



COUNTRY PRIVATE SECTOR DIAGNOSTIC

THE PLURINATIONAL STATE OF BOLIVIA

Unlocking Private Sector Potential to
Achieve a Sustainable and Inclusive Recovery

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ABBREVIATIONS AND ACRONYMS

ABT	Bolivian Authority for the Supervision and Social Control of Forests and Lands
ABC	Bolivian Roads Administration
AEO	Authorized Economic Operator
AEMP	Autoridad de Fiscalización de Empresas (Business Control Authority)
ANAPQUI	Asociación Nacional de Productores de Quinoa
ASFI	Autoridad de Supervisión del Sistema Financiero
ASP-B	Administración de Servicios Portuarios-Bolivia (Port Services Administration – Bolivia)
BCB	Banco Central de Bolivia (Central Bank of Bolivia)
BDP	Banco de Desarrollo Productivo (Productive Development Bank)
BoA	Boliviana de Aviación (BoA)
CAO	Cámara Agropecuaria del Oriente (Eastern Chamber of Agriculture)
CAINCO	Cámara de Industria, Comercio, Servicios y Turismo de Santa Cruz (Chamber of Industry, Commerce, Services and Tourism of Santa Cruz)
CAMEX	Cámara de Exportadores de La Paz (Chamber of Exporters of La Paz)
CADEX	Cámara de Exportadores, Logística y Promoción de Inversiones (Chamber of Exporters, Logistics and Investment Promotion)
CADEXCO	Cámara de Exportadores de Cochabamba (Chamber of Exporters of Cochabamba)
CADEXPO	Cámara de exportadores de Potosí (Chamber of Exporters of Potosí)
CADEX-CH	Cámara de exportadores de Chuquisaca (Chamber of Exporters of Chuquisaca)
CADEXNOR	Cámara de exportadores del Noroeste, (Chamber of Exporters of the Northwest)
CADEXOR	Cámara de exportadores de Oruro, (Chamber of Exporters of Oruro)
CAF	Corporación Andina de Fomento
CFB	Cámara Forestal de Bolivia
Conalog	Consejo Nacional de Logística (National Logistics Council)
CPSD	Country Private Sector Diagnostic
DGIMFLMM	Dirección General de Intereses Marítimos, Fluviales, Lacustres y Marina Mercante (General Directorate of Maritime, Fluvial, Lake and Merchant Marine Interests)

FDI	Foreign Direct Investment
FINPRO	Fondo para la Revolución Industrial Productiva
FLEGT/VPA	Forest Law Enforcement, Governance, and Trade/Voluntary Partnership Agreement
FONABOSQUE	National Fund for Forestry Development
FSC	Forest Stewardship Council
FSL	Financial Services Law of 2013
GIS	Geographic Information System
GVC	Global Value Chains
HPP	Hidrovia Paraná-Paraguay (Paraná-Paraguay Waterway)
IBNORCA	Bolivian Institute of Normalization and Quality
ICT	Information and Communications Technologies
IFC	International Finance Corporation
IDB	Interamerican Development Bank
INIAF	National Institute for Agricultural and Forest Innovation
INSA	National Agricultural Insurance Institute
IT	Information Technology
LAC	Latin America and the Caribbean
LPI	Logistics Performance Index
LSP	Logistics Services Providers
MSME	Micro, Small, and Medium Enterprises
MEFP	Ministerio de Economía y Finanzas Públicas (Ministry of Economy and Public Finance)
MDRyT	Ministerio de Desarrollo Rural y Tierras (Ministry of Rural Development and Land)
MDPyEP	Ministerio de Desarrollo Productivo y Economía Plural (Ministry of Productive Development and Plural Economy)
MMAyA	Ministerio de Medio Ambiente y Agua (Ministry of Environment and Water)
MOPSV	Ministerio de Obras Públicas, Servicios y Vivienda (Ministry of Public Works, Services and Housing)
MRE	Ministerio de Relaciones Exteriores (Ministry of Foreign Relations)
NLS	National Logistics Survey
OECD	Organization for Economic Co-operation and Development
PMR	Product Market Regulation
PPD	Public-Private Dialogue
PPP	Public-Private Partnership
RIA	Regulatory Impact Analysis

SENASAG	Servicio Nacional de Sanidad Agropecuaria e Inocuidad Alimentaria (National Service of Agricultural Health and Food Safety)
SME	Small and medium enterprise.
SNIAF	National System for agricultural and Forestry Innovation
SOE	State-Owned Enterprise.
ULS	Users of Logistics Services
WB	World Bank
WBES	World Bank Enterprise Survey
WBG	World Bank Group
WDI	World Development Indicators
3PL	Third-party logistics
4PL	Fourth-party logistics

EXECUTIVE SUMMARY

In a period of consistent growth fueled by a commodity boom and expansionary government policies, Bolivia was able to significantly reduce poverty and inequality over the past couple of decades. Gross domestic product (GDP) averaged 4.6 percent between 2002 and 2014, and poverty declined from 63.3 percent to 39.1 percent over the same period. The drop in oil and gas prices from 2014 onward led to a strategic shift, and Bolivia made use of both the buffers that it had accumulated during the economic bonanza and expansionary policies to sustain growth and poverty reduction. During that time, economic growth averaged 4 percent between 2014 and 2019, and poverty declined to 34.6 percent in 2018, although at a slower pace than in the previous period.¹ The expansionary policies implemented after the commodity boom have, on the other hand, increased public debt and reduced fiscal savings and reserves and have exhausted their reach.

Public investment nearly doubled in Bolivia from 2005 to 2018, but the Bolivian economy has remained structurally static. During this period, the hydrocarbon sector accounted for most of its exports and foreign direct investment (FDI), and private investment remained low. At an average of 7.2 percent, this is about 60 percent lower than regional peers, putting Bolivia in the bottom 15 worldwide even during favorable economic times. At the same time, the average efficiency gap of public investment² in Bolivia is about 41 percent, well above the average gap of 27 percent for emerging market economies and 29 percent for Latin American and Caribbean countries. The fixed exchange rate system has also limited the tools useful for addressing macroeconomic imbalances, and at the same time, the high real exchange rate overvaluation—estimated between 26 and 33 percent³—has hindered the competitiveness of exports from non-extractive sectors and local products competing with imports. Combined with the sharp decline in commodity prices, the health and economic emergency caused by the COVID-19 pandemic is testing macroeconomic stability further because Bolivia entered the crisis with increasing fiscal deficits and declining international reserves.

The COVID-19 crisis affected Bolivia's private sector substantially, particularly among smaller enterprises and within hard-hit sectors. Economic output is estimated to have contracted by 7.8 percent (World Bank 2021) in 2020—Bolivia's first recession since 1986—while poverty increased because of significant job losses.⁴ Goods exports have plunged in the natural gas and minerals sectors, while agricultural exports have shown more resilience. The crisis has harmed smaller firms more significantly—91 percent of micro and small firms in the most affected sectors (57 percent in commerce alone)—and the job quality in these sectors is already low. These micro and small firms are largely informal and have few coping mechanisms to sustain the shock. Large firms are following in their tracks: assuming a fall of 25 percent in sales (three months of the year), the share of large firms undergoing losses is estimated to have increased from 15 to 38 percent (Apedo-Amah et al 2020). Importantly, the effects are having lasting consequences. Evidence for 51 countries shows that the fall in sales has persisted even four months after the peak of the crisis, and that the impact is much more severe among micro and small firms (Apedo-Amah et al 2020). Micro and small entrepreneurs do not have mechanisms or resources to reestablish their businesses

and tend to turn to even lower-quality fallback jobs. Without intervention, then, the COVID shock may alter the path forward for Bolivia's private sector significantly. As an example of this effect, employment data for urban areas in the third quarter of 2020 show an expansion in employment in the agricultural sector, likely from workers in hard-hit sectors such as restaurants and commerce.⁵

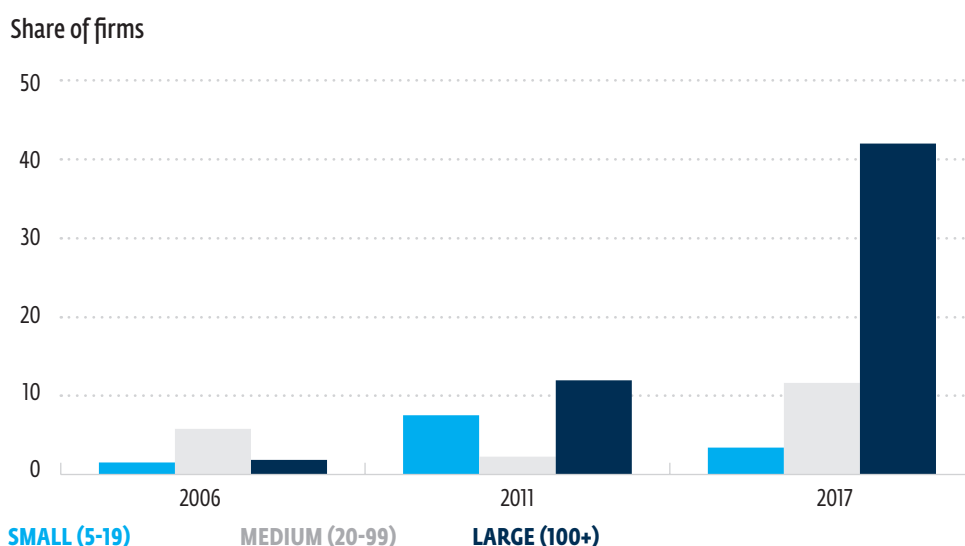
Promoting private investment in a more strategic way that accompanies public efforts is critical at this juncture, and it is an agenda that Bolivia cannot afford to postpone. This may help cushion the potential effects of a significantly tighter macrofiscal situation while building a strong, more productive, and resilient private sector that can provide more, higher-quality jobs to resume the path toward poverty and inequality reduction, post pandemic. Poverty reduction gains accomplished between 2005 and 2014, the period of the highest strides in poverty reduction, were to a very large extent due to improvements at the household level.⁶ Tapping the potential role that the private sector could play moving forward requires addressing the barriers that have hindered private investment, and the gains could be substantial. It is estimated, for example, that a 0.2 percentage point increase in output linked to private sector investment in a sectors could lead to the creation of 10,000 to 15,000 jobs, depending on the sector. This would open opportunities particularly for lower-skilled groups that are likely to have suffered the greatest economic losses as a result of the pandemic and those groups that have been traditionally disadvantaged within the labor market: indigenous and rural populations, women, and youth.⁷ It is estimated, for instance, that women would take up more than 50 percent of new jobs created from private investments in the commerce or services sectors, while the rural population would take up close to 40 percent of new jobs created by investments in several agricultural subsectors (World Bank and IFC 2021).

The key to Bolivia's private sector transformation toward formality, higher-quality jobs, and the consequent rise in income levels is increasing productivity. The private sector landscape in Bolivia is dominated by small, informal firms that are concentrated in three geographic areas (La Paz, Santa Cruz, and Cochabamba) and in specific sectors. The private sector has consistently remained mostly composed of micro and small firms—83 percent of the total paid workers in the country were employed in firms with fewer than nine workers in 2018—and while the share of informal single-person firms accounted for 44 percent of all salaried workers, overall 84 percent of workers hold informal jobs. The average number of workers per firm is small (30.5) and falls below the regional average of 40 employees. Firm-level data for small and micro firms (2018) show that around three-quarters of urban firms are informal and are concentrated in a few sectors (57 percent, for instance, in commerce; see World Bank 2020a). Policies and reforms aimed at making the private sector more productive could deliver benefits to these smaller and informal firms in which a large share of the poor are concentrated (96 percent⁸). Estimations show that promoting private sector investment in the agricultural sector, a highly informal sector in Bolivia, would raise wages and reduce poverty, benefiting indigenous and rural workers. Even investments in higher-skilled and more formal sectors like the business services sector, though, could produce substantial, positive developmental effects by creating more well-paid jobs across the economy, by creating linkages across sectors, and by opening opportunities for lower-income workers to move to better jobs (World Bank and IFC 2021).

The Bolivia Country Private Sector Diagnostic (CPSD) aims to identify barriers and opportunities to promoting and developing a more dynamic private sector by increasing private investment in the Bolivian economy. It also examines two sectors that exemplify opportunities for private sector investment and show potential for achieving growth and poverty and inequality reduction targets. It identifies the main cross-cutting constraints that the private sector faces (categorized as input constraints, undue regulatory burdens, and implementation barriers). It also presents opportunities that would attract private investment—preferably FDI—if these constraints were addressed. Of the sectors analyzed, the first is the logistics sector, which hits at the main challenges Bolivia faces as a land-locked country that relies on its neighbors to help its export base grow. Focusing on this sector would also have economywide impacts as both an enabling sector for agribusiness and manufacturing and as a possible export-oriented services sector for neighboring countries. The second sector, agribusiness, could boost rural prosperity, generate export revenues through diversification, and create jobs across the country by building valuable linkages across the value chain and investing in much-needed innovation and research to boost the sector’s competitiveness. Consequently, the analysis focuses on the agricultural inputs and forestry subsectors, given the strong need for modernization, technology adoption, and sustainable practices. These investments could be prioritized and targeted toward private sector development that leads to inclusiveness (equitable access to quality job opportunities), diversification in exports, and an increase in FDI toward a more resilient, productive, and competitive economy.

MAIN CROSS-CUTTING CONSTRAINTS TO PRIVATE SECTOR DEVELOPMENT

FIGURE ES.1. FIRMS CITING LABOR REGULATIONS AS THE BIGGEST OBSTACLE



Source: World Bank (2020a), using data from the Enterprise Survey 2017.

Bolivian firms face significant barriers to growth because of burdensome labor regulations, tax compliance laws, and business administration processes. Firms in Bolivia struggle with overly restrictive labor regulations and high labor costs. Labor regulations help protect workers, yet when overly restrictive, they reduce the creation of formal jobs and leave many workers unprotected and vulnerable. This seems to be the case in Bolivia, where 86 percent of workers do not enjoy any contractual protection whatsoever and the share of workers earning below minimum wage has been on the rise. Thirty percent of businesses identify labor regulations as a major constraint, compared to 11 percent globally and 16 percent on average in Latin America and the Caribbean (figure E1),⁹ and this burden has been increasing over time. Similarly, the employment protection legislation index ranks Bolivia as one of the most restrictive countries in the region and among Organization for Economic Cooperation and Development (OECD) countries for individual dismissals. Cumbersome tax administration and business processes are two other stifling constraints. Firms comply with a higher number of payments and spend a significant amount of time on tax compliance each year. The World Enterprise Survey results confirm this: Bolivian firms that were required to meet tax officials had to do it more often than those in the rest of Latin America (4.3 versus 2.8), and senior management had to spend more time dealing with regulations than their other Latin American peers. Moreover, survey results show that Bolivian entrepreneurs spend 15 percent of their time dealing with regulations, while the average for Latin America is 10.8 percent. The global average is 8.8. The reported lead time for exporting from Bolivia is 4.5 days – as presented by the Logistics Performance Index*. This is higher compared to 3.5 in the average Latin America and the Caribbean country. The lead time for imports is also higher, taking 7 days compared to an average of 4.5 days in the rest of the region.

Firms and investors in Bolivia face high uncertainty, an unlevel playing field, and disproportionately high competition from public entities in certain sectors. Product market regulation is often anticompetitive; the regulatory framework in key sectors is less conducive to competition and productivity in Bolivia than in peer countries. In addition, the private sector in certain markets is crowded-out by state-owned enterprises (SOEs), which play a dominant role and benefit from concessions and perks that other firms do not. SOEs can play an important role in specific sectors when they provide public goods and services that are not profitable (such as rural connectivity services) or goods and services that are central to national security. When SOEs operate in sectors in which private entities typically invest and compete (contestable and commercial sectors such as the manufacturing sector), there is a risk of crowding-out competitors. This often entails poorer market outcomes in the form of higher prices and lower quality. In Bolivia, SOEs capture government financial support because the Central Bank of Bolivia (BCB) has increasingly granted direct loans to SOEs. The investment environment is also highly uncertain, hampered by weak institutions, property rights issues, and low policy predictability. International assessments such as the World Governance Indicators and the Global Competitiveness Report rank the country low in terms of protection of property and intellectual property rights. Key regulatory and supervisory institutions, such as the National Service of Agricultural Health and Food Safety (SENASAG) and the National Intellectual Property Service, moreover, struggle with low capacity that undermines their ability to regulate the private sector in an adequate and efficient way. Low policy predictability also diminishes investor appetite. The *doble aguinaldo* (a second

end-year bonus introduced in 2013 that is paid when GDP growth surpasses 4.5 percent) effectively raised the minimum wage floor higher. This, alongside the ad hoc increases in the minimum wage, illustrates the unpredictability in the introduction and implementation of rules and their impact on the planned labor costs of firms, which disincentivize investment and formal job creation.¹⁰

Investment in the private sector has also been hindered by limited access to two very critical productive inputs: transport infrastructure and access to credit for the smaller firms. Despite substantial investments and improvements in transport infrastructure, gaps remain. According to the 2019 Global Competitiveness Report, Bolivia ranks 100th out of 122 countries in quality of transport infrastructure because of poor road connectivity, difficult port usage conditions, and inefficient air transport and port services. Moreover, Bolivia's score in the 2018 Logistics Performance Index (LPI)¹¹ was 2.36, one of the lowest in the region because of the country's infrastructure and logistics competence scores. Beyond demonstrating the lack of connectivity resulting from transport infrastructure gaps, the COVID-19 crisis has revealed another connectivity challenge: access to digital technologies. The country lags the region and its neighbors regarding all digital economy dimensions, such as digital infrastructure, digital government and platforms, digital skills and entrepreneurship, and digital finance (ITU 2018; OECD et al. 2020; and WEF 2019). Access to credit has also been emerging as a constraint to smaller firms despite skyrocketing private sector credit in recent years due to expansionary policy efforts. This constraint on credit has primarily resulted from the skewed allocation of credit. Among other reasons, credit quotas and rate caps have altered the allocation and composition of credit flows because lending decisions do not reflect underlying risk. Calice et al. (2020) show that following the enforcement of interest rate caps, average lending interest rates for productive sectors and social housing dropped; however, lending rates increased, and credit growth slowed, for sectors like commerce, hotels and restaurants, and real estate services.¹² Pressure on banks to reach quotas furthermore caused misallocation of credit toward large borrowers (including SOEs) and away from micro, small, and medium enterprises (MSMEs), while concessionary conditions encouraged over indebtedness by certain sectors and borrowers. In addition, financing is more constrained for women-owned enterprises—more than 50 percent of women appear to have difficulties accessing credit—but only 26 percent of male-owned MSMEs face obstacles in borrowing funds.

Despite the challenges of the current economic environment, there are opportunities for change (some at a low fiscal cost) that could offer quick wins and advance the agenda toward private sector development and quality job creation. Table ES.1 summarizes the main cross-cutting constraints for private sector development and presents a range of policy options alongside an assessment of their impact on private sector development and implementation feasibility (a combination of technical and political feasibility) in the next three to five years (dark green stands for high feasibility, light green stands for feasibility in some aspects of the needed reforms, and white stands for low feasibility). Unlocking these constraints is expected to have a positive impact on the creation of quality jobs. A simulation of policy changes¹³ suggests that a set of labor regulation and tax reforms¹⁴ could lead to increases in formal sector jobs by 6.5 and 9.5 percent, respectively, particularly among low-skilled workers, leading to increases in labor income that would boost households' living standards (World Bank 2020a).

TABLE ES.1. POLICY OPTIONS FOR ADDRESSING MAIN CROSS-CUTTING CONSTRAINTS THAT AFFECT PRIVATE SECTOR DEVELOPMENT

CROSS-CUTTING CONSTRAINT	POLICY OPTIONS	IMPACT ON PRIVATE SECTOR DEVELOPMENT	
		FEASIBILITY	
Access to productive inputs: What are the main input barriers?			
Limited connectivity due to underdeveloped transport infrastructure	Revisit prioritization of infrastructure projects, reorienting goals and the allocation of public spending.		
	Develop a stronger regulatory framework for PPPs (compensating for declines in public investment while ensuring that they do not generate contingent liabilities for public finances).		
Misallocation of credit to private sector	Remove, even if only gradually, credit quotas and interest rate caps in the financial sector.		
Regulatory environment: What are the main undue regulation barriers?			
Unlevel playing field: lack of competition regulation plus crowding-out due to the prominent role of SOEs	Short-term option: alternatives of SOE reform without ownership transfer include regulatory reforms to expose SOEs to competition, the introduction of competitive neutrality principles, and the adoption of corporate governance principles to increase transparency and accountability. This may include reducing central bank credit to SOEs. Medium-term option: management arrangements (concession contracts) and PPPs that can engage the private sector without full ownership transformation if they are accompanied by a regulatory framework that mitigates rent-seeking behavior and includes close performance monitoring tools.		
	Establish independent sector regulators, antitrust agencies with powers and resources to prosecute and sanction anticompetitive practices, and a sound regulatory framework on competition.		
Extremely rigid labor regulations that leave many workers unprotected and labor costs high and uncertain	Eliminate the double Christmas bonus, fix minimum wage increases to objective criteria, and reduce the role of the state in setting salaries.		
	Revisit labor regulations to explore options for increasing the flexibility of labor markets and reducing non-wage labor costs while ensuring worker protections.		

CROSS-CUTTING CONSTRAINT	POLICY OPTIONS	IMPACT ON PRIVATE SECTOR DEVELOPMENT FEASIBILITY	
		(dark green: high; light green: medium; white: low)	
Cumbersome tax administration and business processes	Implement procedural changes and a digital process that facilitates tax procedures that are streamlined but that may also reduce discretion in the imposition of taxes.		
	Implement electronic and integrated systems to reduce compliance time for registration processes associated with operating a business (paying taxes, registering a property, requesting an electrical connection).		
	Remove the transaction tax.		
	Streamline the inspections process by eliminating redundancies at the national and local levels.		
	Publish clear and transparent process guides to reduce the discretion of public officers (both for economywide and sector regulations).		
Institutions, property rights, and policy predictability: What are the main implementation barriers?			
High uncertainty for investors: weak institutions and property rights and low policy predictability	Precondition: adopt a better, more formal regulation policy and assign an institution the responsibility and mandate to coordinate the policy implementation.		
	Along with simplifying procedures as described, create an electronic repository of administrative procedures relevant to business operations.		
	Implement advance notice of upcoming regulations ("forward regulatory plans").		
	Create a public consultation portal as a one-stop shop for fulfilling all regulations enacted by all regulating bodies so that relevant stakeholders (including the private sector) can (a) receive advanced notice and access to relevant information on proposed or revised regulations, (b) have an opportunity to comment on the content of those regulations before they are enacted or implemented in a transparent and interactive dialogue, and (c) have access to responses and comments received, explaining how they were used or not to improve the final content of the regulation in question.		
	Systematically carry out ex ante and ex post RIA.		
Limited PPD platforms to inform and support policy implementation	Establish structured and permanent PPD mechanisms, ensuring formal, transparent, and inclusive channels for dialogue.		

Note: PPD = public-private dialogue; PPP = public-private partnership; RIA = regulatory impact analysis; SOE = state-owned enterprise.

Agribusiness: Promoting Inclusive Growth and Prosperity through Agricultural Inputs and Forestry

Agribusiness is a foundational sector of the Bolivian economy: it provides one of the few avenues of growth in rural areas and has weathered the current economic crisis better than other sectors. The agricultural sector accounts for around 15 percent of GDP and 4 percent of exports, which amounts to 13 percent of goods exports and rises to 15 percent after adding some essential manufactured goods related to agriculture, namely soybean oil and sugarcane alcohol. Bolivia is a net exporter of agricultural products (it had an agricultural trade surplus from 2000 to 2018), and unlike mining and hydrocarbon exports, most agricultural exports have remained relatively stable throughout the COVID-19 economic crisis. The agricultural sector grew amid the pandemic at a pace of 2 percent, yet the sector suffers from low productivity and stagnation. The agricultural sector is also the most employment-intensive sector, employing nearly one-third of the total workforce,¹⁵ and it has played a critical role in reducing rural poverty in the country.

Despite growth in the sector, agricultural firms struggle with low productivity, export concentration, and vulnerability to climate change. Between 1950 and 2016, the total harvested area increased fivefold in Bolivia, rising from around 654,000 hectares to more than 3.5 million hectares. Most of this expansion (74 percent) occurred in the lowlands and the Amazon region, considerably surpassing the expansion of harvested area in the highlands (15 percent) and the sub-Andean region (12 percent). Santa Cruz Department in the lowland region had 9 percent of all harvested area in 1950 and 61 percent by 2013. In contrast, sustained gains in productivity—driven by technological change, technical efficiency, and managerial capacity—have been modest in Bolivia, although signs of improvement are emerging. The sector is affected by very low productivity overall, with some regions significantly lagging. Exports are also very concentrated: 95 percent of agricultural exports come from only six crops (77 percent from soybeans and soybean derivatives alone). Moreover, 97 percent of agricultural sector workers hold informal jobs, and 80 percent of farms have at most three employees and a surface area of less than 15 hectares. There are also important concerns regarding the unsustainability of the rapid agricultural expansion that the sector has relied on and its vulnerability to the increasing negative effects of climate change.

The Bolivian government's vision for the agricultural sector has centered around promoting food security and food sovereignty. Realizing the sector's potential will require that strategic priorities, both public and private, focus on productivity, diversification, and promotion of more sustainable and inclusive practices. The Bolivian constitution endorses food security as the foundation of human welfare. Social and economic public policy therefore aligns to achieve food sovereignty through a sustained (and sustainable) increase in the productivity of agriculture, livestock, manufacturing, agro-industry, and tourism. The Economic and Social Development National Plan (2016–20) included food sovereignty as the 8th of 13 pillars with specific goals.¹⁶ This calls for (a) increasing investments in research, development, and innovation for productivity growth; (b) improving connectivity, logistics, and value chain coordination for competitiveness; (c) building climate resilience through risk management and a reduction of the environmental footprint; and (d) strengthening

capacity for evidence-based policy making and investment planning through monitoring, policy analysis, and program evaluation. Both the public and the private sectors have important roles to play in these areas and thus also in materializing the gains from the sector.

The agricultural inputs subsector

The development of the agricultural sector could focus on increasing productivity through a more coordinated and efficient inputs market. The current strategy has been to rely on expanding the agricultural frontier, therefore investment has been limited to a few key areas. Access to fertilizers, herbicides, irrigation, and improved seeds is among the areas, with estimates showing that the use of insecticides could increase soybean yield production by 26 percent and the availability of seeds could increase quinoa production by 23 percent. There are several constraints, though, that hinder the agricultural inputs market. On the demand side, there is little awareness of the benefits of improving inputs such as fertilizer, and these inputs are often too costly. On the supply side, there are constraints that limit availability, including noncompetitive domestic fertilizer production, the high cost of productive inputs and significant contraband pesticide imports.

There are several opportunities for increasing agricultural productivity and eventually competitiveness through better access to inputs that are also affordable. Lowering import costs for pesticides and machinery and providing incentives for higher investments in seed and fertilizer development and production could address some of the barriers faced. More specifically, at the level of pesticides, it would help to simplify the registry and certification import process for agrochemicals and ensure adequate infrastructure and logistics services to allow pesticide imports through the Paraná-Paraguay river basin ports through public and private collaboration. For seeds, initial steps could include promoting public-private ventures to take advantage of resource pooling toward seed development and improvement and providing soft loans for investment in production and processing facilities of undersupplied seeds of important staple foods. For fertilizers, an assessment could be carried out to evaluate the technical-economic feasibility of the implementation of a processing industry (particularly for nitrate phosphorus potassium and diammonium phosphate) that takes advantage of the growing domestic provision of urea and other locally produced compounds.

The forestry subsector

The forestry subsector has the potential to quadruple its contribution to the economy. Tropical forests cover 58 percent of Bolivian territory (60 million hectares). Almost half of such land (28.2 million hectares) is classified as permanent forest production land and one-sixth (10.8 million hectares) is currently under management (ABT 2020). Moreover, 58 percent of the total area under management is in the hands of indigenous and rural communities. Timber exports have responded to well-managed firms with expertise in foreign trade, and exports of timber products were directed to markets with the highest dynamism in the past five years, including the Netherlands, France, and Uruguay. The industry has the ability increase its current contribution to GDP from 1 percent to 4 percent, scaling up exports from US\$60

million to US\$1.2 billion, increasing local consumption from US\$350 million to US\$450 million, and enhancing direct employment by 40 percent to 126,000 jobs. It is estimated that these dynamics could create 17,000 new productive units, a large share of which would be micro enterprises (CFB 2020).

These benefits can be achieved through more targeted government support and a strategy focused on inclusiveness and sustainability. Several constraints limit the sector's potential. There are for example, several legal conditions that prevent communities from having their legal status recognized by the commercial code – a requisite to access credit from the financial sector. In addition, the tax regime discourages forestry as an economic activity, and the sector presents institutional constraints, particularly with the Bolivian Authority for the Supervision and Social Control of Forests and Lands (ABT) that limit its supervision, control, and inspection capacity, as well as the lack of staff and updated technology that would allow ABT, for example, to accelerate the approval of log harvesting permits. Access to productive inputs is constrained by financing gaps for forestry activities and for replacement of obsolete capital equipment. The sector is also disconnected from global value chains because of insufficient production capacity, as well as weak links with both the manufacturing industry and with international markets. The private sector can play a key role in addressing these constraints and increasing the forest subsector's competitiveness. It can provide financing, promote training programs, and support institutional reforms. To promote access to finance, policy options include building dialogue with the financial sector to deploy a financing strategy with funds and instruments to facilitate investments and technological conversion along the forestry productive chain. The strategy could include trust funds (*fideicomisos de crédito*) to allocate financing through the financial sector. The financing mechanisms would need to be directed toward community-managed forestry operations, given their significant presence in the managed forest area. To promote exports, there is an additional need to increase efficiency, quality, and sustainability standards along the supply chain.

Policy options to boost the agribusiness sector, including the agricultural inputs and forestry subsectors, are multidimensional. Table ES.2 presents selected priority areas that could be addressed, covering aspects that range from strengthening the legal framework, the development of financing mechanisms, and institutional development recommendations, to training programs, among others, and their feasibility of implementation.

TABLE ES.2. RECOMMENDATIONS TO PROMOTE THE DEVELOPMENT OF THE AGRIBUSINESS SECTOR, WITH A FOCUS ON AGRICULTURAL INPUTS AND FORESTRY

RECOMMENDATION	OBJECTIVE	FEASIBILITY (dark green: high; light green: medium; white: low)
Provide for stability of technical staff of agencies in charge of certification (SENASAG, INIAF, IBNORCA) and improve training for technical staff and auditors. These agencies could also promote third-party service provision. ^a	Improve timeliness and reduce the costs of certification. High turnover of staff and lack of technical capabilities for certification lead to delayed and costly certification processes.	High
Develop a technical modernization program to address institutional weaknesses the sector's regulatory agencies (i.e., ABT, INIAF, SENASAG) that includes the allocation of resources and increased use of technology.	Increase efficiency (e.g., reduced time to issue harvesting permits) through the modernization of procedures and provide for legal and sustainable wood extraction by improving control capacity.	High
Remove restricting policies (quotas for exports, prior previous authorization) and incorporate technology (digitalization of processes, use of blockchain) within institutions related to agricultural trade.	Promote agricultural exports resulting in higher national production, which addresses increased vulnerability to food insecurity due to poor matching between domestic production and consumption.	High
Agricultural inputs		
Simplify the registry and certification import process for agrochemicals. As the competent national authority, SENASAG could define a single procedure, and act in coordination with MMAyA and INIAF. SENASAG could ensure consistent training and stability for the technical staff in charge of certification and registry.	Guarantee timely agrochemical imports.	High
Create a national seed institute that specializes in seed development and improvement as a joint public-private venture to take advantage of resource pooling. Moreover, knowledge, as a public good, could be disseminated through the SNIAF and producer associations.	Encourage the use of certified seed and fertilizers that would bring about significant increases in yields and productivity in the sector.	High

FEASIBILITY

(dark green: high; light green: medium; white: low)

RECOMMENDATION	OBJECTIVE	
Provide financial support to input supply shops and agro-industry. ^b	Lessen the burdens resulting from payment delays and client defaults and allow broader, better-suited financial products, especially for small and medium farmers who look to these shops for integrated farm solutions (i.e., inputs, technical assistance, extension).	
Strengthen the institutional framework of the public insurance agency by building the operational and technical capabilities of INSA to offer insurance products that are more aligned with user needs and financial sustainability. ^c	Provide agricultural insurance to ensure protection against catastrophic risk, allowing vulnerable farmers to invest longer term and protecting them against the possible impact of climate change.	
Set up a monitoring Geographic Information System (GIS) system to permanently provide crop return information to policy makers, insurers, and potential investors.	Provide standardized information on crop returns, conditional to weather forecasts, to address issues such as adverse selection.	
Forestry		
Strengthen the dialogue with the financial sector, to deploy a financing strategy with funds and instruments to facilitate investments and technological conversion along the productive chain. The strategy could include trust funds (<i>fideicomisos de crédito</i>) to allocate financing through the financial sector.	Develop a comprehensive financing package (e.g., long-term funds) to ensure growth of the forestry subsectors, including manufacturing.	
<p>Develop lending programs and equity participation initiatives to boost technological renovation and capitalization in forestry equipment and sawmills. Programs and initiatives could offer differentiated terms, according to the size of operations and include community operations.</p> <p>Through updates to the 1996 Forestry Law, enable financial institutions to accept the forest canopy (<i>vuelo forestal</i>) as collateral for small and medium enterprises, and grant recognition of legal status that allows communities that manage forests to gain creditworthy status.</p>		
Define the impact of financing on climate change mitigation and adaptation indicators within Bolivia's National Climate Change Strategy to facilitate access to international environmental funds (e.g., Green Climate Fund) that could fund the trust funds.		

RECOMMENDATION	OBJECTIVE	FEASIBILITY
Promote the implementation of quality and sustainability standards along the supply chain as quality-demanding markets require the fulfillment of manufacturing, social, and environmental standards This could include a technical training program for manufacturing companies, sawmills, and forestry operators.	Increase high-value exports of timber products.	(dark green: high; light green: medium; white: low)
Promote the signature of FLEGT/VPA ^e agreements to allow exports to the European Union to non-FSC-certified exporters.		
Develop a research and development program to address low harvesting yields in forestry operations, with a sustainable approach to the extraction and manufacture of nontraditional wood species. The program could be complemented with a promotion strategy for different species and relevant protocol.	Diversify sustainable extraction and manufacture activities to include nontraditional wood species.	
Develop technical training programs and best practices in management and administration, commercialization, productivity, and quality.	Develop human capital, which is currently limited, in the forestry subsector.	
Develop timber transformation centers sourced from communities and financed under concessional terms. Implement a business model that allows the management of timber transformation centers by third and specialized parties, the implementation of international quality standards, the articulation of supply to small and medium manufacturing companies, and the distribution of profits to participating communities.	Make the development of forestry operations inclusive by bringing the communities managing these resources into the modern value chain (to overcome obsolescence, insufficient capacity, and low value addition, and take advantage of the harvesting potential).	

Note: ABT = Bolivian Authority for the Supervision and Social Control of Forests and Lands; FLEGT/VPA = Forest Law Enforcement, Governance, and Trade/Voluntary Partnership Agreement; FSC = Forest Stewardship Council; GIS = Geographic Information System; IBNORCA = the Bolivian Institute of Normalization and Quality; INIAF = National Institute for Agricultural and Forest Innovation; INSA = National Agricultural Insurance Institute; SENASAG = National Service of Agricultural Health and Food Safety; SNIAF = National System for Agricultural and Forestry Innovation

- a. One such example of private provision of certification is the New Approaches for Smallholders and Communities Certification project (<https://fsc.org/en/for-people/solutions-for-smallholders-and-communities>).
- b. The Ministry of Economy and Public Finance (MEFP) and the Ministry of Rural Development and Land (MDRYT) could pool resources for a trust fund to finance agricultural supply shops and agro-industry through the Banco de Desarrollo Productivo at convenient rates and terms. The development of a crop receipt system could also be explored to provide pre-season financing based on the pledge of future crops. See IFC and World Bank experiences in Brazil and Ukraine.
- c. Globally, less than 20 percent of smallholders have insurance coverage to protect themselves against the impact of such unexpected events. See https://www.gsma.com/mobilefordevelopment/wpcontent/uploads/2020/05/Agricultural_Insurance_for_Smallholder_Farmers_Digital_Innovations_for_Scale.pdf.
- d. See MPD 2015.

The Logistics Sector: A Strategic Approach to Boosting Private Investment Across the Board

The logistics sector is a backbone of the Bolivian economy and holds huge potential for unlocking growth, but it faces significant challenges. The sector is considered strategic by the Bolivian government, which has undertaken the elaboration of a national logistics plan. It provides important backbone services for firms across sectors through warehousing services, customs agencies, and transport services by truck, river, air, and railroad. A well-functioning logistics sector can help reduce costs, increase efficiency, and open new opportunities for firms along their value chains as well as other sector value chains (agribusiness, manufacturing, and commerce), and as a result, it can contribute to export diversification. Moreover, it can promote regional inclusiveness by narrowing the time and cost of transportation between regions in Bolivia and neighboring countries, especially if it also provides an incentive to improve trade relations. Yet, the sector faces significant challenges that hinder the country's competitiveness and integration into global and regional value chains. Despite large transport infrastructure investments (32 percent of the public investment budget between 1998 and 2016), low road density, the poor quality of existing infrastructure, and restrictions on the use of ports result in logistical cost inefficiencies that are still far above the average for the Latin America and the Caribbean region. The National Logistics Survey (NLS) estimates the logistics cost for Bolivian firms¹⁷ as being 18.1 percent of the value of sales, which is higher than in Colombia (13.5 percent) and in Paraguay (13 percent), and above the average for Latin America (14.7 percent).¹⁸ Bolivia's results in the 2018 NLS result partly from low logistical efficiency in terms of the tracking and tracing of cargo and the time needed for delivery and customs processes.

Consistent with the overall private sector landscape, the sector is dominated by small firms (in both transport and logistics services), relies heavily on land transport, and is highly informal. This causes inefficiency and fragmentation, which affects the access, affordability, and quality of logistics services, as well as the financial sustainability of firms that provide them. The weak connectivity of road and railway networks is a challenge for the development of transport logistics infrastructure and the logistics services sectors. The sector is highly dependent on trucking, but in recent years the government and the private sector have turned their interest to other modal options, river transport being the most important after roads (particularly inland waterway transportation), followed by railways. Significant investment in river transport infrastructure has improved the performance of international trade logistics operations. As a result, the use of ports has been growing but still faces restrictions linked to seasonal navigability, insufficient dredging and amplitude of canals, and issues of service availability and cargo security that affect transport costs.

Regarding logistical services, firms (except for transnational companies) rely little on outsourcing to fulfill their comprehensive logistics service needs. There are few logistics service providers (LSPs) with a comprehensive and specialized service approach. Evidence suggests that in the past three years, LSPs have been developing

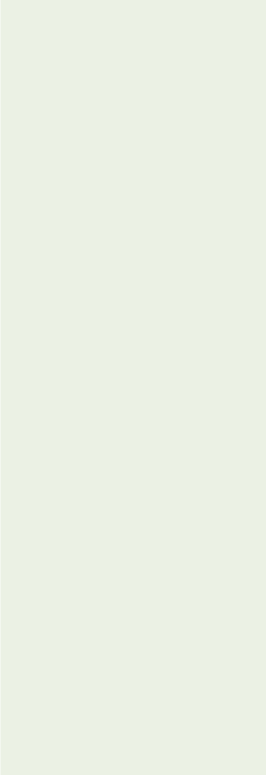
a supply of integral services for the movement of cargo in some relevant sectors (soybeans, fuel, cement, and steel, among others). The sector would benefit from incentives to start using international third-party logistics (3PL) providers (for managing supply chain transport, warehouses, and shipping) and fourth-party logistic (4PL) suppliers (which in addition to 3PL services include inventory management). This type of FDI is necessary to bring badly needed innovation to this sector that is so critical for Bolivia's competitiveness.

There is a need for a legal and regulatory framework for intermodal freight transport infrastructure and associated logistics services that promotes strategic coordination and the implementation of a sectoral road map. Transport infrastructure and services are organized and regulated under a handful of decrees and regulations that include freight transport and associated logistics services. The General Transport Law of 2011, which covers air, road, railway, and waterway transport, defines the concept of an integral transport system (*sistema de transporte integral*) that links different transport modes and components (infrastructure, operators, users, and service providers, including freight logistics services). The law also defines the principles of interinstitutional coordination and establishes different competency standards for national and subnational entities at three levels: the central state level, autonomous departmental governments, and autonomous governments in indigenous communities. Although a sectoral coordination council was created in 2017 under the authority of the Ministry of Public Works, Services, and Housing, it is not yet operational. Ineffective coordination is a significant obstacle to aligning and linking the different institutions and subsectors involved in logistics infrastructure and services, preventing the implementation of strategies to develop intermodal infrastructure and integrated logistics services.

Bolivia also requires a more conducive trade facilitation environment to expedite the cross-border movement of goods. Structural and policy-induced obstacles include lags in implementation of vital aspects related to cross-border cooperation such as (a) the regular exchange of information about import and export declarations with the border agencies of trading partners, (b) the implementation of health and agriculture electronic certificates, and (c) the use of advanced electronic cargo manifests. Outdated facilities at the borders that lack automation and connectivity lead to delays and slow clearance procedures. Cross-border coordination for the official approval of sanitary certificates is still pending, and thus Bolivia's sanitary diplomacy must be strengthened to boost the country's sanitary standing abroad, a necessary precondition for increased exports, especially in the agribusiness sector.

Bolivia has several opportunities to strengthen the logistics sector in the short and medium term and improve trade facilitation. Continued efforts to foster cooperation and coordination among private and public actors to establish a joint work plan are essential. Such joint efforts are also needed for coordinating activities at a national level to achieve integrated logistics services and complementarity among all transport modes. Priority recommendations appear in table ES.3, and the expected feasibility is color-coded as before.

TABLE ES.3. RECOMMENDATIONS TO PROMOTE THE DEVELOPMENT OF THE LOGISTICS SECTOR AND TO ENHANCE TRADE FACILITATION

RECOMMENDATIONS FOR THE LOGISTICS SECTOR	OBJECTIVE	FEASIBILITY <small>(dark green: high; light green: medium; white: low)</small>
<p>Develop a national logistics strategy that includes a freight transport strategy, and the regulatory and institutional frameworks to support multimodal operations in an integrated logistics infrastructure environment and promotes private sector participation and the creation and operation of specialized logistics providers in the country and attracts international 3PL and 4PL suppliers.</p> <p>The strategy could include a masterplan for waterways development, urban logistics platforms, dry port network, implementation of a freight consolidation platform, implementation of road bypasses in urban areas and development of last-mile logistics. The improved regulatory framework for freight can be linked with the ongoing formulation of the national logistics plan and strategy through the coordination of Conalog. The strategy could also consider the optimization of the use of containers in both export and import directions. Considering input from the shipping lines which serve the Bolivian market would be vital.</p>	<p>Complement the missing and pending regulations under Law 165 for intermodal freight transport and associated logistics infrastructure services needed to develop the logistics sector into a modern industry that integrates traditional freight transport providers and associated logistics services and attracts private investment.</p>	
<p>Develop logistics infrastructure through: (a) the design of logistics platforms following global good practice for multimodal logistics platforms and dry ports in the hinterland (on the main logistics corridors of the country) that attract private sector investment for their construction and operation, (b) the development of logistics infrastructure for consolidating and redistributing merchandise and facilitating loading and unloading areas in main cities for last-mile cargo delivery, and (c) the development of logistics cluster strategies and incentives for developing the warehousing subsector (both for dry and temperature-controlled logistics).</p>	<ul style="list-style-type: none"> (a) Improve the country's logistics efficiency through integrating logistics and government services. This will reduce time and the cost of processing and consolidating cargo for both domestic and foreign trade movement. The development of these platforms and dry ports could provide value added services to cargo owners (e.g., storage, packaging, redistribution). (b) Gain efficiency in last-mile logistics and reduce the effects on urban traffic. (c) Address limited warehousing infrastructure, strengthen service specialization, and raise current standards. 	

RECOMMENDATIONS FOR THE LOGISTICS SECTOR**OBJECTIVE****FEASIBILITY**

(dark green: high; light green: medium; white: low)

Ensure permanent maintenance of the Tamengo Canal.	Maintain the navigability of the Tamengo Canal. While normally the public sector is expected to be responsible for maintenance, exploring alternatives to guarantee a permanent dredging of the canal is necessary. Authorities would need to make efforts to ensure navigability at other critical points of the HPP, through the Intergovernmental Committee of Rio de la Plata Basin.	High
Improve the legal and regulatory PPP framework to promote public and private investment in improving road networks (primary, secondary), as well as to modernize and expand supportive infrastructure for integrated logistics services.	Maximize finance for investment and road maintenance through performance-based contracts that could increase the managing capacity of the ABC using a stronger decree (DS 3469) that provides the regulatory framework to allow PPPs in infrastructure for integrated logistics services.	
Explore the promotion of funding facilities to help PPP projects reach financial closure once the PPP framework has been strengthened.	Maximize finance, contribute to addressing macrofiscal constraints on project financing, and stimulate private sector appetite for PPP investments.	Medium
Evaluate alternatives for the development of Puerto Busch as an international Bolivian port with direct access to the HPP.	Find an alternative that would increase port capacity to respond in case of a likely increase in agricultural production and other cargo volumes that might be diverted to the HPP in the next five years. To this effect, evaluate alternatives to develop a port in Puerto Busch with a phased development approach as cargo volumes through the HPP increase. The port would enable a connection with the rail or road freight transport modes and would need to address concerns about environmental impacts.	
Upgrade physical borders and IT infrastructure through the formulation of a border infrastructure strategy that includes integrated facilities with neighboring countries, improved access roads, and broadband satellite connectivity, among other aspects. The strategy would contemplate a national trade portal, the rollout of the SUMA IT customs system, and upgrades to the single window.	Improve the processing time for international trade operations, increase transparency, and improve ease of trading. This would make trade operations more secure, efficient, reliable, and convenient for users. Priority actions would address large infrastructure and information and communication technology gaps in Tambo Quemado, Desaguadero, Pisiga, Yacuiba, and Puerto Suárez.	High

RECOMMENDATIONS FOR THE LOGISTICS SECTOR

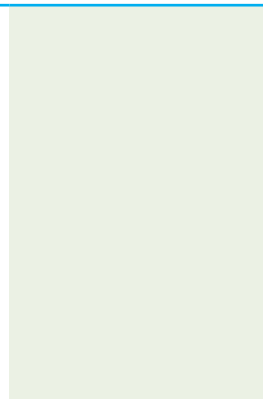
OBJECTIVE

FEASIBILITY

(dark green: high; light green: medium; white: low)

Strengthen institutions and implement coordinated border management. This would entail (a) the formalization and empowerment of the National Trade Facilitation Committee, (b) common inspections and the integration of risk management for selectivity, (c) the implementation of capacity building and staff training programs, (d) the coordination and extension of service hours at the borders, and (e) the expansion of the AEO to accredited Bolivian companies.

Improve levels of service and border compliance, raise the qualification standards for public officials and increase their efficiency, reduce processing times, and enhance the integrity of border control organizations.



Note: 3PL = third-party logistics; 4PL = fourth-party logistics; ABC = Bolivian Roads Administration; AEO = authorized economic operator; HPP = Paraná-Paraguay Waterway; IT = information technology; PPP = public-private partnership. a. Platforms are multimodal and handle different types of cargo (dry and refrigerated). They are near logistics clusters and linked to multimodal transport trunk infrastructure like intercity highways, rail lines, waterways, navigation channels, and urban and industrial areas that act as freight-generating or freight-attracting hinterlands.

1. INTRODUCTION

Bolivia has made significant progress in reducing poverty and inequality in the past two decades, a development propelled by large public expenditures during the commodity boom that contributed to increasing labor earnings.¹⁹ Economic growth and social gains have nonetheless slowed down (World Bank 2020a). In the period 2002–14, around 96,000 people left poverty annually and gross domestic product (GDP) growth averaged 4.6 percent. Progress was driven by household earnings because the private sector holds 73 percent of jobs in Bolivia and labor earnings account for the vast majority of reductions in poverty and inequality. Since the end of the boom, however, not only has GDP growth slowed down, but the average number of people who have escaped poverty dropped significantly (to 35,000 per year between 2014 and 2018 on average), and the public sector’s ability to boost progress has declined alongside it.

