### **Executive summary**

### Brazil's continued development depends on the sustainable use of environmental resources

Brazil is the world's fifth largest country and the most biodiverse. The world's largest tropical rainforest, the Amazon, and 12% of global freshwater resources are in Brazil, together with vast reserves of fossil fuels and minerals. An energy mix that is largely based on the use of hydropower and biofuels helps keep the economy's carbon intensity low. Vibrant growth and effective social policies lifted millions of people out of poverty over the 2000s. However, growth has decelerated since 2012 and income inequality remains high.

More people now have access to electricity, clean water, sanitation and waste management services, although regional disparities are large. Fast urbanisation, agricultural expansion and infrastructure development have increased the pressure on the environment. Severe water shortages have hit the South-east region in recent years, and inadequate wastewater treatment has caused water and soil contamination, particularly in densely populated areas. Air pollution is of concern in major cities. Waste generation has grown with rising living standards and landfilling is the primary disposal method. Total greenhouse gas emissions have dropped by more than 40% since 2000 with the decline in deforestation, but emissions from energy use in industry and transport have grown. Brazil needs to continue to ensure sustainable use of its environmental resources and reduce poverty and inequality, while tackling slow growth and rising unemployment. With lower commodity prices and subdued export demand, improving domestic policies is all the more important.

### Progress in reducing Amazon deforestation has been impressive

In 2004 Brazil launched a whole-of-government deforestation control action plan combining advanced monitoring systems, strengthened enforcement, credit restrictions, expansion of protected areas and promotion of sustainable natural resource use. Resolute plan implementation and international support, notably via the innovative Amazon Fund, resulted in a 75% decline in the annual deforestation rate of the Amazon. However, progress has been uneven across states in the region; about 4 800 km² of Amazonian forests are still lost every year and pressures remain high in the tropical savannah. Brazil needs to further promote sustainable livelihood options in forest areas to make them more attractive than illegal land clearing, while continuing to strengthen monitoring and enforcement. Thorough implementation of the new Forest Code and its Rural Environmental Cadastre will be crucial to reconcile the objectives of biodiversity conservation and agriculture development, thereby contributing to controlling deforestation in the Amazon and other biomes.

### Nearly 2 000 protected areas provide large socio-economic opportunities

The number and surface of official protected areas has more than doubled since 2000, when Brazil established its National System of Protected Areas (SNUC). The Amazon Region Protected Areas programme has largely contributed to this achievement. Protected areas within the SNUC now cover more than 17% of Brazil's terrestrial areas and inland waters, but less than 2% of marine areas. Additional areas are protected within indigenous lands and private lands that are set aside in compliance with the Forest Code. Management of protected areas has improved, but human and financial resources are not yet adequate to ensure that all protected areas meet their environmental objectives and unleash their socio-economic development potential. Tourism and sustainable forestry could be scaled up with more engagement from the private sector. This would also help reduce dependence on the public budget and international finance.

## Brazil has ambitious biodiversity targets but policy coherence needs to be improved

Brazil's 20 national biodiversity targets to 2020 are aligned with its international commitments. In 2015 the parliament approved comprehensive legislation to facilitate the commercial and scientific use of genetic resources and traditional knowledge, while ensuring the fair treatment of indigenous and traditional communities. Brazil has increasingly used programmes of payments for ecosystem services (PES) and income support for rural communities. However, state PES regulations are highly heterogeneous; many such programmes are not systematically monitored and their environmental effectiveness is not clear. A federal PES law would improve consistency and effectiveness. More efforts are needed to mainstream biodiversity considerations into sectoral policies, including agriculture and energy policies.

#### Environmental laws are stringent but implementation gaps persist

Brazil has developed a comprehensive and advanced environmental legislation framework. The financial resources and institutional capacity of federal environmental institutions have grown markedly, and interagency collaboration has improved. Progress has been made in clarifying the boundaries of environmental responsibilities across levels of government and in streamlining environmental licensing. However, licensing procedures are still reported to be excessively cumbersome, delaying important infrastructure projects. Institutional capacity varies widely across regions and is often limited, which makes effective implementation and enforcement of environmental policies challenging.

# Brazil should make a wider use of green taxes and remove harmful tax exemptions

Environmentally-related taxes accounted for 0.7% of GDP in 2013, below the level observed in most OECD countries. Most revenue stems from taxes on vehicle ownership, but tax rates are not linked to vehicles' environmental performance. In a welcome move, in early 2015, the government raised the federal fuel tax rate on petrol and diesel, which had been zero since mid-2012. However, tax rates are low in international comparison and are not linked to fuels' carbon content. Fuels used in sectors other than road transport (e.g. agriculture and industry) go largely untaxed. Charges on water abstraction and pollution, implemented in a few states, are the only form of levies on natural resource use

and pollution. Overall, Brazil would benefit from extending the use of green taxes and charges and removing harmful tax exemptions as part of a comprehensive tax reform. This would help encourage a more efficient use of energy and natural resources.

### Brazil needs to further improve its infrastructure and remove barriers to eco-innovation

Brazil has stepped up public investment in environment-relevant infrastructure. In 2014, 15% of lending by the Brazilian Development Bank, the biggest provider of long-term finance, was environment-related. Various forms of support helped Brazil become the world's seventh largest investor in renewable energy in 2014. Yet the coverage and quality of infrastructure need to be expanded and improved, particularly for wastewater treatment, sanitary landfills and public transport systems. Inadequate pricing of water and waste services, red tape and weaknesses in project planning delay infrastructure delivery and discourage private-sector engagement. Brazil is more specialised in green technologies than other BRIICS economies, although weak science-industry links, skills gaps and a complex incentive system hamper eco-innovation and the diffusion of environmental technology, goods and services. Various forms of trade protection, including local content rules, limit competition and raise technology costs. Brazil would benefit from more systematically integrating environmental objectives into public investment programmes and economic policies more generally.



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