorialisation of the SDGs in Western Paraná through: i) the design of joint municipal actions for the implementation of Agenda 2030; ii) the systematisation of indicators on sustainable human development to support local decision-making; and iii) technical training on the SDGs for local public servants.

Figure 3.2. Map of municipalities that have signed agreements with CEDES to implement the SDGs



Source: PARANACIDADE (2019^[2]), *Municípios com Termo de Compromisso aos ODS [Municipalities with a Term of Commitment to the SDGs]*, <http://sustentabilidadeurbana.org.br/ods/municipios-com-termo-de-compromisso-aos-ods/>.

The role of courts, civil society and the private sector to achieve the 2030 Agenda

Paraná is developing partnerships at different levels of government as well as with the private sector and civil society to implement the SDGs. The state of Paraná is using the “*Paraná de Olho nos ODS*” (“Paraná keeping an eye on the SDGs”) pledge and the underlying business intelligence (BI) platform responsible for mapping, tracking and monitoring indicators related to the SDGs to engage a wide variety of institutions including the private sector and civil society. The pledge encourages institutions to mainstream the 2030 Agenda in their internal practices and engage with other partners. In particular, the pledge calls for the implementation of actions that promote peaceful and inclusive societies, provide access to justice, promote accountable, effective and inclusive institutions at all levels (SDG 16) and strengthen the global partnership for sustainable development (SDG 17). The state is formulating a proposal for a capacity-building programme on planning, monitoring and evaluation of public policies in order to create an enabling environment for the implementation of the SDGs at the local level. Some of the areas that the capacity-building programme is expected to cover are:

- The analysis of local indicators through BI as a tool for sustainable development.
- The use of planning and financial instruments to strengthen urban planning.
- The role of local governments in the implementation of the 2030 Agenda.

- The link between actions in the Annual Budget Law (LOA) and the SDGs.
- The engagement of partners to raise funds for the implementation of the SDGs.

The state courts

Paraná State Audit Court (TCE-PR)

The TCE-PR is contributing to the monitoring and evaluation of the SDGs in the state's budgetary planning. The Court is responsible for overseeing the use of public funds by the state and the 399 municipalities in Paraná through monitoring all public investments undertaken by state and local governments. The TCE-PR also informs the public about the outcome of public spending, e.g. whether public money has been used properly and whether the services offered to the population were of quality. The Audit Court analysed the 2016-19 PPA and the 2017 Annual Budget Law (LOA 2017) to draw lessons for the development of the PPA 2020-23. In that framework, the audit court has developed a model to: i) examine the link of ongoing public policies with the SDG targets; ii) evaluate budget expenditures related to the implementation of the SDGs; iii) generate evidence to improve decision-making processes related to the SDGs; and iv) analyse the official indicators related to the budget-planning instruments (LOA and PPA) (Figure 3.3). The methodology was based on several international references, including the OECD Recommendation of the Council on Budgetary Governance (OECD, 2015^[3]). The work undertaken by the audit court revealed the preponderance of process indicators over outcome indicators.

Figure 3.3. Paraná's State Audit Court initiatives to mainstream the SDGs into the budgetary planning process



Source: TCE-PR (2018^[4]), *Contas do governador: exercício de 2017: objetivos de desenvolvimento sustentável/TCE-PR* [Governor's Accounts: Fiscal Year 2017: Sustainable Development Goals], <http://www3.tce.pr.gov.br/contasdogoverno/2017/pdfs/ods.pdf>.

The TCE-PR found that the vast majority of government initiatives within the 2016-19 PPA were directly or indirectly contributing to the SDGs. The PPA 2016-19 consisted of 20 programmes encompassing 202

initiatives² accounting for approximately 60% of the state budget. The results showed that only 6 of the initiatives did not contribute in any way to achieving the SDGs.

Building on this precedent, the audit court supports the state's efforts to ensure that policies designed in the framework of the PPA 2020-23 also target the SDGs. The TCE-PR is collaborating with the State Secretariat of Planning to align the PPA 2020-23 and remodel the PPA goals' monitoring system towards the SDGs. The methodology developed by the TCE-PR is currently in the revision process. Following that process, the TCE-PR will classify the actions of the 2020-23 multiannual plan according to their direct or indirect contribution to each SDG target. The results will be submitted to the state secretaries gathered at CEDES to enhance the actions, avoid the duplication of efforts and strengthen inter-sectoral collaboration. The audit court is also planning to trickle down this methodology to the municipal level and follow up on the recommendations derived from the analysis. Furthermore, it aims to elaborate an SDG Budget Guide to support the capacity building of technical staff in all municipalities and provide guidance on how to align their budget with the SDGs and increase transparency. Moving forward, further efforts are needed to raise awareness and create consensus among municipal managers.

Paraná State Justice Court

The Justice Courts in Brazil are committed to the 2030 Agenda. In 2018, the National Council of Justice (CNJ) created an inter-institutional committee, which proposed to integrate the goals and indicators of the SDGs into the targets of the Brazilian Judiciary Ordinances.³ At the state level, the Court of Justice of the State of Paraná (TJPR) signed a *Letter of Commitment for Non-Business Organisations*, addressed to the Secretary-General of the UN in November 2018. In the letter, the TJPR expressed its support and commitment to disseminate the Ten Principles of the UN Global Compact on human rights, labour, environment and anti-corruption. To underline its commitment, the court created several initiatives related to social responsibility, sustainable growth and citizenship, such as the Innovation Laboratory (LINO-TJPR) founded in August 2019 and the Laboratories for Innovation, Intelligence and Sustainable Development Goals (LIODS-TJPR) founded in March 2019.