The COVID-19 crisis has hit Bolivia hard at a time when there is limited fiscal space. Bolivia’s output is estimated to have contracted by 7.8 percent in 2020 (World Bank 2021), its first recession since 1986, and poverty is expected to have increased along with a decline in labor earnings for many households. In May 2020, just after the onset of the COVID-19 crisis, 70 percent of workers interviewed in a World Bank phone survey reported that they had not worked or had lost their jobs. In addition, the combination of the COVID-19 health and economic emergency and the sharp decline in commodity prices has put macroeconomic stability under further strain, as Bolivia entered the crisis with increasing fiscal deficits and declining international reserves.

Public sector efforts in Bolivia to strengthen economic recovery, create more high-quality jobs, and achieve economic diversification for a more resilient economy need to be complemented by a thriving private sector. In a more unfavorable external and domestic economic environment, promoting a strong and resilient private sector can accompany public efforts and contribute to boosting economic growth, cushioning the potential effects of a significantly tighter macro-fiscal situation, and providing more quality jobs to resume the path toward reducing poverty and inequality.²⁰ To unleash this potential, though, the constraints that the private sector faces need to be addressed. A large share of private sector jobs is informal (87 percent of those jobs) (World Bank Group 2015), and at 7 percent of GDP, private sector investment in Bolivia is the lowest among comparator countries. Moreover, approximately 80 percent of business owners and top managers indicate that they faced unfair competition from unregistered or informal firms.²¹ These high levels of informality have been linked to the regulatory burden faced by formal firms and the weak investment climate in Bolivia (Sakho et al. 2009).

The Bolivia Country Private Sector Diagnostic (CPSD) aims to identify barriers and opportunities for increasingly dynamic private sector participation in the Bolivian economy and to help the country move toward the goal of boosting economic growth and creating more and better jobs to reduce poverty, and promote a shared prosperity. Policies that encourage private sector development will be vital to achieving a sustainable recovery in Bolivia. Specifically, the gains from private sector investments could materialize by increasing inclusiveness (equitable access to quality job opportunities), diversification (particularly in exports), and productivity and competitiveness. The report zooms in on two sectors that present important opportunities for Bolivia's private sector development and development more broadly. The first is the logistics sector, which could have positive economywide impacts and help compensate for some of the disadvantages that Bolivia faces as a landlocked country. Second is the agribusiness sector, which presents important opportunities to boost rural prosperity, create jobs across the country, and promote exports with a special focus on the agricultural inputs and forestry subsectors.

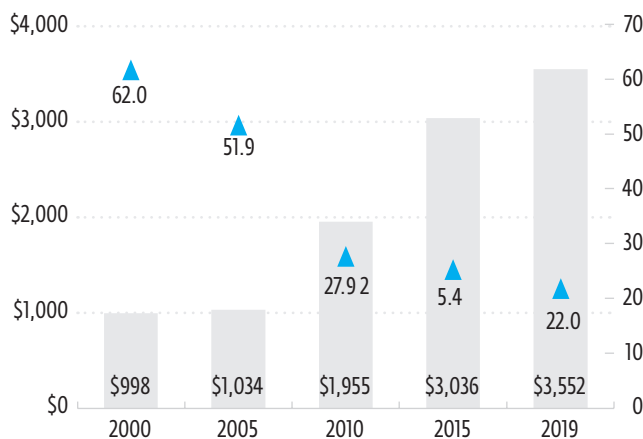
2. COUNTRY CONTEXT

BOLIVIA'S YEARS OF RAPID GROWTH AND GAINS IN SOCIAL AND ECONOMIC INDICATORS DID NOT TRANSLATE INTO A PRIVATE INVESTMENT BOOM

Bolivia experienced strong economic growth supported by the commodity boom (2000–14), which allowed the resource-rich country to sustain large public investment programs. Since then, growth has slowed. During that period, the country outstripped most of its regional peers in terms of growth and social indicators (figures 2.1 and 2.2), but the economy has lost traction since the drop in global oil and gas prices, combined with lower export volumes to Brazil and Argentina. To counter the effects of these lagging commodity prices, the government embarked on expansionary policies that helped sustain economic growth, though at lower rates. Although GDP growth averaged 4.9 percent between 2004 and 2014—high by regional standards (figure 2.2)—it slowed to 4.4 percent between 2015 and 2018 and was only 2.2 in 2019 amid the civil unrest that followed the contested general elections in October 2019.

FIGURE 2.1. TOWARD AN UPPER-MIDDLE INCOME BOLIVIA

Per capita GDP and poverty rate



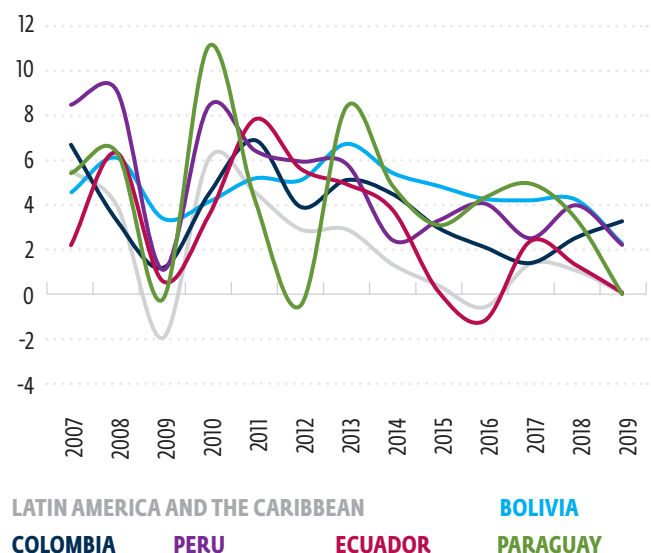
POVERTY RATE (RHS)
US DOLLARS (CURRENT PRICES)

Source: IFC, Country Economics and Engagement calculations using data derived from World Bank, Macro Poverty Outlook, October 2020; World Development Indicators.

Note: Upper-middle-income poverty rate = US\$5,50 in 2011 purchasing power parity.

FIGURE 2.2. REAL GDP GROWTH FOR SELECTED LATIN AMERICA AND THE CARIBBEAN ECONOMIES

Growth in real GDP (%)



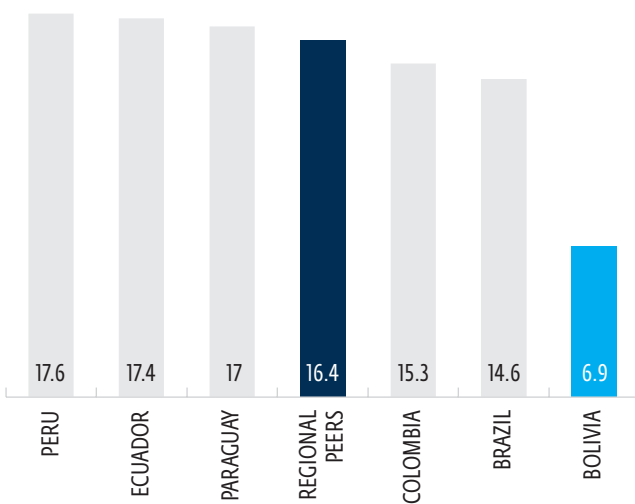
LATIN AMERICA AND THE CARIBBEAN
COLOMBIA **PERU** **ECUADOR** **BOLIVIA** **PARAGUAY**

Source: IFC, Country Economics and Engagement calculations using data derived from IMF World Economic Outlook, October 2020.

Note: Latin America and the Caribbean is composed of 33 countries. GDP = gross domestic product.

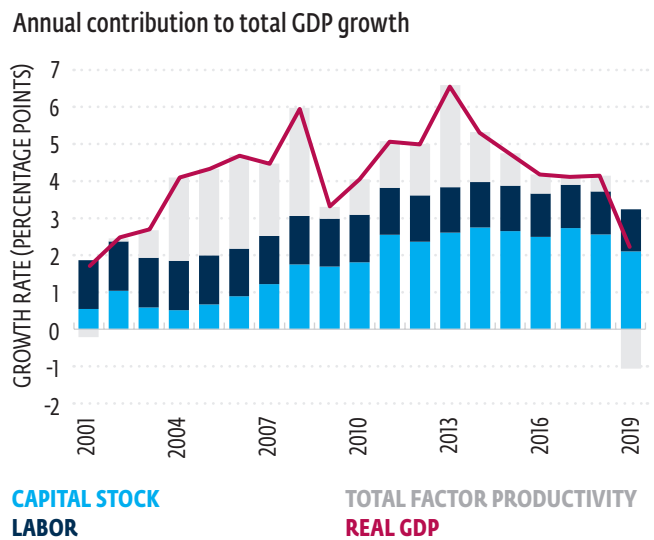
Public capital stock in Bolivia grew rapidly during the commodity boom but efficiency of public investment lagged without a commensurate increase in private sector investment. While public investment nearly doubled from 6.9 percent in 2005 to 13.3 percent of GDP in 2018, private investment averaged 7.2 percent of GDP over the same period, which is about 60 percent lower than Bolivia’s regional peers (figure 2.3). Sluggish total factor productivity (TFP) has additionally gone hand in hand with the post-boom economic slowdown. TFP’s contribution to growth has declined (figure 2.4), and while Bolivia has increased public investment significantly over the past 15 years, there is substantial scope for improving its efficiency (Endegnanew and Tessema 2019). The average efficiency gap of public investment in Bolivia is about 41 percent, well above the average gap of 27 percent for emerging market economies and 29 percent for countries in Latin America and the Caribbean.²²

FIGURE 2.3. PRIVATE INVESTMENT, AS PERCENTAGE OF GDP, BOLIVIA AND COMPARATOR ECONOMIES, 2018 OR LATEST AVAILABLE DATA



Source: World Bank, World Development Indicators data.

FIGURE 2.4. BOLIVIA: GROWTH ACCOUNTING BREAKDOWN BY FACTORS OF PRODUCTION (SIMPLE SOLOW MODEL), 2000–19



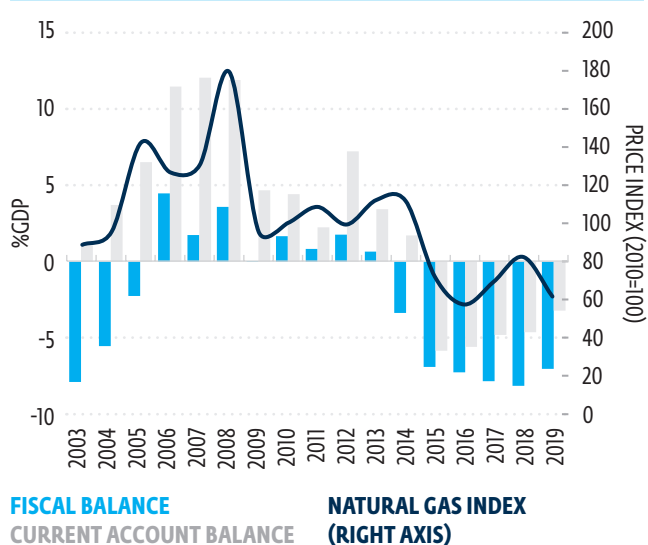
Source: IFC, Country Economics and Engagement calculations using World Bank, World Development Indicators and Education Statistics data.

Note: Growth rates are weighted according to the income share of capital (percentage) = 40 percent. Growth rates are weighted by income share of capital divided by total growth rate. GDP = gross domestic product.

THE COVID-19 CRISIS HAS HEIGHTENED THE EXISTING MACRO AND DEVELOPMENT CHALLENGES

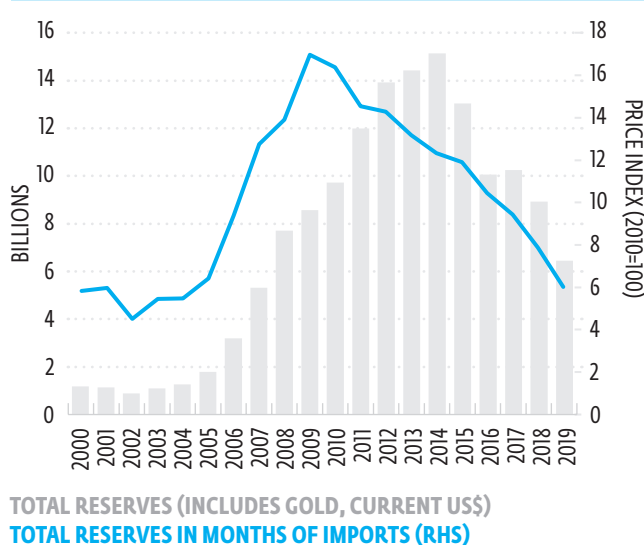
The crisis came at a time when Bolivia was already seeing diminishing fiscal buffers because of a less than favorable internal and external economic situation. Lower gas exports, worsening terms of trade, and accommodative macroeconomic policies have eroded Bolivia's macroeconomic buffers over the past years. Significant external and domestic shocks have created sizeable macroeconomic imbalances, and the country became a net external debtor in 2015 (figure 2.5). The external current account has adjusted, but near-term risks remain stemming from the still large fiscal deficit, rising public debt, and subdued oil prices. Along these lines, Bolivia's international reserves buffer has declined. Together with direct lending to state-owned enterprises (SOEs), the central bank has depleted foreign-exchange reserves (figure 2.6) to stabilize the exchange rate. These developments have caused a real overvaluation of currency because Bolivia has a de facto fixed nominal exchange rate pegged to the US dollar.²³ As such, the country entered the COVID-19 crisis on a weak fiscal footing. Fiscal deficits have averaged 7.5 percent of GDP since 2015, despite the slight improvement in 2019, and have been financed largely by central bank lending along with multilateral and bilateral loans on concessional terms. External public debt remains relatively low at about 30 percent of GDP, but it has risen substantially in the past five years. In this context, the overall fiscal balance was expected to reach 10.9 percent of GDP in 2020, while public debt²⁴ is likely to climb to 72.9 percent of GDP, an increase of more than 14 percentage points since 2019. The deep recession, however, has helped alleviate Bolivia's external imbalance in 2020 as the collapse in domestic activity has reduced imports, narrowing the trade deficit while easing pressures on international reserves, which stood around US\$6 billion as of mid-October 2020 after years of steep declines.

FIGURE 2.5. BOLIVIA'S WEAK FISCAL AND EXTERNAL POSITIONS ENTAIL A MAJOR RISK TO MACROECONOMIC SUSTAINABILITY



Source: World Bank, World Development Indicators 2019; World Bank Commodity Price Data (Pink Sheet); and IMF, World Economic Outlook, October 2019.

FIGURE 2.6. BOLIVIA'S INTERNATIONAL RESERVES BUFFER HAS DECLINED



Source: CPSD team illustration based on World Bank, World Development Indicators.

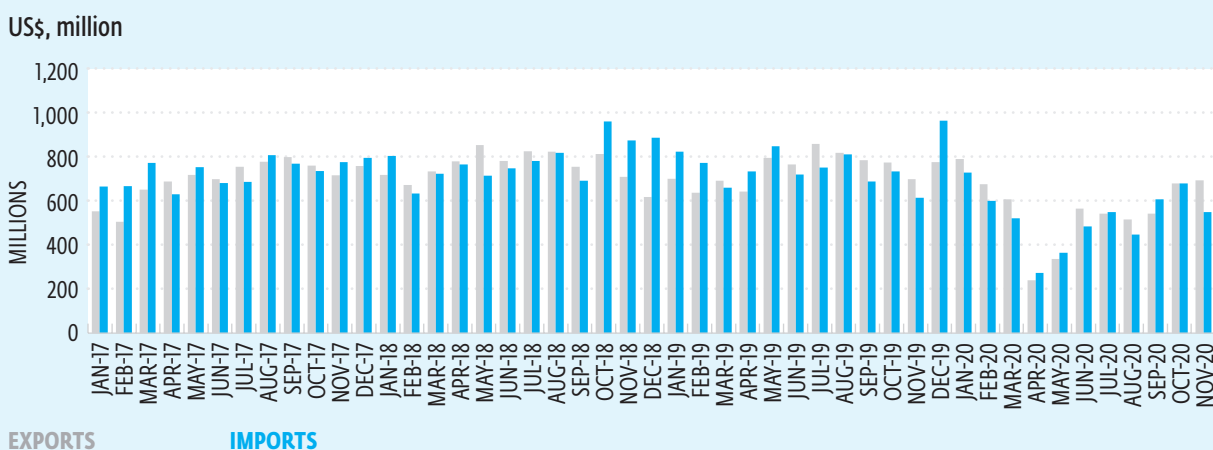
Externally Bolivia faces the dual threats of plunging commodity prices and global markets. Economic activity decreased by 7.9 percent year over year in the first seven months of 2020. Multiple factors dragged down GDP growth, including social distancing measures, a decline in external demand, a drop in oil prices, and high political uncertainty. Despite a modest improvement since July, economic activity was still well below pre-pandemic levels, as the health crisis affected the crucial mining sector and hampered the construction industry. The economy shrank by 8.8 percent in 2020 as all elements of aggregate demand declined. Services, especially the hospitality sector (tourism, commerce, hotels, restaurants), have been significantly impacted. Other sectors (real estate, professional services, finance) are facing indirect impacts as aggregate demand falls. In 2021, Bolivia’s economy is expected to rebound, but economic growth is expected to slow down in the medium term.

Small, informal firms have borne the brunt of the crisis, and commodity exports have been the most negatively affected of all. About 91 percent of micro and small firms are in the most affected sectors (57 percent in commerce, for instance). These micro and small firms are characterized by informality and have few coping mechanisms to sustain the shock. Large firms are not necessarily spared from the shock either: estimates show that, assuming a fall of 25 percent in sales (three months of the year), the share of large firms experiencing losses may increase by 23 percentage points from 15 to 38 percent (World Bank 2020a). Importantly, the effects may have lasting consequences: evidence for 51 countries shows that declines in sales are persisting even four months after the peak of the crisis and that the impact is much more severe among micro and small firms (Apedo-Amah et al 2020). In addition, goods exports continued to fall in July–August as a result of significant drops in shipments of natural gas and minerals, which represent 80 percent of Bolivia’s exports (box 2.1).

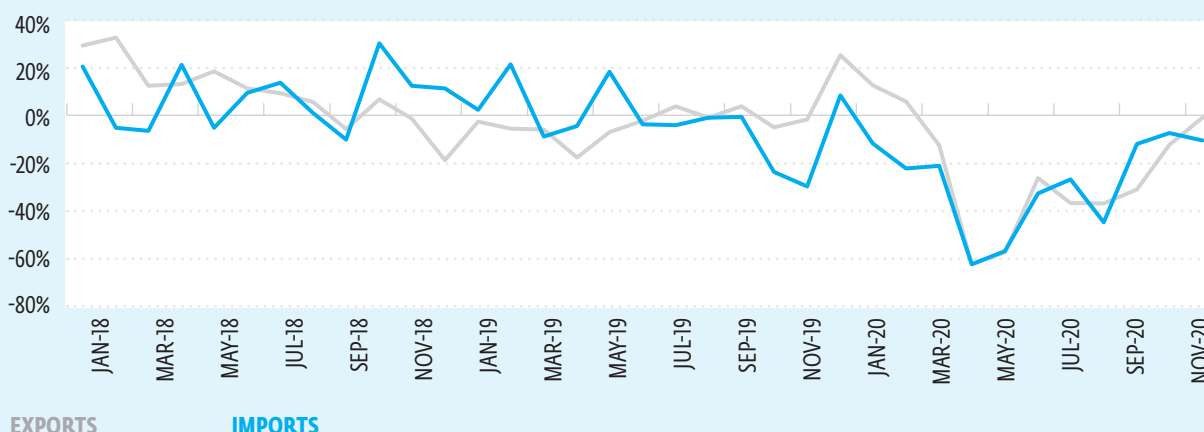
BOX 2.1. BOLIVIAN TRADE AFTER THE ERUPTION OF THE COVID-19 PANDEMIC

Bolivia’s trade exports and imports plummeted at the outset of the COVID-19 crisis in early 2020 (figure B2.1). Both exports and imports were down by more than 60 percent in April and 57 percent in May 2020 (figure B2.2). A slow recovery followed throughout the rest of the year until monthly exports almost reached the level of November 2019.

FIGURE B2.1.1. BOLIVIA'S MONTHLY EXPORTS AND IMPORTS YEAR-ON-YEAR, JANUARY 2017–NOVEMBER 2020



Source: National Institute of Statistics, Bolivia.

FIGURE B2.1.2. BOLIVIA'S MONTHLY GOODS EXPORTS AND IMPORTS, YEAR-ON-YEAR PERCENT CHANGE, JANUARY 2018–NOVEMBER 2020

EXPORTS

IMPORTS

Source: National Institute of Statistics, Bolivia

The recovery of Bolivian exports in late 2020 was driven by agricultural products such as soya, cereal, sugar, and meat (table B2.1.1). The growth was driven primarily by increases in exports of soya products to Peru, cane sugar to Colombia, nuts to the European Union and the United States, and bovine meat to China. Soya exports in November 2020 were six times the exports of November 2019, and these exports accounted for 10.6 percent of exports in 2019. In late 2020, monthly exports of fruits, cereals, dairy, and coffee exceeded the level of the corresponding month in 2019. Because of an agreement with China to open its markets to Bolivian meat, exports of those products have greatly surpassed its 2019 level.

Conversely, monthly exports of gas and minerals, which accounted for almost 80 percent of Bolivian exports in 2019, have not recovered to their 2019 levels (table B2.1.1). The only exception was exports of minerals in November 2020, which exceeded exports in November 2019 by 11.5 percent. A main driver is the declines in gas and mineral prices that Bolivian exports have experienced because of the pandemic.

TABLE B2.1.1. BOLIVIA'S MONTHLY GOODS EXPORTS AND IMPORTS, YEAR-ON-YEAR PERCENTAGE CHANGE, JANUARY 2019–NOVEMBER 2020

	EXPORTS, 2019		YEAR-ON-YEAR PERCENTAGE CHANGE, JANUARY–NOVEMBER 2020											
	Value, US\$, million	Share	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Jan-Nov
Minerals, ores	4,141.7	48.5%	5.7%	49.2%	-26.3%	-97.3%	-84.6%	-36.2%	-46.7%	-49.3%	-41.9%	-6.3%	11.5%	-32.7%
Natural gas	2,559.0	30.0%	16.3%	-28.0%	10.3%	-28.7%	-31.9%	-24.1%	-35.8%	-30.2%	-34.8%	-44.0%	-51.0%	-27.5%
Other hydrocarbons	54.6	0.6%	228.2%	-6.9%	-28.3%	-88.6%	-86.5%	-68.0%	-80.0%	-87.3%	-76.3%	-73.6%	-79.1%	-56.6%
Soya and soya products	906.2	10.6%	-4.2%	-2.8%	0.3%	17.6%	-31.7%	9.9%	-12.8%	-15.1%	9.9%	-11.5%	499.0%	1.1%
Fruit	225.6	2.6%	-15.4%	-22.8%	-25.0%	-36.8%	-9.6%	-1.2%	0.6%	-36.4%	20.1%	49.4%	88.8%	-3.8%
Cereals	139.1	1.6%	-16.8%	-24.0%	-3.7%	2.8%	24.9%	14.7%	-5.0%	-7.3%	27.9%	13.9%	21.8%	3.8%
Sugars	48.3	0.6%	412.6%	101.7%	291.7%	-33.4%	-74.8%	-92.7%	-27.9%	28.7%	-39.1%	71.7%	890.9%	30.0%
Dairy	17.2	0.2%	463.9%	22.2%	-2.9%	-61.7%	-7.4%	33.2%	113.4%	-30.7%	16.5%	22.9%	83.5%	23.1%
Coffee	12.7	0.1%	80.5%	-39.6%	53.5%	-58.3%	-29.1%	137.9%	184.4%	-15.5%	37.4%	-9.4%	42.6%	15.7%
Meat	9.6	0.1%	593.4%	165.9%	288.4%	711.3%	538.0%	557.1%	1269.4%	987.8%	232.5%	295.5%	1310.5%	476.0%
Other agric. products	256.4	3.0%	39.1%	27.5%	29.2%	33.6%	49.1%	29.7%	-2.2%	-27.3%	1.7%	64.3%	395.7%	32.2%
Other exports	173.9	2.0%	57.2%	-27.5%	-41.7%	-74.5%	-60.1%	-48.5%	-32.2%	6.9%	-4.2%	172.9%	120.5%	-6.2%
TOTAL	8,544.2	100.0%	12.8%	6.1%	-12.3%	-62.5%	-57.6%	-26.2%	-36.7%	-36.9%	-31.0%	-12.3%	-0.8%	-24.2%

Source: National Institute of Statistics, Bolivia.

Finally, with more than 80 percent of the workforce employed in the informal sector, the pandemic and lockdown measures have disproportionately affected those in the most vulnerable situations. Between December 2019 and August 2020, urban unemployment increased from 4.8 to 10.6 percent and labor participation decreased from 69 to 62 percent. The Labor Force Survey for urban areas showed that employment in May (compared to the previous year) declined 45 percent for workers 65 years and older and 28 percent for those between 15 and 24 years old.²⁵ By July 2020, the World Bank High Frequency Phone Survey revealed that 67 percent of salaried employees were able to work. Among nonsalaried workers with more insecure earnings, 57 percent were working by mid-2020 (Cueva and Davalos, forthcoming). Moreover, the crisis has had a bigger impact on women, as they are overrepresented in the informal work sector²⁶ and participate at higher rates in sectors especially affected by the crisis.²⁷ Furthermore, job losses in the hotels and restaurants and commerce sectors was 22 percent and 19 percent, respectively, the highest across all economic activities.²⁸ While exceptional measures were adopted to support households and economic activity at the onset of the crisis, the government's response to the crisis has been limited by fiscal space constraints.

3. A LOOK AT THE PRIVATE SECTOR IN BOLIVIA

A HIGHLY INFORMAL PRIVATE SECTOR MOSTLY COMPRISING MICRO AND SMALL FIRMS

The private sector in Bolivia is dominated by small firms operating informally to a large extent. A large informal sector may represent a challenge to competing formal firms, because informal firms are able to engage in practices that can give them an unfair advantage over formal firms, which must comply with prevailing rules and regulations. However, the predominance of informality also represents barriers or disincentives that firms face to become formal. The composition of the private sector reflects a limited capacity to deliver quality jobs but also the quality and low cost of the goods and services that consumers and the economy need.

The private sector in Bolivia is dominated by small firms that operate informally to a large extent and are concentrated geographically. The World Bank Enterprise Survey indicates that formal firms with fewer than 100 workers represented more than 77 percent of the spectrum in 2017, and half had fewer than 20 workers. The average number of workers per firm in Bolivia is small (30.5), which is below the regional average of 40 (table 3.1). Furthermore, few companies have foreign ownership and the proportion of firms with an internationally recognized quality certification (11.6 percent) is significantly lower than in other Latin America and the Caribbean countries (Colombia and Peru have an average of 20.6 and 17.0 percent, respectively; see table 3.1). The private sector landscape and its high concentration of micro and small firms, though, is only revealed when informal firms are also considered. Using household survey data to provide an overview of both the formal and informal side of the private sector in Bolivia suggests that a vast majority of firms are small and informal, and that the share of informal unipersonal firms is very high, accounting for 44 percent of all salaried workers (1.6 million workers; see figure 3.1). Firm-level data of small and micro firms in Bolivia (2018) similarly shows that around three-quarters of such firms in urban areas are informal and concentrated in a few sectors (57 percent, for instance, in commerce). The private sector landscape also reveals that there is a strong spatial concentration of private sector activity in three departments: La Paz, Santa Cruz, and Cochabamba. A survey of large companies (more than 100 workers in 2017) in Bolivia shows that 90 percent of these large firms are in those three departments (figure 3.2), and these firms produced approximately 94 percent of total sales in 2017.

Competition among formal and informal firms limits growth and private investment. Nearly 80 percent of Bolivian enterprises cited competition from informal sector firms as a major obstacle, 16.5 percent higher than the average percentage of responses in Latin America and the Caribbean. Similarly, the share of firms that was formal when they started operations in Bolivia was 7.5 percentage points lower than the regional average (figure 3.3).

TABLE 3.1. SNAPSHOT OF THE BUSINESS ENVIRONMENT IN BOLIVIA: FORMAL FIRMS BY SIZE

FIRM CHARACTERISTIC (UNIT)	SMALL (5-19)	MEDIUM (20-99)	LARGE (100+)
Proportion of firms (% of all surveyed enterprises)	50.3	27.2	22.5
Number of workers (average)	7.9	42.8	298.2
Age of the establishment (years)	17.6	21.9	31.0
Proportion of private domestic ownership in a firm (%)	88.0	96.0	93.6
Firms with at least 10% of foreign ownership (%)	12.2	3.7	6.1
Firms with an internationally recognized quality certification (%)	3.3	37.6	39.7

Source: CPSD team based on World Bank Enterprise Survey Datasets 2017.

FIGURE 3.1. DISTRIBUTION OF PAID EMPLOYMENT BY FIRM SIZE AND FORMALITY, 2017

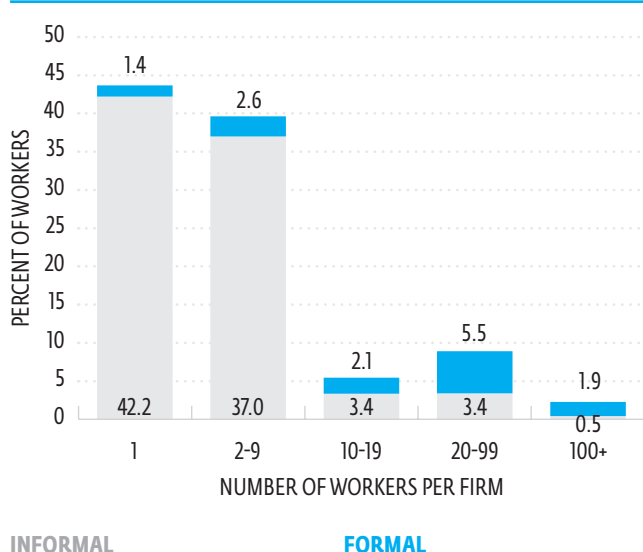
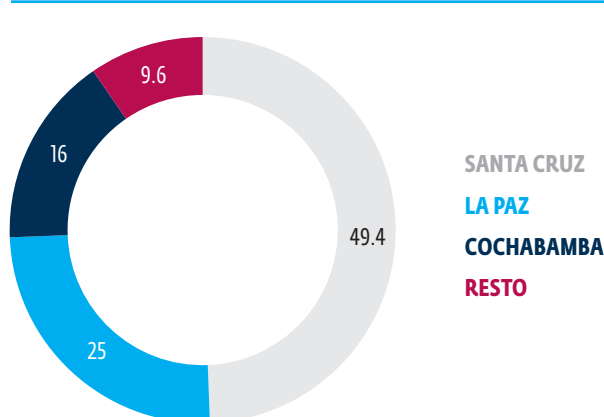
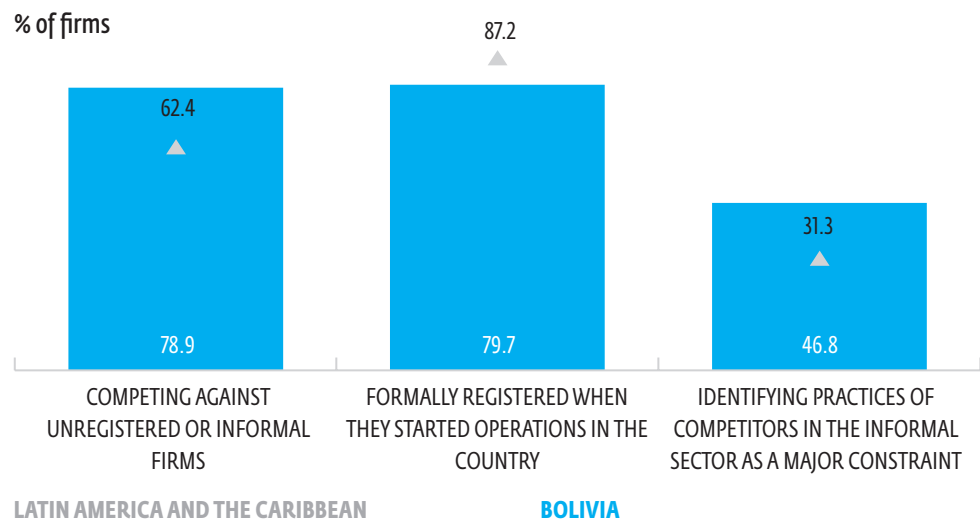


FIGURE 3.2. DISTRIBUTION OF LARGE COMPANIES (100+) BY DEPARTMENT, 2017



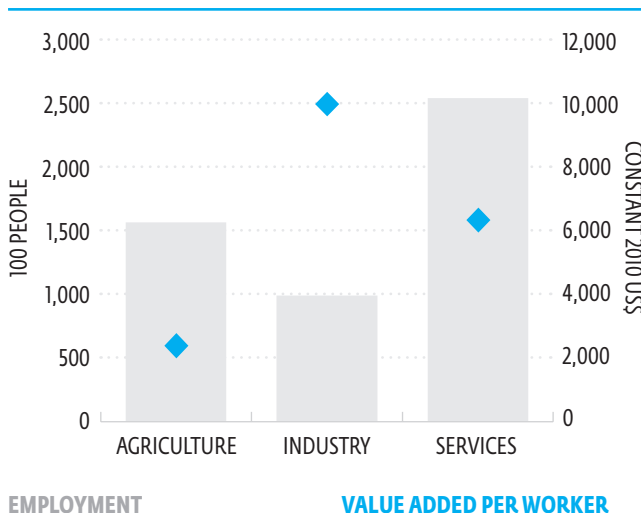
Source: World Bank 2020a, based on Household Survey 2017 and firm-level survey of large firms.

FIGURE 3.3. INCIDENCE OF INFORMALITY IN THE PRIVATE SECTOR. PERCENTAGE OF FIRMS, BOLIVIA VERSUS THE REGION

Source: CPSD team based on the World Bank Enterprise Survey dataset 2017. Business owners and top managers in 364 firms were interviewed between January and June 2017. The surveys were administered to a representative sample of firms in the nonagricultural, formal, private economy. Formally registered when they started operations refers to currently formal firms, showing that 8 out of 10 started formal.

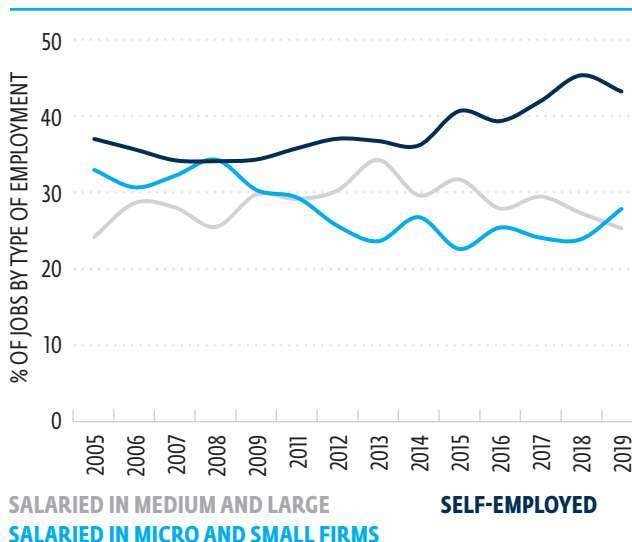
Private sector composition in Bolivia partly reflects the limited creation of quality jobs that has led many to turn to fallback options (World Bank 2020a). Bolivia's informal labor market is among the largest in the region. Nearly 80 percent of the active population in rural and urban areas is employed in the informal sector, and among informal workers, women are slightly overrepresented (in 2018, 75 percent of women were engaged in informal jobs compared to 72 percent of men).²⁹ In contrast, informality across Latin America and the Caribbean ranges from 24.5 percent in Uruguay to 30–40 percent in Costa Rica and Chile. In Guatemala, Honduras, and Nicaragua, informal employment rates are close to 80 percent.³⁰ The agricultural sector has very low productivity per worker, yet it takes up a large share of employment (figure 3.4). Importantly, the end of the commodity boom weakened the labor market. Low-income self-employment has increased to the detriment of workers in micro and small firms (figure 3.5), coupled with a decline in average labor earnings. Trends in job quality using a multidimensional job quality index that includes dimensions such as minimum wage compliance, incidence of relative underpayment, and incidence of overqualification (Cueva and Davalos, forthcoming) show stagnation since 2007 that contrasts with the economic growth of the country during the commodity boom. Moreover, new jobs are being created at a very low rate: only 15 percent of unemployed or low-income self-employed workers manage to find a salaried job in the informal sector in a given quarter, and only 6 percent can find one in the formal sector. These dynamics show differences among groups. Women between 30 and 64 years old remain in unemployment or low-paying self-employment for 18 months, for instance, but men remain in this condition for less than 12 months. In addition, job quality differences between men and women showed a 0.15 gap in an index from 0 to 1 in 2018. Likewise, job quality in sectors with a high share of employment (like agriculture and retail) scores below 0.4 in comparison to other sectors like financial services and construction, with job quality index scores around 0.7.

FIGURE 3.4. EMPLOYMENT BY SECTORS OF ECONOMIC ACTIVITY AND VALUE ADDED PER WORKER BY SECTOR (2019), BOLIVIA



Source: Jobs structure tool with World Development Indicators data.

FIGURE 3.5. EMPLOYMENT STRUCTURE (PERCENTAGE OF JOBS BY TYPE OF EMPLOYMENT)

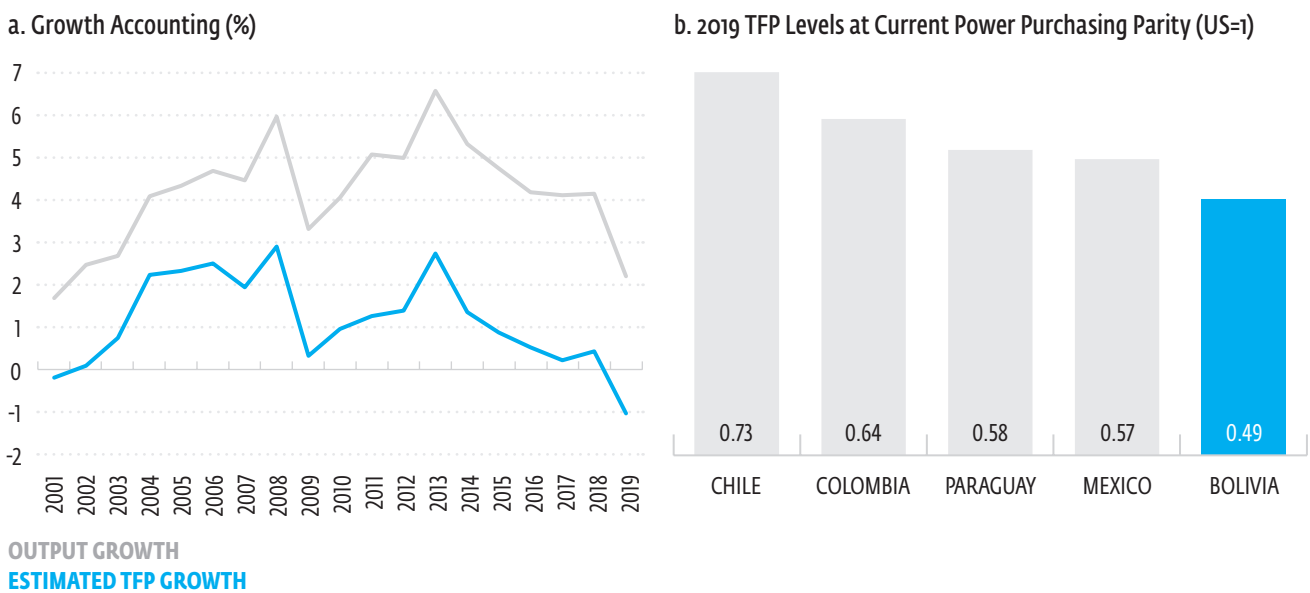


Source: World Bank 2020a using Household Survey data, 2005–19.

LOW PRODUCTIVITY AND COMPETITIVENESS

Measures to boost the productivity of micro and small firms in general will help overall economic growth, employment, and, indirectly, formalization. Currently, productivity remains low in Bolivia. Productivity growth could lead to higher incomes and rising living standards. Promoting reforms that deliver investments that yield gains in productivity and competitiveness are key to attracting more private sector participation.

Productivity in Bolivia has lagged behind that of its peers and is not on an upward trend (figure 3.6a). After increasing during the commodity boom, average total factor productivity (TFP) growth in Bolivia has approached zero since 2013, leaving TFP in Bolivia far below the region’s top performers (figure 3.6b). The productivity gap between the Andean country and the frontier remains substantial: moreover, the output per worker in the United States was more than seven times higher than the output per worker in Bolivia in 2019.³¹ The small productivity gains observed in the early 2000s resulted mainly from labor reallocation as employment shifted from agriculture to services and other nontradable activities, which absorbed self-employed and low-skilled workers in slightly more productive tasks. Within sectors, labor productivity has declined, except for in manufacturing and agriculture.³² As stressed in previous studies on Bolivia, burdensome business and labor market regulation along with constraints on access to finance have undermined productivity growth.³³ Previous studies have also linked low productivity growth to high labor informality, particularly in nonextractive sectors.³⁴

FIGURE 3.6. GROWTH ACCOUNTING AND TOTAL FACTOR PRODUCTIVITY

Source: The World Bank's World Development Indicators, Education Statistics, and Penn World Tables version 10.0. Growth rates are weighted according to the income share of capital (%) = 40%. Growth rate weighted by income share of capital divided by total growth rate. -IFC- CELCE calculations.

Note: TFP = total factor productivity.

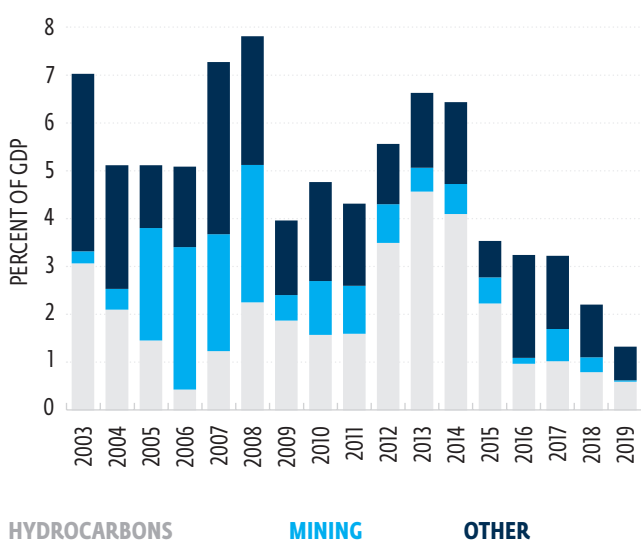
Bolivia lags in competitiveness and struggled with firm productivity even during its high-growth period. Bolivia's performance in the Global Competitiveness Index has been broadly stagnant: its ranking dropped from 104th in 2013 to 117th in 2016 and 107th in 2019. In the most recent report, the country lagged far behind the other 141 countries in the global ranking on key pillars such as labor market (135th), product market (128th), business dynamism (126th), and innovation (124th). Domestic competition was particularly weak in Bolivia, restraining the country's export base diversification.³⁵ According to the World Bank (2015a), limited growth and low productivity among firms are very common in the private sector. Between 2003 and 2013, the country's productivity growth (TFP) was close to the modest Latin America and the Caribbean regional median but far below that of top performers such as the Dominican Republic, Panama, Peru, and Uruguay. In 2019, labor productivity in Bolivia was 12.8 percent of the productivity in the United States and below that of countries such as Ecuador (19 percent) and Guatemala (15 percent), according to recent Inter-American Development Bank (IDB) research (Cruz, Manzano, and Loterszpil 2020). Within the micro and small firm environment, formal firms are 43 percent more productive than informal ones, even when compared with similar enterprises using a wider set of criteria.³⁶ Despite the reasons behind this difference, the greater access to credit by formal small and medium enterprises (SMEs) versus informal ones may partially explain this gap.³⁷ The productivity gap between formal and informal firms decreases with firm size. There are diminishing gains, in other words, to becoming formal. Formal firms with four or more employees, for instance, are only 16 percent more productive than an informal enterprise, and the productivity gains of formal firms decline by 11 percentage points with each additional employee, leading to incentives for firms to stay small and informal.

BOLIVIA HAS AMPLE ROOM TO INCREASE ITS DIVERSITY AND ITS INTEGRATION INTO GLOBAL VALUE CHAINS

Bolivia’s foreign investment and exports are highly concentrated, particularly in extractive sectors. This concentration may lead to volatility in growth and fiscal revenue. Moreover, Bolivia has low backward participation in global value chains (GVCs) and high forward participation, as commodities are predominant in its exports. Promoting increasing diversification in private sector investments is also crucial for Bolivia if it is to reduce its economic volatility and expand opportunities for private sector growth and job creation. Similarly, Bolivia could gain from transitioning to a more sophisticated participation in GVCs.

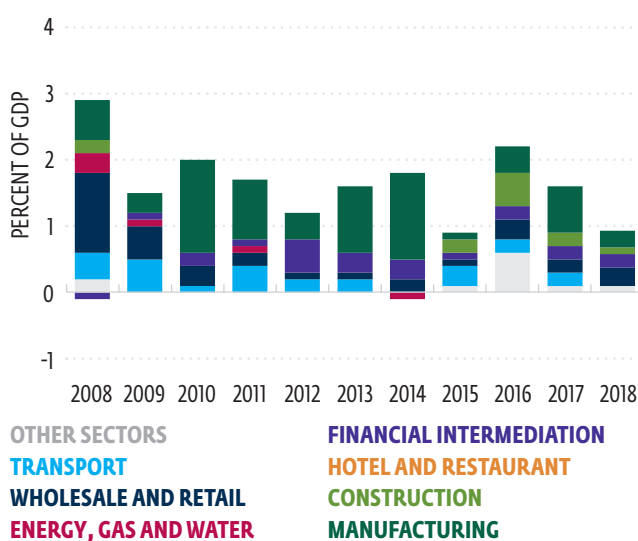
FDI inflows have been concentrated in relatively few sectors, namely hydrocarbons and mining, but this pattern is not consistent. These two sectors accounted for 76 percent of all FDI entering Bolivia in 2013, with hydrocarbons alone representing almost 70 percent of all FDI inflows. Between 2008 and 2019, FDI in Bolivia averaged 4.4 percent of GDP and has fluctuated over the years, dropping to less than 1.5 percent of GDP in 2019 (figure 3.7), which is a function of political uncertainty and lower commodity prices. This change has resulted partly from the contraction of FDI in the hydrocarbons and mining sectors. The hydrocarbons sector contribution decreased from 4.6 percent of GDP in 2013 to 0.6 percent in 2019, whereas FDI in the mining sector reached a minimum of less than 0.1 percent in 2019. Manufacturing and wholesale and retail accounted for 60 percent of the non-mining and nonhydrocarbon FDI entering Bolivia in the past decade (figure 3.8). In 2018, the wholesale and retail sectors became the third most relevant subsector after hydrocarbons and mining, with a total US\$114 million in foreign investment (15 percent of total FDI).

FIGURE 3.7. FDI INFLOWS BY SECTOR, 2008–19



Source: Banco Central de Bolivia.

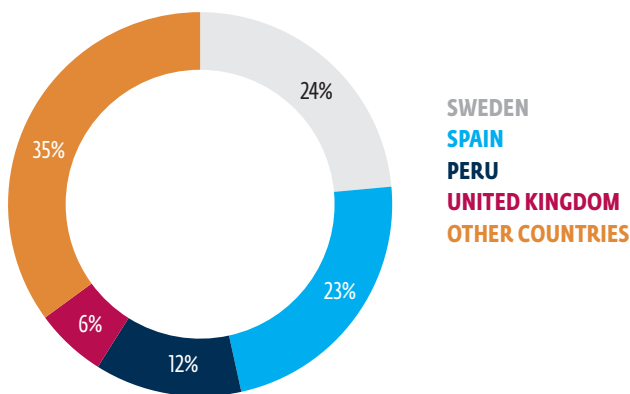
FIGURE 3.8. "OTHER" FDI BY SUBSECTOR, 2008–18



Source: Banco Central de Bolivia.

