Executive summary

Agriculture and the agro-processing sector in Brazil have shown impressive growth over the past two decades. This has been largely driven by productivity improvements and structural adjustment resulting from broad economic reforms, as well as new technologies developed by agricultural science. Government policy and industry initiatives are increasingly focussed on sustainability of agricultural development.

Sustaining high agricultural growth is critical to Brazil's overall development given the importance of agriculture and agro-industries to the national economy and the resource potential that has yet to be exploited. Agricultural growth is also critical from a social perspective as it means making more income opportunities and more affordable food available to poor people. It is also important globally due to Brazil's role as a leading supplier on international agricultural markets.

Key drivers of agricultural growth in the past have weakened, necessitating increased cost competitiveness. The economic reforms of the 1980s and 1990s provided a strong impulse for agricultural development, but their potential to add as much to future growth is diminishing. External demand, which strongly drove sector expansion in the previous decade, is affected by slow growth in developed countries, loss of momentum in key emerging economies, and greater competition in global agricultural markets. Brazil's biggest challenge today is to sustain high agricultural growth in these changed conditions. This places the sector's cost-competitiveness into the foreground and increased innovation can play an essential role in achieving it.

Agricultural growth and fundamental societal objectives must be reconciled. One challenge is to ensure that the sector expands sustainably. Another is to reconcile agricultural growth – and the pressure that structural adjustment puts on small family farmers – with poverty alleviation objectives.

Overcoming structural deficiencies characteristic of an emerging economy is also a challenge. Brazil's capacity to realise its agricultural growth potential is becoming progressively contingent on overcoming the structural deficiencies, such as gaps in physical infrastructure, capital market scarcity and low overall skills levels. Although the country has already made large strides to catch up, structural gaps continue to be significant and hinder development.

The framework conditions for innovation are a significant constraint. Macroeconomic and business conditions have improved, but in many areas they are still highly constraining to business development. Further reforms are needed in various policy areas outside agricultural policy or innovation policy as such. Efforts to stimulate innovation through agricultural measures or support to agricultural innovation system will bring the best outcomes if broader constraints to innovation are eased.

Businesses face restrictive and complex regulations and incur high costs for doing business. Brazil's regulatory framework is relatively restrictive, particularly as concerns the complexity of regulations and administrative burdens on start-ups. Regulations translate into direct and indirect costs of doing business, which are estimated to be in Brazil one of the highest across the world.

Tariffs for capital and intermediate goods are high, increasing the cost of imported farm inputs, including technological items. At the same time, the Foreign Direct Investment (FDI) regime

has been substantially liberalised, although certain constraints exist, such as related to purchase of agricultural land.

Domestic credit is generally costly and long-term credit is scarce. Innovation is often associated with financing from the sources outside the innovating firm. Interest rates in Brazil are high in international terms, largely due to high risk premiums on lending. The segment for short-term bank credit is represented by many competing private and public banks, including foreign banks. Domestic long-term credit, however, is scarce and available mostly from a single state development bank which relies on public funding and provides loans at reduced cost. The limited domestic market for investment credit affects, in particular, small and medium-size businesses which have fewer opportunities to tap into international sources of finance.

Businesses bear a substantial tax burden and high costs to comply with taxes. Taxation affects the returns to innovation, and thus the decisions of firms and individuals to invest. The total tax rate on Brazil's company profits is estimated to be above average for Latin America and OECD countries. Taxes are not only high but burdensome to comply with, mainly due to the complexity of the indirect tax system, particularly the state-based value-added tax.

The commitment to accelerate infrastructure development and foster education must be sustained. The government has undertaken institutional and regulatory reforms in the infrastructure sectors, increased public spending, and has provided regulatory, tax and credit incentives to encourage private investment in infrastructure. Impressive progress has been made in education, particularly in expanding access and making it more equitable. These efforts are expected to take effect in the longer-term and need to be pursued continuously to overcome the significant gaps that still remain in these areas.

Agricultural policy could be more strongly oriented to productivity and sustainability outcomes. New agricultural programmes have been introduced recently to support investments in innovation, and to encourage environmental improvements and infrastructure development. Still, policy could be better targeted to these outcomes. Although agricultural policy on aggregate only moderately distorts farm prices and current costs, over three-quarters of producer support comes from distorting measures, with support levels highly variable across commodities. These policies reduce the incentives to use production factors more efficiently and to innovate so as to become more competitive. This also impedes structural adjustment and in the long run results in a less productive agricultural sector.

Further refocussing of support on adoption of innovations, environmental, and infrastructure improvements will be conducive to productivity gains. Reducing distortive support could strengthen the incentives for productivity improvements and allow for structural adjustment. Important opportunities for such policy change may be present in refocussing of the existing rural credit policy from that which predominantly supports short-term lending to support of investments in innovation, environmental, and infrastructure projects. This may also provide additional resources for essential general services for agriculture.

The capacity to adopt innovation needs to be improved. The agricultural innovation systems benefits from the good governance of public research institutions, notably the Brazilian Corporation for Agricultural Research (Embrapa), which has permitted the development of innovations adapted to practical problems. These innovations have been quickly adopted by large, commercial farms. Embrapa, by demonstrating the positive impact of its activities on the economy and the environment, and the high returns on investment, has enjoyed increasing public support and has become a nationally and internationally a recognised institution. The role of the private sector in the provision of innovation is growing but remains limited to specific input sectors such as seeds, tractors and the bioeconomy. The main challenge of the innovation system is to reduce the lag between the creation and adoption of innovation and to improve its diffusion among poorer farmers. Recognising the importance of extension services to meet this challenge, the Federal government created the Agency for Technical Assistance and Rural Extension (ANATER) in 2013 and budgeted additional resources

for more staff and to subsidise access by poor farmers. This should strengthen the capacity of the system to cover more farmers and issues, as well as facilitate access by poor farmers, with the aim of increasing the productivity and environmental sustainability of farms and to link them to markets.

Policy recommendations encompass the following four key areas:

- ***Improve overall conditions for doing business*** by easing the regulatory burden on businesses; reducing industrial tariff protection; facilitating the development of private long-term finance by creating a level playing field for state and private lenders; and simplifying the tax system, including by moving towards a single national system of indirect taxes.

- ***Enhance the economy's capacity for development*** by continued acceleration of infrastructural development; modernisation of labour regulations and enhancement of labour market insertion programmes; further broadening of access to education while improving its quality and further advances in its equity; strengthening the agricultural vocational training system; and promoting industry-school co-operation in the development and adjustment of curricula and the funding of education.

- ***Strengthen agricultural policy incentives for innovation*** by moving away from distortive support to producers through a gradual downsizing of concessional loans for working capital to commercial producers and focussing credit support to investments in projects that explicitly incorporate technological innovations, and advanced farm management and environmental practices; maintaining the new focus on development of on-farm infrastructure; easing access to credit by rural borrowers though simpler regulations and procedures; and promoting private non-bank financial instruments for agriculture and agro-industries.

- ***Strengthen direct incentives to innovation in food and agriculture*** by increasing Embrapa's capacity and flexibility to collaborate with other research and development (R&D) providers domestically and abroad; promoting research co-operation across sectors; supporting networking and actions to raise awareness and providing training opportunities; reinforcing technical assistance and rural extension services for small family farms; strengthening links between R&D and technical assistance; and continued promotion of forward-looking thinking.