The TJPR is promoting innovative approaches to foster the implementation of the SDGs at the state level. In August 2019, the CNJ established guidelines for the adoption of the SDGs by the judiciary and the Extrajudicial Service. At the same time, the Judge-President of the Justice Court of Paraná signed Judicial Decree No. 497/2019, establishing the Innovation Management programme, which promotes an opportunity for judges and civil servants to present their ideas and created the Innovation Laboratory at the state level, a research and science centre to foster the implementation of SDGs 9 and 16. A similar Laboratory for Innovation, Intelligence and Sustainable Development Goals) was also created by the National Council of Justice. It seeks to advance SDG 16 Peace, Justice and Strong Institutions through institutional knowledge, innovation and co-operation. Furthermore, the TJPR established the Working Group of the Innovation Management Programme (TJPR, 2019^[5]), which is currently building a technical co-operation agreement with four branches of the justice system in the state of Paraná. This agreement will involve the Federal Justice, the Labour Justice, the Electoral Justice and the State Justice Courts and has the mandate to promote studies, research and development of innovative actions and projects, aiming at the achievement of the SDGs. The alignment of the TJPR's work with the SDGs is mainly based on its mission, vision and core values indicated in the strategic planning 2015-20.

A crucial challenge faced by the Judiciary of the State of Paraná is measuring the impact of its actions to deliver justice to the citizens. Improved and new indicators are needed to build a robust database. The TJPR is continuously searching for tools to effectively deliver justice to citizens. For example, the Macro Challenges of the Judiciary 2015-20 created by the CNJ provide guidance and support to the strategic planning of the state court. The CNJ also uses a set of indicators to monitor the implementation of the SDGs, notably SDG 16, for example through the number of states that have implemented custody hearings

and occupation rates in the Brazilian prison system (UN, 2016^[6]). These are also used at the state level by the TJPR.

Digital processes are crucial to develop indicators to achieve the SDGs. The TJPR is very advanced in terms of digitalisation processes. Almost every file in the judicial process is available in a digital format. The judiciary uses a cross-reference database, which allows the court to analyse data provided by the state government and link them to the SDGs. The co-operation between the TJPR, the state government and the TCE-PR may contribute to guide the prioritisation of public action, and help to reduce large demands on the local judiciary including the number of processes and appeals.

Civil society and youth participation

Civil society plays a key role in supporting progress towards the SDGs in Paraná. Civil society organisations are engaged in the implementation of the SDGs and promote different initiatives on the 2030 Agenda. For instance, the movement “Nós Podemos Paraná” (Paraná We Can) has been working to build partnerships with local leaders, non-state institutions and citizens to achieve the Millennium Development Goals (in the previous decade) and the SDGs. The National Movement “SDGs We Can” brings together several partners, including companies, governments, non-governmental organisations (NGOs), educational institutions, associations and volunteers at the state level in Paraná to implement the 2030 Agenda locally. The movement played a key role during the discussions on how to implement the SDGs at the national and state level and contributes to the improvement of public policies in Paraná. The movement however considers that the knowledge of citizens about the SDGs and their engagement in the 2030 Agenda is still weak.

The state of Paraná is using art and culture to advance the implementation of the SDGs through the “SDGs & Art” initiative covering visual arts, dance, music, theatre, fashion and handcrafts. As part of the initiative, 17 artists from Curitiba were invited to create artwork illustrating the SDGs by promoting diversity and artistic-cultural expression, which feature in a web portal accessible to citizens. Another example is the dance day, organised by the state, which featured a special performance of the local ballet on the 17 SDGs to raise awareness among the local population.

The state of Paraná is working closely with young people. CEDES invites youth associations to joint discussions and encourages them to participate in debates related to the SDGs. The Youth Action Hub, created by the United Nations Conference on Trade and Development (UNCTAD) is one of the initiatives promoted by civil society that focuses on research related to the SDGs. It also leads initiatives such as the Youth Action Day, the SDG Challenge and the Youth Share.⁴ The Youth Action Hub in Paraná promotes training with the International Training Centre for Authorities and Leaders (CIFAL), which is backed by the Federation of Industries of the State of Paraná. The initiative is also involved in different events, such as the Climate Cycling, the Sopão Curitiba project and the Environment Week. The Youth Action Hub in Paraná is also engaged in dissemination events such as during the World Refugee Day.

State-owned companies play an important role in the engagement of the civil society on the SDGs in Paraná. Celepar was one of the first state government companies to sign an agreement with CEDES to implement the SDGs. The institution works as a hub that connects academia, government and start-ups, boosts entrepreneurship and fosters innovations in the state. Since the company committed to the achievement of the 2030 Agenda in 2016, it has been working to engage citizens and raise awareness of the SDGs based on a set of activities, including through the Portal de Boas Práticas ODS (SDGs Good Practices Portal). This web portal highlights policies and actions implemented by the state of Paraná contributing to one or more SDGs. Open to the public, it aims to disseminate and replicate good practices and initiatives on the SDGs by all stakeholders in order to improve quality of life in the state.

The role of the private sector for the SDGs

Paraná uses a range of tools to leverage the engagement of the private sector in achieving the SDGs. In Paraná, several large Brazilian companies, as well as small- and medium-sized enterprises (SMEs), are already actively working on the SDGs. Private companies are aligning their business plans and strategies with the SDGs to reduce environmental impacts and promote social justice. For instance, companies such as Terminal de Contêineres Paranaguá (TLP), the largest container terminal in Latin America, and Companhia Paranaense de Energia (COPEL)⁵, a large electricity company with operations in ten Brazilian states, feature in international benchmarks on sustainability and the 2030 Agenda. Another example is Companhia de Saneamento do Paraná S.A (Sanepar),⁶ a water and waste management company active in 346 municipalities (345 of them in Paraná), which has integrated the SDGs into its National Sanitation Quality Award certification process. However, one challenge that remains is the integration of the SDGs into the core business of the companies.