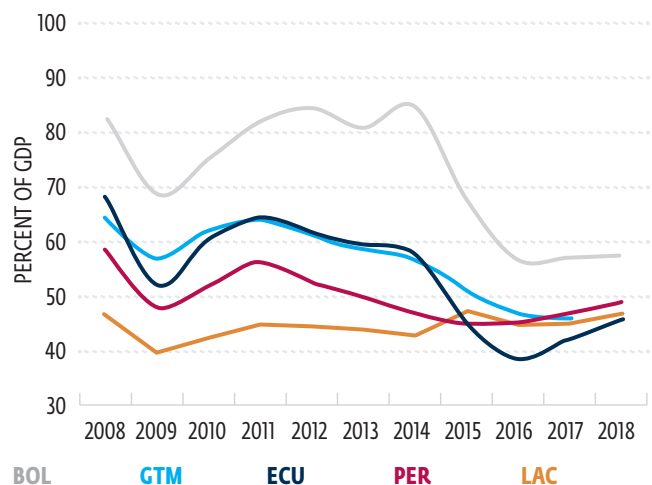
The main sources of FDI for Bolivia are also limited: between 2008 and 2018, the main investing countries were Spain, Sweden, and the United Kingdom. In 2018, the main country of origin of FDI, Sweden, targeted the mining and manufacturing sectors, while Spain, the second largest source, mainly focused on hydrocarbons, and Peru, the third largest, focused on the manufacturing sector (figure 3.9) (Banco Central de Bolivia 2018). Trade opportunities in certain countries have declined since Bolivia terminated important bilateral investment treaties with countries such as Argentina, Ecuador, France, Italy, the Netherlands, Spain, Sweden, and the United States, and some FDI opportunities have declined (for instance, increases in taxes and royalties on minerals imposed by the Bolivian government have depressed the attractiveness of the country to foreign investors). The current COVID outbreak is expected to slow global FDI flows at rates of between –5 percent and –15 percent in 2020, and Bolivia is not immune to this negative shock (UNCTAD 2019b).

FIGURE 3.9. FDI BY COUNTRY OF ORIGIN, 2018



Source: Banco Central de Bolivia.
 Note: FDI = foreign direct investment.

FIGURE 3.10. TRADE OPENNESS (SELECTED COUNTRIES, 2000–18)



Source: World Bank staff estimates using World Integrated Trade Systems.
 Note: BOL = Bolivia; ECU = Ecuador; GTM = Guatemala; LAC = Latin America and the Caribbean; PER = Peru.

On the side of exports, Bolivia has increased the number of export markets served, despite its relatively few preferential trade agreements. The number of export markets has gone from 92 (2008) to 116 (2018), increasing on average by more than two new markets per year since the global financial crisis. According to the Hirschman Herfindahl Index, the concentration of markets has also decreased from 0.26 in 2008 to a low of 0.08, an improvement in the dispersion of trade across export markets for Bolivia. The Latin America and the Caribbean region, however, is still Bolivia’s main trading partner: Bolivia scores only 1.99 out of 10 in the free trade agreement category of the World Bank Trade Policy Indicators scale, reflecting a relatively low number of preferential trade agreements and partners. The top export destinations for Bolivia’s products between 2008 and 2018 were the Mercosur countries, absorbing on average 48 percent of Bolivia’s exports, while Asia absorbed 18 percent, and the Andean Community and United States both absorbed 11 percent (figure 3.12). In 2018, Brazil was the number one destination for Bolivia’s exports (19 percent), followed by

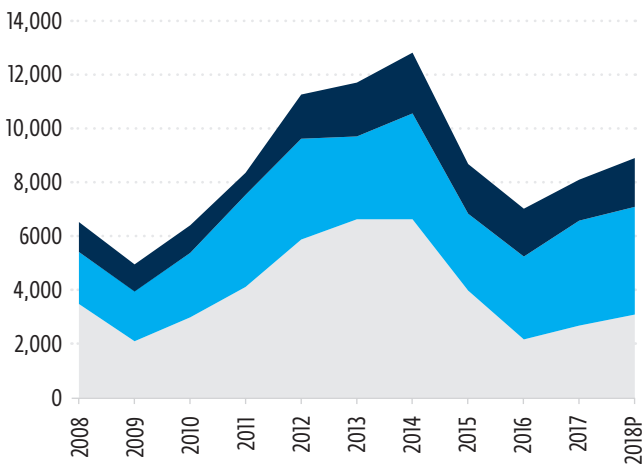
Argentina with the second-largest share at 16 percent (mostly natural gas). While the export share of Mercosur fell from 58 percent (2013) to 36 percent (2018), exports to the Asian markets more than doubled from 11 to 28 percent in the same period. In 2018, Japan became Bolivia's third most important export market, while China remains the main source of Bolivia's imports.

Bolivia's exports have been highly dependent on low-complexity commodities concentrated in the hydrocarbon and mining sectors, which are naturally exposed to volatility in price and global demand.³⁸ Between 2008 and 2018, Bolivia's trade openness averaged 73 percent of GDP, well above the average shares of GDP in countries of Latin America and the Caribbean (45 percent) and peer countries such as Peru (50 percent) and Ecuador (54 percent) (figure 3.10). Bolivia essentially exports hydrocarbons and minerals (natural gas and zinc made up 33 percent and 17 percent of total exports in 2018, respectively). Since 2014, exports have sharply declined from 43 percent of GDP to approximately 26 percent in 2018 (figure 3.11), driven by a steep fall in gas exports from 18 to 7 percent of GDP that followed the collapse of commodity prices and, more recently, lower export volumes under supply contracts to Brazil and Argentina.³⁹ Additionally, the country currently has 46 tariff agreements in place with a trade-weighted average tariff rate of 4.7 percent as of 2018. Bolivia's top three nontariff measures included licensing or permit requirements to export, certificate requirements, and prohibitions for technical barriers to trade in various sectors.

The high concentration of exports is accompanied by a low complexity of export products, minerals, and agriculture. Economic complexity has remained unchanged. Bolivia ranked 112th out of 133 countries in the Economic Complexity Index in 2017. Between 2002 and 2017, the country added only six new export products to its basket, five of them from the agricultural sector.⁴⁰ Manufacturing exports of high or medium technology also fell from 13 percent of total manufacturing exports in 2003 to only 3.4 percent in 2018.⁴¹ Sectors such as industrial machinery and apparatuses (optical and medical) hold potential for diversification.⁴²

Bolivia is in the category of high exporters of commodities and could gain through transitioning to more sophisticated participation in GVCs. While all forms of participation in global value chains bring overall productivity and income gains in participating countries, the biggest growth spurt typically comes when countries transition out of exporting commodities and into exporting basic manufactured products (such as garments) using imported inputs (for example, textiles), as has happened recently in Bangladesh, Cambodia, and Vietnam, according to the *World Development Report* (2020). Eventually, however, these high growth rates cannot be sustained without moving to progressively more sophisticated forms of GVC participation away from commodities and toward light manufacturing. Bolivia, though, has low backward participation and high forward participation in GVCs, as commodities are predominant in its exports. Bolivia's GVC participation as a share of its gross exports has been fluctuating because of changes in international commodity prices. Bolivia's GVC participation follows a pattern like peer countries from the turn of the century (figure 3.13). Exports of hydrocarbons as well as minerals and metals have been significant contributors of forward participation in GVCs. Forward participation for Bolivia is almost three times higher than backward participation. Figure 3.14 shows that backward participation in Bolivia has been growing modestly.

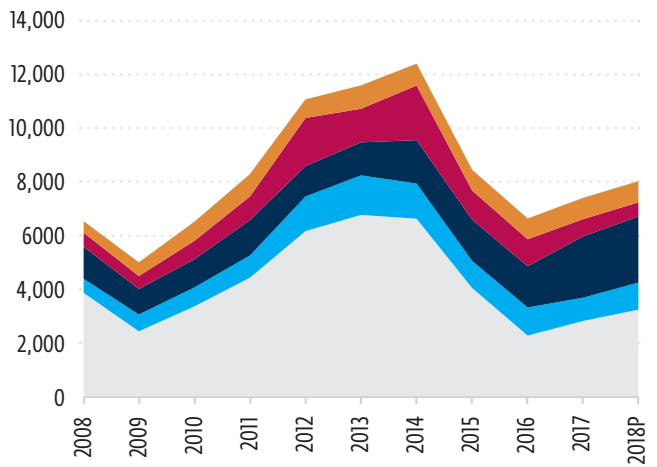
FIGURE 3.11. EXPORT PRODUCTS (US\$, MILLIONS), 2008-18



HYDROCARBONS
MINERALS
OTHER PRODUCTS

Source: Banco Central de Bolivia.

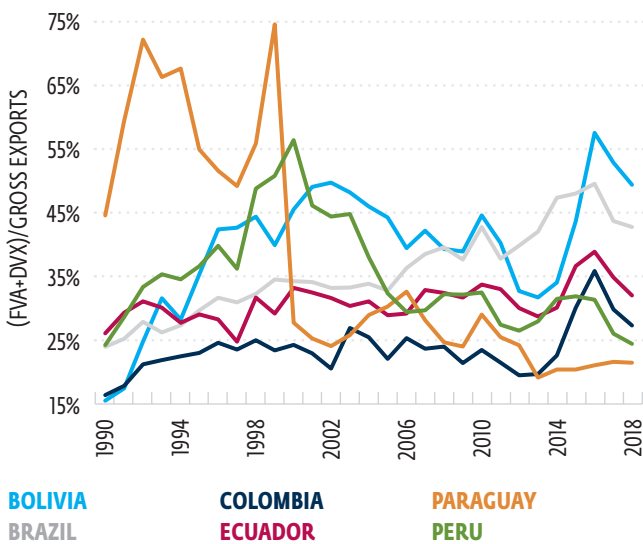
FIGURE 3.12. EXPORT PARTNERS (US\$, MILLIONS), 2008-18



MERCOSUR
ANDEAN COMMUNITY
ASIA
US
EU
REST OF THE WORLD

Source: Banco Central de Bolivia.

FIGURE 3.13. GVC PARTICIPATION (% GROSS EXPORTS) FOR BOLIVIA AND PEER COUNTRIES (1990-2019) AS SHARE OF GROSS EXPORTS ((FVA+DVX)/EXP)

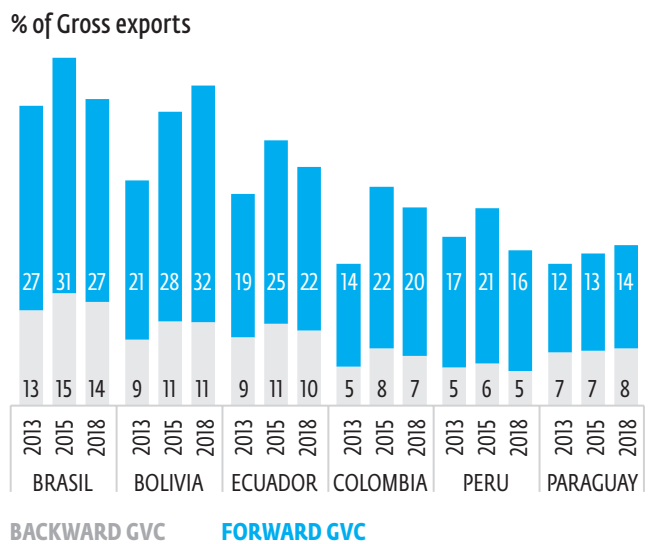


BOLIVIA
BRAZIL
COLOMBIA
ECUADOR
PARAGUAY
PERU

Source: World Bank staff calculations using UNCTAD-Eora Global Value Chain Database.

Note: FVA = Foreign Value Added; DVX = Domestic Value Added Exported as intermediate further re-exported to third country; EXP = gross exports

FIGURE 3.14. BACKWARD AND FORWARD GVC PARTICIPATION FOR BOLIVIA AND PEER COUNTRIES (2013-18)



BACKWARD GVC
FORWARD GVC

Source: World Bank staff calculations using UNCTAD-Eora Global Value Chain Database.

Note: GVC = global value chain.

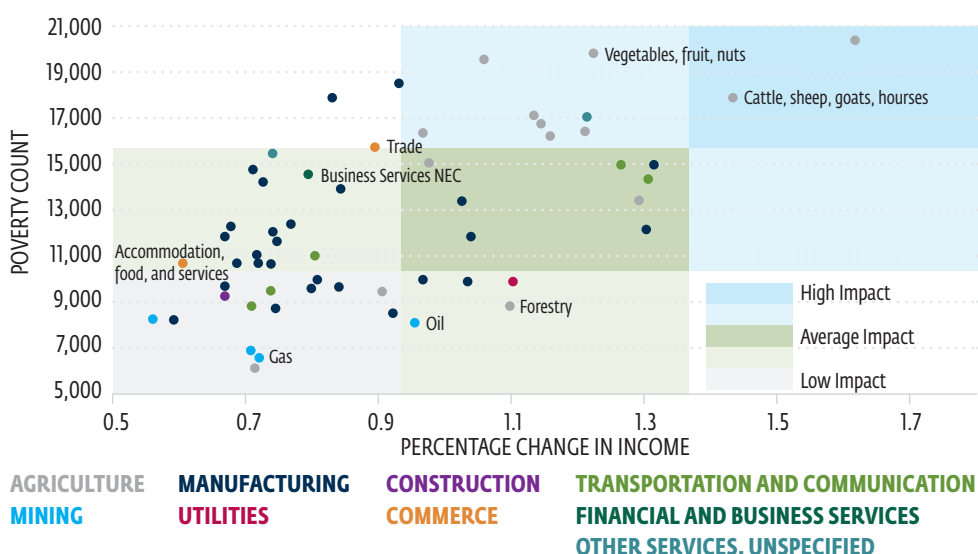
PRIVATE INVESTMENT IN BOLIVIA COULD LEAD TO MORE JOBS THAT ARE BETTER AND MORE INCLUSIVE

Private investment in Bolivia might not only lead to job creation and higher productivity but could also promote inclusiveness by generating jobs for women, rural workers, and indigenous people.

Private investment could lead to higher productivity and more equitable growth, especially in relation to investments in the agriculture and high-skilled services sectors. A macro-micro simulation model⁴³ estimates that an increase in output by US\$100 million resulting from private sector investment in one of the 57 economic sectors (World Bank 2021) would generate 10,000 to 15,000 new jobs and increase value added across sectors. Sector-specific simulations document that investments in agriculture subsectors like vegetables, fruits, and nuts or cattle, sheep, goats, and horses would enable 19,000 individuals to escape from poverty on average and increase the income of the bottom 40 percent by an average of 1.4 percent (figure 3.15).

Welfare gains result from job creation but also from higher wages. On average, 50 percent of the per capita income increases for the bottom 40 percent of the population across all sector investments would result from new jobs for the previously unemployed or inactive. The sector wide labor income gains and better jobs for previously low-income workers would make up the other half of the per capita income increases (figure 3.16). More specifically, it is estimated that new job opportunities for the previously employed would occur in the industry and services sectors rather than in agriculture. This might be explained because of a transition from traditionally low-paid sectors like agriculture to better-paying new jobs in sectors such as transport and communications.

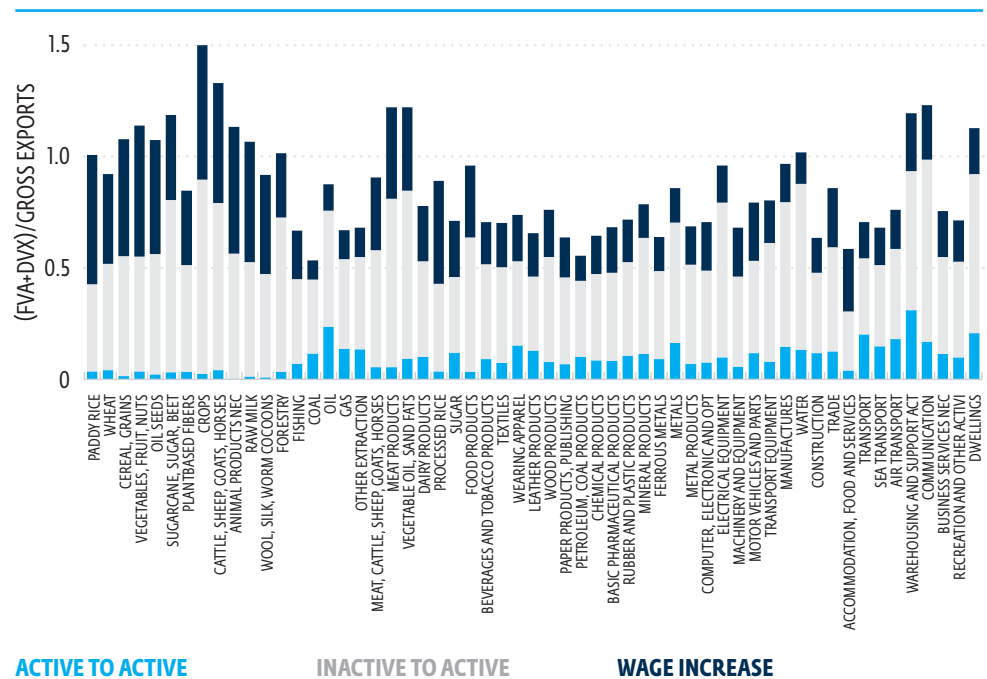
FIGURE 3.15. NUMBER OF INDIVIDUALS WHO EXIT POVERTY AND THE INCOME GAINS FOR BOTTOM 40%, BY INVESTMENT SECTOR



Source: World Bank 2021.

Note: Each dot represents the total impact on poverty and income that follows an investment that increases the output in that sector by US\$100 million. This sector-specific output increase leads to employment creation and wage increases across all sectors of the economy through backward production linkages and increased household consumption.

FIGURE 3.16. PERCENTAGE CHANGE IN PER CAPITA HOUSEHOLD INCOME FOR THE BOTTOM 40%, BY CHANNEL FOR EACH SECTOR-SPECIFIC INVESTMENT

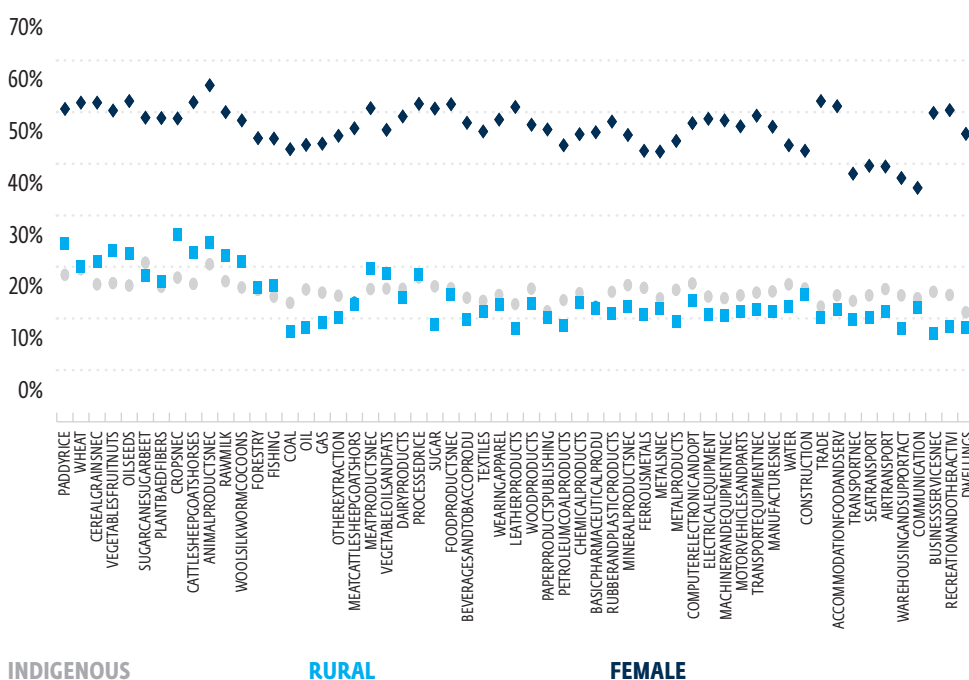


Source: World Bank 2021.

Note: Bars for each sector show the impact of US\$100 million investments in the respective sectors on the income of the bottom 40 percent of population. The percentage change in per capita household income for the bottom 40 percent can be decomposed into the percentage change that is attributed to each impact channel. The active-to-active channel captures the income increase that happens when a previously working household member switches to a better-paying job. The inactive-to-active channel captures the income increase that happens when a previously inactive household member gets a new job. The wage increase channel captures the income increase that results from sectorwide wage increases, which are shared by all households that have at least one member working in the sector.

Private sector investments have the potential to improve job quality in sectors with a high level of informality, such as agriculture and commerce, as well as promote inclusiveness. Highly informal sectors like agriculture (98 percent) and commerce and transport (above 80 percent on average) would experience the highest productivity increases (figure 3.16). It is also estimated that the new jobs would benefit currently disadvantaged workers: women who would take more than 50 percent of the new jobs driven by job creation in the commerce and services sectors (figure 3.17); workers in rural areas who would take close to 40 percent of the new jobs in the case of investments in several agricultural subsectors; and indigenous workers who may take around 30 percent of the new jobs in agricultural subsectors, as well as 20 percent of the new jobs resulting from investments in other sectors (industry, high-skilled services).

FIGURE 3.17. DEMOGRAPHICS OF JOB MOVERS, BY INVESTMENT SECTOR



Source: World Bank 2021.

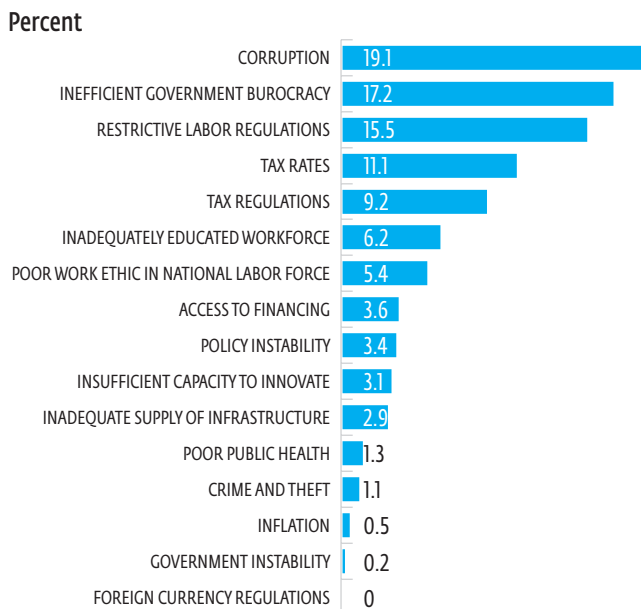
Note: The markers represent the share of individuals with the demographic characteristic among all new job takers in response to a US\$100 million investment in the respective sectors.

Promoting inclusiveness by, for instance, closing gender gaps could help boost Bolivia’s productivity and economic potential, but other barriers to participating in the economy more productively need to be removed as well. It is estimated that Bolivia will lose 15.6 percent of potential GDP per capita by 2050 because of gender gaps in education and labor force participation (Devadas and Kim 2020). Female labor force participation (LFP) rates have declined recently, but only after 15 years of sustained growth that made this one of the highest in the region, an LFP still far below that of men.⁴⁴ The 2017 Enterprise Survey also exhibits low female participation in the surveyed formal companies as less than one-third of the workforce was female. Likewise, the percentage of firms with a female top manager was around 26 percent. One of the main issues in Bolivia concerns economically active women’s access to quality jobs. Bolivia’s score in the Job Quality Index, for example, which expresses its measurements on a scale from 0 to 1, revealed a gap between men and women that was close to 0.15 points in 2018.⁴⁵ Gender inequalities in the labor market are the result of multiple constraints including lack of mobility, time, and skills and exposure to violence.⁴⁶ The intersection of gender and ethnicity creates disadvantages: more than 60 percent of indigenous women and 40 percent of nonindigenous women are self-employed in the informal sector. Average income for indigenous women amounts to only 60 percent of that of nonindigenous women (World Bank 2009). Overall, poverty remains higher among certain groups, with a particular social divide between indigenous and nonindigenous groups: poverty rates stand at 45 percent among the former and 30 percent among the latter.

4. MAIN CROSS-CUTTING CONSTRAINTS TO PRIVATE SECTOR DEVELOPMENT

The Bolivian private sector faces multiple constraints that limit its potential to contribute to overall economic development and quality job creation. Prior research indicates that the most severe constraints to private sector growth at the economywide level are primarily microeconomic policy failures related to the regulatory environment and include regulatory uncertainty, high trade barriers and tax administration burdens, and overly restrictive labor regulations.⁴⁷ Reforms such as lowering tariffs on manufacturing goods, discontinuing the practice of indexing national salary bonuses to GDP growth rates to instead align them to productivity criteria, and avoiding discretionary tax incentives are vital to private sector development.⁴⁸ These assessments are well aligned with recent perception data from firms in Bolivia. A survey of the formal sector in 2015 suggests that 50 percent of the firms do not think that the government provides a regulatory framework that encourages business expansion, and 72 percent consider the time spent complying with government regulations as detrimental to their businesses (figure 4.1). Importantly, a large share of formal firms indicate that informal sector practices affect their operations (figure 4.2), and consultations with the private sector have revealed that competition from the informal sector also stems from regulatory and governance-related factors that allow informal firms to smuggle unregulated goods across Bolivia's borders in ways that formal firms legally cannot. Smuggling is high and persistent in Bolivia: private sector estimates over the last three decades indicate that import smuggling accounts for 6 to 8 percent of GDP and 24 and 40 percent of formal imports (MDPEP, 2020). This issue is of increasing concern for the formal private sector, given a sizable increase in smuggling in the past years and it has been exacerbated in the context of the pandemic in 2020. The *Camara Nacional de Industria* estimates that import smuggling increased from US\$2.3bn between 2017 and 2019 to US\$3.0bn in 2020 (see forthcoming World Bank Bolivia Systematic Country Diagnostic).

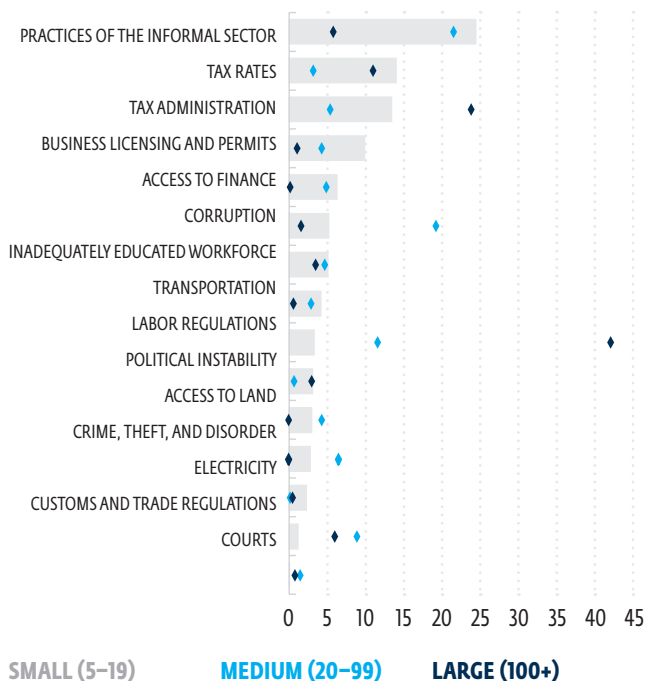
FIGURE 4.1. MOST PROBLEMATIC FACTOR FOR DOING BUSINESS IN BOLIVIA: WEF EXECUTIVE OPINION SURVEY



Source: WEF 2016.

Note: From the list of factors, respondents to the World Economic Forum's Executive Opinion Survey were asked to select the five most problematic factors for doing business in their country and to rank them between 1 (most problematic) and 5. The score corresponds to the responses weighted according to their rankings.

FIGURE 4.2. TOP BUSINESS ENVIRONMENT OBSTACLES FOR BUSINESS, BY FIRM SIZE (%): WORLD BANK ENTERPRISE SURVEY



Source: World Bank Enterprise Survey, 2017.

This chapter describes the main cross-cutting constraints relevant to the Bolivian context that undermine private sector development and investment, as well as the goal of creating more and better jobs.⁴⁹ These constraints are assessed as more serious for Bolivia's private sector development and are classified as those that limit access to product inputs, undue regulatory barriers, and implementation barriers. Table 4.1 presents a summary qualitative assessment of the expected impact of each cross-cutting constraint in curtailing private sector growth.

TABLE 4.1. ASSESSMENT OF OPPORTUNITIES OF REMOVING CONSTRAINTS TO PRIVATE SECTOR DEVELOPMENT IN BOLIVIA

CROSS-CUTTING CONSTRAINT	OVERALL IMPACT ON PRIVATE SECTOR DEVELOPMENT FROM UNLOCKING THE CONSTRAINT <small>(dark green: high; light green: medium; white: low)</small>
Access to productive inputs: What are the main input barriers?	
Limited connectivity due to underdeveloped transport infrastructure	
Misallocation of credit to private sector	
Regulatory environment: What are the main undue regulation barriers?	
Unlevel playing field: lack of competition regulation plus crowding-out because of the prominent role of state-owned enterprises	
Extremely rigid labor regulations and high, uncertain labor costs	
Cumbersome tax administration and business processes	
Institutions, property rights, and policy predictability: What are the main implementation barriers?	
High uncertainty for investors: weak institutions and property rights and low policy predictability	
Limited public-private dialogue platforms to inform and support policy implementation	

Any strategy to address these constraints needs to take into account not only those exacerbated by the current crisis, but also potential medium- to long-term impacts. The economic contraction and deferral of credits, for instance, has negatively affected the financial sector, especially for companies that provide credits to micro, small, and medium enterprises with less means to buffer the effects of the COVID crisis. These companies have also had less access to the liquidity injection provided by the Pensions Administration. As a result, access to finance, especially for micro and small enterprises, could be further affected. In the long term, there could be implications for human capital accumulation, an obstacle for firms that is relevant but deemed relatively less constraining today. The challenges around virtual learning and the 2020 school year closure⁵⁰ not only might create learning losses (especially among students at the bottom of the income distribution) but also may trigger an increase in student dropout rates that would ultimately degrade human capital.

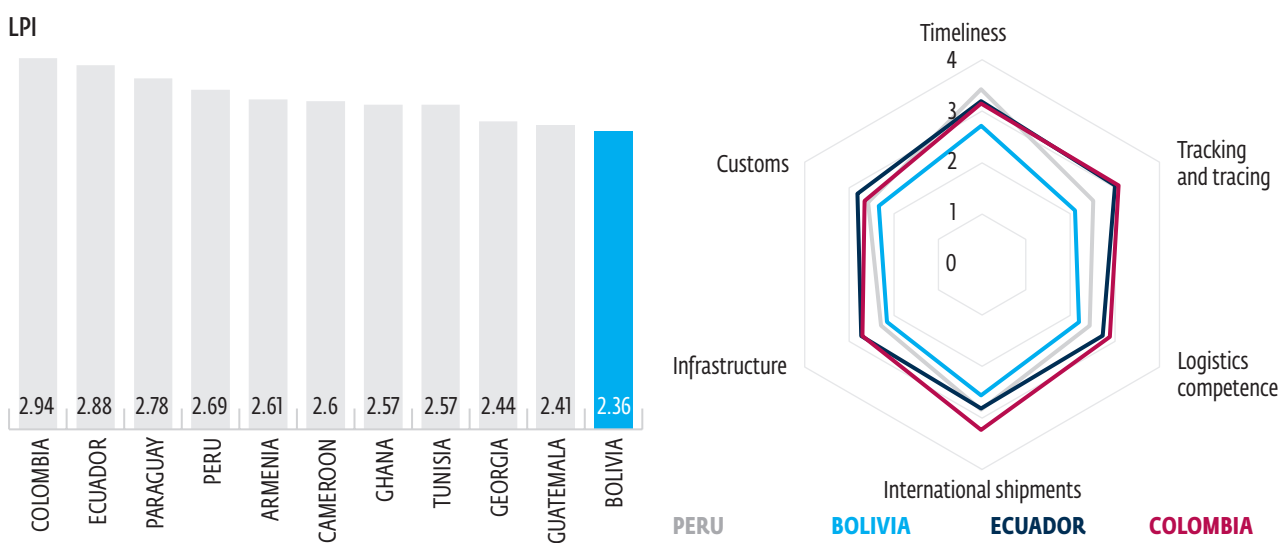
WHAT ARE THE MAIN PRODUCTIVE INPUT CONSTRAINTS?

Limited connectivity due to underdeveloped transport infrastructure

Given Bolivia's lack of access to the sea, connectivity constraints seem to significantly limit the private sector's ability to have more diversified exports, more productive and competitive investments, and access to economic opportunities for lagging regions, which thus limits inclusiveness. While it is not listed as the biggest obstacle for firms across the board, lack of connectivity is an important obstacle for exporters: 82 percent of exporting firms cite it as a major constraint (compared to 26 percent for nonexporters).⁵¹ The sector assessment on logistics in chapter 5 expands on some of the logistics-related challenges that also limited trade.

Despite high public investment in transport infrastructure,⁵² a landlocked country with a complex topography such as Bolivia's faces transport barriers that are challenges to enhancing trade. According to the 2019 Global Competitiveness Report, Bolivia ranks 100th out of 122 countries in terms of transport infrastructure because of poor road connectivity and inefficient air transport and seaport services. Moreover, Bolivia's score in the 2018 Logistics Performance Indicator (LPI)⁵³ was 2.36, one of the lowest in the region. This was partly because its infrastructure score reached only 2.15, the lowest in the region after Cuba, Haiti, and the Republica Bolivariana de Venezuela (figure 4.3). The 2018 National Logistics Survey (NLS) estimates that logistics costs for Bolivian firms⁵⁴ is 18.1 percent of the value of sales, which is higher than in Colombia (13.5 percent), Paraguay (13 percent), and the United States (8.7 percent) and above the average for Latin America (14.7 percent).

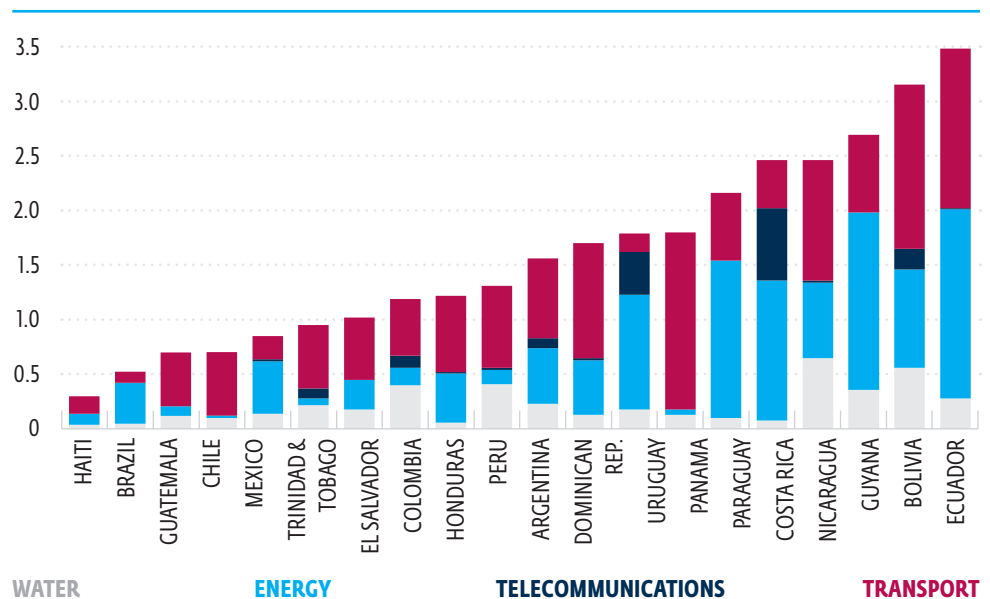
FIGURE 4.3. LAGS IN LOGISTICS PERFORMANCE DRIVEN BY SIGNIFICANT TRANSPORT INFRASTRUCTURE AND SERVICE-RELATED NEEDS



Source: Logistics Performance Index; Connecting to Compete (6th ed.) 2018; Trade Logistics in the Global Economy

Bolivia’s infrastructure investment has been among the highest of the region: half of it has gone to the transport sector but there has been relatively low participation by the private sector. According to data from Infralatam,⁵⁵ Bolivia on average invested about 3.19 percent of its GDP on productive infrastructure between 2008 and 2017, surpassed only by Ecuador at 3.5 percent (figure 4.4). Almost half of Bolivia’s investment went to the transportation sector (49 percent), followed by energy (30 percent) and water (18 percent). Private sector participation was rather limited: according to the IDB (2020), only 5 percent of total infrastructure investment during this period was from the private sector, a condition which is related to the focus of government policy throughout the past decade and a half.

FIGURE 4.4. PRODUCTIVE INFRASTRUCTURE INVESTMENT BY SECTOR (% , AVERAGE 2008–17)



Source: Infralatam 2019.

This has led to gaps in quality and connectivity in the country’s road network. Bolivia has a low road density (0.18 kilometer per square kilometer), close to the regional average for South America (0.15 kilometer per square kilometer) (IRF 2020). Estimates indicate that in 2014, 4 percent of municipalities did not have access to primary and secondary road networks, and 31 percent of municipalities were connected to department capitals only through secondary roads (Nina and Arduz 2016). According to the latest evaluation by the Bolivian Highway Administration (2017), more than 15 percent of the primary road network is in poor condition and requires an estimated investment of US\$373 million. The National Statistics Institute estimates that only 4 percent of the departmental road network and 0.16 percent of the municipal network are paved (2018), which has implications for the operational and maintenance costs of truck fleets.

The low road density and low quality of existing infrastructure present enormous internal and external connectivity challenges for the country. On one hand, it limits access to goods and services, a situation that is especially bad in rural areas. On the other, it increases the costs of trade. According to the NLS, in 2019, 57 percent of exports (by volume) and 50 percent of imports used road freight transport. This implies that transport and distribution represent 45.5 percent of the cost of logistics. Moreover, the lack of adequate transport infrastructure affects the cost of logistics by region. In the department of Beni where road connectivity is much less, it is 32.5 percent of sales, while in Cochabamba, which is a logistics node, the cost is 14.5 percent of sales. In Beni, firms reported that they must consolidate freight, which results in higher storage costs and longer waiting times.

Bolivia has not unlocked its potential that could be realized in the development of its fluvial ports and airport infrastructure. Being landlocked, the country faces higher trade costs as goods must be transported to Chilean and Peruvian maritime ports through winding Andean roads. With 14,000 kilometers of navigable rivers, the fluvial network is a critical resource for logistical connectivity, especially for grains (soy, sugar). According to the Chamber of Industry, Commerce, Services, and Tourism (CAINCO), 26 percent of exports and 12 percent of imports (by volume) used river transport in 2019. The use of its main three ports has been growing, but trade traffic still faces restrictions that affect transport costs. In air transport, three main international airports have 82 percent of the national and international passenger market. a network of 39 airports (commercial, military, general aviation). Bolivia's air cargo traffic contrasts widely with the rest of the countries in the region⁵⁶ (for more detail, see chapter 5, the logistics sector assessment). Most airports do not comply with national and international aviation regulations. A lack of openness, high rates, and the controlled participation of international airlines limit the development of the air transport market.

Closing connectivity gaps calls for prioritizing infrastructure investments. Bolivia could benefit from better prioritizing projects, reorienting goals, and allocating public spending. One option would be to conduct rigorous economic assessments and impact evaluations of policies to identify bottlenecks in the infrastructure network. A more evidence-based public policy design could be complemented with a multimodal transport strategy to close the country's connectivity gaps. More intermodality means more integration and complementarity between modes, which provides scope for a more efficient use of the transport system (Reggiani et al. 2000). A prioritization could also free up resources to scale up public spending on the conservation and maintenance of the existing infrastructure. The design and implementation of a national transportation strategy along with subnational development plans are key to ensuring a more solid infrastructure policy framework. This recommendation also applies to logistics services, and a more detailed set of recommendations can be found in the sector assessment in chapter 5.

Finally, the COVID-19 crisis has made the lack of connectivity beyond transport infrastructure (that is, access to digital technologies) more visible. Bolivia needs to take advantage of digital technologies to increase productivity and competitiveness, an issue that has become more salient in the context of the COVID crisis. Overall, the country lags its regional neighbors in all dimensions of the digital economy (digital infrastructure, digital government and platforms, digital skills and entrepreneurship, and digital finance; see ITU 2018; OECD et al. 2020; WEF 2019). Being landlocked, the country requires a land connection with neighboring countries to access submarine cable connections, increasing the cost and reducing the available bandwidth. Bolivia thus has one of the lowest broadband penetration rates among Latin America and the Caribbean countries (18 percent). Internet use is at 44 percent. The digital divide has a gender dimension as well: 47 percent of men use the internet versus 41 percent of women (ITU 2018), limiting access to opportunities. Bolivia ranks 103th out of 193 countries in e-government, and it ranks poorly on the necessary enabling environment for a digital economy (EGDI Index 2018). With the social distancing measures put in place in response to the pandemic, access to digital technologies has become even more central: at the onset of the crisis, workers in sectors amenable to telework and workers with access to the internet were more likely to remain employed.⁵⁷

Misallocation of credit to the private sector

Before the pandemic, the financial sector in Bolivia experienced an overall increase in credit growth, yet this has not translated into a boost in private sector investments. Access to finance is listed as one of the constraints among firms, and evidence suggests that it is a more severe constraint for micro and small firms—particularly for women-led firms—thus limiting inclusiveness. While the financial system has been relatively resilient since the onset of the pandemic, bank profitability has decreased, and credit expansion has stalled.

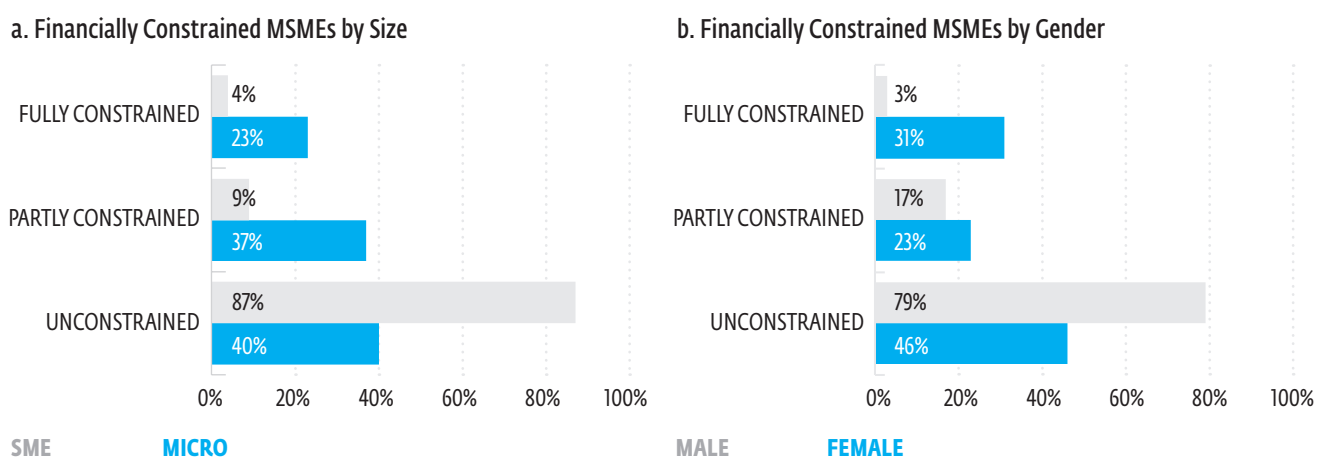
Private commercial banks dominate the private financial sector while state-owned banks still hold a significant presence. The banking sector consists of four different types of banks that were defined in the Financial Services Law of 2013 (FSL). Although the three largest banks—two commercial banks (Banco Mercantil Santa Cruz S.A., Banco Nacional de Bolivia) and one state-owned bank (Banco de la Unión)—account for 40 percent of banking sector assets, the banking sector in Bolivia is only moderately concentrated, with a lower rate of concentration than in most peer countries in Latin America and the Caribbean. Moreover, pension fund assets are large (43 percent of GDP) and a major source of funding for the domestic banking sector.⁵⁸ This contrasts with the small size and underdevelopment of both investment funds and insurance companies.

Bolivia's financial sector experienced rapid growth over the past decade with the bolstering of heavy public sector intervention. Sector growth averaged 6 percent during the period and contributed 0.7 percentage points to the GDP growth rate. The sector accounted for 11.3 percent of Bolivia's GDP between 2006 and 2018. Credit to the private sector expanded by an average of over 11 percent in real terms over the past decade, and the credit-to-GDP ratio increased from 35 percent in 2008 to 66 percent in 2018, lifting Bolivia above the regional average. On the other hand, capital markets have remained rather small and illiquid. Financial access grew as account ownership increased from 28 percent in 2011 to 54 percent in 2017 (Findex data), benefiting the poor and the rural population. The 2013 FSL gave the central government the power to set interest rate caps and floors and to establish minimum lending quotas on credit to market segments of special interest. Financing to the so-defined productive sectors and to newly created social housing programs are subject to interest rate caps. Commercial banks, SME banks, and housing financial institutions are also subject to quotas in their lending to the productive sectors and social housing. The rate caps for social housing range from 5.5 to 6.5 percent, depending on the loan amount, while loans to the productive sectors⁵⁹ are capped at 6 to 7 percent and microfinance loans at 11.5 percent. At least 60 percent of the portfolio of banks must additionally be allocated to productive sectors and social housing, with a minimum of 25 percent placed in productive loans. As of June 2019, around 65 percent of bank loans were allocated to productive and social housing segments. The 2013 FSL is, therefore, associated with changes in bank lending, funding, and profitability⁶⁰ and is also likely to have affected financial inclusion.⁶¹

Credit quotas and limits have led to some distortions in lending. The credit quotas and rate caps have had the effect of altering the allocation and composition of credit flows, since lending decisions do not reflect underlying risk. This could fuel an increase in low-quality lending. Calice et al. (2020) show that following the enforcement of interest rate caps, average lending rates for productive sectors and social housing dropped, but on the other hand, lending rates increased and credit growth slowed for sectors like commerce, hotels and restaurants, and real estate services.⁶² Moreover, pressure on banks to reach quotas caused a misallocation of credit to large borrowers (including SOEs) and away from micro, small, and medium enterprises, while concessionary conditions encouraged over indebtedness among certain sectors and borrowers. Growth in lending after the enforcement of the 2013 FSL has been faster for corporates and slower in the other segments. Growth in lending to corporates has been almost 5 percent higher in the post-implementation period. In contrast, credit growth in microcredit, SMEs, consumption, and housing has been between 1 percent and 3 percent lower than before the passage of the 2013 FSL. The lending growth rates of the segments partially affected by the FSL 2013 (corporates, microcredit, and SMEs) have been greater than that of segments to which lending quotas do not apply. In this sense, credit to small businesses, consumer credit, and housing finance has decelerated.

Overall, the credit gap for enterprises is most acute for micro than for SMEs. Moreover, the financing constraint is more pronounced for women-owned enterprises. On average, 60 percent of micro firms in Bolivia are either fully or partially constrained. The disaggregation of the finance gap for female- and male-owned enterprises illustrates a large difference. While more than 50 percent of women appear to have difficulties accessing credit, only 26 percent of male-owned micro, small, and medium enterprises (MSMEs) face obstacles in borrowing funds (figure 4.5). Woman SMEs can benefit from improved access to markets, business organizations, networks, trainings, and other nonfinancial services.

FIGURE 4.5. MEASURING THE FINANCE GAP IN BOLIVIA



Source: IFC and SME Finance Forum 2017, based on Enterprise Surveys and World Bank Development Indicators.

Note: MSME = micro, small, and medium enterprise; SME = small and medium enterprise.

BOX 4.1. BANKING SECTOR PERFORMANCE AMID COVID-19

Banking system indicators have been relatively stable in Bolivia, although some variables have shown signs of deterioration. The banking sector’s profitability weakened in 2020, but its liquidity profile remained adequate (capital adequacy ratios are above the regulatory minimum), while nonperforming loans were low (they stood at 1.7 percent in November 2020, 0.5 percentage points lower than in 2019). At the end of September, the sector’s return on equity had declined to 6.1 percent, 4.9 percentage points lower than in the same period of 2019. Beyond the ongoing pandemic impacts on economic activity, bank profitability in Bolivia has been on a declining trend because of narrowing interest margins. The balance of current credit granted by commercial banks to the private sector grew at a nominal rate of 3.3 percent in October 2020, gaining strength compared to September (2.5 percent growth) but significantly lower than the rate registered in the same month of 2019 (8.4 percent). In this context, the authorities reduced reserve requirements on foreign exchange deposits three times to support liquidity and lending. Net liquid assets of the financial system increased by 5.9 percent by the end of November compared to the 2019 figure, reaching Bs 54.4 billion in 2018 (US\$7.7 billion) and representing about 59 percent of the sector’s short-term deposits. While systemwide financial indicators remain at moderate levels, the full impact of the pandemic on bank asset quality will not likely be fully visible until late 2021. In the current situation, payment moratoria and some relaxations about prudential requirements regarding loss recognition and restructuring might further delay and blur the accounting visibility of the impact of the crisis on bank balance sheets.

Source: CPSD team based on statistics from the Autoridad de Supervision del Sistema Financiero (ASFI) and Calice et al. 2020.