Several private companies in Paraná are active on the SDGs. The agricultural company Top Eggs, for instance, focuses on SDGs 2, 3, 12 and 17 to align its business strategies with sustainable development through investments in sustainable infrastructure. The company is currently developing a project through which for every ninth egg sold by the company, a tenth will be donated to charitable organisations, which send leftover fruit and vegetables to communities that suffer from hunger or malnutrition thus contributing to the targets of SDGs 2, 3 and 12. Another example is Virtú, a small business that offers courses, training and educational projects for companies and governments related to project management and financial planning. The company has collaborated with the “Keeping an eye on the SDGs” project and supported the state through the preparation of a guide on the implementation of municipal policies for sustainable development in Paraná. Virtú has also supported Paraná on the “Potential Impact Index on Sustainable Development (2017 Government Account Book/TCEPR)” initiative. Tecverde, a company in the construction sector, aligned its business model to the SDGs in 2019 and collaborates with universities to provide access to knowledge about innovation, sustainability and the SDGs in the building sector.

Local initiatives co-ordinated by the private sector and the state are promoting awards for the most sustainable local businesses. In the state of Paraná, CEDES supports partnerships with the private sector. There is also a partnership with the FIEP to implement the SDGs in private companies located in the state. The FIEP encompasses more than 5 000 industries that employ around 700 000 workers in 80% of the municipalities. It also organises an annual SDGs Award contest, which has received an increasing number of applications since its first edition in 2016. In 2019, 386 public and private sector organisations registered for the contest. The FIEP has also been involved in the development of a country-wide SDG portal, which entails indicators and dynamic reports on the SDGs covering all 26 states, the federal district and the 5 570 municipalities in the country. Another initiative, Selo SESI ODS, awards an SDG seal for one year to local businesses as a recognition of their efforts to implement the SDGs.

However, the private sector still faces challenges related to the logistical infrastructure, red tape and the lack of data, which impede to upscale the work on the SDGs. Legislation and logistical infrastructure and related costs affect the private sector development strategy and locational choice. The lack of reliable, updated and accessible granular economic, social and environmental data is another issue that prevents the private sector from being more active on the SDGs. This hinders their capacity to plan and implement business strategies. Consequently, both local policymakers and companies need to use national-level data, which might not actually correspond to the local circumstances and prevent the implementation of effective policies and business strategies.

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Notes

¹ Public sector financing is carried out by the State Financing System for Municipal Development (SFM) in partnership with the State Secretariat of Urban Development and Public Works (SEDU) and Fomento Paraná, a financial institution majority-owned by the state of Paraná, which acts as a financial agent. Planned investments include sports courts, community fire stations, urban road paving, public markets, public lighting, hospitals, urban drainage systems, nursery support, industrial sheds and general equipment, among others.

² The PPA 2016-19 entails 20 programmes encompassing 202 initiatives across various SDGs: Social Development (SDGs 1, 5, 7, 17), Living Well Paraná (SDGs 1 and 10), Health for All Paraná (SDGs 2, 3, 6, 9, 11, 16 and 17), Paraná: Sport and Tourism, State of Well-Being (SDGs 3 and 8), My School has Action (SDGs 4, 8 and 10), Education for All (SDGs 3, 4, 5, 10, 11, 12, 16 and 17), Excellence in Higher Education (SDGs 4 and 8), Paraná has Culture (SDG 4 and 10), Universalisation of Basic Sanitation (SDG 6), Energy and Telecommunications (SDG 7), Sustainable Rural Development and Supply (SDGs 2, 6, 7, 8 and 15), Sustainable Economic Development (SDG 8), Labour, Employment and Income (SDGs 8 and 10), Development Routes (SDGs 9 and 11), Innovative Paraná (SDGs 8 and 9), Sustainable and Integrated Development Metropolitan Regions (SDGs 9 and 11), Sustainable Development of Cities (SDGs 9, 10, 11 and 17), Sustainable Paraná (SDGs 6, 11, 13, 14 and 15) and Safety Paraná (SDGs 3, 5, 8, 11, 15, 16 and 17).

³ No. 133 of 28/09/2018 (CNJ, 2018_[7]) and Ordinance No. 72 of 05/09/2019 (CNJ, 2019_[8]).

⁴ Youth Action Day (YAD) is held by all youth action hubs in the world on the week of 12 August and aims to celebrate World Youth Day, bringing Curitiba's youth closer to local entities working on behalf of the 2030 Agenda, promoting an exchange of experiences and the construction of a networking environment, as well as engaging youth in specific activities related to the 5Ps of Sustainable Development in vulnerable communities. The Youth Share project seeks to share safe and informative information, carried out by and for young people. It is an ongoing project, with lectures, conversation circles and interactive activities, which can be carried out in schools, universities, companies and other organisations. The SDG Challenge is a competition that aims to change adversity scenarios that affect daily life and are related to the SDGs. The target audience is university students or high school students interested in promoting local impact and getting involved with sustainability in one of its three pillars (economic, social or environmental).

⁵ COPEL is a mixed capital publicly held company with legal entity under private law whose major stakeholder is the state of Paraná.

⁶ Sanepar is a joint stock, publicly traded, quasi-public entity, controlled by the government of the state of Paraná.

4 Policy recommendations and action plan

This chapter suggests several policy recommendations to enhance the implementation of the Sustainable Development Goals (SDGs) using a territorial approach in the state of Paraná, Brazil. The recommendations are structured around the OECD Checklist for Public Action to Localise the SDGs and span from enhancing the alignment of the Municipal Comprehensive Plans with the SDGs to mainstreaming the SDGs in municipal budgetary and planning tools, and strengthening the engagement of citizens by involving municipal civil servants as SDG agents.

Box 4.1. OECD Checklist for Public Action to localise the SDGs

The OECD Checklist for Public Action is aimed at 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, objectives across all levels of governments 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 (VNRs) to reflect progress at the subnational level and address regional disparities. Voluntary Local Reviews (VLRs) 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 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 SDG framework to foster multi-sectoral programmes and priorities.
- **Data and information:** Leverage SDG data and localised indicator systems to guide policies and actions to better people's lives 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, networking opportunities but also de-risking investments in SDG solutions through grants or loans, as well as fiscal incentives for innovative solutions towards sustainability.

Source: OECD (2020^[1]), *A Territorial Approach to the Sustainable Development Goals - Policy Highlights*, OECD, Paris.

Box 4.2. OECD Action Plan for a territorial approach to the SDGs in Paraná

The main objective of the action plan is to provide Paraná with a menu of options for the implementation of the OECD recommendations contained in the SDG draft pilot case. The action plan sets out a series of specific actions aiming at supporting Paraná's implementation of the SDGs. In particular, it identifies:

- **Objectives:** The action plan presents a number of objectives for each of the recommendations, in terms of expected outcomes.
- **Practical steps:** The action plan includes a set of actions that can be useful in advancing towards the achievement of the objectives.
- **Possible champions and partners:** This section refers to the stakeholders, institutions or organisations that can play a (leading) role in the execution of the actions.
- **International experiences:** These experiences include relevant practices carried out in the field of localising the SDGs by cities, regions and national governments as well as international organisations that can serve as inspiration. These experiences are not expected to be implemented as such but to provide the region/municipality with a set of examples for the design and development of the suggested actions.
- **Timeline:** In order to implement the recommendations efficiently, it is necessary to prioritise the recommendations within the short, medium and long terms. These time scales are indicative and should be updated as actions are being implemented.

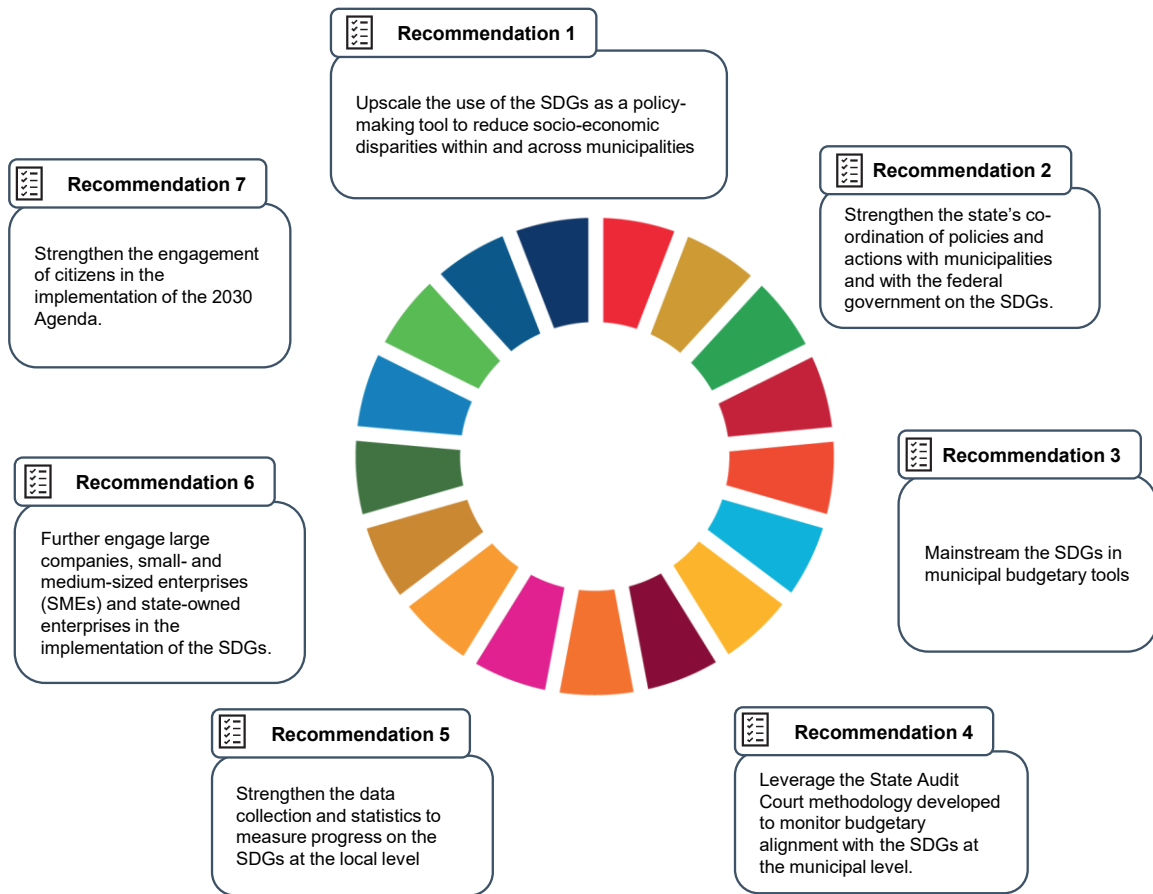
It is important to note that:

- *Actions are neither compulsory nor binding:* Identified actions address a variety of ways in which recommendations can be implemented and objectives achieved. They represent suggestions whose adequacy and feasibility should be carefully evaluated Córdoba in an inclusive manner, involving stakeholders as appropriate. In turn, the combination of more than one action can be explored, if necessary.
- *Resources for implementation should be assessed:* The implementation of the actions will require human, technical and financial resources. When prioritising and assessing the adequacy and feasibility of the suggested actions, the resources needed to put them in practice should be carefully evaluated, as well as the role of stakeholders that can contribute to the implementation phase.
- *The action plan is a dynamic tool:* It requires to be updated as new potential steps and objectives may emerge as actions start to be implemented.

Key recommendations for Paraná

Building on the OECD Checklist for Public Action (Box 4.1), the following policy recommendations were developed through the policy dialogue with a wide range of stakeholders in Paraná in order to use the SDGs as a tool to reduce territorial disparities and to promote the exchange of good practices among municipalities at different levels of development.