Overall, the 2013 FSL may have brought unintended consequences that may make the current economic downturn resulting from the COVID shock more difficult (see Box 4.1). For instance, the annual growth rate in the number of borrowers decreased after the FSL, while the average loan size increased.⁶³ This suggests that the FSL may have hampered access to credit. Some financial institutions are additionally experiencing increases in funding costs (SME and commercial banks). Products subject to interest rate caps are now relatively less profitable and may see a decline in lending volumes. Similarly, quotas on the regulated sectors may have ripple effects on the unregulated sectors limiting credit growth. On this manner, the profitability of the country's banks has further deteriorated since 2014, especially for SME banks. Consequently, Bolivian bank buffers may have weakened because of lower retained earnings and incentives for shareholders to invest equity above the regulatory minimum threshold.

Beyond the FSL, financial technology (fintech) is rapidly transforming the economic and financial landscape to increase financial inclusion. Fintech has brought unprecedented and big possibilities for the private sector that push the agenda for financial development and inclusion in Bolivia.⁶⁴ At the same time, it brings options that are well suited to the country's challenges, such as the low levels of formality and unbanked and isolated populations. Different initiatives have started to shape the fintech start-up ecosystem with companies and platforms that offer technology solutions to improve ecommerce and data analysis or platforms that allow users to make and receive payments using QR codes and mobile phone numbers.⁶⁵ The expansion of fintech nevertheless brings risks that may be exacerbated by the country's preexisting vulnerabilities and capacity constraints. The probability and impact of cyber-attacks, for instance, may be higher in developing economies as the payment and financial market infrastructure is often less resilient. In addition, compliance risks like consumer protection, data privacy, and anti-money-laundering requirements could also be significant. As such, regulatory and supervisory activity will be necessary to keep risks under tolerable levels while fostering innovation and competition.

Addressing the gaps in access to finance calls for exploring alternatives to credit quotas and interest rate caps. This may include their gradual removal, given their effect of altering the allocation and composition of credit flows. Adequate regulatory and supervisory functions on fintech, moreover, are important for managing risks while further materializing its benefits.

WHAT ARE THE MAIN UNDUE REGULATORY BARRIERS TO PRIVATE SECTOR DEVELOPMENT?

Leveling the playing field: Competition regulation reform and reassessing the role of SOEs

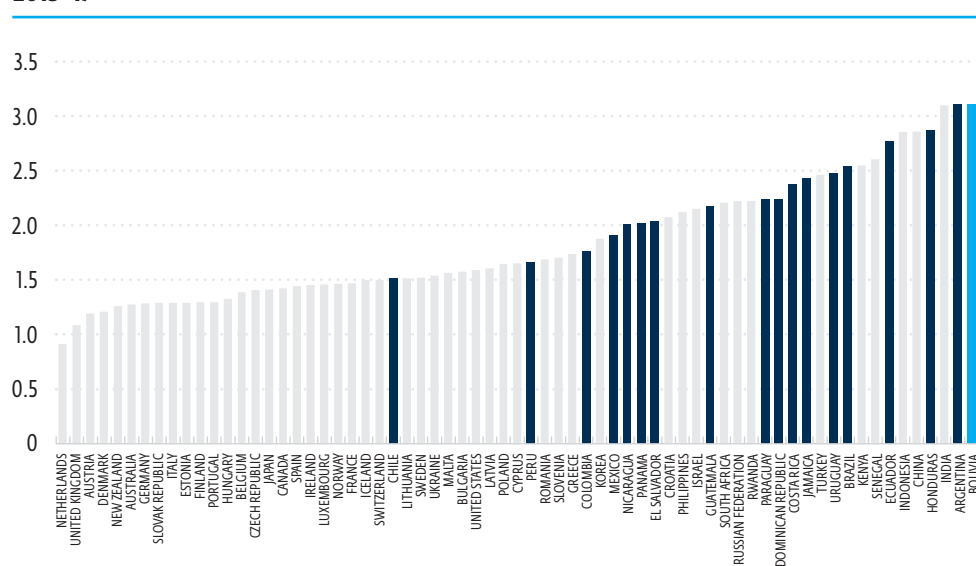
Companies in Bolivia have no effective means for shielding themselves from anticompetitive practices by dominant companies.⁶⁶ The product market regulation is not conducive to competition and favors incumbents. This affects firm competitiveness and productivity. While market distortions due to SOEs do not emerge in quantitative surveys, qualitative assessments nonetheless revealed that competitiveness as well as private sector diversification is limited in SOE-relevant sectors.

Companies in Bolivia have limited recourse against anticompetitive practices by dominant companies. There is no single good-practice antitrust framework that covers all sectors, so in many sectors, companies can engage in exclusionary practices and cartel behavior without fear of prosecution. Public or private companies that offer essential inputs such as backbone infrastructure services or raw materials can deny their competitors access to such goods or services without the credible threat of an investigation by a monopoly watchdog, as would be the case in many other countries with mature market institutions. Similarly, the lack of a general framework for controlling mergers that may have anticompetitive effects⁶⁷ limits the government's ability to protect competitive market structures and prevent monopolistic market power.

Product market regulation is also not conducive to competition and favors incumbents. Bolivia has the highest Product Market Regulation Indicator score among several Latin American countries and other emerging markets and developing economies (figure 4.6). This suggests that its regulatory framework in key sectors is less conducive to competition and productivity than in peer countries. The government has direct control over economic activity in many sectors, and there is also a lack of access regulation to essential facilities (for example, in infrastructure). Without access to key facilities in the hydrocarbon sector, for example, future new operators would not be able to compete even if they were equally or more efficient.

The state additionally has a large footprint in Bolivian markets. As of 2019, the state held 10 percent or more directly or indirectly in at least 88 companies incorporated in Bolivia. Nearly half of SOEs were created since 2004. For those SOEs for which there was officially accessible financial information in 2018, the total revenues added to over US\$11 billion, an amount equivalent of 30 percent of GDP. This ratio is high, even when compared to other countries with a strong state presence, such as Angola, Pakistan, or Uruguay. Private firms in many industries compete against SOEs. SOEs play an important role in specific sectors when they provide public goods, services that are not profitable (such as rural connectivity services), or goods and services that are central to national security. When SOEs operate in sectors where private entities typically invest and compete (contestable and commercial sectors such as the manufacturing sector), there is a risk of crowding-out such private investment if SOEs do not compete on a level playing field. This often entails poorer market outcomes in the form of higher prices and lower quality. State ownership can even affect industries and consumers downstream through shortages, underdeveloped infrastructure, high logistics costs for exporters, and barriers to digital adoption. In Bolivia, at least 68 percent of SOEs operate in commercial and contestable sectors. Private companies compete with at least 24 SOEs in fully commercial sectors, and this includes activities in the manufacturing sector such as the production of beer, cement, flat glass and glass containers, sugar, dairy products, nuts and seeds, paper, and cardboard.

FIGURE 4.6. ECONOMYWIDE PRODUCT MARKET REGULATION SCORES BY COUNTRY, 2013–17

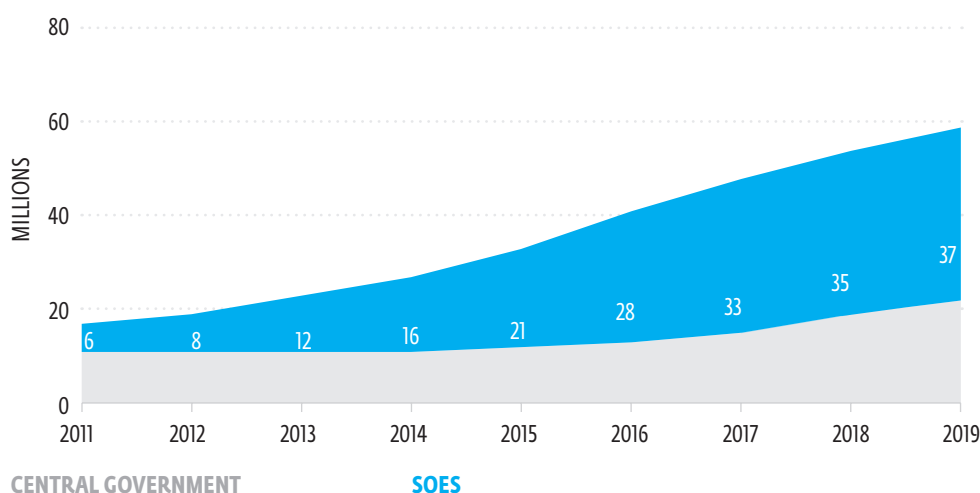


Source: World Bank LAC competition report (forthcoming) based on data from 2013 OECD PMR database and 2013–17 World Bank-OECD PMR data.

Note: The PMR index ranges from 0 to 6, where 6 indicates the most restrictive regulatory framework to foster market-based competition. Results for the Arab Republic of Egypt, Kuwait, and the Republica Bolivariana de Venezuela are not publicly available. Latin America and the Caribbean (LAC) countries are highlighted in orange, the rest of the world in blue. PMR = product market regulation.

The role of the state as a market player also hinders competition through the benefits these SOEs receive. World Bank-OECD estimates for the PMR indicator show that Bolivia is among the top 10 countries with the largest scores in terms of restrictiveness for competition derived from the scope of SOEs in the economy among 67 economies. It also reveals that significant barriers for market-based competition and private sector development in Bolivia can be associated with involvement by the government in the network sector, direct control over enterprises, and governance of SOEs, as scores in Bolivia are among the highest when compared to regional peers and some emerging economies. SOEs have better access to financial support compared to private counterparts. The Central Bank of Bolivia (BCB) grants direct loans to any SOE considered strategic. In addition, SOEs receive funds through the FINPRO fund (*Fondo para la Revolución Industrial y Productiva*) to meet the constitutional mandate of “intervening directly in the economy through the production of goods and services.” FINPRO funds come at concessional terms. As of June 2020, US\$855 million had been granted in loans to 14 SOEs, including one formerly private textile exporter that was nationalized and has since closed. Likewise, net central bank credit to public companies reached BOB 34.3 billion as of December 2019, which was equivalent to approximately US\$5 billion and 12 percent of GDP (figure 4.7). This exposes the central bank to significant credit risk, undermines the credibility of monetary policy, and crowds out the private financial sector (World Bank 2020d). Until June 30, 2020, the volume of the productive loans granted from private commercial banks to the private sector (medium and large firms) accounted for \$US3.139 billion,⁶⁸ only 60 percent of the total amount granted to five SOEs, which shows the imbalance in credit access between private firms and SOEs. Furthermore, SOEs benefit from and employ noncompetitive public procurement methods that reduce the transparency and efficiency of the use of public funds.

FIGURE 4.7. LENDING TO SOES (LOCAL CURRENCY)



Source: ASFI based on Central Bank of Bolivia statistics. See https://www.bcb.gob.bo/webdocs/2020/informacion_economica/estadisticas/estadisticas_por_sectores/01/02-01A.pdf.

Note: SOE = state-owned business.

SOEs still struggle with profitability despite significant financial support and regulatory advantages. As of 2019, at least 21 SOEs were either running losses or failing to generate profits. Empresa Azucarera San Buenaventura's net profits have been negative for several years, and in 2018, its net losses were twice as high as their revenues, suggesting that it is incurring disproportionate expenses. Its net equity is negative, implying that its debt levels have surpassed its capital stock. The firm is technically in bankruptcy. It lacks raw materials for producing the final products for sale (Pagina Siete 2019). This contrasts with the performance of the private sector in the same economic sphere of activity. The sugar industry belongs to the agro-industrial subsector, and in the last three years, it has grown robustly amid the slowdown of other sectors and the economy in general. Similarly, Empresa de Apoyo a la Producción de Alimentos (EMAPA) has registered negative net profits since 2011 (Cedla 2018).

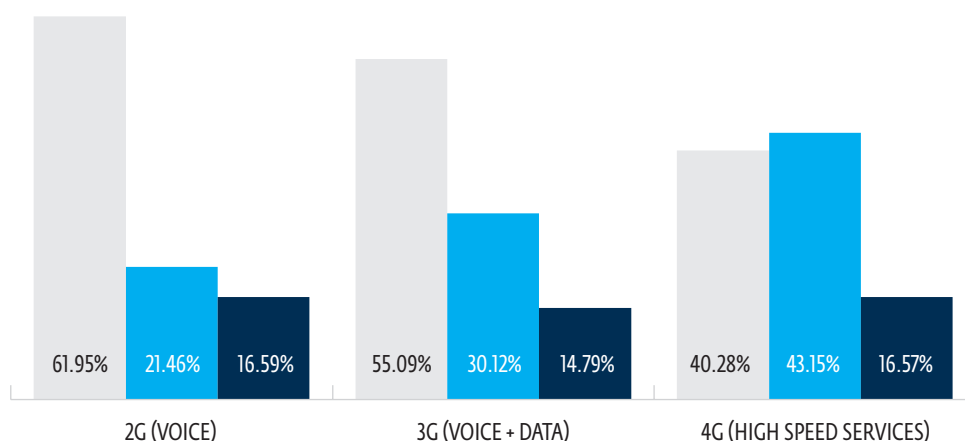
Sectors that are dominated by SOEs have been held back owing to limitations in the regulatory framework for competition. The Business Control Authority (AEMP) is in charge of protecting competition through Decree No. 29519, which deems free competition to be a catalyst for the national economy and in the public interest. The government therefore regulates competition to prevent people or firms from acting abusively as a result of their dominant position in the domestic market, although SOEs and firms operating in strategic sectors with their own regulations do not fall under the authority of the AEMP. Between 2013 and 2016, there were at least 19 investigations into anticompetitive practices,⁶⁹ most of them initiated ex officio. Most cases involved markets with SOE presence such as aviation, beer, sugar, cement, and milk. In the air transportation service sector back in 2010, the private operator Aerosur alleged that the state airline was engaging in anticompetitive practices by reducing prices to the point that private competitors could not follow.

In several key sectors, the presence of SOEs has been accompanied by a decline of private sector competition in the face of regulatory and financial disadvantages. More importantly, market outcomes such as service quality and prices are unfavorable to productivity and consumer welfare.

The role of the private sector in air transport has faded as the state airline, Boliviana de Aviación (BoA) increased its market share from less than 10 percent to almost 80 percent in less than a decade. BoA started operations in 2009 and rapidly expanded its participation as a provider of passenger and freight transportation in Bolivia, displacing large private operators. In 2009, AeroSur, which by then had gone out of business, alleged that BoA was engaging in anticompetitive practices. The harmful effect of the alleged predatory pricing is a complex concept to prove and can often be mistakenly confused with procompetitive conduct. In this case, though, BoA did succeed in excluding its competitor from the market. By 2019, the SOE held almost 80 percent of the passenger and freight transportation services market. In that year, it received US\$17.5 million as a loan from the government to support its air fleet at terms that would not be available to a private airline: resources from the Bolivian sovereign wealth fund FINPRO, which granted BoA an instrument with a 15-year maturity, a 3-year grace period and a 1.5 percent interest rate.⁷⁰ Despite such preferential access to financing, the state airline reported losses above US\$28 million as of 2019.

In an attempt to secure steady demand for national cement companies including the SOE, the government could affect the cost of construction materials. As of 2019, Bolivian cement must be used for departmental roads (instead of imported asphalt from Brazil and Peru).⁷¹ This provides local cement companies with a guaranteed demand for the foreseeable future. This benefits Fancesa, an entity expropriated by the government and formally owned by a member of the political opposition at the time,⁷² and the new Empresa Pública Productiva Cementos de Bolivia. Fancesa held 23 percent of the market in 2019.

FIGURE 4.8. MARKET SHARE BY OPERATOR IN THE TELECOMMUNICATIONS SECTOR



Source: GSMA Intelligence.

Private telecommunications operators face a state competitor with regulatory advantages, while Bolivian customers face poor-quality, high-cost connectivity services. Private telecommunications companies such as Tigo and Viva compete against Entel, a mostly state-owned company that offers fixed local, long distance, and mobile services. As of 2019, Entel was the largest operator with almost double the market share of its private competitors: 62 percent and 55 percent in voice (2G) and data and internet services (3G), respectively (figure 4.8). Some sectoral regulation may distort the levelness of the playing field. Only majority-owned SOEs, for instance, can subscribe contracts with the Ministry of Public Works, Services, and Housing for the execution of social inclusion projects in the telecommunications sector. Private operators can participate only if majority-owned SOEs cannot execute the projects. Despite recent investments by Entel in optic fiber and submarine cable for improving connectivity and reducing connectivity costs, Bolivia's connectivity is among the bottom 30 with the lowest average fixed broadband and mobile speed. It ranks 139th among 196 economies and has the highest prices for mobile cellular services. Bolivian consumers spend on average 4.13 percent of the gross national income (GNI) in accessing a mobile cellular basket (ITU 2017).⁷³ Prices in Bolivia are more than twice the prices reported for other regional countries such as Chile (1.65 percent), Paraguay (1.69 percent), Peru (2.03 percent), and Uruguay (1.28 percent).

Policies to promote a level playing field on which firms can compete will not only incentivize private investments but also help consumers access better quality products and services. Along these lines, SOE-related reform efforts should focus on ensuring a level playing field in key sectors before considering ownership transfer. Effective SOE reform should start by increasing the incentives to promote the role and investments of the private sector and focusing on how to restructure the incentives and market dynamics, even if that does not necessarily imply a change of ownership. Just as state ownership does not solve market failures per se, neither does private ownership. Some alternatives to SOE reform without ownership transfer include regulatory reforms aimed at exposing SOEs to competition, the introduction of competitive neutrality principles, and the adoption of corporate governance principles to increase transparency and accountability. Some intermediate reforms could also be implemented in the form of management arrangements (such as concession contracts) and PPPs that can engage the private sector without full ownership transformation, if they are accompanied by a regulatory framework that mitigate rent-seeking behavior and close performance monitoring tools. Independently of the ownership arrangements, the effectiveness of SOE reform ultimately depends on the way in which the incentives for the operation of market players are defined. This requires establishing independent sector regulators, antitrust agencies given the power and resources to prosecute and sanction anticompetitive practices, as well as a sound regulatory framework that ensures a level playing field as essential prerequisites for fostering private sector development even before pursuing ownership transformations.

Labor regulations meant to protect workers have led to high costs and uncertainty

In both quantitative and qualitative assessments, labor regulations emerged as one of the most severe constraints for private sector growth in Bolivia. Extremely rigid labor regulations and high labor costs that are misaligned with the country's economic realities curtail the creation of formal employment (inclusiveness) and limit productivity and competitiveness. More importantly, they do not achieve the objective of protecting workers but instead force workers into jobs with no contractual protection at all.

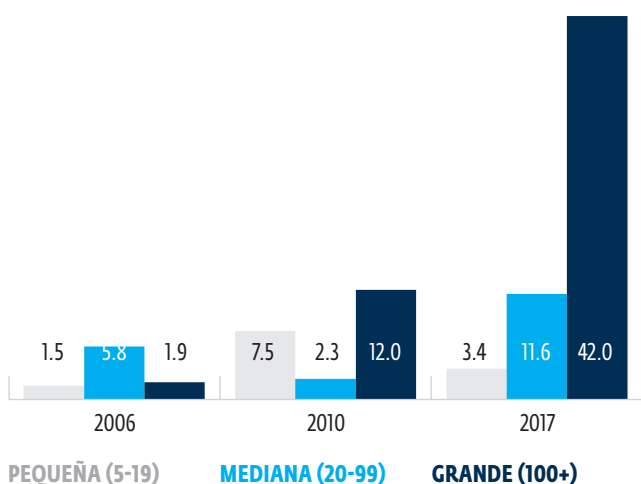
Labor regulations represent one of the biggest constraints for firms in Bolivia and do not deliver the intended benefits to workers. Thirty percent of businesses identify labor regulations as a major constraint, compared to 11 percent globally and 16 percent on average in Latin America and the Caribbean.⁷⁴ Importantly, the share of firms that identifies labor regulations as the biggest obstacle has been increasing, particularly for large firms with 100 or more workers, which are probably more seriously affected given their level of formalization. While 2 percent of large firms considered labor regulations as the biggest obstacle in 2006, 42 percent did in 2017. For medium firms (20–99 workers), it has doubled from 6 to 12 percent in that period (figure 4.9).

Domestic firms report a heavier burden (32 percent) than firms with 10 percent or more foreign ownership (15 percent), yet the burden is perceived negatively at almost an equal level across sectors and regions.⁷⁵ The current framework of labor regulations does not deliver in terms of protecting the workforce. Eighty-six percent of workers do not enjoy any contractual protection whatsoever. In addition, while 64 percent of waged employees in medium and large firms have access to social security benefits, only 2 percent of employees in SMEs do, and furthermore, only 31 percent of workers at SMEs earn hourly wages equal to or greater than the equivalent of the minimum hourly wage.⁷⁶

Employment protection legislation in Bolivia is stringent compared to other countries. The employment protection legislation index ranks Bolivia as one of the most restrictive countries in the region and among OECD countries for individual dismissals; the Republica Bolivariana de Venezuela is the only country in Latin America and the Caribbean with more restrictive provisions.⁷⁷ While laws in other countries throughout the region allow for dismissal on the grounds of redundancy or worker capabilities, Bolivian law dictates that worker capability cannot be a grounds for dismissal, and it also makes reinstatement available to the worker after unfair dismissal (Remenyi 2018). As such, Bolivia ranked 136th out of 138 countries in the WEF's hiring and firing practices index (2016/17), the worst value assigned by the index since the data became available in 2007/08.⁷⁸ Bolivian law also strictly regulates temporary employment, allowing temporary contracts only for jobs of limited duration and only one contract renewal (IDB 2015), making this provision one of the most restrictive in Latin America and the Caribbean and OECD countries, putting Bolivia in 45th place out of 53 countries. These regulations provide disincentives for firms to hire workers formally, can reduce their efficiency, and increases the costs of firing workers because of the informal dismissal negotiations that take place in practice between employer and employee.

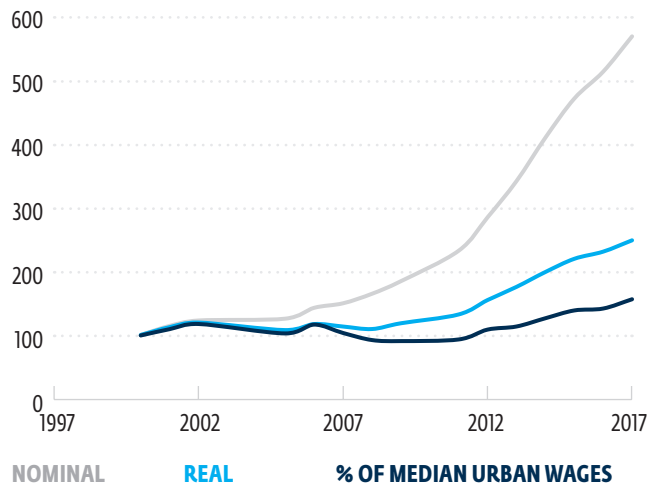
As a result, labor costs have been rising in Bolivia, making the uncertainty resulting from the increases an important concern for the private sector. The minimum wage has been increasing (figure 4.10). Between 2011 and 2015, the real minimum wage was increased by 67 percent, and by 122 percent over the decade between 2007 and 2017. At the same time, the share of workers who earn below the minimum wage and the ratio of the minimum wage to median income have been steadily increasing, signaling that the minimum wage is not providing the intended protection to many workers and that it is becoming a more a severe constraint to formal work. These ad hoc increases were compounded by the introduction of the *doble aguinaldo* (a second end-year bonus) in 2013, to be paid when GDP growth surpassed 4.5 percent, which effectively further raised the minimum wage floor.⁷⁹ The increasing labor costs and the high uncertainty created by those increases affect productivity and disincentivize firms from hiring workers formally.

FIGURE 4.9. FIRMS CITING LABOR REGULATIONS AS THE BIGGEST OBSTACLE, 2017



Source: World Bank 2020a using data from the Enterprise Survey 2017.

FIGURE 4.10. MINIMUM WAGE (2000 = 100), 2000-17



Source: World Bank 2020a.

Policy options that address labor regulation barriers can promote job creation in the private sector and can lead to more worker protections. Microsimulations suggest that the benefits of labor regulations, and tax and structural reforms may foster formal job creation.⁸⁰ a reform package that reduces the labor costs and addresses regulatory constraints,⁸¹ for instance, may stimulate the growth of the employed population in the formal sector (6.5 percentage points) in response to an increased creation of formal jobs as well as productivity gains resulting from growing shifts to the formal sector. Likewise, a tax reform package⁸² could lead the workforce in the formal sector to grow 9.5 percentage points as a result of the creation of formal jobs and the decreased incidence of low-paying formal and informal jobs. Moreover, this reform may bring a decrease in informality, especially among low-skilled workers. Short-term feasible reforms include removing the double Christmas bonus, fixing minimum wage increases to objective criteria, and reducing the role of the state in setting salaries. Similarly, medium- to long-term reforms could stimulate the rethinking of labor regulations, a step toward creating greater flexibility in labor markets and reducing nonwage labor costs.

Bolivian firms face many time-consuming tax and regulatory burdens

Tax administration, emerged as one of the most severe constraints for private sector growth in Bolivia in both quantitative and qualitative assessments. Burdensome business regulations also add transaction costs for firms. Importantly, these barriers are more serious for exporting firms, and they limit productivity, competitiveness, and diversification.

Firms in Bolivia face a relatively high tax burden and spend a great amount of resources handling tax administration complexities. The tax burden in Bolivia is among the highest in the region: a standard-sized Bolivian firm spends nearly 83.7 percent of its profits paying taxes and social contributions because of Bolivia's transaction tax (a cascade tax of 3 percent of gross sales that most countries remove), which distorts production processes and deters linkages between firms that could enhance exports, productivity, and competitiveness. While Bolivia has been making significant efforts to improve its tax systems and procedures, tax compliance in the country entails significant costs for firms. Firms report, in fact, that tax regulation interpretation, cumbersome payment procedures, and audits result in high costs that are reflected in the number of payments and the time that firms dedicate to complying with taxes. The World Enterprise Survey results confirm this: Bolivian firms that were required to meet tax officials had to do it more often than those in the rest of Latin America (4.3 versus 2.8), and senior management had to spend more time dealing with regulations than their other Latin American peers. More over, survey results show that Bolivian entrepreneurs spend 15 percent of their time dealing with regulations, while the average for Latin America is 10.8 percent. The global average is 8.8. In field interviews, Bolivian entrepreneurs argued that the discretionary application of regulation by authorities leads to excessive fines, penalties, and even "tax harassment" that pushes senior management to intervene. The World Enterprise Survey results confirm these statements: Bolivian firms that were required to meet tax officials had to do it more often than those in the rest of Latin America (4.3 versus 2.8), and senior management had to spend more time dealing with regulations than their other Latin American peers.⁸³ Looking closely at the three main cities, it is evident that firms in La Paz face a higher probability of being visited by tax officials (67 percent versus 43 in Cochabamba and 46 in Santa Cruz), as well as a higher average number of visits by tax officials. Cumbersome procedures restrain firms from formalization and limits their growth (World Bank 2015a; Djankov 2010).

Protective business regulations disproportionately affect smaller firms because of their time-consuming nature. Firms cite cumbersome regulations (including processes for business licensing and permits) as a constraint. This constraint is much more serious among exporting firms (71 percent for exporters and 28 percent among nonexporters). Establishing a firm in Bolivia takes 40 days, which is significantly higher than the Latin America and the Caribbean average of 21.3 days. In Colombia and Paraguay, for instance, it takes 35 and 10 days, respectively. Likewise, Bolivian entrepreneurs need to work through 12 procedures to start a business, twice as many as in Chile and four times what is needed in Uzbekistan. The reported lead time for exporting from Bolivia is 4.5 days – as presented by the Logistics Performance Index. This is higher compared to 3.5 in the average Latin America and the Caribbean country. The lead time for imports is also higher, taking 7 days compared to an average of 4.5 days in the rest of the region.⁸⁴

The need to comply with complex business inspections for operating licenses affects business decisions and investments negatively. Firms in Bolivia face inspections carried out by both municipal authorities (security and sanitary inspections) and national government entities (tax and labor inspections), and entrepreneurs point to excessive discretion used by inspectors in applying the rules. Once the firm becomes formal, it has visibility for around 19 public entities that administer specific regulations. Unlike most countries in Latin America, qualitative evidence suggests that the main

bureaucratic procedures that affect the creation and operation of firms in Bolivia come from regulations managed by central government entities rather than by municipalities. Still, some municipal procedures do create barriers for businesses. At the Municipality of La Paz, for instance, it can take 25 days to get an operating license when the economic activity does not require an ex ante safety inspection, but it can take up to 60 days in cases in which the municipality must carry out an inspection before issuing the license. Although efforts have been made to streamline the process and introduce an online system, investors still face long processing times. Sector-specific regulations can further slow business operations in such sectors as finance and agribusiness. The business environment within the financial sector, for example, is hyper-regulated and faces burdensome oversight from national government authorities such as ASFI, the Autoridad de Fiscalización del Juego, and the Autoridad de Fiscalización de Empresas. According to PMR data, regulatory restrictions to entry and state presence in Bolivia are greatest in gas, telecom, and air transport, and to a lesser extent in the electricity, rail, and road transport sectors. In the retail sector, the complexity of the permit and license regime stands out, in line with the findings on high regulatory burden and complexity regionwide (Endegnanew and Tessema 2019).

Policies to improve tax administration and business regulations are necessary. A wide-reaching effort at the national and subnational levels is needed to streamline administrative processes and enhance efficiency. Bolivia could consider streamlining the inspections process, for instance, by eliminating redundancies at the national and local levels, as well as by publishing clear and transparent process guides to reduce the use of discretion by public officers. Bolivia could also implement electronic and integrated systems to reduce compliance time for registration processes associated with operating a business (paying taxes, registering a property, requesting an electrical connection). A more conducive fiscal environment, from which the transaction tax has been removed, may lead to progressively more competitive and networked private sector in the medium term. Chapter 5 describes additional challenges and policy options for improving trade facilitation and addressing the procedural barriers faced by firms.

WHAT ARE THE MAIN IMPLEMENTATION BARRIERS?

Investors need stronger institutions, policy predictability, and secure property rights

Weak institutions, weak property rights, and low policy predictability are three aspects of the broader governance environment that affect the appetite of firms to invest and tend to curb foreign direct investment. These constraints can also affect the productivity and competitiveness of already established firms.

Three challenges are discussed that affect private sector investment, particularly as they introduce uncertainty that affects the appetite to invest. First, limited capacity within public institutions contributes to the constrained private investment in Bolivia.

The WEF Global Competitiveness Index (2016/17) ranks Bolivia 133rd out of 139 countries on the quality of its institutional framework. Its institutional score, which includes confidence in rule of law, control of corruption, and government effectiveness, falls below the Latin America and the Caribbean average and shows a downward trend from 2010 onward. Interviews with the private sector in Bolivia illustrate opportunities to strengthen institutions.⁸⁵ The sector assessments in chapter 5 provide policy options for improving the institutional framework in these sectors.

Second, contract enforcement and property rights introduce appropriability risks to private sector investments (World Bank 2015a). The World Governance Indicators placed Bolivia in the 10th percentile worldwide in the rule of law scale in 2018—this indicator captures the quality of contract enforcement, property rights, the police, the courts, and so on—a decline from its standing in 2008 and 2013. The Global Competitiveness Report 2019 ranked Bolivia as one of the weakest countries in the world measured by the guarantee of property and intellectual property rights (WEF 2019). Moreover, the WEF’s global competitiveness subindexes (WEF 2016)—constructed with a combination of quantitative and qualitative data such as an executive opinion survey—highlight concerns regarding judicial independence, the role of favoritism in the decisions of government officials, and the efficiency of the legal framework in settling disputes and challenging regulations.

Similarly, as Bolivia seeks to attract private investment, particularly in the mining and heavy industry sector, its history of expropriations and failed joint ventures reduces investor certainty. The presence of SOEs is associated with numerous investor dispute settlement or arbitration cases, suggesting that changes in ownership through nationalizations and expropriations were not conducted with mutual consent. In 2007, Bolivia nationalized the previously privatized smelter of Vinto Nal.⁸⁶ The sole owner at the time (Glencore) claims Bolivia expropriated its investments when it nationalized the Vinto tin smelter and another antimony foundry plant in 2010. Its claims rise to US\$676 million. In 2010, Bolivian and Mexican stakeholders of a cement company claimed that the then-government forced them to sell the business at a below-value price. In the lithium sector, the SOE was engaged in a joint venture with Germany ACI Systems that was halted in November 2019, which provoked general protests against the government. The Mining Law (Article 26) sets out that the production of all compounds derived from lithium must be done exclusively by the state, which increases legal uncertainty for any private investment in the sector carried out through joint ventures.

Finally, low policy predictability reduces the appetite to invest. Despite Bolivia’s good performance in the World Bank’s Global Indicators of Regulatory Governance (GIRG),⁸⁷ firms face high uncertainty in practice, given the unpredictable introduction and implementation of rules. According to GIRG, Bolivia scores 3 out of 5 possible points—above the average for countries in Latin America and the Caribbean (1.96), a score mainly driven by the publication of major laws and regulations in the *Official Gazette of Bolivia* and through the application of some good regulatory practices (forward regulatory planning, public consultation, regulatory impact analysis) by a few regulators. Examples like the introduction of the *doble aguinaldo* and the ad hoc increases in the minimum wage, though, illustrate the unpredictability created by the introduction and implementation of rules that raise planned labor costs in any given

year.⁸⁸ Beyond the introduction of new policies, consultations with private sector actors suggest that the unpredictable enforcement of existing regulations such as labor regulations and tax provisions, which are often cited as dependent on the interpretation of the public official in charge of the case, also represent a source of uncertainty for firms. Moreover, businesspeople and investors mention that they are not always certain about the regulations that apply to them, and they face heavy transactional costs to acquire information from each regulator to understand the implications.

The government of Bolivia could implement better regulatory reforms to increase transparency, access, participation, and evidence-based analysis, incentivizing a more favorable and predictable business environment. In addition to providing electronic access to main laws and regulations through the *Official Gazette*, the government could also create an electronic repository of administrative procedures (*tramites*),⁸⁹ increasing certainty about the requirements, steps, processing time, and fees related to them. This action could have potential positive impact as it reduces the uncertainty about administrative procedures that leave room for ample discretion about application. The creation of a single online repository of procedures could be jointly implemented with a reform effort to simplify the process, reduce the regulatory burden, and eliminate regulations that are outdated or unnecessary.

Moreover, the private sector could benefit from government actions that help them learn and comment on regulatory proposals before they are enacted. This could be achieved by widely adopting two good regulatory practices. One would require all regulators to announce in advance a list of all regulations they are reviewing or preparing. These “forward regulatory plans” are usually published once or twice a year to give the private sector advance notice about upcoming regulatory changes before they even start.⁹⁰ Another tool for improving the predictability of the regulatory environment is the adoption of a whole-of-government online public consultation portal,⁹¹ where the private sector can (a) receive advanced notice and access to relevant information on proposed or revised regulations, (b) have an opportunity to comment on the content of those regulations before they are enacted or implemented through a transparent and interactive dialogue, and (c) get access to responses to comments received explaining how they were used or not to improve the final content of the regulation in question. To reduce transaction costs, this public consultation portal would post all regulatory proposals from all regulators, creating a single source for private sector participation in rulemaking. Limited public-private dialogue, by contrast, may undermine these efforts.

Bolivia could adopt evidence-based approaches such as ex ante and ex post regulatory impact analysis (RIA) to ensure its policy aims are achieved. Ex-ante RIA ensures that the costs and benefits of regulatory proposals and some alternatives are properly analyzed before regulations are enacted.⁹² Ex post evaluations are necessary when regulations do not seem to achieve their policy objectives, either because they were poorly designed or are outdated,⁹³ and they can take many forms. One of them is a review of an individual regulation or a set of related regulations to assess their impact and the degree to which they have achieved their initial objective. Another type reviews an entire regulatory framework through a systemic approach, like the “Regulatory Guillotine” approach used by Croatia. This is a quick way to identify an existing regulation, question its need using preidentified parameters, and then decide

whether to eliminate, modify, or keep it. In some countries, this approach has been used to review, simplify, and streamline business licenses or administrative procedures. While these tools require analytical capacity, their methodological approaches can be easily adopted in an “RIA-light” mode in which the initial emphasis is to apply the methodology and then build sophistication of the impact analysis over time. It is not common to find countries with systematized and well-defined ex post review systems such as ex ante RIA.

Finally, Bolivia may consider adopting a better, more formal regulation policy that brings together all the elements described above and assigns an institutional responsibility and mandate to coordinate the policy implementation. To be effective, the policy would be given a legal mandate. In some countries, this takes the form of a national better regulation law or presidential decree. While there is no one-size-fits-all recipe by which government institutions should coordinate improved regulation policy, several countries carry out this mandate close to the center of government or link it to line ministries responsible for economic activities. Mexico’s national law (2018), for example, which established institutions, tools, and requirements at the federal, state and, municipal levels of government, is considered a best practice by experts.⁹⁴ In any case, making an impact on the private sector and the business environment requires that the better regulation policy requirements and institutional mandate are clear and strong enough to ensure widespread adoption by all regulatory agencies and are not perceived as voluntary.

Limited public-private dialogue platforms to inform and support policy implementation

Overcoming barriers in inputs, undue regulations, and implementation may be undermined by a limited public-private dialogue in Bolivia.⁹⁵ Bolivia’s public-private dialogue (PPD) has not been as effective as needed because it has been composed of ad hoc initiatives and efforts without formal structure or official regulation that have experienced varying levels of success. Instead, it has been composed of a conglomerate of different private sector players with differing abilities to influence public policy. Overall, Bolivia's public sector has traditionally developed planning and legal proposals within the government, without a set mechanism for requesting private sector inputs. Some PPD initiatives initiated by the private sector in the past decade have been effective through a thorough analysis of the issue at hand and its economic benefit to both governments and the private sector (Appendix B).

The lack of a formal institutional structure and a single institutional umbrella representing all Bolivian businesses has limited the communication flow between the public and private sectors. Bolivia’s private sector does not have a vertical institutional structure, and there is no single entity that represents all Bolivian business organizations in negotiations with the national government. Instead, there is a conglomerate of different private sector players with different abilities to influence public policy. As such, some departmental and sectoral chambers have public-private representation and dialogue directly with national public bodies. Business organizations that have more success in their PPD initiatives based their influence on the significant number of member companies, specialized departments for technical

research and analysis of public policies (which has limited the role of private sector associations with limited public policy knowledge), and the strength of the economic sectors that they represent.

To promote public-private dialogue, Bolivia could establish structured and permanent PPD mechanisms, ensuring formal, transparent, and inclusive channels for dialogue.

This mechanism could promote dialogue in the design, analysis, discussion, elaboration, implementation, and monitoring of public development policies using a three-level organizational structure. It is important in the design of such a mechanism to account for risks, such as of excluding the participation of new entrants or smaller firms. It is therefore important to ensure the inclusive and equal participation of all relevant actors, including microenterprises, artisans, peasant producers, indigenous peoples with productive activities, and other minority groups. In addition to channels of communication that reach the wider public through formal public consultations, the institutional structure of the PPD could have three levels that allow a definition of agendas, a prioritization of topics, analysis, the preparation of technical proposals, and their review and approval. A structure could potentially incorporate the following elements: (a) dialogue tables that would define the PPD agenda, prioritizing the strategic projects, and promoting the dialogue; (b) technical committees in charge of the analysis, drafting proposals, and preparing projects and new legal instruments (laws, decrees, and other directives); and (c) a decision body responsible for the approval of legal instruments and strategic projects (Appendix B). A similar PPD scheme could be implemented at the subnational level in a way that secures the participation of public and private sector representatives such as regional chambers of commerce and other sectoral associations. This proposal is based on successful processes that have been used in the recent past, as well as some international best practices from neighboring countries. It also calls for the private sector to strengthen its technical capacity to influence public policies more effectively and to set up an analysis and monitoring committee to work on the prioritization and formulation of proposals.

5. SECTOR ASSESSMENTS: AGRIBUSINESS AND LOGISTICS

The Country Private Sector Diagnostic provides an in-depth assessment of two sectors: agribusiness (includes agricultural input and forestry) and logistics. These were selected for their potential development impact based on their contribution to a more diversified, competitive, and inclusive private sector. They were also selected because they may present the most significant opportunities for private sector investment in the medium term once a set of policy, regulatory, and institutional constraints are relaxed. The rationale also considers the potential World Bank value added (opportunity to leverage World Bank know-how). Their selection is supported by extensive interviews with private and public sector stakeholders conducted during the preparation of the CPSD. This chapter describes these sectors and their main constraints, then makes recommendations to unlock their growth through private sector investment.

WHY THESE SECTORS?

Bolivia's agricultural sector is a proven engine of economic growth and has ample room to increase its productivity. The country has used its diverse natural endowments to grow agriculture and increase people's incomes. The agricultural sector has experienced high and sustained growth, contributing to a reduced national dependency on the mining and gas sectors. The compound annual growth of agriculture, forestry, and fishing remained above 5 percent between 2013 and 2018 (figure 5.1a), and it has also proven to be pro-poor, employing one-third of the labor force (figure 5.1b). The sector nonetheless has substantive room to increase productivity and strengthen backward and forward linkages to other economic activities.

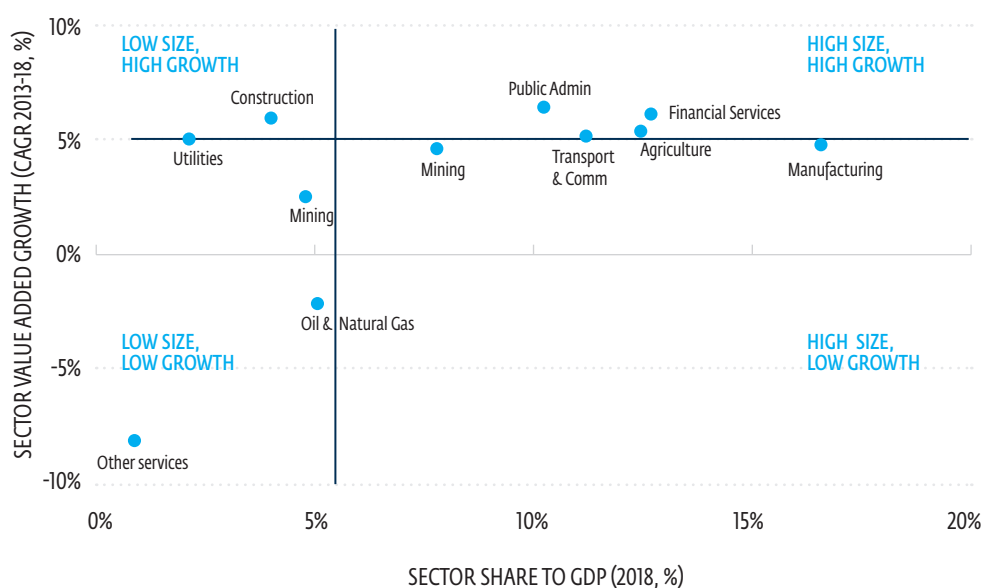
Most agricultural subsectors are among the industries with the highest GDP multipliers driven by large direct and induced effects despite weak backward linkages with other sectors. Figure 5.2 shows that agricultural sectors such as crops, vegetables, fruit, nuts, and livestock have high GDP multipliers in Bolivia (above 1.9). These sectors do not have strong backward production linkages in the economy but generate large multiplier effects. The decomposition of multipliers into direct, indirect, and induced effects helps explain these patterns. Direct effects in these agricultural sectors have large magnitudes because of the high ratio of value added to output (on average 51 percent) driven by the low cost of intermediate goods relative to revenue. Also, agricultural sectors have large, induced effects driven by an increase in labor income, given their labor-intensive production structure.

The selected subsectors within the agricultural sector have the potential to generate significant GDP and export revenues in addition to its stimulation of employment. Agriculture has potential for diversification, creating opportunities for consolidated and emerging nontraditional exports (like beef and quinoa), and also has a strong need for modernization and technological adoption and a high share of jobs (approximately 30 percent of the labor force and 90 percent in rural areas). In the agri-inputs subsector, the public sector is involved (fertilizers), and options to increase their use and develop the private sector in this market can contribute to boosting productivity. Forestry represents opportunities for inclusiveness around value chain development (supplier development) and for reduced climate vulnerability, as the country has gone through an unsustainable expansion of its agriculture frontier that is compromising its natural resource capital. In addition, the assessment is starting to fill a knowledge gap regarding the competitiveness of the forestry subsector and the identification of the enabling factors that, if improved, could significantly boost exports.

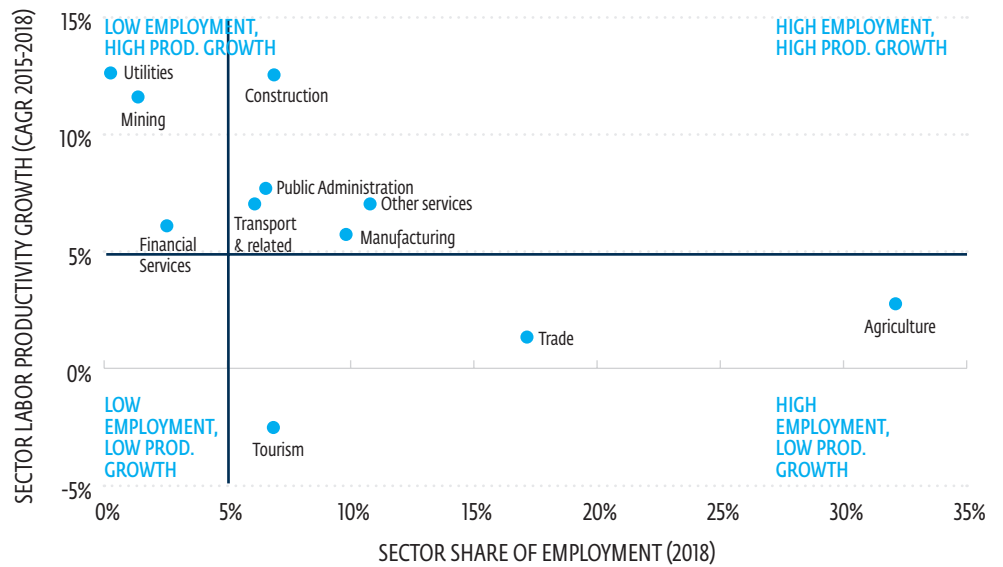
Transportation and logistics challenges in Bolivia are important factors impeding the development of sectors across the economy, so overcoming these challenges could be transformational to the country. Despite significant investment in the primary road network, low connectivity and low efficiency of transport and logistics services keep the trade costs faced by exporters and importers high. Transport and transport equipment have a high direct impact on job creation. Logistics, infrastructure, and related services are a priority because they could enhance growth opportunities and chain coordination across economic activities in an economy with weak interindustry linkages. Understanding the key obstacles faced by operators and users of the various modes of transportation could help to identify policy levers that could increase export competitiveness.

FIGURE 5.1. ANALYSIS FOR SECTOR SELECTION

a. Output and Growth

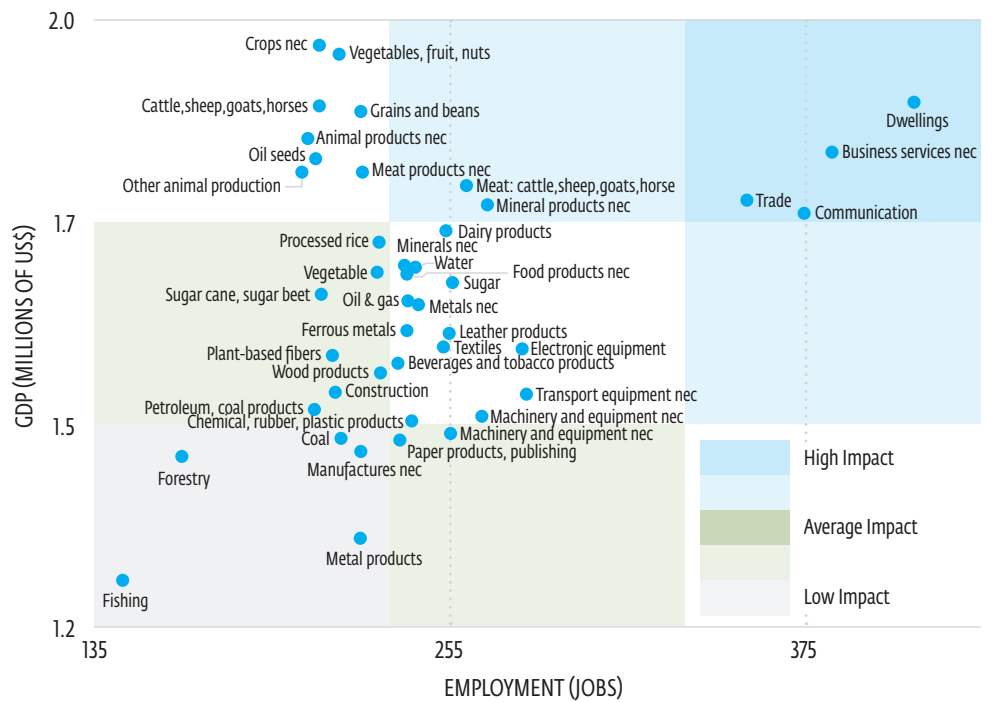


b. Employment and Productivity



Source: World Bank staff calculations based on Bolivia's National Institute of Statistics.