Figure 4.1. Seven key recommendations for a territorial approach to the SDGs in Paraná



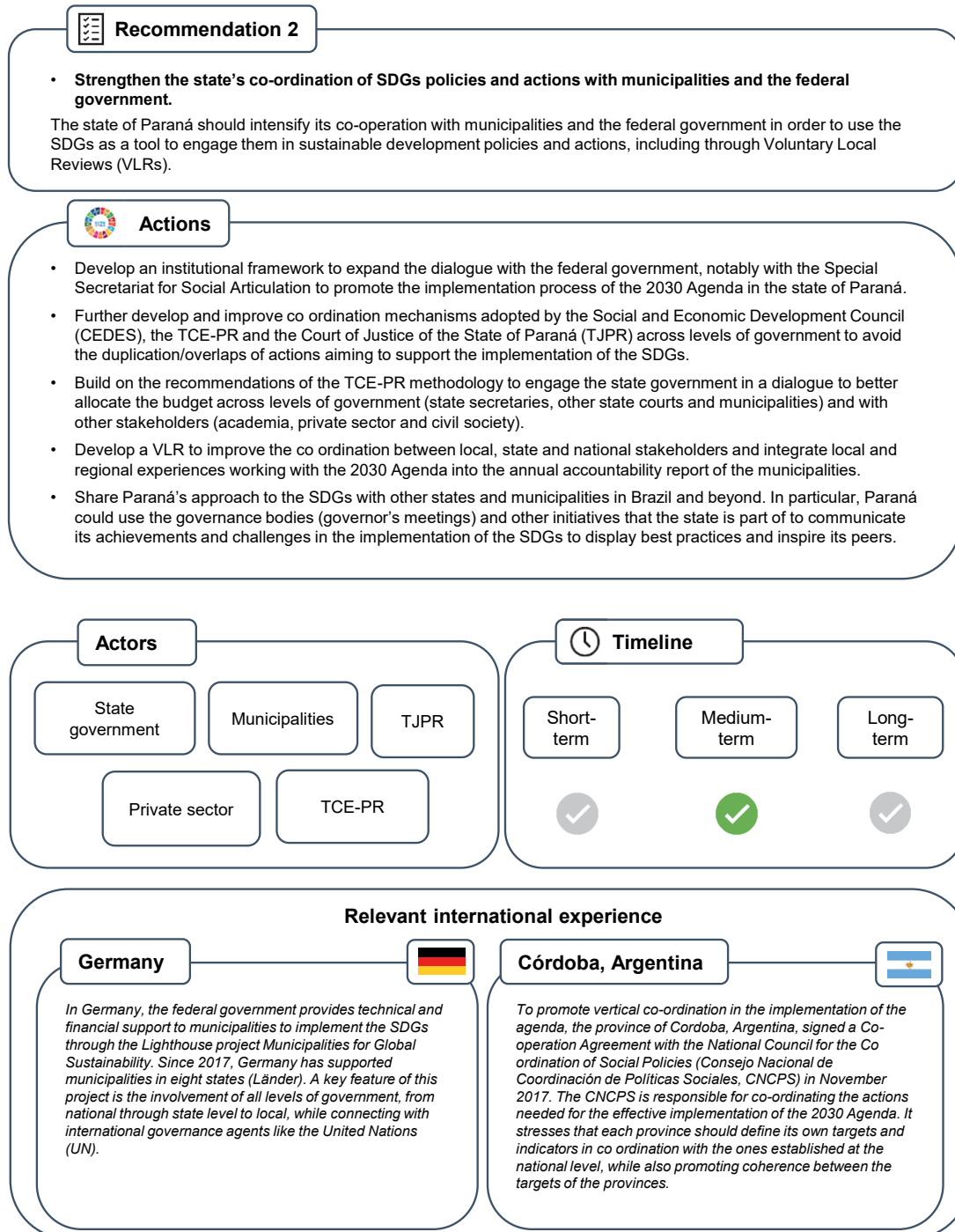
Planning, policies and strategies

Figure 4.2. Action plan to implement OECD Recommendation 1 to upscale the use of the SDGs as a policy-making tool to reduce socio-economic disparities within and across municipalities



Multi-level governance

Figure 4.3. Action plan to implement OECD Recommendation 2 to strengthen the state’s co-ordination of SDGs policies and actions with municipalities and the federal government



Financing and budgeting

Figure 4.4. Action plan to implement OECD Recommendation 3 to mainstream the SDGs in municipal budgetary tools

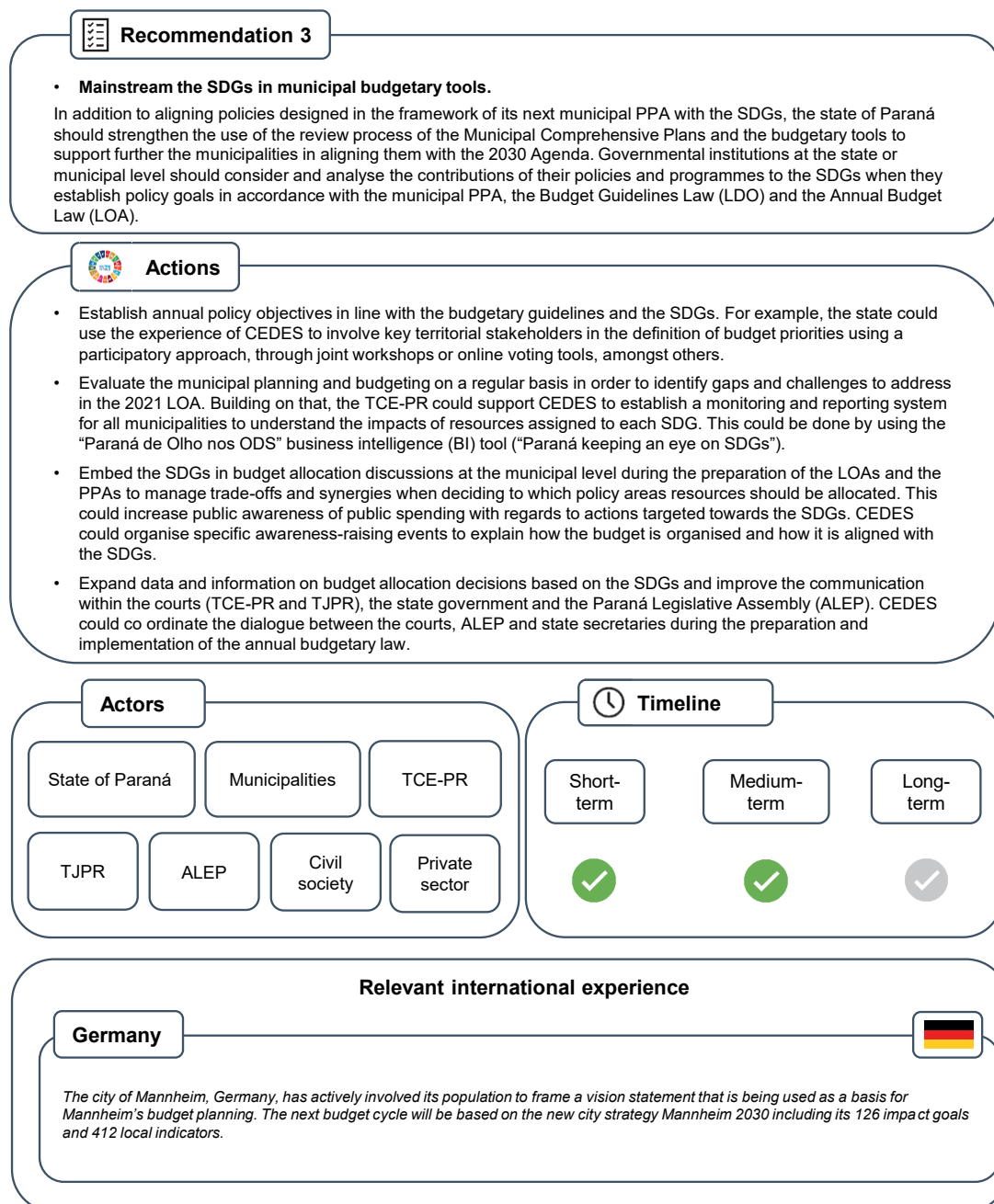
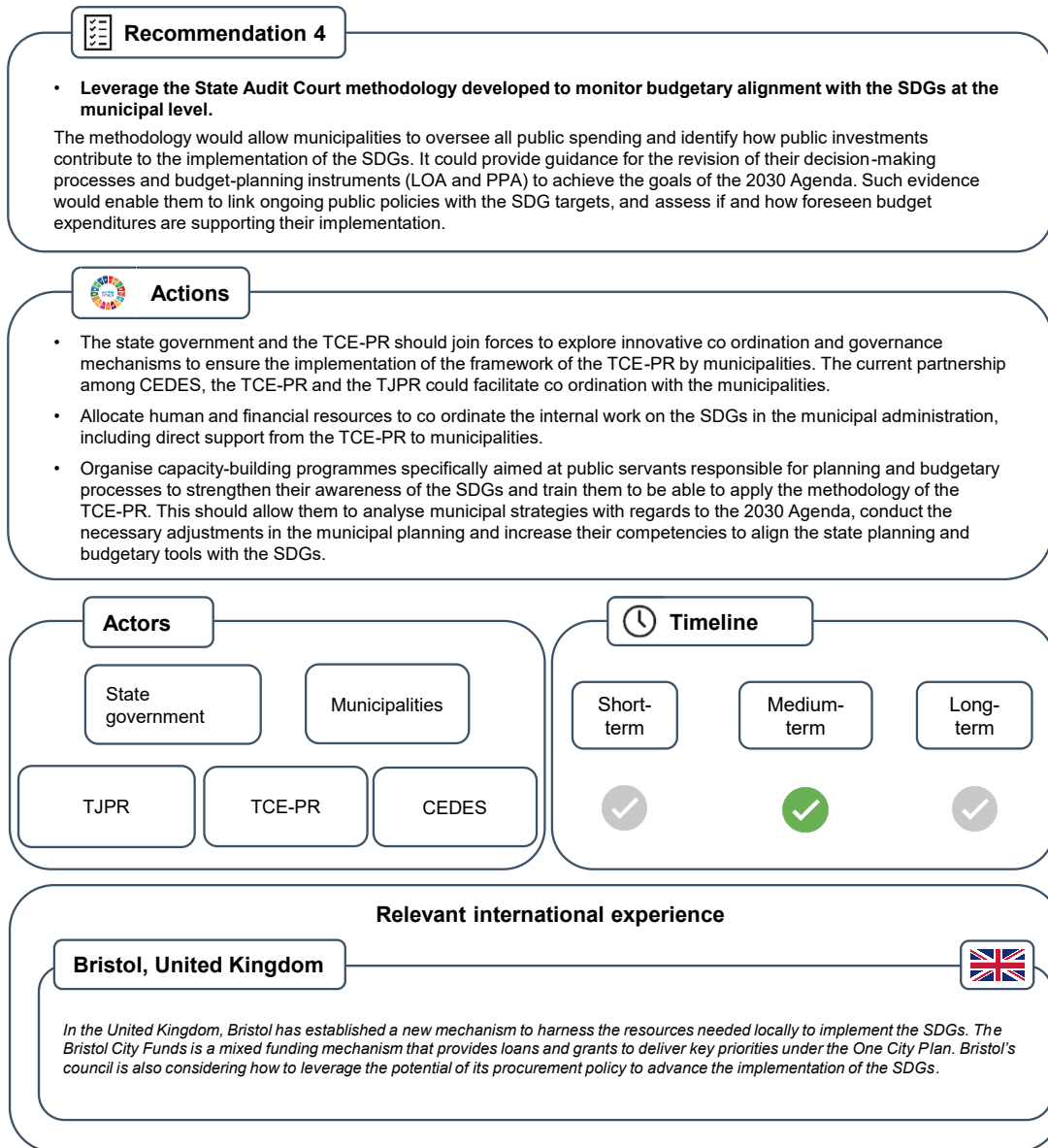