FIGURE 5.2. IMPACT PER US\$1 MILLION OF ADDITIONAL REVENUE



Source: World Bank staff calculations based on Bolivia's National Institute of Statistics.



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AGRIBUSINESS: ASSESSING THE POTENTIAL OF AGRICULTURAL INPUTS AND THE FORESTRY SUBSECTORS

Sector Overview

Agriculture will continue to drive both growth and poverty reduction in Bolivia. The share of agriculture in total GDP is around 12 percent, increasing to nearly 18 percent when the sector's forward linkages are considered (table 5.1). The agricultural sector generates around one-third of total employment, more than regional (21 percent) and structural peers (27 percent), and more than three-quarters of rural employment (figure 5.1). During 2003–19, though, agricultural value-added growth averaged 3.6 percent annually, slightly below the averages of regional (4.1 percent) and structural (3.5 percent) peers.⁹⁶ In 2018, the share of primary agricultural products (excluding soybeans) was 4.8 percent of total exports. The addition of soybeans and soybean byproducts increases this share to 14 percent (World Bank 2019a). Agricultural and agro-industrial value-added in 2019 was US\$6.6 billion on a net cropped area of 3.9 million hectares.

TABLE 5.1. VALUE-ADDED OF PRIMARY AGRICULTURE, WITH FORWARD MULTIPLIER EFFECTS

COUNTRY	PRIMARY AGRICULTURE SHARE (%)	PARTICIPATION IN FORWARD SECTORS (%)	MULTIPLIER EFFECT* (PER US\$)
Nicaragua 2006 IO matrix, 2006 VA	23.5	2.5	0.10
Bolivia 2012 IO matrix, 2012 VA	12.9	4.6	0.36
Peru 2007 IO matrix, 2007 VA	7.3	3.6	0.49
Chile 2008 IO matrix, 2008 VA	3.8	1.8	0.48
Mexico 2012 IO matrix, 2012 VA	2.9	7.0	2.40

Source: World Bank 2020c.

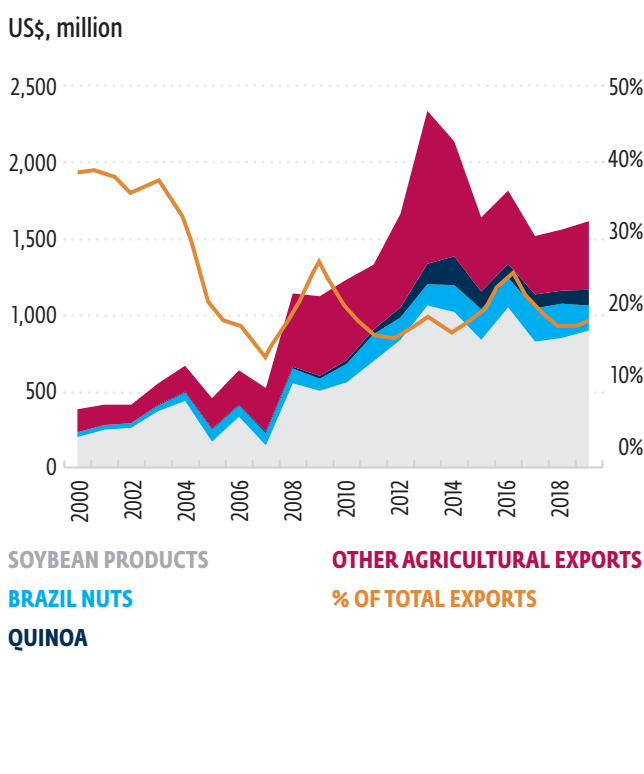
Note: IO = input-output; VA = value-added.

* multiplier effect is defined as the ratio of the contribution of primary agriculture via intermediate inputs to downstream production relative to its value added to GDP.

Overall, Bolivia is a net exporter of agricultural products that had an agricultural trade surplus from 2000 to 2018, yet imports are relatively high given the country's natural endowment, and they are growing. In 2018, the value of Bolivia's agricultural imports reached US\$780 million (8 percent of total imports). The top five agricultural import categories represented 62 percent of the value of total agricultural imports and included edible food preparations, products for the milling industry, cereal preparations, beverages and spirits, and cereals. The category of edible food preparations has doubled in value since 2010, representing 22 percent of the value of agricultural imports in 2018. Fruit imports attained a value of US\$22.5 million in 2018, representing only 2.8 percent of the value of agricultural imports that year, but this category has shown strong growth (an average annual growth rate of 8.8 percent since 2010). Imports of vegetables have also shown an increasing trend during 2010–17: an average annual growth of 9 percent over that period with a value of US\$4 million in 2017 (which is still less than 1 percent of the total value of agricultural imports).⁹⁷ The top 10 import partners are Argentina, Brazil, Chile, China, Colombia, the Republic of Korea, Mexico, Paraguay, Peru, and United States. Mercosur countries are the central origin for both primary and processed agrarian imports because of the access with a 100 percent tariff preference for these products that result from the Complementary Economic Agreement No. 36, which establishes a free trade zone between Bolivia and Mercosur members.

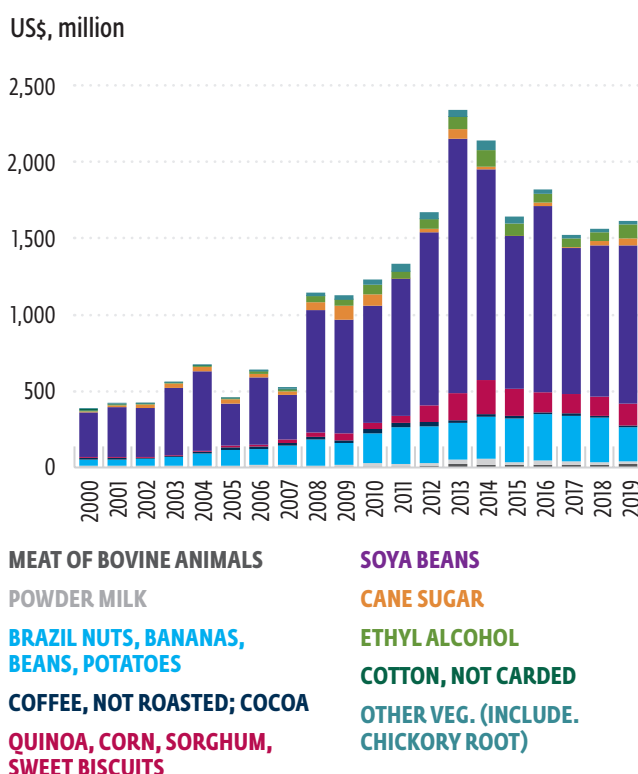
The value of Bolivian agricultural exports surged in 2013 to US\$2.3 billion, later declining to US\$1.6 billion in 2019. As a share of total exports, agricultural exports are trending downward from 40 percent in 2000 to about 20 percent in 2019 (figure 5.3). According to the National Accounts System, around 10 percent of agricultural production is exported unprocessed, 50 percent is exported as intermediate goods for the oil and sugar industries, and the remaining 40 percent is exported as final products for household consumption. Exports of soybean products increased steadily from 5 percent of total exports of Bolivia in 2000 to around 15 percent in 2019 and currently dominate Bolivian agricultural exports.⁹⁸ Bolivian exports of soybean products are nonetheless less competitive than those of its Mercosur partners, who show higher yields than Bolivia because of the use of new biotechnology (glyphosate-resistant soybean). Nontraditional agricultural exports are led by bananas, beans, Brazil nuts, chia, and quinoa, which together represented 87 percent of the total value of agricultural exports in 2018 (excluding soybeans and their byproducts). Bolivia exports primarily to Colombia, Peru, Ecuador and China, the largest consumer of soybean products in the world. Mercosur’s share of Bolivian agricultural exports has declined, while exports to other Latin American countries, the EU, and the United States have been expanding. The fluctuations in exports of soybean meal and sugar appear to be driven primarily by price.⁹⁹ On the other hand, export volumes of Brazilian nuts have been rising after declining throughout 2017. Other exported agricultural products include cotton, vegetables, fruits, and coffee (figure 5.4).

FIGURE 5.3. AGRICULTURAL EXPORTS 2000–19



Source: National Statistics Institute (INE).

FIGURE 5.4. AGRICULTURAL EXPORTS, BOLIVIA, 2000–19, MIRROR DATA



Source: INE.

Small-scale farms with low productivity are responsible for most of Bolivia's agricultural production. Most Bolivian agriculture is in the hands of single-crop smallholders with a low degree of specialization. Eighty percent of farms have at most three employees and occupy less than 15 hectares. Even in Santa Cruz, a lowland region accounting for 74 percent of total agricultural production, the median farm size is less than 20 hectares. Fragmentation of agricultural land persists in the Bolivian highlands, the Amazon, and the Sub-Andean region where average farm size does not exceed 3 hectares. Land fragmentation is most acute in the highlands, where 60 percent of all farms are now smaller than 1 hectare. Overall, only 30 percent of farms use irrigation, equivalent to one-tenth of total arable land, making agriculture vulnerable to the changing climate.

TABLE 5.2. DOMINANT DRIVERS OF TREE COVER LOSS

DRIVER	AREA (KHA)	AREA (%)
Commodity-driven	125.0	75.8
Shifting agriculture	37.8	27.9
Forestry operations	1.3	0.8
Wildfire	0.75	0.4

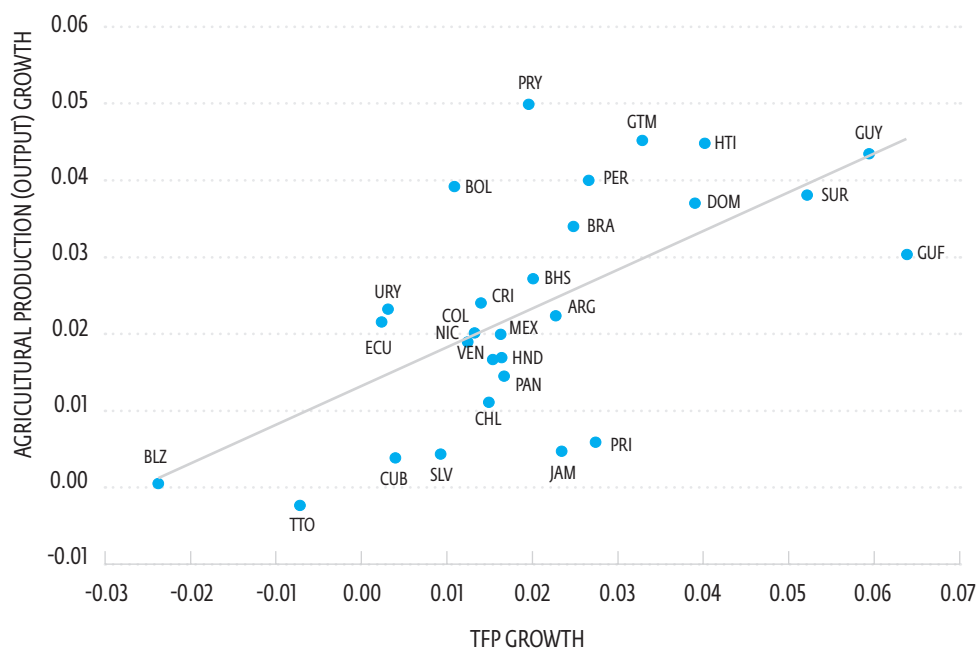
Source: Global Forest Watch, 2015.

Note: kha = kilohectare.

Bolivia is currently facing a mostly commodity-driven deforestation threat. About 58 percent of Bolivia's land is tropical forest, and the average annual deforestation rate is about 0.2 to 0.4 percent. Between 2001 and 2019, Bolivia lost 5.68 million hectares of tree cover, equivalent to an 8.8 percent decrease in tree cover since 2000, and 1.72 gigatons (Gt) of CO₂ emissions.¹⁰⁰ Deforestation is primarily commodity-driven in that long-term, permanent forest and shrubland has been converted to non-forest land use such as agriculture, mining, or energy infrastructure (table 5.2). Shifting agriculture also contributes to deforestation when small- to medium-scale forest and shrubland that has been converted to agriculture is later abandoned and subsequently reverts to young forest. Forestry operations (managed forest and tree plantations) and wildfires account for slightly more than 1 percent of tree cover loss up to 2015.

After the period of Bolivian hyperinflation (1980–94), agricultural expansion was measured by putting larger harvested areas into use rather than seeking higher yields, so national laws and regulations became focused on promoting food security and food sovereignty. Between 1950 and 2016, total harvested area increased fivefold in Bolivia, rising from around 654,000 hectares to more than 3.5 million hectares. Most of this expansion (74 percent) occurred in the lowlands and the Amazon region, far surpassing the expansion of harvested land area in the highlands (15 percent) and the Sub-Andean region (12 percent). Santa Cruz Department in the lowlands had 9 percent of all harvested area in 1950 but 61 percent by 2013. In contrast, sustained gains in productivity driven by technological change, technical efficiency, and managerial capacity have been modest in Bolivia, although signs of improvement are emerging. Nonetheless, the agriculture sector grew amid the pandemic at a pace of 2 percent. The legal framework driving this change became part of the Bolivian constitution, which endorses food security as the foundation of human welfare (Article 16) and requires an alignment of social and economic policy to achieve food sovereignty (Article 309) through sustained (and sustainable) increase in agricultural productivity, livestock, manufacturing, agro-industry, and tourism (Article 405). The Economic and Social Development National Plan 2016–20 (PDES) includes food sovereignty as the 8th of 13 pillars with specific goals.¹⁰¹

FIGURE 5.5. AGRICULTURAL TFP GROWTH AND AGRICULTURAL GROWTH 2006-2015



Source: World Bank 2020c.

Note: TFP = Total Factor Productivity.

Bolivia's sectoral growth strategy does not favor agricultural productivity growth that drives overall sectoral growth. Total factor productivity (TFP) growth in Bolivia was negative during 2001–10 but rebounded to 2.6 percent during 2011–15. In Latin America, agricultural output growth is strongly and positively correlated with agricultural TFP growth (figure 5.5). The relationship holds up not only in countries with modernized, technologically advanced commercial agriculture sectors (Argentina, Brazil, Chile, Mexico, and Peru), but also in countries with many subsistence-oriented producers (Dominican Republic, Guatemala, Guyana, Haiti, Honduras, Nicaragua, and Suriname).

Through increased yields and crop intensity, Bolivia can sustainably double agricultural production. Bolivian climate conditions allow for two planting seasons annually (winter and summer). The total harvested area was 3.9 million hectares in 2019 covering an annual surface area of 3 million hectares, a crop intensity of 1.3. Crop intensity could nearly double to 2.03 (or 6.1 million hectares of harvested area) through investments in irrigation and improved management practices while protected areas within the official soil use plan boundaries could be preserved (Box 5.1). Worldwide, multiple cropping systems are found on 135 million hectares (12 percent of global cropland) with 85 million hectares in irrigated agriculture.¹⁰² For Bolivia, CAINCO selected main crops in diverse geographical areas in 2020 to collect more specific figures to help forecast potential crop intensity increases. These crops were corn, soybeans, wheat, sugarcane, rice, bananas, peaches, quinoa, potatoes, onions, and grapes. Four of these crops (corn, soybeans, potatoes, and onions) are currently harvested twice a year. Results indicate that there are potentially 8.7 million hectares of net cropped area that could be put to use through intensification.

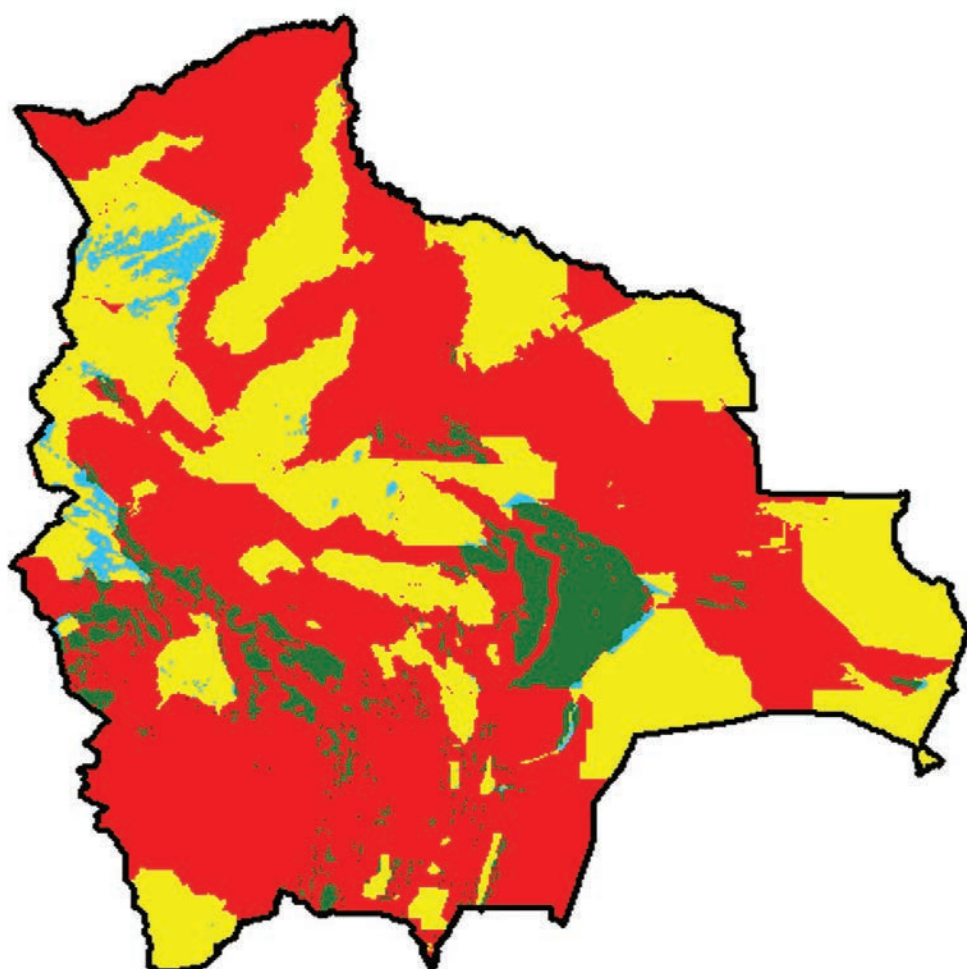
BOX 5.1. BOLIVIAN AGRICULTURAL POTENTIAL

Ranked as the 28th largest country in surface with 110 million hectares, Bolivia could expand agricultural production sustainably. The magnitude of expansion will depend on geographic or edaphoclimatic conditions, environmental or protected areas regulation, allowable land use, legal (specific regulations regarding agriculture), and on-farm capitalization (irrigation, mechanization). Regarding the first three, the CPSD completed an analysis of edaphoclimatic fundamentals to assess this potential. The main variables included precipitation, weather, elevation, soil pH, and soil texture. Concerning land regulations, the official soil use plan and protected areas regulations were considered in the analysis. The result was an arable land potential of 60,957 square kilometers or 6.1 million hectares.

Source: CAINCO 2020.

Bolivia's agricultural output potential is stunted because of legal constraints. The net cropped area is barely half of its potential and total production could at least triple with proper land use and superior inputs, including seeds and financing (figure 5.6). According to producers, lack of sector development can be attributed to (a) an uncertain legal framework resulting from the periodic revision of land use (Constitución Política del Estado CPE 396.III), (b) constraints on domestic and foreign sales (including price controls) enabled (but not removed) during the upsurge of inflation in 2008 (DS 29524, 348, 725, and 1316), and (c) regulation preventing biotechnology in the industry (CPE 409).¹⁰³ There is empirical evidence that livestock export restraints in Bolivia reduced productive capacity (Burgoa and Herrera 2017; García-Lembergman, Rossi, and Stucchi 2018). It could be inferred that similar effects apply to agricultural exports.

FIGURE 5.6. SUITABLE AREA FOR AGRICULTURE



Source: CAINCO, 2020.

Note: Green = suitable, yellow = not allowed, red = nonsuitable, light blue = suitable but not allowed.

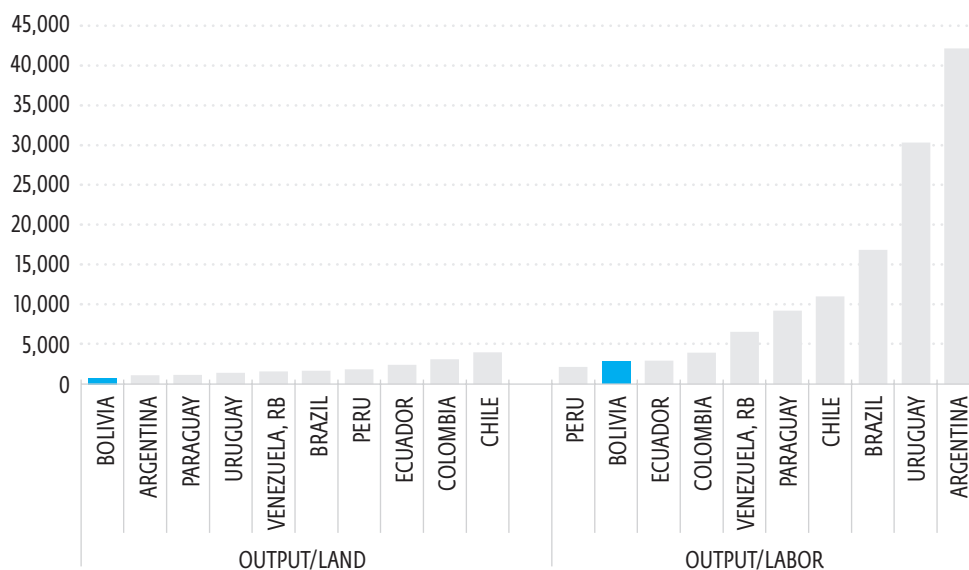
The public sector, moreover, intervenes significantly in agribusiness through regulation. The public sector mainly participates in regulating production and international trade through institutions led by the Ministry of Rural Development and Land (MDRyT) and the Ministry of Productive Development and Plural Economy (MDPyEP). The leading public institutions within these two ministries are an input provider (Insumos Bolivia), an innovation agency (INIAP), an agency for agricultural health and food safety (SENASAG), and a public firm established to support the agricultural value chain (EMAPA). The regulations of these agencies constrain agricultural commercialization by requiring bureaucratic processes that generate unnecessary cost and waste time. Some agency policies constrain agricultural growth: export restraints and price controls (MDPyEP), lack of biotechnology regulation (MDRyT), a low degree of agro-innovation (INIAP), and an inadequate institutional framework (SENASAG), just to cite the most relevant examples.

Certification and control services are provided by public institutions, and the process is bureaucratic and costly. As a result, many small and medium enterprises cannot afford international certification and can only sell in the local market. IBNORCA is the main public actor involved in sanitary certification for agricultural production, distribution, import, and export, and it leads quality certification. SENASAG controls, certifies the legal requirements, and provides laboratory analysis for national distribution and export (Law 830/2016). Producers and exporters agree in that their inspection processes and services are bureaucratic and the lack of infrastructure, the dearth of technical experts, and bureaucracy in each process affect agricultural exports. A significant challenge in the certification process is the limited knowledge of producer standards and certifications and the financial hurdles to accomplishing these requirements. As a result, only one Bolivian company has global GAP (good agricultural practice) certification. The cost of certification is such that some quinoa producers have organized collectively to gain organic certification. An agile and accountable entity—which could be private as well as public—is required in this area.

Low levels of collective action such as that by producer organizations limit the market power and commercial potential of farmers. Farmers are relatively more organized in the lowlands (14.4 percent), while in the Amazon region, they are the least organized (7.1 percent). Policies and programs that promote organization and collective action among producers (such as the *Programa de Alianzas Rurales*) are more likely to improve the livelihoods of peasant families than policies and programs targeting individual farmers.

A focus on increased productivity (yields and crop intensity) could diversify agricultural exports and avoid further deforestation. Measured by output per hectare or worker, Bolivian agricultural productivity is the one of the lowest in the region (figure 5.7). To diversify production and increase export competitiveness, Bolivia must focus on higher sectoral productivity. Since soybeans, sorghum, and corn are land-intensive crops, boosting land productivity is paramount. Bolivia’s soybean yield for the 2019/20 planting season was 2.0 metric tons per hectare versus 3.4 for Brazil, 2.9 for Argentina, 2.8 for Paraguay, and 2.2 for Uruguay. A significant ongoing transition is taking place, where both domestic and foreign capital are being invested in commercial agriculture, leading to a highly mechanized, capital-intensive production model that has considerably diminished labor demand. This progress still erodes the ability of small farmers to engage in productive activity, though. Large soybean producers occupy about 56 percent of the industrial plantations area in Santa Cruz, where two-thirds of farms are under foreign ownership. Boosting land productivity to avoid further deforestation, then, will require farmers to secure access to better inputs such as small-scale machinery, finance, training, and technical advice.

FIGURE 5.7. AGRICULTURAL PRODUCTIVITY, LAND, AND LABOR IN SELECTED COUNTRIES (2016)



Source: US Economic Research Service.

Note: LATAM = Latin America. Output/Land: Output/ha; Outut/Labor: output/worker. In both cases, output is measured in USD.

Agribusiness could easily contribute to higher output, external resources, and superior earnings in a challenging context after the pandemic, but every node of the value chain in agribusiness must be addressed to increase agricultural productivity. While preserving the sector's labor intensity, better performance in each node can ensure greater production and higher incomes for agricultural workers and entrepreneurs. The most relevant issues to be addressed are the needs for (a) clear regulations regarding land use to promote long-term harvesting and financial resources availability, (b) more and better inputs to increase yields across crops, and (c) renewed and institutionalized innovation systems in agriculture, both in public and private organizations. With these reforms, agricultural output could almost triple its current volume, thereby improving input and biotechnology uptake sustainably and scientifically. This could mean a growth rate of 7.4 percent similar to that during the fastest growth period (1987–97) and may add more than US\$8 billion in agricultural and agro-industrial GDP through 2025, in addition to US\$5 billion of sectoral exports.

The agricultural inputs subsector

Bolivia largely sources agricultural inputs from a small number of foreign suppliers, which poses risks to both food security and food sovereignty.¹⁰⁴ Between 2014 and 2018, average imports of intermediate inputs amounted to US\$500 million (5 percent of the country's total imports in 2018), of which US\$45 million worth were illegally smuggled in. China is by far the largest provider of herbicides (47 percent) and insecticides (43 percent), while fungicides come mainly from Argentina (25 percent) and Brazil (24 percent). Fertilizer imports originate primarily in Peru, particularly potassic blends and organic fertilizers, and China is also a significant source. Other essential fertilizer providers are Brazil (16 percent) and the United States (27 percent) for NPK compounds, and Chile for nitrous mixes and urea (66 percent). Imported seeds correspond mainly to forage plants from Brazil (81 percent) and vegetable seeds from China (28 percent) and the United States (26 percent). Bolivia's core machinery provider is Brazil (60 percent).

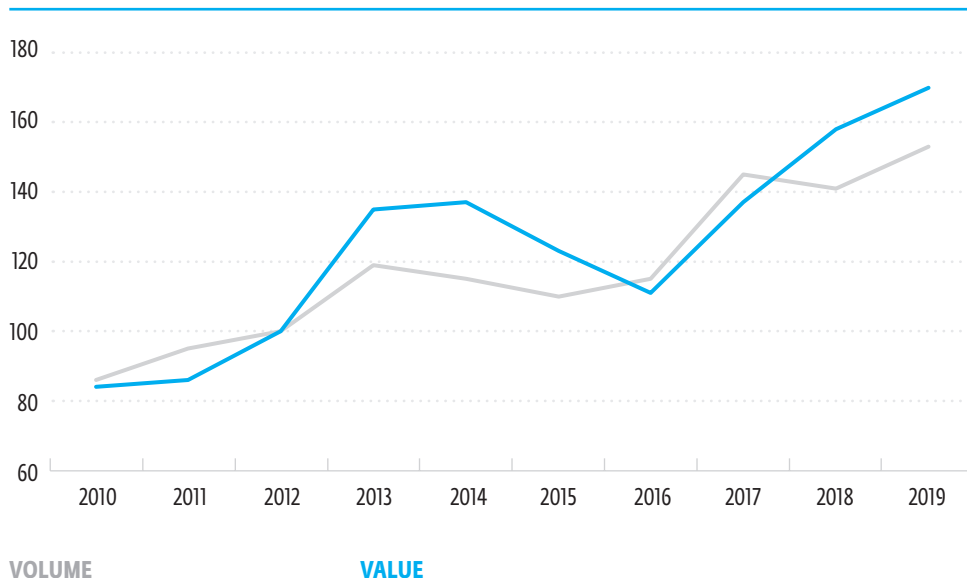
There are significant differences in cost structure for agricultural inputs across regions in Bolivia. The cost of large-scale agriculture production in the lowlands is composed primarily of agrochemicals (25 percent), seeds (26 percent), transport and storage (28 percent), and machinery, fuel, and other services (17 percent; see IBCE 2019). Family labor accounts for more than 85 percent of the value of all agricultural labor in the highlands and the Amazon region, 75 percent in the lowlands, and 64 percent in the Sub-Andean region. In contrast, intermediate inputs (pesticides, fertilizers, and seeds) account for 20 to 30 percent of gross production value (World Bank 2019a).

The country’s agricultural productivity is among the lowest in the South American region, partly because of its relatively low use of agricultural inputs. Fertilizers are currently applied on only 20 percent of Bolivia's cultivated area, and certified seeds are sown on 57 percent of cultivated area (92,000 metric tons). Pesticide use is concentrated in the lowland department of Santa Cruz (94 percent) where extensive crops are grown. Fertilizers are 3 percent of direct production costs, compared with United States (14 percent), Argentina (13 percent), and Brazil (41 percent).

Pesticide use is costly when compared with Bolivia’s neighbors. In 2010, there were 40 firms importing or marketing agricultural chemical inputs (*agroquímicos*) in Bolivia. As of 2019, this figure had risen to 65 firms (IBCE 2019). Over roughly the same period, demand for these inputs in terms of value and volume increased by more than 50 percent. For soybeans, the main industrial crop in Bolivia, a cross-country comparison of direct production costs (seed, fertilizer, pesticide, and custom operations) reveals that pesticides represent 48 percent of its costs, compared with only 13 percent for the United States, and 27 percent for Brazil and Argentina.

Illegal pesticide imports are significant in Bolivia. It is estimated that more than US\$ 45 million in contraband pesticides enter Bolivia annually, an amount equal to some 14 percent of otherwise legal pesticide imports (IBCE 2019). The illegal nature of these pesticide imports also results in foregone annual tariff revenue in the range of USD 6.5 m. For two regional neighbors – Colombia and Peru – illegal pesticides comprise 25-30 percent of their total domestic pesticide markets (IBCE 2019).

FIGURE 5.8. BOLIVIAN FERTILIZER IMPORTS, VOLUME (MT, MILLION) AND VALUE (US\$, MILLION)



Source: INE (2019).
 Note: MT = metric tons.

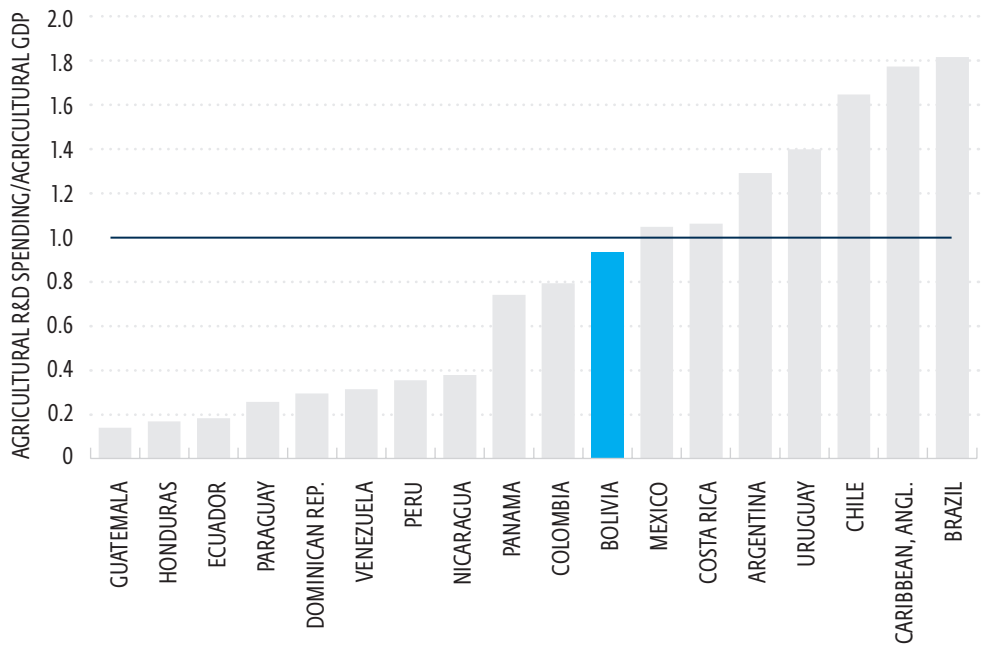
Although fertilizer imports have grown over the past decade (figure 5.8), farmers, particularly owners of small and medium farms, are skeptical of its benefits. Lack of training about fertilizer applications is a common problem, according to producer associations such as ANAPO (Association of Oilseed and Wheat Producers). As a result, Bolivian farmers apply an average of 24 kilograms per hectare (kg/ha) of fertilizers, significantly below neighboring countries such as Chile (352 kg/ha), Colombia (292 kg/ha), Brazil (156 kg/ha), Paraguay (105 kg/ha), Peru (91 kg/ha) and Argentina (45 kg/ha) (INIAF et al. 2019). Moreover, many of the farmers do not have access to adequate cash resources for purchasing fertilizers. For 2019–20, the National Oil Company (YPFB) projected fertilizer sales of around 50,000 metric tons annually in the local market (YPFB 2019). Although farmers complain about the quality of domestically produced fertilizer, a significant reduction in urea imports is unlikely if prices for domestic production remain uncompetitive. In December 2020, the domestic wholesale price of urea fluctuated between US\$310 and US\$319 per metric ton.¹⁰⁵ Despite being 30 percent cheaper than imported urea, farmers argue they should buy it at YPFB's export price to Brazil, which is around US\$100 per metric ton less. If the retail urea price were lower, which would be achievable through efficiency gains in the production process, annual effective demand for urea could increase from 20,000 to 130,000 metric tons just for the oilseed and wheat sectors, according to ANAPO.

Bolivian farmers mostly rely on locally produced noncertified seeds. INIAF provides seed quality certification and is responsible for research and development of new seed (adapted) varieties. However, INIAF is too underfunded to carry out its mandate and, additionally, there are no incentives for expanding quality seed production (tax relief, capital finance for irrigation and processing facilities). Most small farmers either use their own seeds or buy them from informal, noncertified producers. In 2019, one-third of soybean seeds were reproduced without any quality control, smuggled, or illegally imported as cheaper grain. For corn seed, around 42 percent was noncertified material, most of which (60 to 70 percent) were hybrids reproduced by Mennonite communities. While sorghum and sunflower seeds extensively use high-quality genetics, wheat and rice production relies on just 30 percent and 42 percent, respectively, of certified genetic material. Quality seed use for potatoes (2.8 percent) and quinoa (0.9 percent) is negligible. There is one state-owned firm, the Seed Production Strategic Enterprise, which provides quality seeds, though it can deliver only 12,000 metric tons per year, which constitutes a bottleneck if the country's seed use rises above 494,000 metric tons annually, even considering that sugarcane was excluded from this estimate because its seed usage is 10,000 metric tons annually. Finally, seed sales from processors and agricultural input shops include value added tax, whereas informal (and low-quality) seed purchases from small-scale producers do not. This in turn drives up costs and retail prices, discouraging the adoption of quality seeds.

Even with growth of agricultural mechanization, productivity gains from machinery are not fully realized because of inadequate training. All agricultural machinery is imported. According to Unidad de Análisis de Políticas Sociales y Económicas (UDAPE 2015), there were an estimated 57,000 tractors and 13,000 harvesting machines in Bolivia in 2014. Tractors are used on 48 percent of farms in the lowlands and 41 percent of farms in the highlands (World Bank 2019a). Enhanced and efficient extension services are needed to increase technology dissemination and adoption.

Low research and development (R&D) expenditures inhibit innovation and productivity growth, and skills in agriculture are poorly developed. Like many of its regional peers, Bolivia invests less than 1 percent of GDP in agricultural R&D, as recommended by the UN (figure 5.9). The country’s expenditure levels on agricultural R&D reached US\$59 million, while the number of agricultural researchers is only 190, according to the Agricultural Science and Technology Indicators maintained by the International Food Policy Research Institute, or IFPRI (2011). Those countries that meet or exceed the recommended one percent (Argentina, Brazil, Chile, Uruguay) are recognized globally as having a dynamic agricultural sector.¹⁰⁶ Given the known lag in translating R&D into innovation and competitiveness, those countries that invest early and continuously can sustain an advantage in the marketplace. Additionally, although 1.8 million Bolivians are economically active in agriculture, only 59 percent have completed primary education. The Cinda Report (2016) states that in 2014, some 27,000 students were studying agricultural science in public and private universities. As a result, skilled staff is limited, which is evident in procedures such as food standards certification, for which foreign experts are hired instead of national professionals.

FIGURE 5.9. AGRICULTURE R&D (% OF AGRICULTURAL VALUE-ADDED, LATIN AMERICA)



Source: Agricultural Science and Technology Indicators database, IFPRI.

Transport costs for a landlocked country like Bolivia are critical. International critical infrastructure facility prices make up 60 to 70 percent of total agrochemical costs, as imports come from China and need special handling facilities provided only by Chilean ports. Poor domestic infrastructure adds another 20 percent to logistical costs, and this inhibits agricultural logistics, both domestically and for exports. It is thus critical for Bolivia to improve its roads and assess the feasibility of building operative facilities in the Paraná-Paraguay river basin, considering that the largest consumption market is in the eastern lowlands. In terms of infrastructure, the improvement of maritime connections to the Atlantic Ocean and the development of road and rail infrastructure to connect production areas with capital cities are crucial. To make this possible, the government could open investment through public-private mechanisms. Opportunities for improvement are possible both in infrastructure and bureaucratic constraints.¹⁰⁷

Only 11 percent of agricultural producers receive formal financing. The rest of those that receive financing are likely to receive credit from their local agrochemical suppliers and the industries within the chain, mainly for cash flow for annual harvests. Over the last five years, estimated annual aggregate demand for agricultural finance averaged US\$2.2 billion, one-third of it provided by microcredit financial entities and a similar figure by banks. Nonprofit financial institutions for development are less than 7 percent of the total and are devoted mostly to supporting small farmers in urban-adjacent areas. The main reason producers cannot fully access many financial products is the low availability of collateral as the Bolivian constitution limits using private land as collateral for access to finance. Agrarian property is classified as small, medium, and business, and of the different categories, only small property is indivisible and unattachable. Collective property is likewise indivisible, imprescriptible, unattachable, inalienable, and irreversible (Bolivian Constitution, article 394, sections II and III). If only movable assets can be collateralized, the financing capacity of farmers will remain significantly limited. Moreover, Law 393 (2013), which sets up minimum levels of credit caps by prioritizing loans to housing and the productive sector—this includes agriculture—implies that the agricultural credit supply must compete with the manufacturing industry in which property (including land) can be used as collateral.

Agricultural supply shops and agroindustry finance a package of farm solutions including intermediate inputs, technical assistance, and extension, to small- and medium-scale farmers. As such, input providers turn into specialized agricultural banks, which charge farmers a risk premium. It is estimated that 90 percent of input sales are financed to farmers either by these shops or by agro-industry, with payment due after the harvest. Similarly, agricultural supply shops manage large client portfolios because small- and medium-scale farmers do not have access to formal banking services. Large agricultural enterprises and some individuals also import directly to reduce their costs. As of March 2020, farmer indebtedness totaled some US\$1.59 billion, with a delinquency rate of 13 percent. Margins across the supply chain could be reduced if farmers could access convenient and lower-cost funding sources from the formal financial sector and not from agricultural supply shops or agro-industry that are themselves funded through commercial, short-term loans.

Low uptake of irrigation constrains agricultural yields and increases production risk. Farmers that invest in irrigation avoid the risks posed by unreliable and inadequate rainfall. Irrigation can also increase and stabilize yields, improve resilience in the face of climate change, and safeguard food and nutrition security for rural families. In Colombia, where land under irrigation accounts for 6 percent of total irrigated land surface potential, the government is investing to increase coverage by 60 percent within the next 20 years (CONPES 2936, 2018). In Chile, Ecuador, and Peru, irrigated land now accounts for between 30 and 65 percent of all cultivated land.¹⁰⁸

Bolivia's agriculture is highly vulnerable to adverse weather events such as flooding, drought, hail, and frost, and with a limited insurance market, these vulnerabilities are exacerbated. A study of technical and institutional capacities by the UN Food and Agriculture Organization (FAO 2017) indicated that between 2002 and 2012, floods were the natural disaster reported most often (1,799 cases), affecting approximately 283 municipalities and 396,000 families. Floods caused losses of 493,000 hectares of crops, of which about 78 percent were in the Santa Cruz Department. Drought is the second most reported event (682 cases), causing losses of 631,000 livestock units in the departments of La Paz, Santa Cruz, and Tarija. Hail is the third most pervasive natural event, representing the loss of 99,000 hectares of crops in the departments of Potosi, Chuquisaca, and Cochabamba. Finally, frost represented crop losses of 99 hectares, mostly in the departments of La Paz, Potosi, and Chuquisaca.

An agricultural insurance market that enables commercial farmers to transfer risk to a third party is still at an early stage. In 2017, direct written premiums for agricultural insurance amounted to Bs 157,000 (US\$23,088) and handled by only three companies.¹⁰⁹ Given the extremely low market penetration of agricultural insurance products, farmers have limited knowledge of them and how they function, and it is likely that only farmers exposed to significant risks are willing to pay for insurance coverage, creating the problem known in the industry as adverse selection (World Bank 2019a). The SAMEP (Agricultural Insurance For Municipalities with Highest Levels of Extreme Poverty) insurance program created by the Instituto del Seguro Agrario (INSA) is a compensation payout program that protects small-scale farmers. As of 2017, SAMEP coverage extended to 168,705 farmers on a total of 315,693 hectares (table 5.3).

TABLE 5.3. EVOLUTION OF SAMEP PROGRAM (2013–17)

YEAR	Nº MUNICIPALITIES	Nº COMMUNITIES	Nº FARMERS (COVERED)	COVERED AREA (HA)	AFFECTED AREA (HA)	COMPENSATION PAYOUTS (BS.)	COMPENSATED FARMERS
2013	63	2,491	57,497	91,226	8,469	7,601,460	7,141
2014	107	4,631	106,049	175,892	19,910	18,061,748	23,425
2015	141	5,575	146,563	272,886	6,866	6,463,856	11,148
2016	142	5,379	135,456	249,893	33,992	32,111,987	43,536
2017	140	6,186	168,705	315,693	25,338	24,560,182	28,616
Total	593	24,262	614,270	1,105,590	94,575	88,799,233	113,866
Avg	119	4,852	122,854	221,118	18,915	17,759,847	22,773

Source: Agricultural Insurance Institute (INSA). Note: ha = hectares; Bs = Bolivianos.

Compared to other regional programs, SAMEP pays the highest indemnity value per hectare. Farmers receive Bs 1,000 per hectare (US\$147.05 per hectare) for up to 3 hectares. In comparison, Mexico's CADENA program distributes a preset lump sum per hectare (Mx\$1,500 or US\$75 per hectare) for rain-fed crops. In northeastern Brazil, the Garantia Safra program disburses R\$850 (US\$216.87)¹¹⁰ in five installments to farmers who work 0.6 to 5 hectares and have monthly family incomes amounting to less than 1.5 times the minimum wage. The Garantia Safra is triggered when the municipality-level yield is 50 percent or less than the expected yield for covered crops. Community leaders and community organizations play an essential role in helping the 60 INSA technicians to enroll the farmers (typically around 122,800 on average) who get coverage annually and to assess their field losses. A training program to enhance efficiency, improve skills, and standardize SAMEP's operating procedures would help to reduce errors that could affect the frequency of payments (repeated payouts for poor crop selection or, in extreme cases, moral hazard).

Absence of market mechanisms to promote risk-sharing within the value chain is a constraint for the agribusiness sector. Key issues that produce low financial access are asymmetric information and the implied costs of gathering, managing, and analyzing agribusiness-related information. Both imply that the gathering, managing, and analyzing information, if existent, will lead to huge transactions costs to financial intermediaries. MDRyT has invested in information systems such as the Early Warning System for the Agricultural Sector (SAT) platform (box 5.2) to reduce these asymmetries.

BOX 5.2. INFORMATION FOR RISK MANAGEMENT

The government of Bolivia has developed information systems to aid decision makers in monitoring potential hazards and providing farmers with early response information on possible weather or climate-related events. Since 2017, the Rural Contingency Unit of MDRyT has integrated state-of-the-art geographic information technology, meteorological data, and forecasts with ancestral traditional knowledge into the SAT platform (<http://sat.agro.bo>).

Source: World Bank, 2019a.

SAT monitors evolving weather hazards and provides data to authorities to mitigate sector-wide impacts. The platform's weather forecasts are generated in close collaboration with the National Meteorology and Hydrology Service of Bolivia. SAT also allows end users to compare its outputs with biotic weather forecasting indicators and informs farmers about sowing dates that pose the least exposure to agro-meteorological risk.

Higher-quality agricultural input use will be critical for increasing agricultural production through larger yields. Suitable land availability is a binding constraint, so an increased use of higher-quality inputs will be required to increase crop intensity and obtain superior yields. Effective access to fertilizers, herbicides, irrigation, machinery, and certified seeds will provide a suitable agribusiness environment. A stochastic frontier analysis ¹¹¹ showed how the use of certain inputs could increase the total production of crops: the use of insecticides can increase soybean yield production around 26 percent from 2.9 million to 3.7 million metric tons, while the availability of certified seeds can increase quinoa production by 23 percent from 74,000 to 91,000 metric tons.

Nearly US\$9 billion could be needed in the next five years to close agriculture's estimated investment gap. More than one-third could be required for machinery and irrigation and the remaining for working capital. To achieve the potential production of agricultural commodities such as wheat, rice, corn, potatoes, peaches, bananas, and onions, an additional US\$8.8 billion in investment may be required. About 38 percent of this gap would be needed for agricultural machinery and other fixed capital formation, the remaining amount for working capital, with an annual average requirement of US\$1 billion.¹¹²



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The forestry subsector

Tropical forests cover 58 percent of the Bolivian territory (60 million hectares). From this, 28.2 million hectares are classified as permanent forest production lands, of which only 10.8 million hectares are currently under management (ABT 2020). The forestry subsector GDP in 2019 was estimated to be US\$381 million, of which US\$172 million corresponded to nontimber forest production, and US\$209 million are related to wood extraction and manufacturing (INE 2019). The real compound annual growth rate between 2009 and 2019 was 2.6 percent for the wood and manufactured timber subsector, representing a share of about 1 percent of total GDP. Currently, the forestry subsector supports 90,000 jobs (CFB 2020), mostly in the lowlands, the indirect job multiplier being 3 to 1 (CFB 2020).

Timber harvesting yields are low: only 59 percent of the authorized volume is extracted. Responding to an increased local demand driven by the dynamism of the real estate sector and public investment, the area of managed forestland increased from 5.4 million to 10.8 million hectares in the last 10 years, while harvested volumes rose from 684,000 round cubic meters in 2009 to 1.1 million round cubic meters in 2019, peaking at 1.4 million in 2013. The low extraction yield is because of the low diversification of wood species in the markets—10 species representing 55 percent of total extracted volume—driven by a lack of research on their properties and performance in manufactured products, and also bottlenecks in the production nodes driven by low technological renovation and resulting high production costs. Technological renovation and increased productive capacity could increase the extraction volumes in a sustainable way to 5 million cubic log meters (CFB 2020).

Small and medium companies account for most of the forestry-based industry. The wood industry chain in Bolivia consists of two types of wood processing: multiple products based on sawn wood and boards and sheets from veneers and chips. Most sawmilling (78 percent), manufacturing plants (93 percent), and distribution companies or timber yards (91 percent) belong to sole proprietorships. In terms of size, 72 percent of sawmills, 77 percent of manufacturing companies, and 88 percent of timber yards are classified as small companies.¹¹³

The forestry subsector has had insufficient public sector support and legal frameworks. Forestry Law 1700 (1996) has not been updated in 25 years.¹¹⁴ The support to the subsector was developed mainly by international cooperation between 1996 and 2008.¹¹⁵ Since then, cooperation programs have been gradually reduced because of a lack of resources and the government's lack of support for different bilateral cooperation organizations and NGOs.

Public policy since 2006 has furthermore promoted a change in the structure of tenure rights on forests. The main government institutions interacting with the subsector are MMAyA (Ministry of Environment and Water of Bolivia) as the head of the sector, ABT (the control and regulatory body), FONABOSQUE (a financing institution), and INIAF (which oversees innovation, research, and development). Other involved ministries include MDPyEP (the head of productive and economic development) and the Autoridad de la Madre Tierra (which is in charge of developing and coordinating climate change mitigation and adaptation strategies closely related to forests conservation). Indigenous and rural communities and local cooperatives currently manage 58 percent of the total managed forest area (6.2 million of the total 10.7 million hectares). Private companies with temporary management contracts and private owners manage the remaining 4.5 million hectares. Community-managed forest area grew 2.76 times as large in recent years while privately managed private area increased by 1.43 times (box 5.3). The shift in forest management has reduced the supply of raw material for vertically integrated companies, making long-term supply alliances or agreements scarce.¹¹⁶ This resulted in many large exporting companies (La Chonta, Mabet, United Furniture, Sustainable Lumber Veneer, and others) closing or substantially reducing their operations.

BOX 5.3. COMMUNITY FOREST MANAGEMENT: MIXED RESULTS

Community Forest Management (CFM) claims it can improve local livelihoods and conserve forests. A vast body of literature reveals that the overall results of CFM are mixed. Arts and de Koenig (2017) apply a “practice-based approach” to better understand how and why CFM institutions are successful or not. The authors conducted a systematic cross-case comparison in analyzing a decade of CFM research at the Forest and Nature Conservation Policy (FNP) group from Wageningen University in the Netherlands. After analyzing 10 CFM cases from Africa, Asia, and Latin America, they concluded that (a) CFM does indeed present mixed results, (b) CFM performs similarly on social and ecological parameters, (c) overall, community-based organizations are strongly engaged in CFM, (d) such strong engagement is not sufficient to ensure CFM's peak performance, and (e) the presence of a “community of practice” that links local people to external forest professionals for mutual learning in relationships based on respect and trust, makes a positive difference in terms of livelihoods and forest conditions.

Source: Arts and de Koenig 2017.

The increase in timber production has been driven mainly by a growing domestic demand boosted by the dynamics in the construction sector. Export demand was not addressed because of the opportunities and conditions of a less demanding local market in terms of quality as well as the deterioration of the supply chains of timber to the main exporting industries. This resulted in a significant drop in forest product exports and a subsequent increase in the overall trade deficit. Between 2009 and 2019, wood product exports fell from US\$94.5 million (138,000 metric tons) to US\$56.1 million (70,000 metric tons). The domestic demand was also covered by increased imports of boards and other manufactured goods resulting in a commercial deficit between 2014 and 2017 that reached a high of US\$12 million in 2016. The increase in imports responds to the slow movement in national production as well as to a permanent depreciation of currencies in Brazil and Chile, the main exporters of wood products to Bolivia.

Timber exports are driven by well-managed firms with expertise in foreign trade.

Exports of timber products were directed to markets with the highest dynamism in the last five years such as France, the Netherlands, and Uruguay. Countries with contracted demand from Bolivia were China, Chile, Germany, Italy, and the United States (Trade Map 2020). The growing exports to the Netherlands are associated mainly with two Bolivian firms with solid business strategies that can be competitive in international markets (box 5.4). These companies have business models characterized by (a) control over forests and the supply of raw materials, (b) technologically appropriate equipment, (c) the use of Forest Stewardship Council (FSC) standards and certification, (d) the production and sale of linear products, (e) a direct relationship with distribution channels in Europe; and (f) highly trained staff.

BOX 5.4. VERTICAL INTEGRATION FOR EXPORTS

Vertically integrated firms with leadership and a strong commitment to continued operations are mainly in the Department of Santa Cruz. Among them:

- **Exomad.** A specialized company in the sawn wood and veneers, leads the Bolivian market with direct exports to the final consumer.
- **INPA.** An FSC company with a privately owned forest specializing in flooring and decking exports to Europe.
- **Colser.** Oriented to the production and export of lumber and decking.
- **Dekma Company.** An FSC-certified company using high-quality wood to export flooring and decking to Europe (the Netherlands).
- **Cimal.** An FSC company with various species in its production process focusing on veneers and boards and serving mostly the local market.

Source: CAINCO 2020.

Forestry operations are capital-intensive. Many forest areas under management are large-scale operations with an average area of 65,000 hectares (and most near 40,000 hectares) in an overall range of 10,000 to 370,000 hectares per operation (ABT 202). On average, forestry operations in different nodes require investment of more than US\$1 million per unit, the use of unconventional guarantees, low-interest rates (below 6 percent), and longer terms (at least 10 years and 2 years of grace).

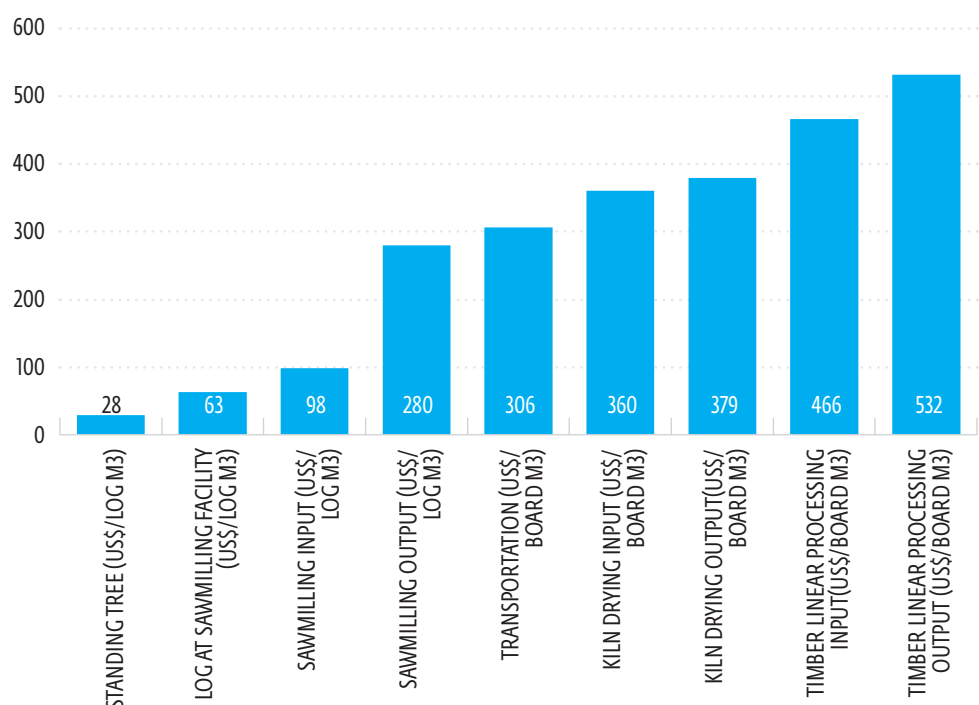
Scaling up operations requires large-scale financing and adequate conditions. In 2020, financing to the silviculture sector (which includes forestry, fisheries and hunting) reached US\$43.6 million (compared to US\$3 billion for agriculture and livestock sector), representing 0.35 percent of the total financial sector financing of the productive sector (ASFI 2020). The low financing to this subsector can be explained by several factors: (a) the banks' limited knowledge of the subsector, which quells their interest; (b) a perception of high risk resulting from the limited control and supervision that banks can exercise on operations executed in remote forest areas; (c) the lack of uptake of unconventional guarantees such as timber-based collateral that are still unavailable in Bolivia (box 5.5); and (d) the limited capacity of communities who manage large forest areas for acquiring debt. In 2016, ASFI established a regulatory framework for timber-based collateralization through the policy directive Circular 404/2016. As of yet, the financial sector has not taken advantage of this innovative collateral option. In Lao PDR, low-income farmers have been granted certificates for their teak plantations to strengthen tenure rights and encourage the restoration of degraded forests. These certificates give farmers the commercial rights to harvest their trees—a strong incentive for sustainable forest management—and open the door to potential partnerships with sawmills and other buyers.¹¹⁷

BOX 5.5. LEVERAGING TREES AS FINANCIAL COLLATERAL

In July 2020, the government of Thailand announced a new policy that would enable owners of 58 economically valuable tree species to use them as collateral when applying for loans at financial institutions. The Ministry of Commerce issued a regulation defining what types of collateral in terms of trees that can be used under the country's Business Collateral Act BE 2558. The 58 economically valuable trees are now being named in the country's Forest Plantation Act BE 2535. Among these are teak, mango, durian, tamarind, and all types of bamboo. Through August 2020, there were 109,007 high-value trees worth B 132.01 million (US\$4.3 million) being used as collateral for loans with the Bank of Agriculture and Agricultural Cooperatives (BAAC). BAAC makes loans to farmers for up to 80 percent of the collateralized value of the trees on their property. Since 2009, BAAC's Tree Bank program has reached more than 150,000 farmers across 6,000 communities growing over 11 million trees.

Investing in manufacturing capacities generates an important value-added to the subsector's economy. The value-added in manufacturing products is 18 times the value of a standing tree. The cost structure is divided into six phases: (1) the standing tree, (2) the harvested log at a sawmill, (3) sawmilling operations, (4) timber transportation to a manufacturing plant, (5) kiln drying, and (6) wood processing (figure 5.10). The estimated value-added on a manufactured product (US\$ 532 per cubic board meter) is 18 times the price of a standing tree from a high-value species such as oak (*Amburana cearensis*) or 36 times the value of a low-value species such as ochoó (*Hura crepitans*). Value is added along the productive chain. Investing in nodes to raise the market value of wood products could bring positive outputs in terms of job creation, improving the subsector's economy and reducing trade deficits.

FIGURE 5.10. VALUE-ADDED IN WOOD LINEAR PRODUCTS (US\$/M³)



Source: CAINCO (2020) based on ABT data.

Note: m³ = cubic meters

Compared to forestry operations in Brazil, the costs in Bolivia are higher in nodes related to sawn timber production. Unit costs could decrease if higher volumes are extracted per hectare. Lower costs in Brazil are explained mainly by (a) higher extraction volume per hectare, which is a function of the number of species, the size of the tree, and the number of dry months; (b) the quality of roads; (c) the use of relatively new equipment (no more than 10 to 11 years old) in the forest and at the sawmill; and (d) the use of multiple saws as complementary sawmill equipment (Bauch 2006). Reducing costs within the productive chain in Bolivia and increasing competitiveness in the node consequently requires increasing the yields per hectare, improving the quality of roads, renewing forestry equipment such as skidders, front loaders, and trucks and boosting a technological conversion in sawmills, which use mostly obsolete equipment.

Compared to other tropical timber exporting countries, Bolivia is competitive in terms of freight and insurance costs. The country also gets advantages in paying zero tariffs in EU countries and the United States due to its participation in the Generalized System of Preferences. A comparative parity analysis (table 5.7) comparing unit values of tropical wood products (linear products, windows, doors, office furniture) from Bolivia, Brazil, Indonesia, and Malaysia being exported to Europe shows that while Bolivia is competitive in linear products and windows, doors and office furniture remain a challenge. Freight and insurance costs are lower for Bolivia, considering that these exports depart from Chilean ports. Likewise, in the framework of the Generalized System of Preferences, the country does not pay tariffs. From this perspective, the country needs to improve free onboard prices by reducing production costs to achieve higher productivity.¹¹⁸

TABLE 5.7. COMPARATIVE PARITY ANALYSIS

LINEAR TIMBER PRODUCTS	BOLIVIA	BRAZIL	COLOMBIA	MALAYSIA	INDONESIA
FOB	1,233.00	1,541.00	1,421.00	1,620.00	1,353.00
CIF	1,291.53	1,602.61	1,464.97	1,753.10	1,488.74
Market Price	1,291.81	1,602.89	1,465.25	1,754.38	1,489.02
Windows and Frames					
FOB	667.00	3,550.00	3,000.00	1,382.00	1,421.00
CIF	723.54	3,618.64	3,049.50	1,514.27	1,556.97
Market Price	723.82	3,725.42	3,049.78	1,557.01	1,599.88
Doors and Frames					
FOB	4,810.00	1,777.00	5,391.00	1,722.00	2,141.00
CIF	4,881.05	1,839.43	5,448.87	1,855.46	2,279.49
Market Price	4,881.33	1,893.02	5,449.15	1,908.40	2,344.00
Office Furniture					
FOB	3,000.00	1,585.00	–	4,700.00	2,531.00
CIF	3,064.71	1,646.76	–	4,843.88	2,670.86
Market Price	3,064.99	1,647.04	–	4,844.16	2,671.14

Source: CAINCO, 2020, based on ABT data.

Note: FOB = free on board; CIF = cost, insurance, freight.

A higher tax burden for forestry enterprises, though, hinders the development of the sector, and addressing disparities could invigorate the forestry sector. Currently, income and profits derived from forestry are subject to VAT (13 percent), transaction tax (3 percent), and profit tax (25 percent). Producers get a tax retention of 8 percent of total sales from buyers. In comparison, farmers operate under a single tax regime (the Regimen Agropecuario Unificado) that bases its tax assessments (currently US\$4.15/hectare) on productive area. With this one tax, farmers can sell production to any buyer and fulfill their tax obligations with the state.

Opportunities for the development of the agribusiness sector through the inputs and forestry subsectors

Sustainable intensification in agriculture could guide diversification and expansion of exports toward preventing deforestation and other environmental problems. The concept of sustainable intensification involves sustainable soil management, water use efficiency through irrigation, sustainable management of grazing areas, responsible use of pesticides, traceability, and food safety for food consumers.

With most of its seeds being produced locally (80 percent of total volume), Bolivia could consider marketing most of its agricultural products as non-GMO and gluten-free to receive higher margins. Brazil, for instance, has been promoting sustainable production practices in soybeans through eco-certification programs as importing countries (namely, European countries) appear to differentiate on quality based on the presence of GMO materials. Since 2008, farmers have planted the biotech soybean GTS 40-3-2, which is the only approved soybean seed in the country. As for marketing its products as gluten-free, Bolivian exporters could further process corn into a gluten-free corn flour.

There are opportunities to diversify into growing less developed markets. This applies to exports such as quinoa and Brazil nuts that are mostly destined for developed countries at present, and where there are market opportunities in other countries. Quinoa (annual export value is under US\$350 million) is exported primarily to the Canada, the EU, and the United States. Brazil nuts are exported primarily to Canada, the EU, the United Kingdom, and the United States (US\$200 million annually). In the last months of 2020, Germany, the Netherlands, and the United States served as the primary destinations.

There is room to diversify into higher-value products such as meat, nuts, forestry products, and processed food by adopting sustainable practices. Some of these products are among the fastest growing exports between 2013 and 2018 (table 5.4) and have been reaching new markets. Beef exports, for instance, went to Ecuador and Peru. Starting in August 2019 and continuing throughout 2020, Bolivia increased its exports to China as a result of an export agreement. Increased cattle production and its rising beef exports are associated with wildfires and further deforestation, though. According to the Friends of Nature Foundation, an environmental group based in Santa Cruz, cattle grazing is responsible for more than 60 percent of forest loss in Bolivia. One avenue for incentivizing sustainable production practices are eco-certification programs.¹¹⁹

TABLE 5.4. TOP 10 FASTEST GROWING EXPORTS BETWEEN 2013 AND 2018

	HS-6	DESCRIPTION	EXPORTS (US\$, MILLION)		ANNUAL GROWTH
			2013	2018	2013-18
1	200930	Citrus juice	0.55	3.38	43.6%
2	190219	Pasta	2.24	6.28	22.9%
3	160250	Bovine animal products	3.43	8.98	21.2%
4	510530	Animal hair	3.29	8.08	19.7%
5	150790	Soybean oil, other	17.98	44.10	19.7%
6	440729	Wood	5.69	10.75	13.6%
7	120220	Peanuts	6.26	10.77	11.5%
8	80122	Brazil nuts, shelled	138.03	220.13	9.8%
9	120929	Seeds of forage plants	1.56	2.41	9.1%
10	441119	Wood, fiberboard with density > 0.8 g/cm ³	1.72	2.58	8.5%

Source: INE.

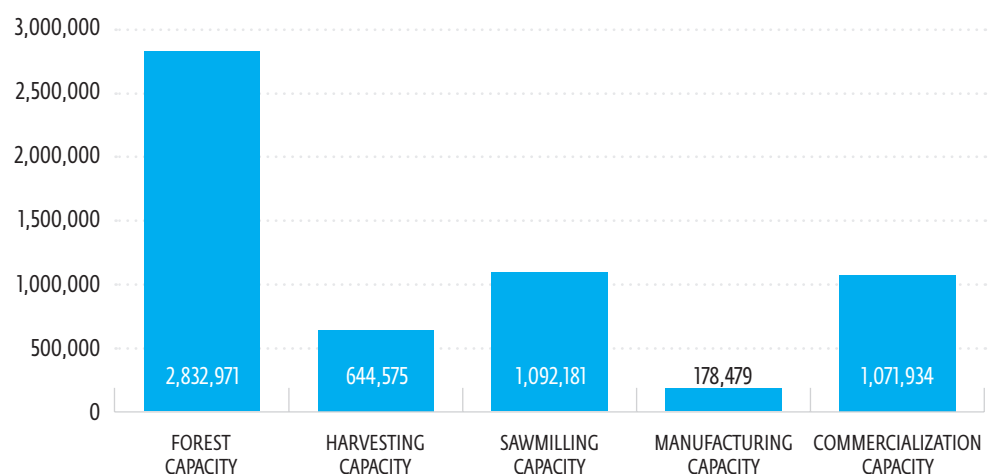
Note: g/cm³ = grams per cubic centimeter.

Bolivia could explore its comparative advantage relative to imported agricultural inputs. Adequate training, extension, and financial services could boost technology adoption to spur effective demand. The feasibility of domestic fertilizer production, for example, could be assessed considering the significant gap in use compared to regional neighbors, and this signals market potential. While it is unlikely that the government would be able to invest in production facilities on its own, opportunities may arise for public-private ventures. The same would apply to high-quality seed production. Despite private investments in costly irrigation systems and processing facilities, only 19 percent of seed demand was of certified quality in 2019. Additionally, private and public funding could be pooled to enhance the research and development of new and improved seed varieties and knowledge transferred as a public good.

Bolivian primary crop production is land-intensive and has ample space for increased productivity with the appropriate management of inputs. Applying the stochastic frontier analysis to the main crops produced in the country, it was possible to identify agricultural production as land-intensive in all the crops observed.¹²⁰ Seeds, quinoa, wheat, rice, and potatoes can improve their production with increased input availability. As for the use of insecticides, estimates show an ambiguous effect, depending on the crop. Insecticides can extend the production frontier of soybeans and rice, while for potatoes and peaches, the effect is the opposite. Herbicides can decrease production of wheat, peaches, and potatoes, while a negative elasticity was observed between chemical fertilizers and rice and onion production. To reach the productive potential, the need for each type of input was calculated, based on Ministry of Rural Development and Land data on the cost structure of different crops. Seeds are the primary need (5.6 million metric tons), along with fertilizers such as urea (111,000 metric tons) and natural manure (756,000 metric tons).

Forestry has strong potential, and it could become part of a strategy to boost the economy from the perspective of sustainability and social impact. Only 38 percent of forests classified for permanent production are currently under management plans. From a potential sustainable extraction of 15.9 cubic log meters per hectare (Dauber 1999), only 7 cubic log meters are being harvested (ABT 2020). Direct employment in the sector is estimated at 90,000 jobs, and the indirect job multiplier is 3 to 1 (CFB 2020). The subsector can increase its current contribution to GDP from 1 to 4 percent, scaling up exports from US\$60 million to US\$1.2 billion, increasing local consumption from US\$350 million to US\$450 million, and enhancing direct employment by 40 percent to 126,000 jobs. It is estimated that these dynamics could create 17,000 new productive enterprises (CFB 2020).

FIGURE 5.11. ESTIMATION OF PRODUCTIVE CAPACITY PER NODE (IN BM3)



Source: CAINCO (2020), based on ABT data.

Note: Bm3 = cubic board meters.

Investments to increase capacity in harvesting, sawmilling, and manufacturing nodes are needed to improve competitiveness and boost the forestry subsector potential.

Main bottlenecks in the productive chain are related mostly to harvesting and manufacturing capacities. Figure 5.11 illustrates how the forest wood supply is 4.3 times the harvesting capacity and almost three times the sawmilling capacity.¹²¹

The development of the forestry sector would take advantage of Bolivia's native forests and open opportunities for investment. With the current availability of forest lands and unknown timber species, properly managed forests supported by research and development could increase the country's production of timber products by fourfold. Complying with the international standards and norms adopted by importing countries will increase the demand for Bolivian wood products. In the past, the country has shown that it can fulfill requirements such as FSC standards. Having a national policy that incorporates training and supporting mechanisms to comply with international markets requirements is key. Linking the management of the sector with global strategies on climate change through forest conservation and nontimber forest products is an essential pillar of climate change mitigation. A national forestry plan could articulate objectives, targets, and the expected impact on climate change indicators and would create the possibility of gaining access to the international finance needed to boost the subsector. Forestry involves thousands of people living within or nearby forest production lands. An increased volume of operations would provide additional jobs and have a positive social impact improving community living conditions. Increased lending to support technological renovation along the productive chain would spur business opportunities for producers and for equipment importers.

Recommendations

The following sections presents a set of actions to accelerate private sector development in the agribusiness sector. Table 5.5 presents recommendations designed to address cross-cutting constraints for agribusiness, while tables 5.6 and 5.7 include recommendations for the development of the agri-inputs and forestry subsectors, respectively. For the latter, the section proposes several actions to increase its competitiveness across the value chain, by focusing on productivity finance, trade promotion, institutional development, and social inclusion. The three tables provide an initial assessment of their priority that accounts for potential impact on further private investment and of reform feasibility (technical and political). They also propose a possible set of stakeholders that could be engaged in moving these changes forward.

TABLE 5.5. RECOMMENDATIONS THAT ADDRESS CROSS-CUTTING CONSTRAINTS, SECTORS

PROBLEM	RECOMMENDATION	PRIORITY/ FEASIBILITY	MAIN STAKEHOLDERS
The legal framework imposes several restrictions that limit the flow of funds to agribusiness.	Include indigenous and peasant community organizations in the Code of Commerce (to recognize their legal status) so that they will be regarded as creditworthy.	Medium/ Low	MDPyEP MMAyA
There is increased vulnerability to food insecurity resulting from poor matching between domestic production and consumption.	Promote agricultural exports through removing restrictive policies (exports quotas and prior authorizations), and incorporate technology (process digitalization, use of blockchain) within institutions that regulate and oversee agricultural trade.	High/Low	MDRyT MDPyEP ABT SENASAG INIA
The main regulatory agency, ABT, has weak institutional capacity.	Develop a technical modernization program to increase efficiency through improved procedures and control capacity. ^a This would include allocation of resources and increased use of technology and would help ensure legal and sustainable wood extraction and improve efficiency ^b (reduction of time required to approve harvesting permits), among other benefits.	High/High	MMAyA ABT SENASAG INIA
High turnover of staff and the lack of technical capabilities for certification lead to delayed and costly certification.	Agencies in charge of certification could promote stability for their technical staff and provide training for technical staff and auditors. They could also promote the private provision of these services to improve timeliness and reduce the costs of certification. ^c	High/High	SENASAG INIAF IBNORCA

Note: ABT: Autoridad de Fiscalización y Control Social de Bosques y Tierras; IBNORCA: El Instituto Boliviano de Normalización y Calidad; MDPyEP: Ministerio de Desarrollo Productivo y Economía Plural; MDRyT: Ministerio de Desarrollo Rural y Tierras; MMAyA: Ministerio de Medio Ambiente y Agua; SENASAG: Servicio Nacional de Sanidad Agropecuaria e Inocuidad Alimentaria.

- Through its one-stop shop for environmental approvals, Australia, for example, expects to save businesses around US\$426 million a year through streamlining environmental assessment and approval processes (https://www.environment.gov.au/system/files/resources/d5142c29-c80f-4065-8aa3-cf43b98d78fd/files/fact-sheet-2a-economic-benefits-one-stop-shop_o.pdf).
- See the Bosnia and Herzegovina Sustainable Forest and Landscape Management Project (<http://documents1.worldbank.org/curated/en/449041575387942723/text/Bosnia-and-Herzegovina-Sustainable-Forest-and-Landscape-Management-Project.txt>).
- One such example of the private provision of certification is the New Approaches for Smallholders and Communities Certification project (<https://fsc.org/en/for-people/solutions-for-smallholders-and-communities>).

TABLE 5.6. RECOMMENDATIONS FOR THE DEVELOPMENT OF THE AGRI-INPUTS SUBSECTOR

PROBLEM	RECOMMENDATION	PRIORITY / FEASIBILITY	MAIN STAKEHOLDERS
Agricultural producers depend on the financial support of input supply shops because of the lack of adequate financial products for the sector.	Provide financial support to input supply shops and agro-industry to lessen the burdens of payment delays client defaults and allow broader and better suited financial products, especially for small and medium farmers, who look to these shops for integrated farm solutions (i.e., inputs, technical assistance, extension). ^a	High/ Medium	MEFP Financial Sector/Banks
	Establish trust funds, under third-party administration, to finance import of agrochemicals.	Medium/ High	MDPyEP MDRyT
There is a limited, inadequate access to agricultural insurance.	Strengthen the institutional framework of the public insurance agency by building INSA's operational and technical capabilities to offer insurance products that are more aligned with user needs and financial sustainability. ^b	High/ Medium	MDRyT INSA
Lack of standardized information on crop returns are conditional to weather forecasts, which may lead to adverse selection issues.	Set up a monitoring Geographic Information System (GIS) to permanently provide crop return information to policy makers, insurers, and potential investors.	Medium/ Medium	MDRyT
Unnecessary bureaucratic barriers hinder agrochemical imports.	<p>Simplify the registry and certification import process for agrochemicals to guarantee timely imports. As the national competent authority, SENASAG could define a single procedure and act in coordination with MMAyA and INIAF. APIA, the Bolivian Association of Agricultural Input and Service Providers, could recommend and update technical information on agrochemicals. SENASAG could ensure consistent training and stability for the technical staff in charge of certification and registry.</p> <p>Organize awareness campaigns to inform agricultural producers and other stakeholders of the threats that illegal pesticides pose to human health and sustainable agriculture.</p>	High/High	MDRyT SENASAG APIA Producer organizations; Input Supply Shops; MDRyT
There is a high dependence on fertilizer imports.	Conduct a feasibility study for an NPK, DAP processing facility that would take advantage of the growing domestic provision of urea and other locally produced industrial by-products and compounds, e.g., from the sugar cane industry. ^c	Medium/ Low	MDPyEP Private Investors

PROBLEM	RECOMMENDATION	PRIORITY / FEASIBILITY	MAIN STAKEHOLDERS
The infrequent use of certified seed and fertilizers in most crops produces low yields.	Provide soft loans or matching grants for investment in production and processing facilities of undersupplied seeds of staple foods, like potatoes, quinoa, wheat, and rice to address food sovereignty objectives.	Medium/ Medium	MEFP ASFI
	Create a national seed institute specializing in seed development and improvement as a joint public-private venture to take advantage of resource pooling. Moreover, knowledge could be disseminated as a public good through the SNIAF and producer associations. ^d	Medium/ Medium	MDRyT CAO ANAPQUI
High logistics costs hinder the importation of inputs for large-scale agriculture.	Implement adequate infrastructure to allow pesticide imports through the Paraná-Paraguay river basin ports, including warehouse facilities to permit imports during the rainy season when the river is navigable.	Medium/ High	MOPSV MDPyEP

Note: ANAPQUI: La Asociación Nacional de Productores de Quinoa; ASFI: La Autoridad de Supervisión del Sistema Financiero; CAO: Cámara Agropecuaria del Oriente; CFB: Cámara Forestal de Bolivia; MDPyEP: Ministerio de Desarrollo Productivo y Economía Plural; MDRyT: Ministerio de Desarrollo Rural y Tierras; MEFP: Ministerio de Economía y Finanzas Públicas; MMAyA: Ministerio de Medio Ambiente y Agua; MOPSV: Ministerio de Obras Públicas, Servicios y Vivienda; MRE: Ministerio de Relaciones Exteriores; SENASAG: Servicio Nacional de Sanidad Agropecuaria e Inocuidad Alimentaria.

- a. MEFP and MDRyT could pool resources for a trust fund to finance agricultural supply shops and agro-industry through the Banco de Desarrollo Productivo at convenient rates and terms. The development of a crop receipts system could also be explored to provide pre-season financing based on the pledge of future crops. See IFC and World Bank experiences in Brazil and Ukraine.
- b. Less than 20 per cent of smallholders in the world have insurance coverage to protect themselves against the impact of such unexpected events (https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/05/Agricultural_Insurance_for_Smallholder_Farmers_Digital_Innovations_for_Scale.pdf).
- c. A technical committee led by MDPyEP could be summoned, with participation of MEFP, MMAyA, MDRyT and private actors (industry chambers, the Cámara Agropecuaria del Oriente (CAO), Cámara Agrícola Pecuaria y Forestal del Occidente (CAPFO), Asociación de Productores de Oleaginosas y Trigo (ANAPO)).
- d. See, for example, INASE in Uruguay (<https://www.inase.uy/>) and the Indian Institute of Seed Science (<https://seedres.icar.gov.in/>).

TABLE 5.7. RECOMMENDATIONS FOR PRIVATE SECTOR DEVELOPMENT IN THE FORESTRY SECTOR

PROBLEM	RECOMMENDATION	PRIORITY/ FEASIBILITY	MAIN STAKEHOLDERS
Adequate financing for the forestry subsector is lacking.	Strengthen dialogue with the financial sector to deploy a financing strategy with funds and instruments to facilitate investments and technological conversion along the productive chain. The strategy could include trust funds (<i>fideicomisos de crédito</i>) to allocate financing through the financial sector. ^a	High/ Medium	MMAyA MDRyT
	Improve technical and legal definitions to include unconventional collateral (see box 5.5) to reach a broader number of producers with financing options such as credit guarantees. Innovative collateral options e.g., harvesting permits based on real harvested volumes, forest canopy (<i>vuelo forestal</i>) and tradeable wood, require updated legislation as well as improved procedures to perform risk valuation within the banking sector. (see Hodgdon and Loewenthal 2015 for the case of Guatemala). To this end, the ASFI could finalize legal and technical definitions in coordination with development-oriented banks. The implementation of these innovative collateral options could also be supported by a guarantee fund that could be managed through the financial sector.	High/ Medium	ASFI
	Implement large-, medium-, and small-scale financing programs through trust fund management.	High/ Medium	MOPSV MD
	Define the impact of financing on climate change mitigation and adaptation indicators within Bolivia's national climate change strategy to facilitate access to international environmental funds such as the Green Climate Fund to provide long-term and low-interest loans to the trust funds. Update the 1996 Forestry law to promote the use of forest canopy as collateral by financial institutions. ^b	High/Low High/ Medium	MDRyT, Cámara Forestal ^c MEFP ASFI
Limited manufacturing capacity.	Develop lending programs and equity participation initiatives to boost technological renovation and capitalization in forestry equipment and sawmills. ^d Programs and initiatives could offer differentiated terms, according to the size of operations, and include community operations (which is critical, given the share of small companies and self-owned enterprises in the subsector). ^e	High/ Medium	National Financial Sector Potential equity investors

PROBLEM	RECOMMENDATION	PRIORITY/ FEASIBILITY	MAIN STAKEHOLDERS
Exports of timber products have been reduced.	Promote the signature of FLEGT/ AVA agreements to allow exports to the European Union by non-FSC certified exporters. This would improve control of the legality of wood product exports and improve access to markets.	High/ Medium	MRE ^f
	Promote the implementation of quality and sustainability standards along the supply chain, as quality-demanding markets require the fulfillment of manufacturing, social, and environmental standards. ⁹ This could include the development of a technical training program for manufacturing companies, saw mills, and forestry operators.	High/ Medium	MDPyEP IBNORCA ^h
Harvesting yields in forestry operations are low.	Develop a research and development program to increase productivity (extraction yield per hectare) that uses a sustainable approach to the extraction and manufacture of nontraditional wood species. Several species with important potential extraction volumes are not being used. Such a program would deepen the study of the physical characteristics of the species, the behavior in manufactures, and specific protocols for drying them. The program could be complemented with a promotion strategy for different species and relevant protocols.	High/High	Cámara Forestal MMAyA INIAFi
Quality standards in the timber industry are low.	Develop a program to help small and medium companies to work with quality standards.	Medium/ Medium	MDPyEP ABT INFOCAL
	Connect the timber demand of small and medium manufacturers with yards that have good quality wood supply. Matching could be combined with a training program for introducing and implementing quality standards. ^j	Medium/ High	MDPyEP ABT
	Connect timber yards with community timber transformation centers.	Medium/ Medium	MDPyEP ABT
Education and training programs to develop human capital in the forestry sub sector are lacking.	Develop training programs and best practices in management, commercialization, productivity, and quality control.	High/ Medium	CFB INFOCAL

PROBLEM	RECOMMENDATION	PRIORITY/ FEASIBILITY	MAIN STAKEHOLDERS
The inclusion of communities into the modern value chain is limited.	Develop timber transformation centers ^k sourced from communities and financed under concessional terms. This would allow communities to overcome obsolescence, insufficient capacity, and low value addition to take advantage of the harvesting potential.	High/ Medium	MDPyEP Financial Sector
	Propose the implementation of a business model that allows for (a) the management of timber transformation centers by third and specialized parties, (b) the implementation of international quality standards, (c) the articulation of supply to small and medium manufacturing companies, and (d) the distribution of profits to participating communities.	High/ Medium	MDPyEP

Note: ABT: Autoridad de Fiscalización y Control Social de Bosques y Tierras; ASFI: La Autoridad de Supervisión del Sistema Financiero; CFB: Cámara Forestal de Bolivia; MDPyEP: Ministerio de Desarrollo Productivo y Economía Plural; MEDP: Ministerio de Economía y Finanzas Públicas; MMAyA: Ministerio de Medio Ambiente y Agua; MOPSV: Ministerio de Obras Públicas, Servicios y Vivienda; MRE: Ministerio de Relaciones Exteriores.

- a. This would require coordination with the Ministry of Economy and Finance and the Ministry of Planning.
- b. Thailand’s Ministry of Commerce issued a regulation in 2020 regarding 58 economically valuable trees that can be used as collateral under the Business Collateral Act BE 2558. Among these are teak, mango tree, durian tree, tamarind tree, and all types of bamboo.
- c. This could be developed in collaboration with the Autoridad Plurinacional de la Madre Tierra and the Ministry of Planning using that part of the national strategy on climate change that is now being updated.
- d. See the Cochabamba Project (Bolivia) and Greenwood (Honduras and Peru) as an example of community forest capitalization (<http://www.fao.org/3/ap86oe/ap86oeoo.pdf>).
- e. This could be implemented in parallel with the legal setup for the trust funds. Partnering banks in charge of managing the trust funds would be able to finance operation in selected areas. It would require a recognition of legal status for communities as creditworthy and an inclusion of indigenous and peasant community organizations in the commercial code.
- f. This could be done in coordination with MMAyA and ABT.
- g. See Green Gold Forestry program in Peru (<http://www.gfggroup.pe/about.html>).
- h. This could be done with partnering organizations such as the CFB.
- i. This would include research institutions or universities.
- j. This would include addressing illegal timber harvest.
- k. Lessons from community forest management in the Mekong region of Thailand indicate that such community-based approaches can achieve both commercial and sustainability outcomes. The Center for People and the Forests is implementing production-driven forest landscape restoration under the Reducing Emissions from Deforestation and Forest Degradation (REDD+) program using private sector-community partnerships like FLOURISH. The project (2018–22) aims to further develop commercial partnerships between local communities and the private sector to achieve forest restoration, increase food productivity, and improve local livelihoods in Lao PDR, Thailand, and Viet Nam. By strengthening these partnerships, FLOURISH seeks to counteract and balance the effects of rapid commercialization in the Greater Mekong subregion. FLOURISH assesses the readiness and capacities of smallholders, identifies and screens potential private sector actors associated with forest restoration and forest product business models, and seeks support from local governments to build on existing local forest restoration programs. Through FLOURISH, the Center for the People and the Forest partners with the Technical University of Dresden (for research and technology transfer); the International Network for Bamboo and Rattan in Beijing (for standards, capacity-building, and cooperation), and the Nan Community College (for community-level education and training).



LOGISTICS SECTOR: A KEY TRANSVERSAL SECTOR FOR BOLIVIA

The logistics sector has the potential to boost competitiveness and diversification in Bolivia. It provides important backbone services for firms across sectors. Agriculture demands 4.8 percent of the total value-added of transport and storage, while manufacturing demands 18.1 percent, of which 12.7 percent comes from agribusiness and related sectors. The sector has shown dynamism: it grew at an average rate of 5.6 percent between 2006 and 2016, higher than its rate of growth between 2000 and 2005 (3.3 percent). In terms of FDI, transport, storage, and communications ranked third in inward FDI¹²² after hydrocarbons and manufacturing, with most of the investment in 2019 coming from the United States. In addition, transport, together with communications, employs more than 384,000 workers (data from the National Statistics Institute).

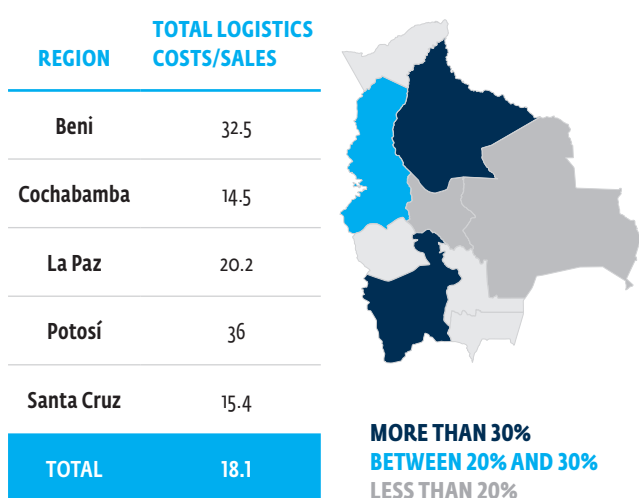
The sector nonetheless faces significant challenges that put it at a disadvantage in relation to other countries in the region and affect its competitiveness and integration into global and regional value chains. As mentioned in chapter 4, Bolivia's score in the LPI is one of the lowest in the region because of lagging performance in logistics competence, tracking and tracing of cargo, and time taken for delivery and customs processes. The 2018 National Logistics Survey estimates that the logistics cost for

Bolivian firms¹²³ is 18.1 percent of the value of sales, higher than Colombia (13.5 percent), Paraguay (13 percent), and the United States (8.7 percent), and above the average for Latin America (14.7 percent)¹²⁴ (see bar graph in Figure 5.12). Surveyed firms reported that they must overcome several logistics barriers: excessive processes and paperwork for trade; long waiting times at ports and customs for product entry and exit; a low supply of logistics services; and a lack of adequate road infrastructure that allows for less transport time between logistics nodes.

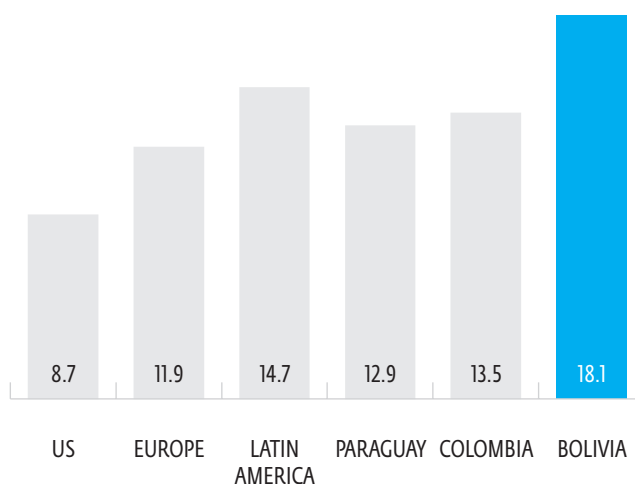
Despite large investments in transport infrastructure, cost inefficiencies are still present. Between 1998 and 2016, 32 percent of the public investment budget was allocated to developing transport infrastructure. Of that amount, 95 percent was invested in road transport, especially in improving the infrastructure of the central axis and 5 percent in the remaining modes of transport: rail, river, and air (Consultrans et al. 2018). Some of the sections of the five road corridors of its primary network, though, are under construction or being studied. High transportation costs resulting from this limited connectivity constitute one cause of cost inefficiencies, together with the lack of backhaul cargo, the absence of containers available in the territory, and supplier management.¹²⁵ According to the NLS, transport and distribution represent 45.5 percent of average logistics costs, purchasing and management of suppliers 16.5 percent, and warehousing 15.4 percent. The rest of the cost is split between order preparation, planning, and miscellaneous process costs, showing the importance of freight transport cost for the logistics sector in Bolivia. Figure 5.12 shows logistics costs by department, with Santa Cruz and Cochabamba having the best indicators with 14 percent and 15 percent of sales, respectively. These regions are the most connected and link the main trade routes. On the other hand, the farthest regions from the central axis have logistics costs that exceed 20 percent of sales.

FIGURE 5.12. LOGISTICS COSTS IN BOLIVIA

a. Logistics Cost/Sales ratio per Department



b. International Comparison of Logistics Costs/Sales ratio



Source: National Logistics Survey of Bolivia, 2018.

Logistics is considered strategic by the Bolivian government, so efforts are underway to strengthen the institutional framework. The current institutional map of the sector involves multiple responsible parties that without proper articulation may hinder the implementation of policies and projects that are not framed within a country road map. Since 2016, the country has advanced programs and projects to design the required institutional framework and the work plan of what will be the national logistics policy. The implementation of the policy includes the following areas: a) institutions and regulation, b) intermodal infrastructure, c) human capital development, d) technology and innovation, e) measures of sustainability and planning. For instance, the institutional design of the Conalog (National Logistics Council) and the Pnlog (National Logistics Plan) is ongoing. The Conalog will attempt to create a national logistics system that allows the alignment and coordination of private and public actors to establish a joint work plan, as well as the coordination of activities related to logistics in the country. Beyond public institutions, private sector actors that are central to Bolivia's national logistics system include users of logistics services, or ULSs, which are companies that produce, transform, or commercialize products; generators or recipients of cargo and those that need warehousing, transport and distribution of goods, customs brokerage, international transport, reverse logistics, and logistic services providers, and then there are private entities, trade associations that promote the strengthening of the sector. For details regarding public and private sector actors involved, see appendix C. Adequate coordination among these actors will strengthen the country's logistics system, promoting and managing efficient logistics operations to meet demand requirements to enhance productivity in supply chains and national competitiveness.

Sector overview

As mentioned, the demand for logistics services stems from several sectors and covers logistics services for exports, imports and national distribution, and land transport as the main means of international trade.¹²⁶ Exports are concentrated in mineral and metal products and agricultural products, of which soybeans and their derivatives represent 42.3 percent,¹²⁷ while imports are more diversified, with machinery (28 percent) and chemicals and plastics (12.3 percent) having the largest shares (28 percent and 12.3 percent, respectively). Figure 5.13 shows the high participation of land freight transport in trade flows. In the first three quarters of 2020, 75 percent of the total amount of kilograms transported was mobilized in this mode, but it is noteworthy that between 2016 and 2019, multimodal transport modes have been increasing their participation. Figure 5.14 outlines how the participation of multimodal modes is relevant for cargo movement between west and east (orange in the figure), using bimodal road-river and rail-river routes. The minerals from Oruro and Potosi exit through Antofagasta, and the remaining blue flow is the road mode. As for the air mode, 99.5 percent of the primary goods exported in 2018 and 2019 correspond to products with a high commercial value: precious metals, jewelry and oil refining products, clothing, leather, and raw silver.

FIGURE 5.13. SHARE OF TOTAL TRADE BY MODE OF TRANSPORT, 2016–20 (WITHOUT PIPELINE)

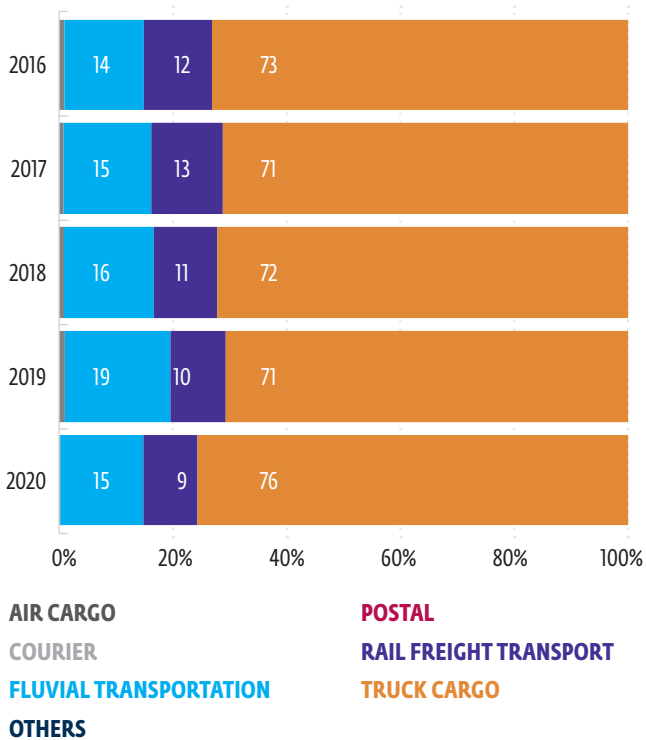
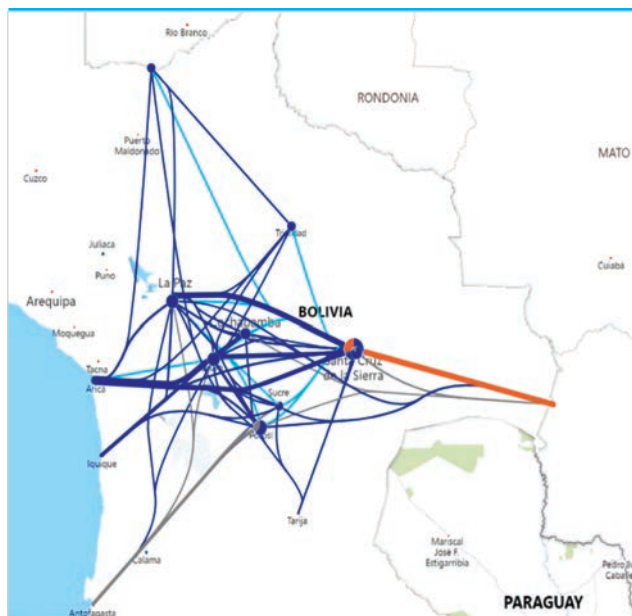


FIGURE 5.14. MAIN LOGISTIC FLOWS OF FOREIGN TRADE IN VOLUME WITHOUT DUCTS (LINE THICKNESS IN WEIGHT, GIGAKILOS)



Source (fig. 5.13 and 5.14): Original compilation using data from the Vice Ministry of Productive Development and Plural Economy.

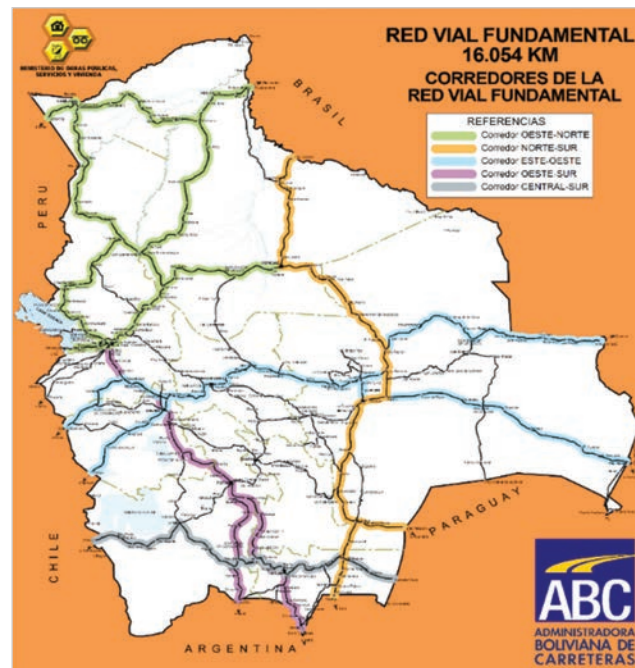
Note: kg = kilogram.