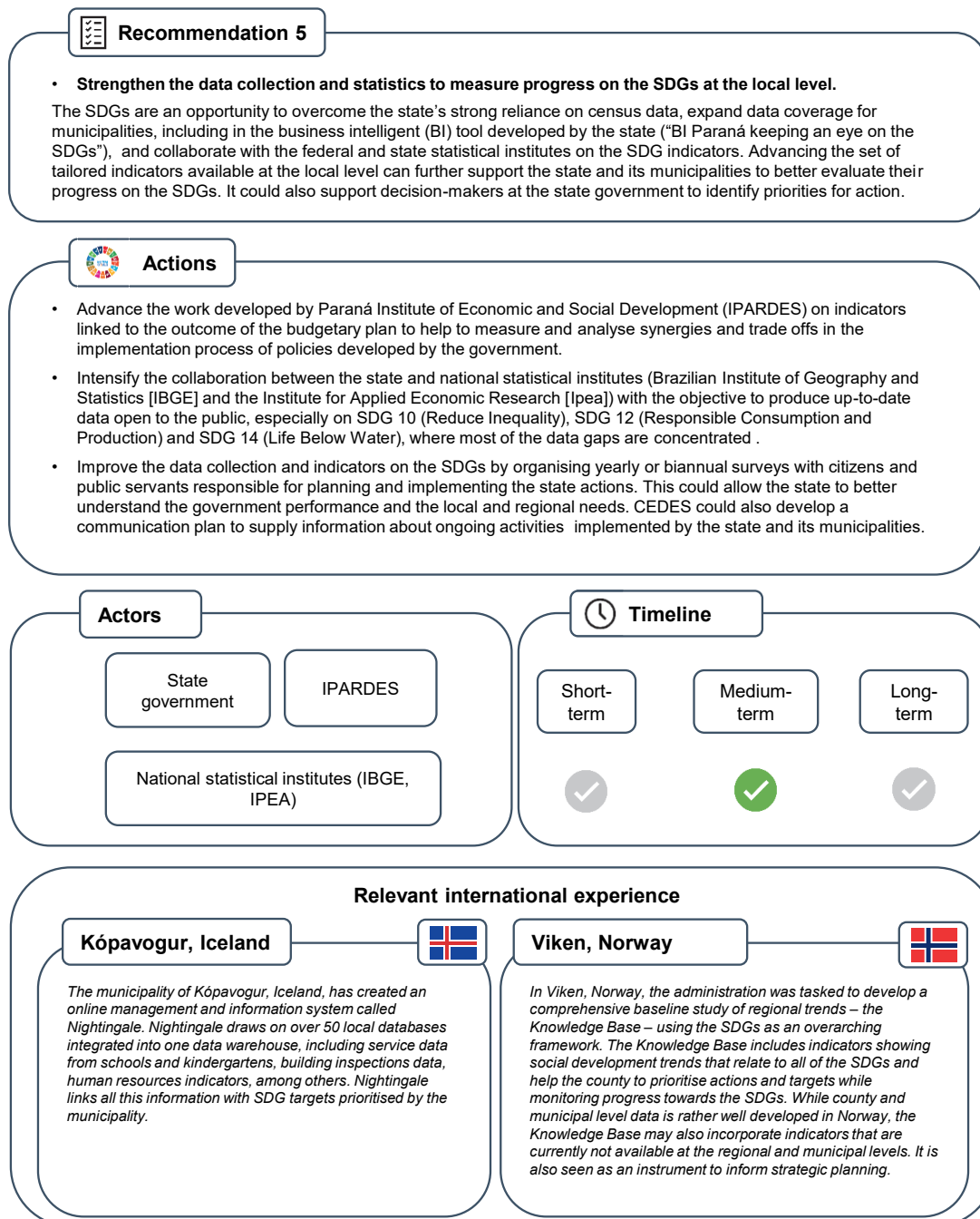