The supply side of the logistics sector is divided into three components: (a) transport logistics infrastructure, (b) logistics services, and (c) trade facilitation. The following sections describe the current situation and the main challenges for each.

Freight transport logistics infrastructure

The road transport infrastructure is characterized by five main logistics corridors.¹²⁸ East-west, north-south, west-north, west-south, and central-southern (figure 5.15). The east-west corridor and that section of the west-south corridor that connects La Paz with Desaguadero are the most important routes for Bolivian foreign trade, since more than 85 percent of the country’s export and import cargo is transported along these routes.¹²⁹ The importance of these corridors is best appreciated when analyzing the main logistical routes (origin-destination) of Bolivian foreign trade (figure 5.16).

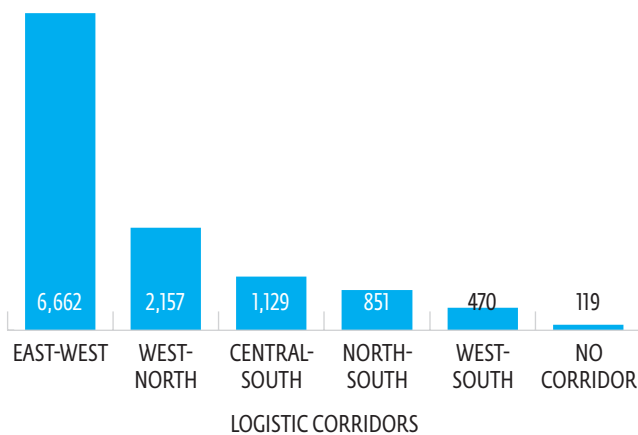
FIGURE 5.15. LOGISTICS CORRIDORS IN BOLIVIA



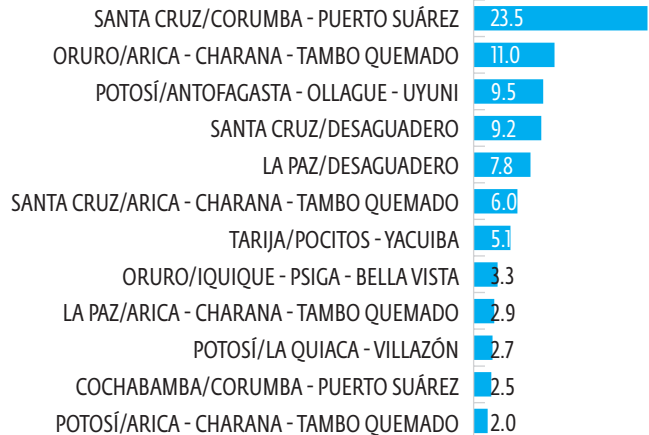
Source: Bolivian Roads Administration (ABC).

FIGURE 5.16. LOGISTICS CORRIDORS AND THEIR IMPACT ON FOREIGN TRADE IN BOLIVIA, 2019

a. Weight of freight transported by corridor (2019, million kg)



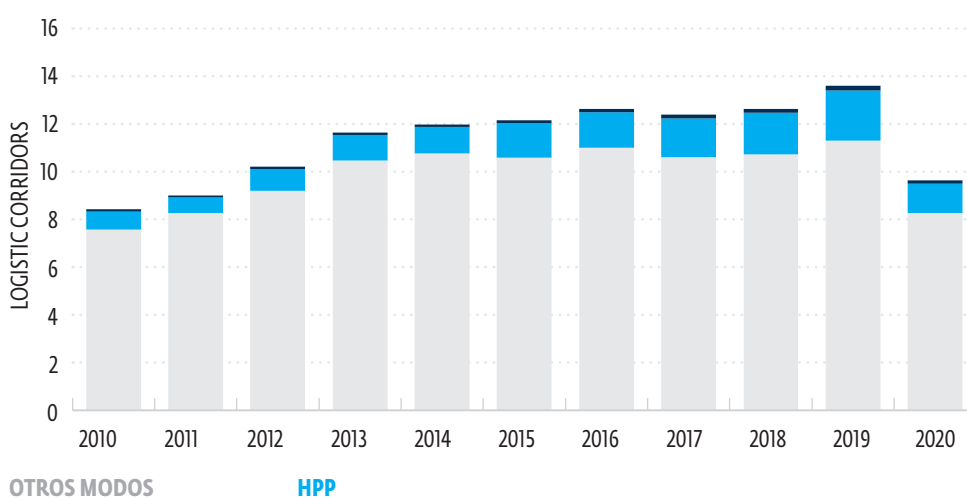
b. Principal Routes (% of Total Kg)



Source: Original compilation from data of the Vice Ministry of Productive Development and Plural Economy.

Significant investments in river transport infrastructure have improved the performance of international trade logistics operations. Puerto Jennefer, Puerto Gravetal, and Puerto Aguirre (in Puerto Quijarro) have been categorized as international ports and offer a very important way for Bolivian cargo to leave and enter through the Paraná-Paraguay Hydroway (HPP) and through the Tamengo Canal going to and from the Atlantic Ocean. Figure 5.17 shows the evolution of Bolivian foreign trade transported through the HPP over the past decade, as reported by the National Institute of Statistics (excluding cargo transported by pipeline and air). The expansion of river transport is clear: it reached a historic maximum cargo volume of 11.3 million tons in 2019, which is equivalent to a 19 percent market participation rate compared to other modes of transportation (road and rail). Bolivia would benefit from promoting the use of the existing infrastructure along the Tamengo Canal. If the transport of cargo on the HPP grows significantly in the next five years, alternatives could be sought to expand cargo handling capacity. The pandemic (which reduced Bolivia’s foreign trade volume) and extreme drought (which has resulted in the lowest water level observed on the waterway since 1971) have negatively hampered logistics operations on the waterway, though, and proven that the system’s reliability is closely linked to climate events.

FIGURE 5.17. EVOLUTION OF RIVER TRANSPORT (AS A SHARE OF TOTAL MODES), 2010–20



Source: Original compilation, using data from the National Institute of Statistics.

Note: HPP = Hidrovia Paraguay-Paraná

The country’s railway infrastructure consists of two disconnected networks, reducing the possibility of increased rail transport for cargo generators. The Andean (2,276 kilometers) and eastern (1,244 kilometers) networks are used for passenger and freight transport. Two private companies provide railway transport service: Ferrovial Oriental S.A. and Empresa Ferrovial Andina S.A. The eastern network transports cargo mainly through bimodal operations (rail plus river). Much of the cargo is soybeans and its derivatives, construction materials, and export minerals (Consultrans et al., 2018). The Andean network supports the transfer of refined silver, zinc, and lead ores from the San Cristobal mine to the port of Antofagasta. The government has

established a railway development plan, with several priority projects in mind. One is the Central Bioceanic Railway Corridor that seeks to connect the port of Ilo (Peru) with that of Santos (Brazil), crossing Bolivia by rail to connect the two existing railway networks.¹³⁰ Another is the Motacucito-Mutún-Puerto Busch project to promote the intermodal transport of the iron produced in Mutún across the international waters of the HPP in Puerto Busch. For this last project, a road connection to the port is also being evaluated.

Despite investments in improving airport infrastructure, Bolivia's air cargo traffic has not increased in the last decade. While air cargo transport represents one-fifth of trade flows¹³¹ measured in dollar value (in 2019, it was about 19 percent) it was less than 2 percent of transported volume. Bolivia's air cargo traffic has varied little over the last decade, with a total mobilized volume of approximately 22.98 million ton-km per year in 2019 that contrasts widely with the rest of the countries in the region.¹³² El Alto airport in La Paz, Jorge Wilsterman in Cochabamba, and Viru Viru in Santa Cruz are the main hubs for international trade cargo and are located on the east-west corridor.¹³³ Most airports (92 percent of a network of 39) do not comply with the provisions of the National and International Aeronautical Regulations that concern operational equipment and instruments. The country invested US\$823 million in its airports between 2016 and 2020.¹³⁴ The development of air transport infrastructure in Bolivia—both the construction of new airports and upgrades to existing ones—was a pillar of the most recent national plan, the Plan de Desarrollo Económico y Social 2016-20. Developing an intercontinental hub at the Viru Viru airport in Santa Cruz is seen as promising in terms of the potential possibilities for private sector investment in logistics infrastructure facilities aimed at facilitating and clustering intermodal freight flows.

The development of intermodal logistics platforms in Bolivia has been scarce and limited to foreign trade connections,¹³⁵ which does not allow users of logistic services to benefit from efficiency gains of scale in the movement of cargo and containers and the integration of services (including those provided by government). There has been no major development of logistics platforms infrastructure¹³⁶ in recent years (the main intermodal terminals in operation are listed in appendix D).

Although the General Transport Law is in place and provides an institutional framework, collaboration within the sector needs to be strengthened. A summary of the institutional arrangement of the transport infrastructure and services sector is provided in box 5.6. It identifies the government agencies and provides some insight into the reasons for the absence of such a framework. The General Transport Law adopted in 2011 (covering air, road, railway, and waterway transport) defines the concept of an integral transport system that links different transport modes and components (infrastructure, operators, users, and service providers, freight logistics services). The law also defines the principles of interinstitutional coordination and establishes different competencies for national and subnational entities at three levels.¹³⁷ Although it established a sectoral coordination council under the Ministry of Public Works, Services, and Housing, the council was officially created in 2017 and is not yet operational. Ineffective coordination is a significant obstacle to aligning and linking the different institutions and subsectors involved in logistics infrastructure and services, preventing the implementation of strategies to develop intermodal infrastructure and integrated logistics services.

BOX 5.6. OVERVIEW OF INSTITUTIONAL FRAMEWORK FOR TRANSPORT INFRASTRUCTURE AND SERVICES

The transport sector is administered at the central level by the Ministry of Civil Works, Services and Housing (MOPSV). MOPSV has a division, the Vice Ministry of Transport, which oversees the handling of norms related to transport. The implementation of the MOPSV's operational purviews regarding transport is transferred to several autonomous constituting entities.

The General Transport Law (Ley General de Transporte, or Ley No. 165) establishes the creation of a sectoral coordination council under MOPSV. This council was officially created in 2017, and its regulation was approved at the end of 2018. The council has not been operational in practice yet.

Regarding **road transport**, the Bolivian Road Administration (ABC) is the entity in charge of the planning, construction, administration, and maintenance of the primary road network of Bolivia. ABC also relies on a deconcentrated organization. Below the central office, each of the country's nine departments has a regional office. In addition, Vías Bolivia is a public decentralized entity created in 2006 (Decreto Supremo No. 28948), and it is responsible for the administration of tolls and for weighing and weight control on the primary road network. Under the oversight of MOPSV, it has an autonomous financial, legal, and technical administration.

For **regulation activities**, the ATT (Autoridad de Regulación y Fiscalización de Telecomunicaciones y Transporte) is the national authority in charge of the regulation of telecommunications and ICT, transport, and postal services. In the transport field, the ATT specifically regulates and controls commercial air transport, including airport operations, interurban passenger transport, and passenger and freight rail transportation.

Several agencies play a role in the **air transport subsector**. The Civil Aviation Directorate (DGAC, Dirección General de Aeronáutica Civil) is entrusted with technical regulation, providing safety, and

security oversight. It is in charge of accident investigation functions. The Administration of Airports and Air Navigation Services (AASANA, Administración de Aeropuertos y Servicios Auxiliares a la Navegación Aérea) is responsible for the planning and administration of airports and the provision of air navigation services in Bolivian airspace. SABSA (Servicios de Aeropuertos de Bolivia), which was the operating company of the three main airports of the country (El Alto in La Paz, Viru Viru in Santa Cruz, Jorge Wilstermann in Cochabamba), was nationalized in 2013 and still operates those airports.

Regarding the railways, the government of Bolivia liquidated the former state-owned company called ENFE (Empresa Nacional Ferroviaria del Estado) in 1994 and privatized railway infrastructure and services in the form of two private companies: Empresa Ferroviaria Andina, which operates the western part of the railroad network, and Empresa Ferroviaria Oriental, which operates the eastern part of the network.

In addition, the regulation, control, and security of **waterways** are under the responsibility of the Dirección General de Intereses Marítimos, Fluviales, Lacustres, y Marina Mercante (DGIMFLMM), which is under the Ministry of Defense (Ministerio de Defensa). Furthermore, the ASP-B (Administración de Servicios Portuarios, Bolivia), a state-owned company under the oversight of the Ministry of Economy and Public Finance (MEFP, Ministerio de Economía and Finanzas Públicas), offers port services for freight transit through Bolivian ports authorized abroad.

A specific entity for the national coordination of logistics, the National Logistics Council (Conalog), is currently being created under the coordination of the Ministry of Productive Development and Plural Economy (MDPyEP, Ministerio de Desarrollo Productivo y Economía Plural), which leads the coordination and planning of the national logistics development.

The legal framework still lacks key decrees and regulations that support the creation of intermodal freight transport infrastructure and associated logistics services in an integrated logistics infrastructure environment that promotes private sector participation. Only a handful of decrees and regulations are meant to organize and regulate the transport infrastructure and services sector, including freight transport and associated logistics services. The sector does not have a clear understanding of how the absence of regulations for intermodal logistics infrastructure services¹³⁸ may be causing the shortfall in private investment in specialized logistics infrastructure such as warehousing for dry and refrigerated goods as well as container yards (warehousing, cleaning, and inspection of containers) because the rules to enter and operate are undefined. The research conducted did not find any regulation in the General Transport Law that handled market entry and tariff policy setting for intermodal freight transport and associated logistics infrastructure services on a cost-recovery basis. These regulations could be considered in the context of the ongoing formulation of the Pnlog and the sectoral coordination council established by the General Transport Law.

Limited economic and technical regulation of the sector could be the source of bottlenecks or barriers that block the modernization and mobilization of private sector investment in freight transport operations. In the context of the Pnlog, the government is planning to enhance the diagnosis of the sector by conducting price monitoring and analysis of market entry standards and technical/safety regulations in freight transport services. Previous attempts to introduce economic regulations into the road trucking sector have failed because of stakeholder concerns that made them difficult to implement. In 2017, for example, the government of Bolivia had to withdraw an economic regulation of road trucking services in the face of pressure from the actors concerned.¹³⁹ The absence of a regulatory framework to promote competition and efficiency in service provision with a clear understanding of risk distribution and impacts on investment recovery is still a major challenge for the development and modernization of the freight transport sector, especially when it comes to road trucking (which is the primary means of freight transport in the country). The absence of economic and market entry regulations in freight transport services, for example, impedes the creation of arrangements for optimizing and rationalizing cargo sharing among multimodal freight operators to improve the efficiency of freight transport. The strong competition among a plethora of small trucking operators without a clear competition regulatory framework may encourage formal and informal monopolistic practices at the local level by routes or cargo niches, preventing the development of collaborative synergies among operators and supportive logistics services. This leads to inefficiencies. Only 23 percent of return trips involve carrying cargo, for example, and the average use of the volume capacity of trucks in cubic meters is 59.5 percent (National Logistics Survey, 2019). In addition, the absence of service performance regulations does not encourage operators to invest in the modernization of their assets and processes. These examples show the importance of establishing a sound regulatory framework as a strategy to modernize and mobilize private sector investment in freight transport and to improve overall logistics performance in the country.

The analysis under the Pnlog will also include key regulations or contract amendments relating to other freight transport modes operated under concessions to incentivize the modernization and expansion of networks and services such as the freight railway sector. Freight railway services in Bolivia were privatized in 1994. The two existing concessionary companies are nonetheless faced with limitations in terms of investment capacity. Their concession contracts include the improvement and maintenance of the network but do not provide for an extension of the existing network, the development of new intermodal freight infrastructure facilities, or the potential to generate ancillary revenues. There is no clear framework for other potential service providers to expand the possible private sector investment and participation in rail freight investments.

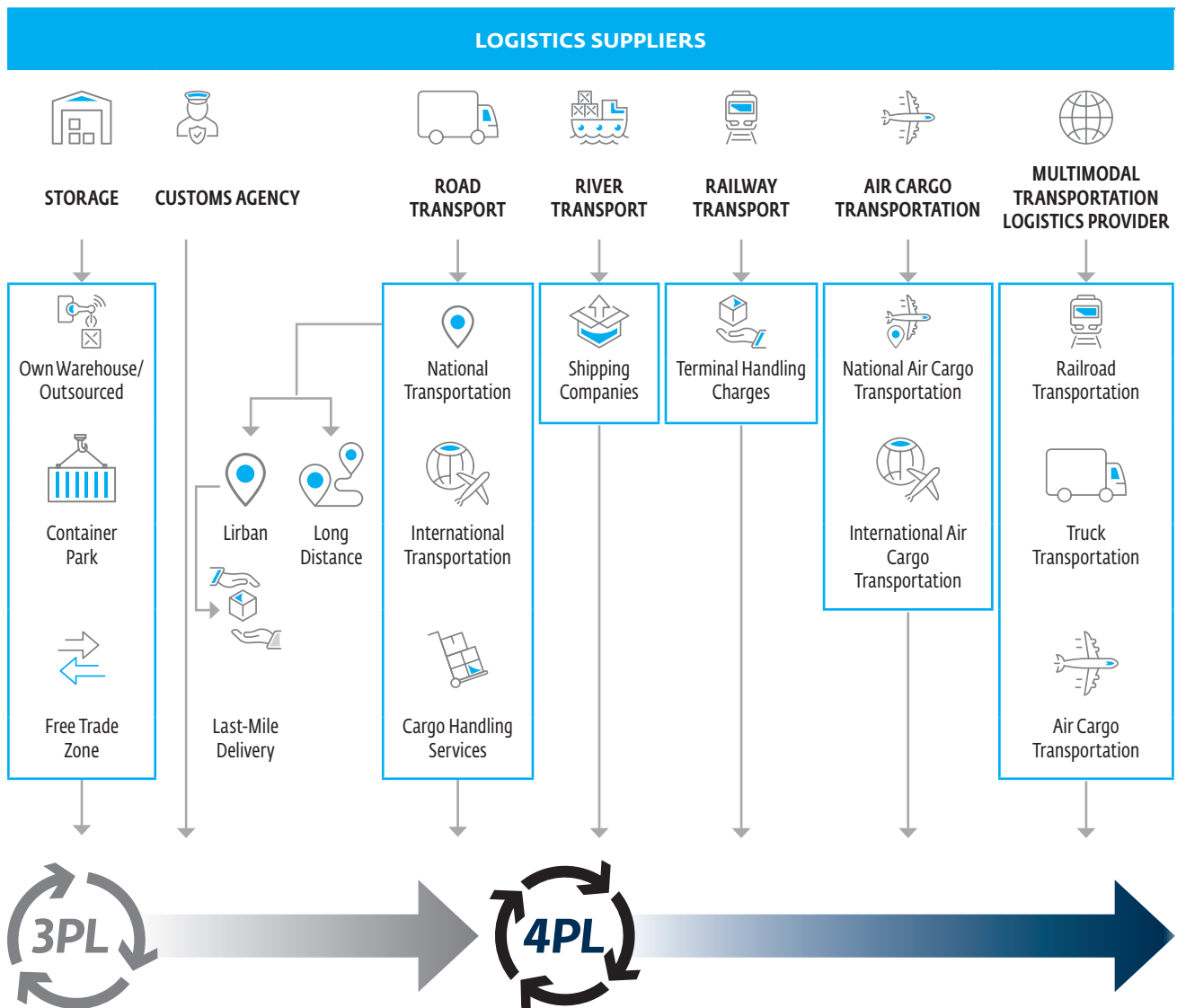
Consultations with the sector stakeholders indicate that the local private sector is interested in investing in the waterways subsector and in developing new freight multimodal routes to boost export capacity. Just as with other freight transport modes, the existing regulatory framework remains limited regarding market entry, competition, and mechanisms for assigning commercial risk to river freight transport operations. A gap analysis of the economic regulations in this subsector could identify areas to improve private sector participation in investments in waterway transport infrastructure and services. It would be important to strengthen these regulations, considering the strategic stake that this subsector has in facilitating access to maritime ports.

The COVID crisis and limited fiscal space will force the government to restrain investments in air transport infrastructure, supportive integrated logistics infrastructure at these hubs, as well as improvements that enable compliance with national and international aeronautical regulations. In addition, improved competition in the air cargo market will require a better business climate for private sector participation. In this context, the analysis of the Pnlog includes key economic regulations that will allow the entry of private participation into air transport investment, particularly investment that promotes the upgrade of operational equipment and instruments in airports and the development of logistics infrastructure facilities aimed at facilitating and clustering the freight intermodal flows at these hubs.

Logistics services

Logistics services cover a wide range of providers, yet few firms rely on outsourcing the provision of integral logistics services (figure 5.18). Except for transnational companies, firms rarely rely on outsourcing to fulfill the multiplicity of logistics service needs, and there are few LSPs with a comprehensive and specialized service approach. The level of outsourcing by ULSs is low, compared to other regions in Latin America. The main outsourced process is cargo transport (71.8 percent participation), followed by foreign trade activities (23.7 percent) and warehousing (14.1 percent).¹⁴⁰ Businesses are at a nascent stage in terms of developing their logistics: 62 percent¹⁴¹ of companies do not have a manager responsible for logistics. Evidence suggests, however, that in the past three years, LSPs have been developing a supply of integral services for the movement of cargo in some relevant sectors (soybeans, fuel, cement, and steel, among others).

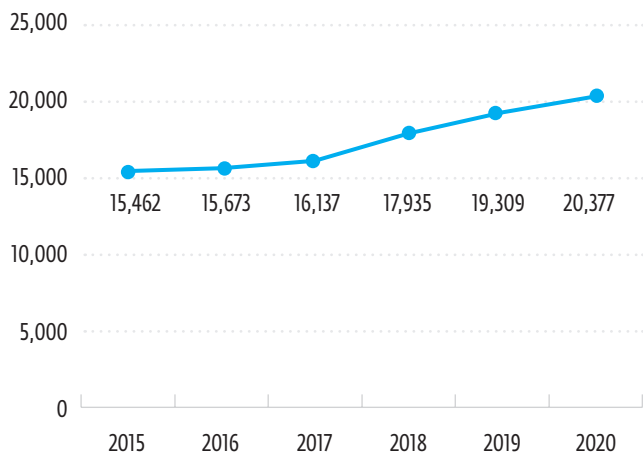
FIGURE 5.18. LOGISTICS SERVICES OFFERED IN BOLIVIA



Source: Original compilation

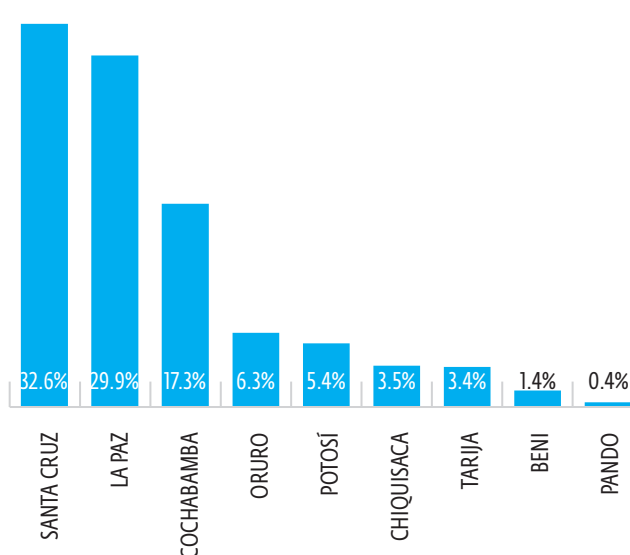
The number of firms in the logistics services sector has expanded, while value-added has not improved. According to the classification of Fundaempresa, the transport and warehousing sector had experienced a three-year growth of 13.8 percent in the number of companies providing these services as of August 2020. In that same month, Bolivia had 20,337 registered companies¹⁴² (figure 5.19), of which 79.7 percent were in Santa Cruz, La Paz, and Cochabamba (figure 5.20). This growth translates in practice into an increase in the number of microenterprises (often only one person), constituting an offer with little differentiated and low-skilled services. The number of suppliers is increasing, but with no observable improvement in the level of service. In contrast to this trend of expanding supply, the transport and warehousing sector decreased in the amount of GDP variation according to economic activity from 4.28 percent in 2018 to 3.5 percent in 2019. In addition, there is low capacity and few incentives for specialized logistics providers in the country to partner with international 3PL and 4PL suppliers.¹⁴³

FIGURE 5.19. NUMBER OF COMPANIES REGISTERED IN TRANSPORT AND WAREHOUSING



Source: Fundaempresa, August 2020.

FIGURE 5.20. COMPANIES REGISTERED IN TRANSPORT AND WAREHOUSING, BY DEPARTMENT



Source: Fundaempresa, August 2020.

The supply of warehousing services is limited and is concentrated in a small number of companies forcing users to develop their own facilities.¹⁴⁴ The country does not have world-class warehousing infrastructure for dry and refrigerated cargo, which makes it difficult for companies to find modern and developed spaces to meet their requirements. As a result, many make their own investments in warehouses. Saturation is also an issue. In 2017, the government eliminated commercial free zones that once housed import cargo, causing an overload of warehouses (CAINCO 2019). Services offered by warehousing companies include administration, warehousing, document management, warehousing of dry and refrigerated goods, container yards (warehousing, cleaning, and container inspection), and free zones. Approximately 89 percent of such companies are domestic. Almacenera Boliviana-ALBO (with 43.5 percent of the market), Ransa (8.71 percent), and Free Port Terminal Company Limited Branch Bolivia in Puerto Aguirre (5.1 percent)¹⁴⁵ are some of the largest players. These have been strengthening their services, projecting investments focused on the real estate development of spaces and plots in major cities and the logistic networks of their clients for 15 years.

The services of customs brokers and customs clearance agents are fragmented, and there is no clear differentiation between the services offered to ULSs. In 2018, 387 companies were registered with Fundaempresa, generating revenues of close to US\$74 million. Eighty-eight percent of these companies are concentrated in Santa Cruz, La Paz, and Cochabamba where there is more demand for foreign trade services to manage the entry and exit of goods coming to and from Bolivia. One-third of registered brokers are sole proprietors.

The road freight transport service supply is also fragmented: a high number of single-owner providers (truckers) with low professionalization levels and inefficient vehicles has affected the quality of service. As of 2018, 4,355 companies were registered,¹⁴⁶ 68 percent of which were sole proprietorships and 31.3 percent that were limited liability companies, and they generated revenues of US\$1.5 billion. Some 18.9 percent of transport companies offer freight transport services with their own fleet and 47.7 percent under an outsourced model,¹⁴⁷ which makes it difficult for the business sector to hire, manage, and monitor the country's freight trucking companies.¹⁴⁸ The fragmentation of supply is mostly due to the seasonal nature of shipments and other market dynamics, just like in other countries, as well as the lack of professionalization in the trucking sector, limited entrepreneurship, and an excessive supply of low-efficiency vehicles. These affect the quality of freight transport services provided to ULSSs.

The supply of vehicles authorized to provide international transport services is concentrated in the central axis corridors, where cargo volume is higher, leaving the north corridor underserved. About 18,000 vehicles are authorized for international transport to meet the needs of Bolivian exporters and importers. Offers of internationally certified freight transport company vehicles are scarce in El Beni, where cargo with an international destination is moved to Porto Velho by Brazilian companies. Large, long-standing road freight transport companies in the country are seeing the opportunity to specialize not only in domestic but also in international transport services. Certifications, however, are expensive, and the process to obtain them is long (per vehicle, the cost ranges from US\$76 to US\$190,¹⁴⁹ and the average processing time is 10 days). Very few international freight transport service providers have the status of an authorized economic operator,¹⁵⁰ which allows them to differentiate themselves in terms of quality and service standards.

The COVID-19 pandemic accentuated the need for e-commerce services and the provision of last-mile logistics freight transport services, showing that Bolivia was not prepared to provide these services in an agile manner. E-commerce is a sector in full growth: in 2019 sales by e-commerce and mobile commerce platforms amounted to US\$3.3 billion,¹⁵¹ and cross-border e-commerce¹⁵² grew by 25 percent. Large public and private players have developed services to meet the needs of last-mile distribution such as Agencia Boliviana de Correos in partnership with Entel, Fedex, DHL, and Misenvios.combo, which is using small-capacity vehicles to make home deliveries in the main cities of Santa Cruz, La Paz, and Cochabamba. The lack of readiness for service provision could be explained by (a) the scarce supply of freight transport operators with units of capacity for microdistribution and LSPs specialized in package shipment management, (b) the use of informal modes of transport by the transport sector in attending to last-mile service provision (motorcycles, cabs), (c) the lack of specialized infrastructure (urban consolidation and distribution platforms) in cities, (d) the limited use of technology for real-time traceability in delivery tracking, and (e) the absence of a standard tariff for deliveries.¹⁵³ For cross-border e-commerce, there are additional restrictions resulting from high taxes (customs is 15 percent and the tariff charge is 10 to 40 percent), which may prevent growth for subsequent years in the country.

Although waterway freight transport in Bolivia is a favorable alternative for the flow of trade¹⁵⁴ to international markets, it has faced several restrictions, which include low water levels induced by drought and insufficient dredging, weak coordination among suppliers of barges and other service providers, and deficient crossing infrastructure. Freight transport services are mainly carried out through companies in Argentina, Brazil, and Paraguay. Although options have been explored for developing private and public companies that can provide this service, Bolivia currently does not have domestic river freight transport service companies. Restrictions that affect this mode of freight transport are associated with (a) environmental issues such as shallow water at different critical points both in the Tamengo Canal and along the HPP; (b) commercial issues such as weak coordination among different service providers for the supply of barges, the assembly of barge convoys, and imbalances in the volumes of cargo being imported and exported; (c) geographical issues such as the sinuosity of the river and its depth; and (d) existing infrastructure such as the crossing over the water intake in Corumbá and other road and rail bridge crossings. These issues limit the efficient navigation of the convoys and require reassembly operations and increasing operational costs. In the absence of state support,¹⁵⁵ private sector investment has overcome some of these limitations, such as the dredging of a 3.6 kilometer stretch of the Tamengo Canal to 2.5 meters to allow the transit of barges. In addition, the reduction of trade volumes caused by the pandemic and a drought that caused the lowest water level observed on the waterway since 1971 have negatively affected operations for waterway freight transport along the HPP.

Multimodal freight transport services are still very limited in Bolivia and historically have depended on investment from the private sector that operates and offers these services. Appendix E illustrates how the development of existing multimodal transport has been undertaken mainly from private sector initiatives with high investments in infrastructure and maintenance to offer services to third parties. These have allowed innovation in the provision of logistics services for the movement of trade cargo.

Perceptions of Bolivia's logistics users illustrate the challenges faced in the logistics sector. As noted in appendix F, there are obstacles related to the logistics infrastructure: the quality of services offered, the lack of technological tools, and the institutional framework.

Trade facilitation

Bolivia's trade facilitation environment is not conducive to expediting the cross-border movement of goods and suffers from structural and policy-induced obstacles. Bolivia's rugged landscape and landlocked nature, compounded with enduring bottlenecks in border management, curb the country's ability to connect with markets abroad. Efficient processes and controls, good governance practices, and better coordination among border agencies can contribute to lower trade costs and increase the reliability of supply chains. The latter are essential for enhancing economic diversification and attracting higher levels of foreign direct investment. According to the LPI, the overall efficiency of the border clearance process in Bolivia ranks in the bottom 25 percent among 160 participating countries and falls behind its regional neighbors. Bolivia has built on legacy regional agreements by embracing international commitments in border management and trade facilitation. The country is a signatory party to several regional

trade agreements, including an association agreement with Mercosur, and it ratified WTO's Trade Facilitation Agreement (TFA) in early 2018. The latter sets out measures designed to reduce the time and cost of trade and provides a mechanism to obtain technical assistance and capacity building support.

Previous assessments identified major bottlenecks in key building blocks of trade facilitation. Trade facilitation assessments were conducted in the past by different multilateral organizations.¹⁵⁶ The major obstacles found include (a) inefficient, costly, and cumbersome border controls leading to extensive delays, (b) limited coordination among border agencies and use of risk management, (c) transparency and knowledge gaps regarding the country's operating environment, (d) inadequate infrastructure for meeting international standards, (e) a lack of effective public-private sector consultative mechanisms, and (f) the lack of automation and a single window for international trade. Bolivia has not yet instituted a governance framework like the National Trade Facilitation Committee that can coordinate the various ministries and agencies to formulate trade facilitation policies and drive reforms.

Despite reform efforts, progress has been sluggish in many areas, and trade facilitation bottlenecks persist. Consultations with key stakeholders in late 2020 and early 2021 have indicated that progress has been slow or very limited in key aspects related to border management and trade facilitation. The following paragraphs summarize the latest understanding of the trade facilitation environment in Bolivia, followed by a set of policy recommendations. Implementing the latter would create an environment conducive enabling the private sector to benefit from international trade.

Bolivia lags in implementation of vital aspects related to cross-border cooperation. The trend in South America leans towards the construction and operation of integrated border facilities, but Bolivia has not followed suit. Other tools to speed up trade and increase border compliance have not been implemented, such as (a) a regular exchange of information on import and export declarations between the border agencies of trading partners, (b) the implementation of health and agriculture electronic certificates (typically, paper certificates must be obtained in La Paz), (c) the use of advanced electronic cargo manifests, and (d) a mutual recognition of authorized economic operation (AEO)¹⁵⁷ programs. Bolivia has begun taking steps forward in recent years, though. During 2020, the country launched a pilot program with Brazil, and Bolivian customs has now accredited around 200 import and export companies, as well as some logistics companies. There are efforts underway in the region (Mercosur, Pacific Alliance) that have produced good results with cutting clearance times and avoiding trade irregularities by exchanging cargo manifests and customs declarations in real time. Also, cross-border coordination for the homologation of sanitary certificates is still pending, which would call for strengthening Bolivia's sanitary diplomacy abroad. Lastly, improved regional dialogue and cooperation would be required to avoid unnecessary inspections during transit through third countries.

An institutional framework for trade facilitation has not been implemented yet. Although there is an obligation under WTO's TFA to formally establish a national trade facilitation committee (NTFC), no ruling has been passed yet to this effect, and no resources have been allocated to support it. The World Bank has supported efforts to kickstart an NTFC, as well as to devise a broader trade facilitation strategy and

action plan. The latest development was the issuance of an interministerial ruling on October 2020 mandating the creation of an NTFC, but it was never published. The ruling was finally repealed on December 20, 2020. While there are regular meetings (mainly for specific consultations) between customs and the main private sector organizations, there is no long-term agenda for trade facilitation.

In parallel to its work on trade agreements, the Bolivian customs service has undertaken modernization efforts to improve the environment for traders, but key infrastructure obstacles at the border have still not been removed. Some efforts that started in the mid-1990s focused on improving institutional arrangements, automation, HR management and internal audit capacities. The most recent customs reforms were based on its Institutional Strategic Plan 2016–20, which sought to modernize the institution using a results-oriented approach. The plan prioritized the adoption of best practices and international standards, such as the World Customs Organization’s SAFE regulatory framework and the WTO’s TFA as the basis for planning and managing customs reform projects. Advances were made to increase the fluidity of goods moving across borders, including the use of nonintrusive inspection equipment and risk management, the adoption of the AEO program, the introduction of digital signatures, and the implementation of Bolivia’s Single System for Customs Modernization (SUMA, in Spanish) in lieu of the international ASYCUDA system. Although some investment has been made on nonintrusive inspection equipment, most facilities have a single lane for imports, exports, and passenger traffic, which slows clearance procedures. Long lines and delays occur frequently at the main borders between Argentina (Yacuiba), Brazil (Puerto Suarez), Chile (Tambo Quemado and Pisiga), and Peru (Desaguadero). Disruptions in telecommunications generate additional delays in processing customs declarations and electronic payments, slowing down the clearance process even more. Finally, it is also reported that physical facilities for border agency staff are in a suboptimal state, compounded by the harsh conditions typical of working in isolated, remote locations. Infrastructure for road operators and other service providers is also missing or does not meet acceptable standards.

Inefficient, paper-based procedures and a lack of coordination among border agencies are also bottlenecks, but the COVID-19 pandemic has forced the implementation of measures that facilitate trade. Although most of them are provisional, the customs service and users have indicated a willingness to maintain some after the outbreak is over, specifically those adopted that relate to the digital domain: the acceptance of digital copies for certain documents instead of paper originals, the granting of extended time for in-transit storage, deferred fine payments, the adoption of electronic customs auctions, and the introduction of an electronic chat channel with authorities for consultations. Typically, separate health and agriculture controls generate delays during clearance procedures, although local coordination sometimes allows for joint inspections. Physical inspection rates by customs are near the legal limit of 20 percent using risk management selectivity, adding delays and problems for perishable merchandise. Advance declarations are not allowed when other agencies intervene. Moreover, they do not apply any risk management, usually reverting to 100 percent physical inspections when agricultural or health-controlled products are declared. Border operating hours are not meeting the needs of users (hours are currently not 24/7) and they are not coordinated among agencies, creating avoidable delays at the border at the expense of traders and road carriers.

Border crossings are understaffed, and personnel lack training in key areas. The lack of training of border agency personnel can generate problems in the processing and inspection of physical documents. There are, for example, not many staff members with English language skills, hence documents must be translated. Often, misinterpretation can represent a hold on the cargo. Specialized training is also lacking especially for non-traditional products, for personnel allocated to the Waterway (HPP) checkpoints. A lack of standardization in the criteria of customs control also prevails within the various customs administrations of the country. A high turnover of personnel and limited presence of qualified representatives of other government agencies (health) also creates issues for document processing and inspection duties.

A new customs IT system is under implementation, but its integration and functionality remain limited. The SUMA IT system has been rolled out in most customs facilities, including those at main border crossings and in cities, and it is expected to complete implementation during the first half of 2021. SUMA replaced ASYCUDA World, and it is expected to better manage access to other agency IT systems, achieve better risk management support, and ensure operational continuity. New functionalities support open data, which was implemented in 2020. Another service to users already implemented is a real-time chat function that allows consultations on customs regulations and procedures and reporting on clearance delays. Electronic payments for customs duties and other fees have been implemented, but not all banks are currently offering an e-payment solution. The implementation of electronic data interchange for advanced air cargo (manifest) information using CXML industry standards, needs to be expedited. A short-distance radio frequency identification truck tracking pilot system is being piloted by customs with voluntary participation from users. Although road freight operators use real-time track and trace software, this information is not being shared with customs or other control agencies.

In addition, Bolivia's single window has not been implemented and no plans exist to develop a trade portal. In 2017, a single window for export was partially implemented, with which some agencies are expected to integrate in upcoming years, although there are no new developments on the export side. Moreover, the single window is not operational for import transactions because of investments required from several agencies and missing regulations.

Maintaining border compliance has been a persisting challenge for Bolivia, despite the customs service's control-oriented approach. According to the Ministry of Economy and Productive Development, the value of smuggled goods into the country represents up to 40 percent of total formal imports (8 percent of GDP; see DAPRO 2020). Most goods smuggled into Bolivia originate in Chile's free zones. Remote, high-altitude areas and long physical borders tend to breed malfeasance, where smugglers can evade formal control checkpoints by using roads of the beaten track and unsanctioned crossings. A multiplicity of remote border posts scattered among Bolivia's five neighbors creates additional enforcement challenges.

Challenges related to logistics faced by firms in selected agriculture value chains

In order to identify, the constraints of and opportunities for private investment in the logistics sector in greater depth, four agriculture chains were analyzed: soybean and its derivatives, quinoa and its derivatives, brazil nuts and its derivatives, and beef and its preparations. These four chains, which in 2019 accounted for 40 percent of total export volume and 11 percent of total agricultural production, illustrate different types of logistics operations and represent different segments of logistics such as dry and temperature-controlled logistics, bulk cargoes, and container logistics. Similarly, they are representative of different regions: Brazil nuts and beef, which are strong products in the north in Beni and Pando; quinoa in highland departments such as Oruro, Potosi, and La Paz, and soybeans and beef mainly in the plains of Santa Cruz and Beni. Table 5.8 presents a summary of the main findings identified, and appendix G provides detailed descriptions for each of these restrictions. Although the first two are not related to logistics, they will enable an increase in cargo volumes and increase demand for logistics services and transport infrastructure if they are eliminated. The resulting logistical constraints cause cost overruns, inefficiency, and the loss of value of the products either because of detrimental effects on the quality of goods or a reduction in price factored in by clients of those companies that have low reliability in their logistic chains.¹⁵⁸

TABLE 5.8. RESTRICTIONS OF THE PRODUCTION CHAINS ANALYZED AND THEIR EXTENSION TO OTHER PRODUCTS

ANALYZED VALUE CHAIN	RESTRICTIONS	OTHER PRODUCTS WITH THE SAME RESTRICTIONS
Restrictions that affect the growth of export volume		
Soy, Brazil nuts, beef, and quinoa	<p>Limitation of production and export growth levels</p> <ul style="list-style-type: none"> • Land titling insecurity relative to productive land that discourages investments in technology and improved practices • Regulation regarding authorization to export surpluses • Lack of access to biotechnology products that could increase crop productivity • Unclear regulation of modifying the use of soil on land that is suitable for crops or livestock • Construction of access roads to bring products to market 	Corn, sorghum, sunflower, cereals, oats, powdered milk, Brazil nuts, quinoa, bananas, and coffee

ANALYZED VALUE CHAIN	RESTRICTIONS	OTHER PRODUCTS WITH THE SAME RESTRICTIONS
Restrictions that affect logistics efficiency, generate cost overruns, and affect service quality across the logistics value chain		
Soy, Brazil nuts, beef and quinoa	Limited number of trade agreements that affects growth potential	Soy, corn, sunflowers, barley, sesame, chestnuts, beef, milk powder, sugar cane, rice, oats, alfalfa, potatoes, cassava flour, bananas, watermelons, tangerines, pineapples, and coffee
Soy, beef	Logistical restrictions in port and on the Paraguay-Parana Waterway (HPP) <ul style="list-style-type: none"> • Delays in inspections by government entities • Limited port infrastructure capacity, particularly equipment and facilities (warehousing, silos for handling bulk cargo, facilities for handling refrigerated and containerized cargo) • Increased shipping costs resulting from physical restrictions on navigation in the Tamengo Canal (narrowing at the Corumba Water Intake and needing continued dredging and maintenance) • Restrictions on navigation at critical points in the waterway, resulting in increased operational costs for shippers that are passed along to cargo owners 	Urea (fertilizer quality), iron ores and concentrates, clinker, hydraulic cements and Portland cements, soybeans (including broken beans), natural sodium borates and concentrates, wood, leather, refrigerated containers with beef
Soy, quinoa, beef and Brazil nuts	Logistical restrictions in Pacific Ports in Chile and Peru <ul style="list-style-type: none"> • Lack of containers for export and infrastructure to maintain inventory of containers in Bolivia, forcing exporters to bring empty containers from distant locations • Low maritime frequencies of international shipping companies reducing the reliability of maritime transport services • Delays at border crossings because of inspections procedures to cargo 	Soybean oil, quinoa, Brazil nuts, beef, base and precious metal minerals, sugar, molasses, honey, alcohols, clay building materials and refractory building materials, cereals, wheat, rice, barley, corn, sorghum, oil seeds and fruits, wood, fruits and nuts, cereal preparations and flour preparations, fertilizers, fresh, chilled, frozen, or simply preserved vegetables, roots, tubers and other edible vegetable products, milk, cream, dairy products, inorganic chemicals, paper and paperboard, margarine and shortening, preserved fruit and fruit preparations, perfumery and cosmetic products, animal and vegetable fats and oils, fruit juices (including grape must) and vegetable juices (unfermented), textile fabrics of textile materials, hides and skins, edible products and preparations, explosives and fireworks, coffee

ANALYZED VALUE CHAIN	RESTRICTIONS	OTHER PRODUCTS WITH THE SAME RESTRICTIONS
Brazil nuts	Lack of connection of the northern corridor to alternative export routes via Brazil. The Porto Velho-Manaus route is currently not a feasible option for export products from the northern regions, forcing exporters to use an inefficient route via Arica	Wood, chestnut, charcoal, urea (fertilizer quality)
Soy, quinoa, Brazil nuts, and beef	High atomization of transport services and limited capacity to handle large volumes, with higher reliability using technology. Low specialization of trucking services and lack of traceability of cargo reduces the quality of services	All Bolivian domestic and export products
Soy, quinoa and Brazil nuts	Low development of warehousing infrastructure and services both in capacity and quality.	All Bolivian domestic and export products
Soy and beef	Use of double trailer trucks is not allowed. Not using such high-capacity vehicles in regions where it unnecessarily increases costs	Soy, corn, sunflower, barley, sesame, chestnut, beef, milk powder, sugar cane, rice, oats, alfalfa, potato, cassava flour, banana, watermelon, tangerine, pineapple and coffee, urea (fertilizer quality), iron ores and their concentrates, Unsprayed cement (clinker), hydraulic cements and portland cements, soybeans, including broken beans, natural sodium borates and concentrates, wood, leather, refrigerated containers with bovine meat
Soy, beef and Brazil nuts	Lack of maintenance of the fundamental, secondary, and regional roads, low connectivity and high vulnerability to climate factors. There are no alternative routes when networks are affected	All Bolivian domestic and export products
Beef	Weak cold chain infrastructure and services. Producers that require these services not properly served	Beef; fruits; foods derived from fruits and vegetables; fresh, refrigerated, frozen vegetables

Source: CPSD team from interviews with private sector companies, producer associations, and other stakeholders.

Opportunities to support the development of the logistics sector

The logistics public sector functions implicit in the recommendations for Bolivia are critically important, complex, and difficult to balance successfully without input from private sector stakeholders. There is not a single high-performance logistics market in the world that became so without proactive government involvement. A World Bank review of international best practices and lessons learned from the role of government in many top-performing logistics markets around the world shows that logistics networks are highly decentralized, multidimensional, vulnerable to a multitude of

shocks, and in constant flux as they respond to ever-changing market requirements. These intricate networks are unlikely to be well understood by those stakeholders who—like government planning agencies—are not directly exposed to them and do not depend on them for their commercial survival. Institutional mechanisms to engage private sector stakeholders in the logistics planning, regulatory, and policy making process are therefore at the core of the recommended actions for further enabling private investment and participation in the logistics sector.

While commercial logistics are largely driven by private sector firms, public sector agencies play an essential role in enabling the engagement of the private sector in logistics and overseeing logistics activities. The role of government in the actions recommended for logistics can be classified in three major functions: (a) planning, funding, and delivery of capital expenditures (and maintenance expenditures) in public and PPP infrastructure such as roads, bridges, ports, airports, and waterways; (b) the design and enforcement of regulations for influencing and promoting the orderly functioning of the logistics industry (this includes the regulation of transport safety, goods handling and storage safety, national security, environmental protection, labor, market entry and competition, permits and certifications, pricing, and information disclosure); and (c) the design and implementation of policies and processes to promote better industry performance and stronger trade competitiveness such as crafting sector-wide strategic plans, collecting and disseminating industry data, monitoring and evaluating industry performance, providing access to credit (and grant) programs, training programs, industry certification programs, and the like.

Key lessons learned from top-performing logistics markets offer some insights for experiences implementing government-led institutional mechanisms for private sector involvement in transport/logistics planning and policy making. The National Logistics Council (Conalog) being adopted and implemented in Bolivia is an example of one such mechanism. Seven recommendations are shared consistently among best practices and offer easy and practical guidance for the ongoing work in the implementation of Conalog:¹⁵⁹

- Formally-established (as opposed to ad hoc) institutional platforms for collaboration tend to be most effective.
- Managing expectations and attaining measurable results are the key to keeping private sector stakeholders engaged.
- Private sector outreach in freight planning and policy making is as relevant and viable at the subnational level as it is at the national level.
- Private sector participants in engagement platforms for planning, whether at the national or subnational level, should be reasonably representative of the target markets.
- Common-sense "business meeting etiquette" applies to stakeholder outreach platforms for freight logistics planning and should not be taken for granted.
- Private sector stakeholder advice should be sought on a wide range of issues.
- Collaboration among government agencies themselves is as impactful and necessary as collaboration between public and private sector stakeholders.

The private sector can become an accelerator for the logistics sector and complement public sector efforts. Table 5.9 details recommendations for the logistics sector regarding policy and regulation improvements for infrastructure development. The recommendations also serve to promote opportunities for the provision of services associated with logistics. The table provides an initial assessment of prioritization accounting for potential impact on further private investment and reform feasibility. The table also proposes a possible set of stakeholders who could be engaged in moving them forward.