Figure 4.5. Action plan to implement OECD Recommendation 4 to leverage the State Audit Court methodology developed to monitor budgetary alignment with the SDGs at the municipal level



Data and information

Figure 4.6. Action plan to implement OECD Recommendation 5 to strengthen the data collection and statistics to measure progress on the SDGs at the local level



Engagement

Figure 4.7. Action plan to implement OECD Recommendation 6 to further engage large companies, SMEs and state-owned enterprises in the implementation of the SDGs

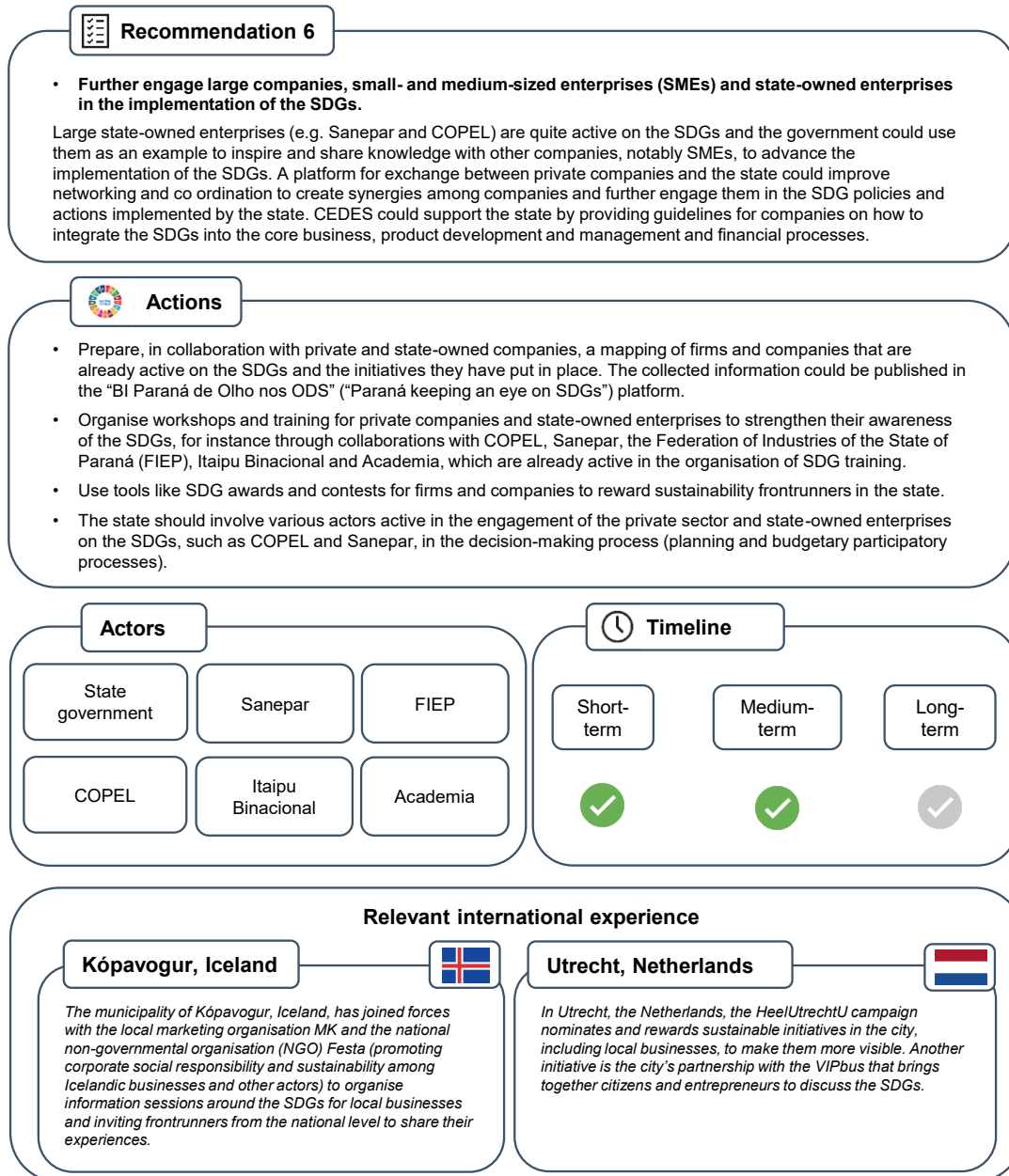
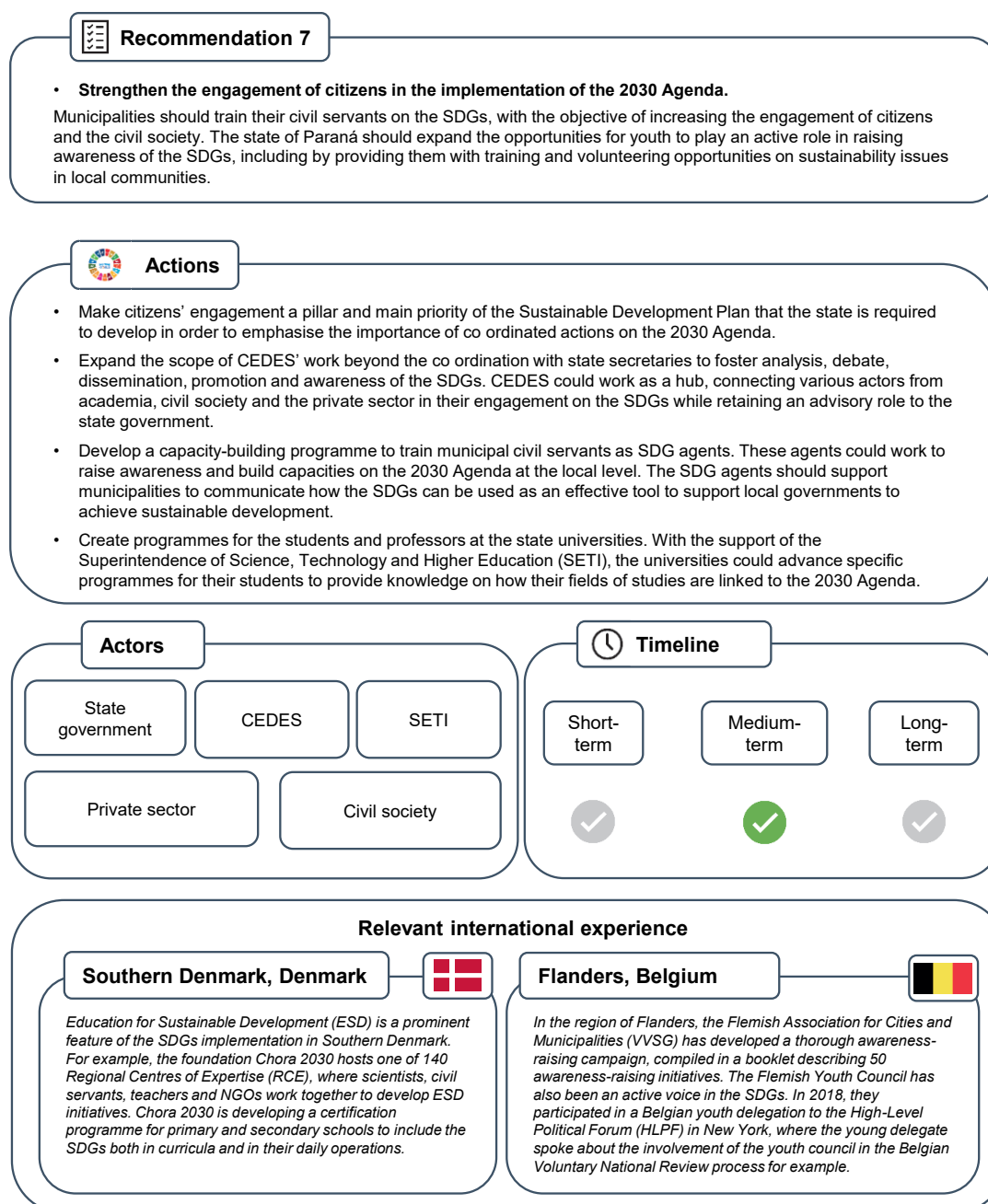


Figure 4.8. Action plan to implement OECD Recommendation 7 to strengthen the engagement of citizens in the implementation of the 2030 Agenda



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