This prioritization of recommended actions was also analyzed in the context of global good practices for managing freight logistics. International experience in logistics clusters¹⁶⁰ shows that the location of logistics activities linked to ready sources of demand generates operational efficiencies, increases productivity, strengthens firm-level profitability for those companies located at the cluster, and generates a number of socially desirable outcomes like expanded connectivity, job creation, and a reductions in congestion (Sheffi 2013). Following international best practices, the recommendations regarding logistics clusters have been formulated based on the concept of close proximity and direct links to trunk multimodal transport infrastructure like intercity highways, rail lines, waterways, and navigation channels, as well as to urban and industrial areas that act as freight-generating and freight-attracting hinterlands. In this sense, it is worth noting the strong potential for the development of a multimodal logistics hub in Santa Cruz. The demographics of the city and the strong regional agricultural and industrial production makes Santa Cruz a significant potential multimodal infrastructure hub for freight logistics. The international airport at Viru Viru, its connection to the eastern rail network (which ensures the link with the HPP), and its road connections to the waterways of the Amazon basin in the neighboring department of Beni suggest that the metropolitan area of Santa Cruz could in the future become the main multimodal logistics hub in an extended national multimodal logistics network with additional hubs that will serve other relevant consumption and production areas.

Although the development of a network of logistics clusters is desirable, they rarely succeed if their development is left purely to the commercial decision making of individual firms. The recommendations in table 5.9 related to the development of new international ports, the creation of new shipping and port services companies, the establishment of special zones for cargo consolidation, truck centers, and more generally, the logistics cluster strategies for platforms and dry ports in the hinterland will require a common policy framework for multimodal logistics clusters. International experience shows that the most successful logistics clusters have been developed through partnerships between the public and private sector, and particularly through partnerships between public sector agencies and private sector real estate developers. Bolivia could focus on addressing weak land use and transport planning that may lead to a proliferation of logistics facilities scattered across a geographic area (the opposite of agglomeration) resulting in the atomization of demand, the loss of economies of scale and scope, the loss of transport efficiency, and increases in congestion. Coordination between the public agencies responsible for land use—Ministerio de Desarrollo Sostenible (MDS), Viceministerio de Planificación y Ordenamiento Territorial (VPOT), department and municipal governments—with

those responsible for transport planning (MOPSV) could enhance the government of Bolivia's ability to designate well-justified, well-located parcels of land for the purpose of developing logistics clusters.¹⁶¹

Integration within the private sector and between the public and private sectors is also critical for promoting commercially feasible logistics clusters. Real estate developers with a focus on commercial activity and specifically real estate devoted to logistics operations can partner with planning agencies in the conceptualization, development, and management of logistics clusters. These firms tend to have a more demand-driven, commercially disciplined understanding of the underlying market needs for logistics services clustering and the specific locations where this could take place. They also have the marketing skills and financial resources to attract large, sophisticated anchor tenants to logistics clusters, which in turn tend to be the key attractor drawing other tenants into the cluster. Through public-private partnerships, the combination of real estate specialization by private developers with government administration of land use, basic infrastructure provision, commercial services licensing, government-provided incentives through taxation and other things, and economic and transport planning has been the hallmark of logistics cluster development in North America and increasingly in China and other countries (Blancas et al. 2015). The international experience with integrated logistics centers offers some lessons¹⁶² to inform the carrying out of the specific recommended actions in the table below as a strategic stimulus of Bolivian logistics competitiveness in the years ahead.

TABLE 5.9. RECOMMENDATIONS FOR THE DEVELOPMENT OF THE LOGISTICS SECTOR

RECOMMENDATION	OBJECTIVE	PRIORITY	MAIN STAKEHOLDERS
<p>Develop a national logistics strategy that includes a freight transport strategy, and the regulatory and institutional frameworks to support multimodal operations on an integrated logistics infrastructure environment and promotes private sector participation and the creation and operation of specialized logistics providers in the country, attracting international 3PL and 4PL suppliers.</p> <p>The strategy could include a masterplan for waterways development, urban logistics platforms, dry port network, implementation of a freight consolidation platform, implementation of road bypasses in urban areas and development of last-mile logistics.</p>	<p>Complement the missing and pending regulations under Law 165 for key intermodal freight transport and associated logistics infrastructure services, a key element for logistics development in the country.</p> <p>Transform the logistics sector into a modern industry that provides specialized logistics services for the real estate sector, integrating traditional freight transport providers and associated logistics services.</p>	High	MOPSV, Conalog, MDPyEP, World Bank IDB

RECOMMENDATION	OBJECTIVE	PRIORITY	MAIN STAKEHOLDERS
<p>The improved regulatory framework for freight can be linked with the ongoing formulation of the national logistics plan and strategy through the coordination of Conalog. That combination could help enable the business environment to be more friendly to private sector participation, ensuring commercial incentives for investment recovery on logistics infrastructure services that support multimodal freight operations. A national logistics observatory could be created to support and monitor the implementation of the strategy.</p> <p>If feasible, the freight transport strategy could identify regulatory incentives to provide support for the organization of the large base of truck drivers (based on principles of efficiency, high-quality service provision, and competitiveness). It could include a plan to modernize trucking operations and adapt the logistics corridors to heavy load transport (a renewal of the vehicle fleet, the use of technology for cargo tracking and real-time traceability) and propose incentives for the modernization and expansion of networks and services in all modes of transport (roads, railways, waterways, air transport).</p> <p>The freight transport strategy could also consider the optimization of the use of containers in both export and import directions. Considering input from the shipping lines which serve the Bolivian market would be vital.</p>			

RECOMMENDATION	OBJECTIVE	PRIORITY	MAIN STAKEHOLDERS
<p>Develop the logistics infrastructure through</p> <p>(a) the design of logistics platforms that follow global good practices for multimodal logistics platforms¹⁶³ and dry ports in the hinterland within the country's main logistics corridors, that attract private sector investment in their construction and operation</p> <p>(b) the development of the logistics infrastructure for the consolidation and redistribution of merchandise and facilitate loading and unloading areas in main cities for last-mile delivery of cargo; and</p> <p>(c) the development of logistics cluster strategies and incentives for the development of the warehousing subsector (both for dry and temperature-controlled logistics).</p>	<p>(a) Improve the country's logistics efficiency through the integration of logistics and government services. This will reduce the time and cost of cargo processing and consolidation for both domestic and foreign trade movement. In addition, the development of these platforms and dry ports could provide value added services to cargo owners (e.g., storage, packaging, redistribution).</p> <p>(b) Gain efficiency in last-mile logistics and reduce the impact on urban traffic.</p> <p>(c) Address limited warehousing infrastructure, strengthen service specialization, and raise current standards.</p>	High	<p>MDPyEP, Conalog, MOPSV, MDS/VPOT, departments and municipalities (La Paz, Santa Cruz, Cochabamba), and private sector companies</p>
<p>Ensure a permanent maintenance of the Tamengo Canal. Authorities would need to make efforts to ensure navigability at other critical points of the HPP, through the Intergovernmental Committee of Rio de la Plata Basin.</p>	<p>Maintain the navigability of the Tamengo Canal. While the public sector is normally expected to be responsible for maintenance, exploring alternatives to guarantee a permanent dredging of the canal is necessary.</p>	Quick win	<p>DGIMFLMM, MOPSV, private operators of the Tamengo Canal</p>
<p>Improve the legal and regulatory PPP framework to promote investments in and maintenance of primary and secondary road networks, as well as the modernization and expansion of supportive infrastructure for integrated logistics services.</p>	<p>Maximize finance for the investments in and maintenance of roads through performance-based contracts that could increase the managing capacity of ABC and with a stronger version of Decree No. DS 3469 that provides a regulatory framework enabling PPPs in infrastructure for integrated logistics services.¹⁶⁴</p> <p>It is worth noting that the municipal and departmental governments of Santa Cruz have proposed and submitted PPP bills to their respective legislatures. It is important that these subnational initiatives are in line with the PPP regulation.¹⁶⁵</p>	Medium	<p>MOPSV, ABC, Via Bolivia, MDPyEP</p>

RECOMMENDATION	OBJECTIVE	PRIORITY	MAIN STAKEHOLDERS
Explore the promotion of funding facilities to help PPP projects reach financial closure once the PPP framework has been strengthened	Maximize finance, contribute to the addressing of macro-fiscal constraints on project financing, and stimulate the private sector's appetite for PPP investments.	Medium	MOPSV
Evaluate alternatives for the development of Puerto Busch as an international Bolivian port with direct access to the Parana-Paraguay Hydroway (HPP).	Find an alternative that would increase port capacity to respond in case of a likely increase in agricultural production and other cargo volumes that might be diverted to the HPP in the next five years. To this end, evaluate alternatives to develop a port in Puerto Busch through a phased development as cargo volumes through the HPP increase. The phases could incorporate scenarios of higher cargo demand and could enable the connection of the port with rail or road freight modes. This project would need to address environmental impacts with mitigation measures.	Medium	MOPSV, MDPyEP, CADEX, CAINCO, CAO, CAF
Develop a national network of truck centers in the east-west and central corridors to provide maintenance and attention to truckers. Include promotion of private investment in setting up the service stations.	Improve road freight trucking safety and efficiency by ensuring the provision of quality services for truckers in long-haul freight corridors.	Medium	MOPSV, Via Bolivia, ABC
Promote the establishment of local shipping and port service companies (public, private, or mixed ownership).	Increase the number of players that would stimulate the growth of river shipping services. By promoting the constitution of shipping companies operated by Bolivians with technical expertise from international partners, the quality of services for Bolivian cargo generators would likely improve. There are no Bolivian shipping companies currently providing this service along the HPP, and there is an increasing potential of river freight transport service between Tamengo and the future port in Puerto Busch, as well as of container movement from Bolivia to the Atlantic ports.	Medium	DGIMFLMM, CADEX, CAINCO, foreign shipping companies

RECOMMENDATION	OBJECTIVE	PRIORITY	MAIN STAKEHOLDERS
<p>Promote the use of ICT to increase the efficiency of the freight transport and integrated logistics sector.</p> <p>There are opportunities to promote the use of digital technologies and data to develop freight logistics applications and support planning, management, and control of logistics operations.</p> <p>The implementation of this recommendation would be accompanied by wider efforts to ensure internet coverage throughout the country.</p>	<p>Provide real-time information on cargo movements within the country. This information is valuable for policy makers, LSPs (including potential participation of international 3PL or 4PL), and ULSS. The use of ICT and data standards could facilitate the integration of national cargo registry programs with cargo tracking and tracing technologies, as well as other sensors or technologies in the transport infrastructure, such as radio frequency identification and video recognition.</p>	Medium	MOPSV, MDPyEP, World Bank, IFC, IDB
<p>Establish special zones for Bolivian cargo consolidation and management at ports on the HPP waterway.</p>	<p>Improve the quality of transit services for Bolivian cargo being transported on the HPP waterway. This could include preferential services and develop special and preferential zones in ports at the waterway, ensuring a modern and high-level infrastructure that meets the need of river freight transport to promote and enhance the movement of Bolivian cargo through the HPP.</p>	Medium	National customs service, DGIMFLMM, ASP-B

Note: HP = high priority; MP = medium priority; QW = quick win.

MOPSV= Ministerio de Obras Públicas, Servicios y Vivienda (Ministry of Public Works, Services and Housing)

Conalog = Consejo Nacional de Logística (National Logistics Council)

MDPyEP: Ministerio de Desarrollo Productivo y Economía Plural (Ministry of Productive Development and Plural Economy)

IDB = Interamerican Development Bank; CAF=Development Bank of Latin America

DGIMFLMM=Dirección General de Intereses Marítimos, Fluviales, Lacustres y Marina Mercante (General Directorate of Maritime, Fluvial, Lake and Merchant Marine Interests)

ASP-B=Administración de Servicios Portuarios-Bolivia (Port Services Administration – Bolivia)

CAO=Cámara Agropecuaria del Oriente (Eastern Chamber of Agriculture)

CADEX= Cámara de Exportadores, Logística y Promoción de Inversiones (Chamber of Exporters, Logistics and Investment Promotion)

CAINCO= Cámara de Industria, Comercio, Servicios y Turismo de Santa Cruz (Chamber of Industry, Commerce, Services and Tourism of Santa Cruz)

Vía Bolivia=National Road toll agency

IFC= International Finance Corporation

HPP=Hidrovia Paraná Paraguay

ULS= Users of Logistics Services; LSP= Logistics Services Providers; PPP= Public Private Partnership

ICT= Information and Communications Technologies; 3PL= Third-party Logistics provider; 4PL=Fourth-party Logistics provider

Table 5.10 details the policy recommendations covering all major building blocks on trade facilitation and provides an initial assessment of prioritization.

TABLE 5.10. RECOMMENDATIONS FOR ENHANCING TRADE FACILITATION

RECOMMENDATION	OBJECTIVE	PRIORITY	MAIN STAKEHOLDERS
<p>Upgrade physical borders and IT infrastructure.</p>	<p>This would improve the processing time for international trade operations and make them safer, more reliable, and convenient for users. The current border design paradigm could transition towards facilities integrated with neighboring countries. The expansion of access roads to main border crossings with new processing lanes and nonintrusive inspection equipment would enable these improvements. Broadband satellite connectivity could be improved to avoid processing downtimes. The most acute physical infrastructure gaps are found in Tambo Quemado, Desaguadero, Pisiga, Yacuiba, and Puerto Suárez. Advice could be sought to formulate a border infrastructure strategy.</p> <p>Enhancing IT infrastructure and capability would decrease processing times, improve border compliance using risk-based tools, and reduce paper use. Creating a national trade portal would increase the transparency and ease of trading, publishing all tariff and nontariff measures, its costs, procedures, and expected delivery time. The SUMA IT customs system would be rolled out to all customs facilities, and remaining paper-based procedures ought to be digitized.</p> <p>The single window could be upgraded into a fully functional system to process import declarations, payments, certificates, and clearance authorizations all in one place. Deploying electronic queuing systems would increase the efficiency and security of operations at the border and improve working conditions for users. Implementing cargo tracking systems would in turn provide the complete visibility of shipments, promoting operational gains and deterring irregularities such as smuggling.</p>	High	Customs and other border agencies

RECOMMENDATION	OBJECTIVE	PRIORITY	MAIN STAKEHOLDERS
<p>Strengthen institutions and implement coordinated border management.</p>	<p>Improve levels of service and border compliance, increase the efficiency and skills of public officials, and enhance the integrity of border control organizations. Formalizing the National Trade Facilitation Committee, giving it a legal stature, and empowering its functions with staff and representation from all stakeholders would contribute to these improvements.</p> <p>Strengthen coordination between border agencies by allowing common inspections, integrating common risk management for selectivity, and deepening authority in need of common staff training programs. Bolivia could obtain significant benefits in terms of processing times, improved border compliance, and less smuggling from an online, real-time exchange of information with neighboring countries and increased prior-to-arrival import declaration use. Extending and coordinating border and service operating hours is also necessary for maximizing the throughput capacity of the facilities and avoiding the idling of trucks at the border. A capacity building plan might be required and rolled out. Expanding the Authorized Economic Operator (AEO) to accredited Bolivian companies and engage in cross-border mutual program recognition would provide facilitation benefits to compliant undertakings.</p>	High	<p>Customs and other border agencies and trade governing ministries</p>

Note: HP = high priority; MP = medium priority; QW = quick win.

SUMA= Sistema de Modernización Único de Aduanas, IT=Information Technology, AEO=Authorized Economic Operator



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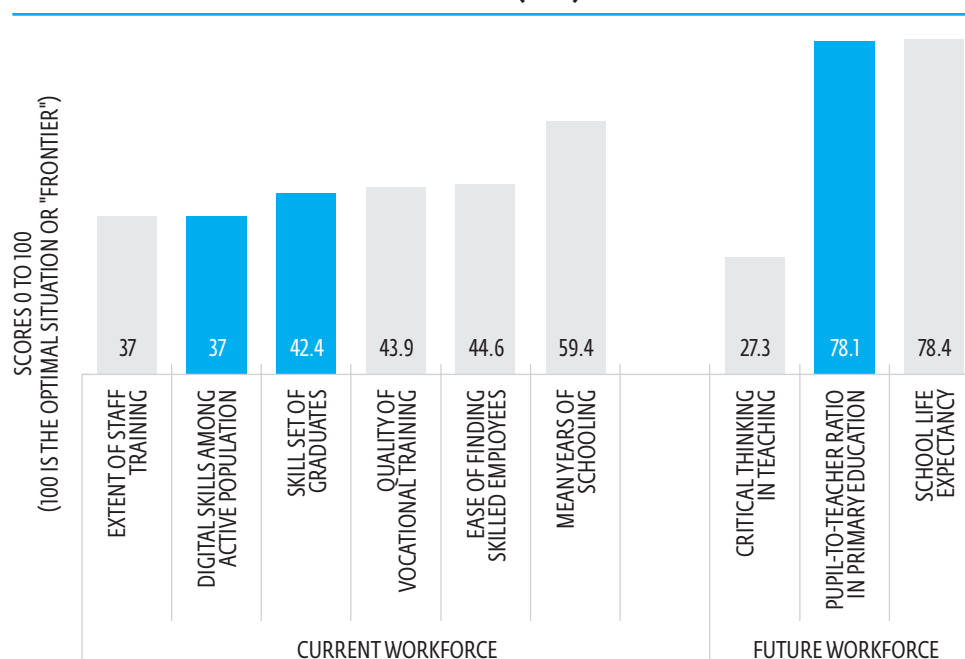
APPENDIXES

APPENDIX A. ADDITIONAL CROSS-CUTTING CONSTRAINTS

Progress in access to education with substantial gaps in job-relevant skills

While Bolivia has made substantive progress in increasing access to education, skills levels remain low. Educational attainment in Bolivia has increased, and the average years of education among the population (ages 21 to 30) has risen from 9 years in 2002 to 12 years in 2017.¹⁶⁶ It is important to note, however, that gaps remain, leaving rural indigenous women at a particular disadvantage.¹⁶⁷ Other education indicators have also shown improvement, including literacy and enrollment levels across population groups. This was accompanied by increases in education returns among low-skilled workers and declines among the higher-skilled workers, particularly during the commodity boom period. The country still faces gaps in translating these indicators into positive learning outcomes. The 2012 Skills Measurement Study for Bolivia shows that as many as 57 percent of workers have a basic reading comprehension level and 40 percent of youth (ages 19 to 20) can be considered functionally illiterate, despite 80 percent of them having completed secondary education.¹⁶⁸

FIGURE A1. GLOBAL COMPETITIVENESS REPORT (2019) SKILLS SCORES FOR BOLIVIA



Source: World Economic Forum, Global Competitiveness Report, 2019. Scores 0 to 100 (100 is the optimal situation or "frontier"); green shows improvement since previous measure; orange shows deterioration.

The lack of job-relevant skills remains a barrier for businesses. According to data from the 2017 Enterprise Survey, 17 percent of firms in Bolivia reported an inadequately educated workforce as a major constraint. This, however, is lower than global and regional averages (21 and 32 percent, respectively). The lack of job-relevant skills among the workforce nevertheless represents a stronger barrier among firms in the retail sector (30 percent), large firms (37 percent), and is in turn much lower in Santa Cruz (10 percent) than in Cochabamba and La Paz (24 and 21 percent, respectively). Similarly, the 2019 Global Competitiveness Report ranks Bolivia 124 among 141 countries in workforce skills, with the country faring poorly across several dimensions of the current and future workforce (see figure A1). These challenges limit productivity growth and the ability of Bolivia to diversify its economy activity into new sectors like the IT services sector. Firms that use information and communication technologies in fact, report higher needs for skilled individuals (Bagoll, Valencia, and Urquidi 2019), as Bolivia's score in the population's digital skills has deteriorated (the country ranks 128 among 141 countries; see WEF's 2019 *Global Competitiveness Report*). Importantly, skills gaps are probably more pronounced among less well-off groups in the population. Very few of those with less than a secondary education currently use computers at work (100 percent of those with only a primary education or less are not using those skills and 88 percent among youth 15-24 years with a lower secondary education), limiting the development of those skills on the job (Roseth, Valerio, and Gutierrez 2016).

Lagging innovation as a cross-cutting constraint

Bolivia's rate of innovation, as measured by the number of registered patents is low by global standards. According to the WEF Global Competitiveness Report, Bolivia ranks 124th of 140 economies in innovation capability, receiving particularly low scores on multistakeholder collaboration, cluster development, and buyer sophistication (WEF 2019). In terms of research and development, Bolivia ranks 97th of 144 economies, although it has shown a slight upward trend in recent years, spending around 0.2 percent of GDP per year, a rate similar to that of the average Latin American or lower-middle-income country. Given the country's scores on innovation capacity, though, this may indicate that Bolivia is falling short in terms of R&D outcomes.

There is a lack of institutional capacity for promoting innovation in Bolivia. There are two institutions charged with promoting innovation in Bolivia, including the Vice Ministry of Science and Technology (Ministry of Education) and INIAF. Bolivia does not have a specific law that regulates the national ecosystem of innovation and technology¹⁶⁹ and programs to promote the development of entrepreneurship with high levels of innovation. The private sector is leading some efforts to promote innovation. CAINCO is working to develop innovation at the regional level in collaboration with the Innovation Lab of Santa Cruz. They support the creation of "fab labs" (fabrication laboratories) that allow entrepreneurs to develop prototypes for technology innovation projects using small-scale workshops.¹⁷⁰ CAINCO is focusing on the high-potential sectors that may benefit from improvements to the overall innovation framework, including agribusiness and food production, logistics, the orange economy (tourism, gastronomy, leisure, and entertainment), and energy.

Sectors need to develop innovative strategies to increase productivity, diversify exports, and become competitive in the international market. In the case of agriculture, for example, soy is no longer a competitive option for most agricultural producers because its price has fallen from US\$500 to US\$250 per hectare. It is no longer profitable for all producers because of the low levels of productivity. For diversification to take root, stakeholders in the agriculture sector have identified the need to improve technology use.

Customs and trade regulations affect Bolivia's competitiveness

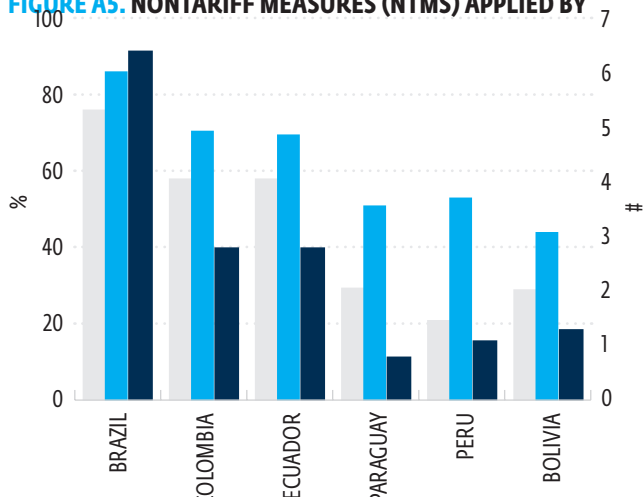
The country is facing trade regulatory barriers that affect its competitiveness in the global markets. Bolivia ranks 141st of 196 countries measured by World Bank Trade Policy Indicators, scoring 4.47 points overall out of a possible 10. The country scores 6.3 points on subindicators measuring tariffs, driven by full scores regarding binding coverage and most-favored-nation status applied to non-ad valorem goods, which is quite high considering the average of the top worldwide performers is 7.24 (Austria, Belgium, the Netherlands, and Sweden). Low marks are also given to logistics (2.43, compared to the top scores of 9 and above). Logistics quality and competence (1.35) and tracking and tracing (1.85) scores are also quite low.

Tariffs have been increasing since 2008. Most-favored-nation tariffs in Bolivia went up from an average 8.3 percent in 2008 to 11.9 percent in 2018. Tariffs increased significantly in 2009 and 2010 during the global recession. Such tariff increases were driven by the pursue of higher tariff revenue collection from imports, and these consequently increased domestic prices, which hurt both consumers and the exportability of inputs that are used in the making of products.

Beyond tariffs, Bolivia imposes an important number of nontariff measures (NTMs) that affect international trade activities.¹⁷¹ NTMs affect the economy as a whole: 28 percent of all products are subject to one or more NTM (frequency index), 44 percent of imports are subject to one or more NTM (coverage ratio), and on average, each imported product is affected by 1.3 NTMs (prevalence ratio).¹⁷² Compared to other countries in the region, the percentage of imports subject to NTMs (coverage ratio) is lower than in comparator countries, and only Peru has a lower frequency ratio, which is normal given that countries with lower incomes have fewer NTMs. The average number of NTMs applied to a product (prevalence score) in Bolivia, though, is higher than in Paraguay and Peru, which shows room for policy improvement (see figures A4 and A5).

FIGURE A4. NONTARIFF MEASURES (NTMS) IMPOSED BY BOLIVIA AND COMPARATORS ON IMPORTED GOODS

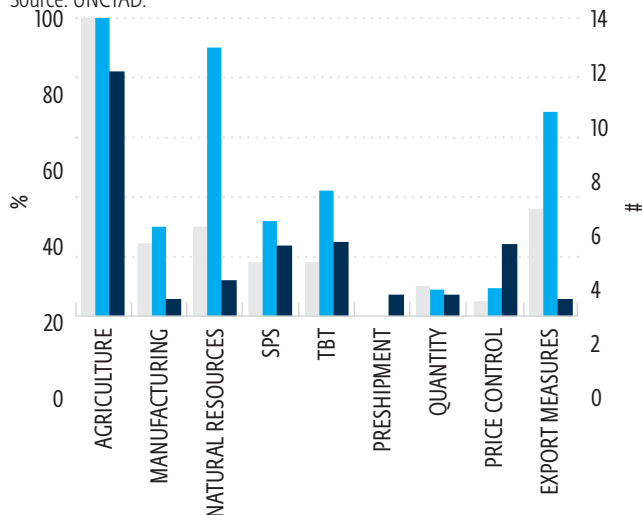
FIGURE A5. NONTARIFF MEASURES (NTMS) APPLIED BY



FREQUENCY INDEX (%)
 COVERAGE RATIO (%)
 PREVALENCE SCORE (#)

SECTOR AND BY TYPE IMPOSED BY BOLIVIA ON IMPORTED PRODUCTS

Source: UNCTAD.



FREQUENCY INDEX (%)
 COVERAGE RATIO (%)
 PREVALENCE SCORE (#)

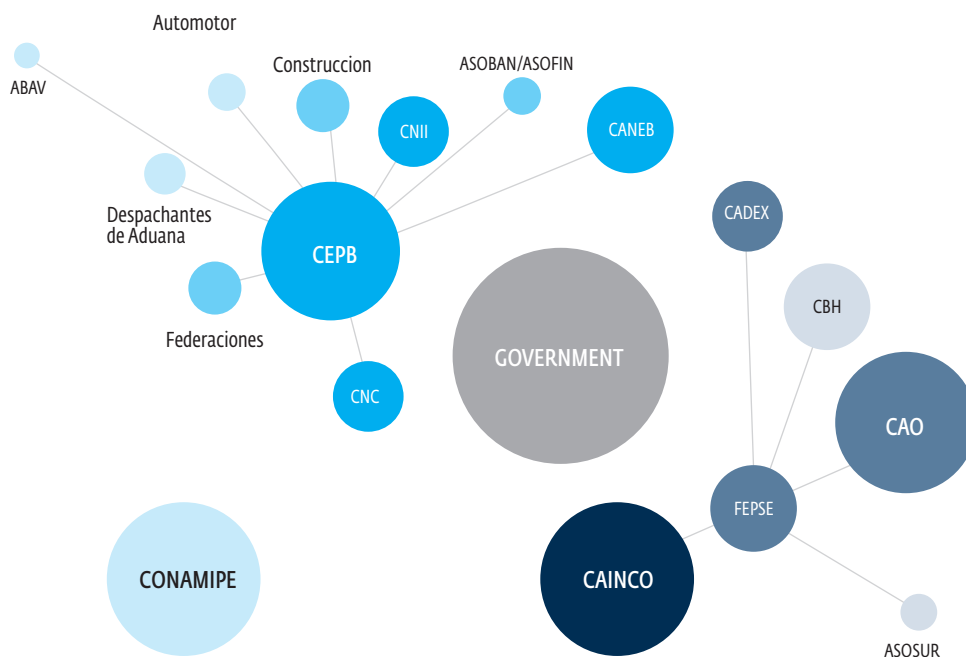
Note: Sectors are defined by the Harmonized System (HS) with two-digit scores: agriculture corresponds to HS 1–24, natural resources to HS 25–27, and manufacturing to 28–97. The frequency index captures the percentage of products that are subject to one or more NTMs. The coverage ratio captures the percentage of imports that is subject to one or more NTMs. The prevalence score captures the average number of NTMs applied to a product.

APPENDIX B. PRIVATE-PUBLIC DIALOGUE PLATFORMS: CURRENT STRUCTURE AND PROPOSAL

Bolivia’s public-private dialogue (PPD) has not been as effective as needed because it has been comprised of ad hoc initiatives and efforts that have had varying levels of success, all without using a formal structure or official regulation. Throughout the last several decades, the most impactful national PPD initiatives have generally been those initiated by the private sector, while the government's willingness to develop PPD initiatives was mainly based on political or electoral considerations judged likely to strengthen political power rather than on intentions to use such initiatives as a mechanism to engage in dialogue and develop sound policy.

Bolivia’s private sector does not have a vertical institutional structure, and there is no single organization that represents all Bolivian business organizations in negotiations with the national government. Instead, as we can see below in the Figure B1, there is a conglomerate of different private sector players with differing abilities to influence public policy. As such, some departmental and sectoral chambers have public-private representation and conduct dialogue directly with national public bodies. Business organizations that have more success in their PPD initiatives have based their influence on the ability to assemble a significant number of member companies, specialized departments for technical research and analysis of public policy (which has limited the role of private sector associations with limited public policy knowledge), and the strength of the economic sectors that they represent.¹⁷³

FIGURE B1. CORRESPONDENCE ANALYSIS OF THE RELATIONSHIP OF PRIVATE SECTOR INSTITUTIONS WITH THE GOVERNMENT



Sphere size: number of partners/participation in GDP
 Distance: Ability to influence public policies
 Tone: Darker - Greater technical capacity - Lighter - Less technical capacity

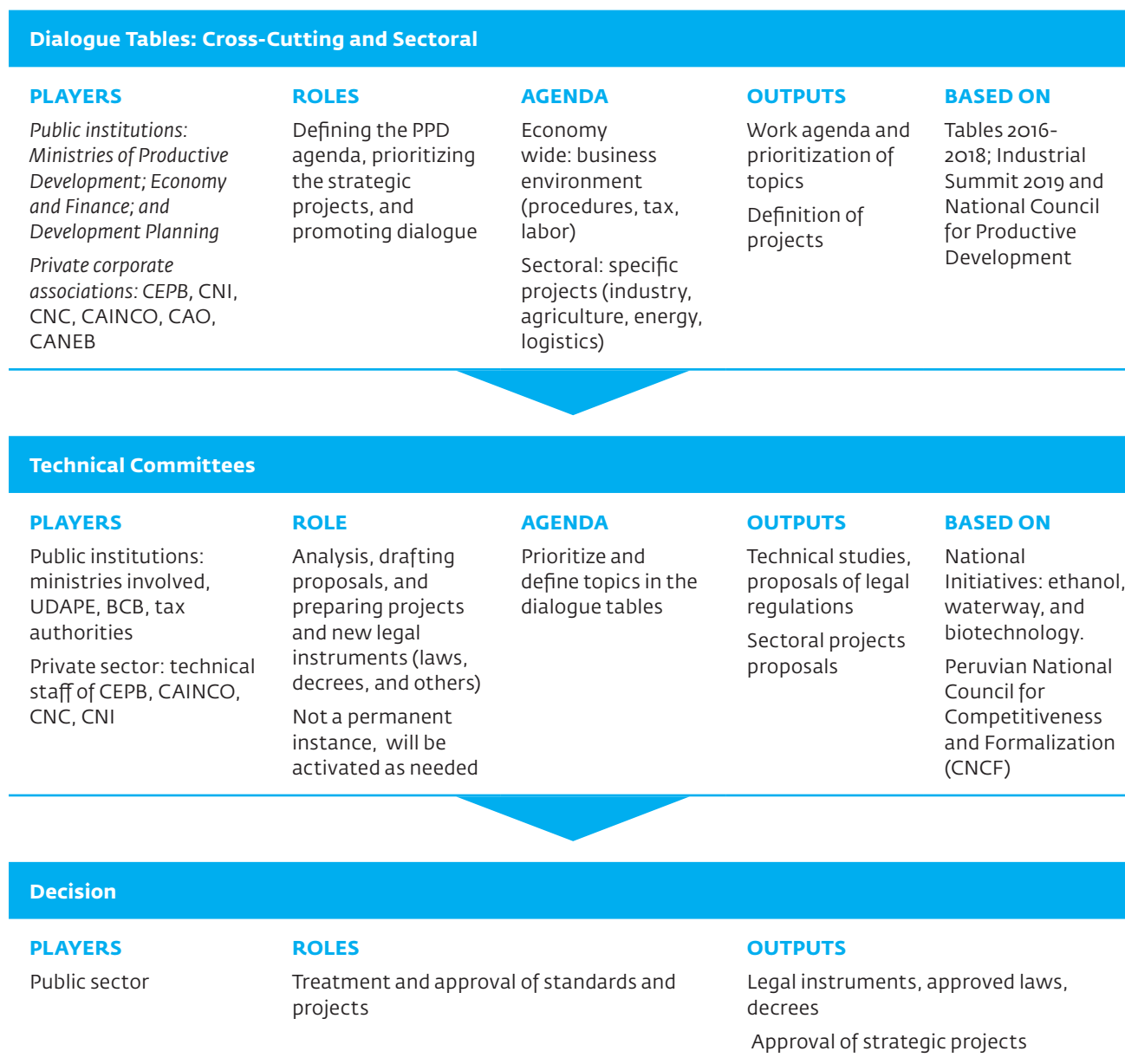
Proposed PPD institutional structure for Bolivia

Bolivia would benefit from having a formal and structured PPD mechanism for the design, analysis, discussion, elaboration, implementation, and monitoring of public policies, as well as an organizational structure at three levels that would allow the definition of agendas and the prioritization of topics, analysis, and the preparation, review, and approval of technical proposals. The proposed structure for this mechanism (figure B2) is based on successful processes that have been used in the recent past, as well as some international best practices from neighboring countries, such as the following:

- **Dialogue tables** that would define the PPD agenda, prioritize the strategic projects, and promote dialogue
- **Technical committees** in charge of analysis, drafting proposals, and preparing projects and new legal instruments (laws, decrees, and others)
- **Decision body** responsible for the approval of legal instruments and strategic projects

These would be permanent spaces of dialogue involving both debate and proposals for solutions with a vision towards mutual benefit.

FIGURE B2. PROPOSAL FOR IMMEDIATE APPLICATION OF PPD IN BOLIVIA



APPENDIX C. ROLES OF PUBLIC AND PRIVATE ACTORS IN LOGISTICS

TABLE C1. ROLES OF BOLIVIAN PUBLIC INSTITUTIONS

NO.	ENTITY	MISSION/OBJECTIVES	REMARKS
1	MDPyEP	<p>Promote the development of the industrial, manufacturing, and artisanal sectors of the country through generating policies and norms that promote and strengthen actors in the plural economy. Promote conditions that create access to productive resources and the development of internal and external markets at a fair price within the framework of integral, productive complexes and in harmony with Mother Earth.</p> <p>Supreme Decree No. 3540 defines the responsibilities of the Vice Ministry of Domestic Trade as the following:</p> <ul style="list-style-type: none"> • Creation of the General Directorate of Commercial Development and Internal Logistics • Formulate policies and strategies for the development of the internal trade logistics system in coordination with the competent bodies • Give technical, financial, and logistical advice for exports • Design physical infrastructure and logistics development policies for foreign trade in coordination with the competent entities • Execute logistical development policies for foreign trade in coordination with the competent entities • Design and implement policies for the development of the national logistics system <p>https://produccion.gob.bo/mision-vision/</p>	<p>This ministry concentrates the country's production policy, which represents the load-generating sector within the supply chains.</p>
2	MDRyT	<p>Define and implement policies to promote, facilitate, regulate, and coordinate comprehensive rural development in agriculture, forestry, aquaculture, and coca in a sustainable manner and promote in the country a new structure of tenure and access to land and forests. Create decent employment for the benefit of producers, communities, and peasant economic organizations (indigenous and business sector) according to the principles of quality, equity, inclusion, transparency, reciprocity, and cultural identity in order to achieve food security and sovereignty and to live well.</p> <p>https://www.ruralytierras.gob.bo/</p>	<p>This ministry concentrates the country's agricultural production policy, which represents the sector that generates rural load within the supply chains.</p>
3	MRE¹⁷⁴	<p>Govern the international relations of the Plurinational State of Bolivia and manage foreign policy to defend the sovereignty, independence, and interests of the state through the application of people's diplomacy in ways that benefit Bolivia's citizens.</p> <p>http://www.cancilleria.gob.bo/webmre/pagina/84</p>	<p>In addition to concentrating foreign relations policy, the foreign ministry also integrates trade and foreign integration policies.</p>

NO.	ENTITY	MISSION/OBJECTIVES	REMARKS
4	MOPSV	Promote and manage universal and equitable access by the Bolivian population to quality works and services in telecommunications, transport, and housing in harmony with nature. https://www.oopp.gob.bo/index.php/informacion_institucional/quienes_somos,1.html	This ministry concentrates the policy of the transport and infrastructure sector.
5	Ministry of the Presidency	Support the presidential administration, coordinate with the other branches of government, establish public management with the participation of social organizations and indigenous peoples and mechanisms for the transparent communication and dissemination of government information. Articulate institutional priorities to implement public policies. Promote the efficient and timely management of state entities. Support strategic actions that improve the quality of life of the population. http://www.presidencia.gob.bo/index.php/institucion/mision	From its position as head of state, this entity facilitates institutional articulation.
6	MEFP	Contribute to the construction of the new productive community socioeconomic model based on the concept of living well. Formulate and implement macroeconomic policies that preserve stability as a heritage of the Bolivian population and promote economic and social equity. https://www.economiayfinanzas.gob.bo/mision-y-vision.html	This ministry integrates the government's budget planning, which is ultimately responsible for budget allocation.
7	MPD¹⁷⁵	Guide integral planning of the Plurinational State toward achieving the objectives of integral development for living well in harmony with Mother Earth within the framework of the Patriotic Agenda 2025. http://www.planificacion.gob.bo/content/1479	This ministry is part of the country's multisectoral planning. Its holistic approach is key to strengthening the policies and cross-cutting strategies for strengthening national logistics.

Source: World Bank elaboration of Imétrica.

TABLE C2. ROLES OF BOLIVIAN CONTROL AUTHORITIES

NO.	ENTITY	MISSION/OBJECTIVES
1	ANB ¹⁷⁶	Facilitate foreign trade operations, control goods, and improve the collection of customs duties for the benefit of the development and security of the state. https://www.aduana.gob.bo/aduana7/Institucion01
2	SENASAG	Improve and protect agricultural and forestry productive heritage and food safety in order to contribute to the sustainable and durable development of the agricultural sector with food sovereignty and security. http://www.senasag.gob.bo/institucional/misionvision
3	ABC	National integration through the planning, administration, study and design, construction, maintenance, conservation, and operation of the primary road network and its access points within the framework of the national development plan in order to contribute to the achievement of efficient, safe, and economic land transport services. http://www.abc.gob.bo/?page_id=393
4	Bolivian Police	Defend society, preserve public order, and ensure compliance with the law throughout Bolivian territory. http://www.policia.bo/Home/Vision
5	ASP-B	Establish the sovereignty of cargo in transit to and from the Plurinational State by means of port and logistic services with promptness, economy, and efficiency. https://www.aspb.gob.bo/index.php/mision-y-vision/
6	ATT	Promote the right to equal, universal, and quality access to telecommunications, information and communication technology, transport, and postal service for Bolivians. https://www.att.gob.bo/
7	SENAVEX ¹⁷⁷	Contribute to the development of exports through the efficient administration of public records within the framework of bilateral and multilateral integration agreements. Among its functions are: <ul style="list-style-type: none"> • Administration of the single registry of exporters and importers; • Issuance of the certificate of origin; and • Assistance to help exporters take advantage of trade agreements and preferential regimes. http://www.senavex.gob.bo/

NO.	ENTITY	MISSION/OBJECTIVES
8	AGEMED ¹⁷⁸	As a regulatory authority, AGEMED, through its highly qualified human resources, promotes and protects the health of the Bolivian population, under principles of legality, impartiality, coherence, effectiveness, efficiency, equity, clarity, transparency and respect for diversity; strengthening health control through registration, surveillance, control and rational use for access to effective, safe and quality medicines and technologies, contemplating the control of health risks, social participation, research and permanent improvement of health technologies. https://agemed.gob.bo/
9	SENARECOM ¹⁷⁹	Record and control the marketing of minerals and metals, providing useful and timely statistical information for the implementation of economic and social policies. Among its main activities is the provision of advice to the private sector in the marketing and export of minerals and metals. http://www.senarecom.gob.bo/
10	ANH ¹⁸⁰	Regulate, supervise, control, and supervise the activities of the entire hydrocarbon chain with efficacy, efficiency, quality, and transparency within the framework of national hydrocarbon policy. Safeguard the rights and obligations of operators, users, and consumers. Regulate activities related to the refining, industrialization, transport, and marketing of hydrocarbons and gas distribution networks in order to ensure safety, quality, volume, price, and continuity of service. https://www.anh.gob.bo/
11	FSA ¹⁸¹	Exercise government oversight of forests and public lands, protecting, regulating, supervising, and controlling human activities and promoting development and sustainable integral management for the benefit of the Bolivian people. http://www.abt.gob.bo/

Source: World Bank elaboration of Imétrica.

TABLE C3. ROLES OF THE BOLIVIAN TRADE SECTOR

NO.	ENTITY	MISSION/OBJECTIVES	REMARKS
1	CANEB ¹⁸²	Promote the economic and social development of the country, sustaining the philosophy of free enterprise as the essential basis of this process through supporting the development of exports in the interest of Bolivia. CANEB's vision is to strengthen the integral development of companies by promoting Bolivia's exportable supply in international markets through developing sectoral strategies aimed at the insertion of products in potential foreign markets. https://www.caneb.org.bo/wordpress_4/	It represents the Departmental Chambers of Exporters, the members of which are CAMEX, CADEX, CADEXCO, CADEXPO, CADEX-CH, CADEXNOR, and CADEXOR. Each chamber represents companies in the Bolivian export sector.
2	CNI ¹⁸³	Promote the development of the industrial sector and the business community for the generation of resources, sustainable employment, and the improvement of the quality of life in the country. http://www.cnibolivia.com/quienes-somos/mision-y-vision	CNI has departmental chambers that in turn represent companies in the country's industrial sector.
3	CNC ¹⁸⁴	A representative chamber of private entrepreneurs with more than 120 years of experience with Bolivia's logistics that knows the logistics of import and export and direct contact with entrepreneurs. http://www.cnc.bo/	The CNC has departmental chambers, which in turn have been leading important logistics and foreign trade projects.
4	CNDA ¹⁸⁵	This is a nonprofit civil law association created to defend the interests of its members and ensure their prestige and technical and professional solvency. https://www.cnda.org.bo/mision.php	This chamber represents an important link in Bolivian foreign trade.
5	CONFAGRO ¹⁸⁶	This organization represents the main agricultural chambers of the country, which focus on strengthening production, exports, legal security, access to credit, and the fight against smuggling.	
6	CBT ¹⁸⁷	This organization represents entrepreneurs in the Bolivian land transport sector.	This chamber represents the transport sector of the Bolivian production chain.

Source: World Bank elaboration of Imétrica.

Note: HP = high priority; MP = medium priority; QW = quick win.

CAMEX=Cámara de Exportadores de La Paz (Chamber of Exporters of La Paz)

CADEX=Cámara de Exportadores, Logística y Promoción de Inversiones (Chamber of Exporters, Logistics and Investment Promotion)

CADEXCO=Cámara de Exportadores de Cochabamba (Chamber of Exporters of Cochabamba)

CADEXPO= Cámara de exportadores de Potosí (Chamber of Exporters of Potosí)

CADEX-CH= Cámara de exportadores de Chuquisaca (Chamber of Exporters of Chuquisaca)

CADEXNOR= Cámara de exportadores del Noroeste, (Chamber of Exporters of the Northwest)

CADEXOR= Cámara de exportadores de Oruro, (Chamber of Exporters of Oruro)

APPENDIX D. MAIN INTERMODAL TERMINALS IN OPERATION IN BOLIVIA

1. **Agesa.** Bimodal terminal (FFCC–highway) located in Corumbá (Brazil) specializing in exports from Brazil to Bolivia and imports of Ulexite and beans.
2. **Bimodal terminal (FFCC–highway)** located in Pocitos (on the Argentine border) specializing in Argentine exports to Bolivia, especially those related to clean bulk (wheat, wheat flour).
3. **Santa Cruz Industrial Park.** Bimodal terminal (FFCC–highway) specializing in soybean exports and imports from Brazil and Argentina.
4. **Port Aguirre.** Multimodal terminal (FFCC–road–river) specializing in clean bulks (soy, wheat), liquid bulks (diesel), and dirty bulks (steel).
5. **Gravetal Port.** Multimodal terminal (FFCC–road–river) specializing in clean bulk (soy, wheat), liquid bulk (diesel), special cargo, and containers.
6. **Port Jennefer.** Multimodal terminal (FFCC–road–river) specializing in clean bulk (soy, wheat), liquid bulk (diesel), special cargo, and containers.
7. **Albo.** Bimodal terminal (FFCC–highway) located in Santa Cruz dedicated mainly to imports from Argentina and Brazil.
8. **Warnes.** Bimodal terminal (FFCC–highway) that acts as a transfer station for solid bulks transported on the eastern railway network.
9. **Granorte.** Soybean transfer station (FFCC–highway) located in Montero for handling loads weighing more than 150,000 tons.
10. **Oruro.** Bimodal terminal (FFCC–road) that operates the Andean railroads. It is a terminal mainly dedicated to handling ores, especially ulexite.

APPENDIX E. SELECTED PRIVATE SECTOR INITIATIVES IN THE DEVELOPMENT OF MULTIMODAL TRANSPORT

1. Leading private sector companies in the soybean sector (Grupo Nutriol and Gravetal, for instance) that have experience in moving and warehousing large loads have become strategic players in providing specialized services. In the last few years, Puerto Jennefer, Puerto Gravetal, and Puerto Aguirre have invested in the development of specialized port infrastructure through the Tamengo Canal, connecting bimodal road-rail and road-fluvial platforms to seek new exit alternatives to the Atlantic.
2. Private ports have been investing heavily in their infrastructure and maintenance to sustain their own operations and offer services to third parties. As of 2015, Puerto Jennefer was reported to have invested close to US\$10 million¹⁸⁸ in the construction of platforms and in the dredging of 3.6 kilometers of the Tamengo Canal, seeking an operational draught of 2.5 meters to allow the transit of barges. The terminal has continued to invest to expand its capacity to manage other types of cargo such as containers, project cargo, vehicles, and other bulk cargo. Puerto Gravetal has invested in the purchase of its own wagons, railway access network, and equipment and cranes to move containers ranging from U\$1 million to U\$7 million. Puerto Aguirre has secured itself large international investment partners—IFC, World Bank, and Cargill International—came together with more than US\$8 million in capital. These partners consolidated in 1996 to form a "joint venture" to develop agricultural production and Bolivian exports. Puerto Aguirre also developed the Free Port Terminal Company, the first Bolivian hydrocarbon port terminal in international waters on the Paraguay-Paraná Hydroway.
3. Ferroviaria Oriental,¹⁸⁹ a private company given the concession to operate the eastern railroad network, has been generating tailor-made integrated logistics solutions in sectors such as soy, cement, urea, and steel, connecting the different modes of transport to offer integrated solutions to its customers. It has invested US\$148 million¹⁹⁰ between 2010 and 2018. Large investments tailored to customer needs have been made such as the development of transfer stations at Corumbá (Brazil), Santa Cruz, and Montero stations, as well as warehouses, space conditioning, and wagon manufacturing. These investments have been made through bond issues and are tied to contracts ranging from 5 to 20 years, in which the value of the fee to be charged for the service is diluted.

4. Ferroviaria Andina has been operating the western network since 2015, which covers 2,276 kilometers and accounts for 75 percent of the railway's revenue. In the last five years, it has invested approximately US\$41 million in track maintenance, station improvements, technology, and the purchase of three new locomotives. Its operations are aimed at passengers and transporting cargo such as minerals, ulexite, clinker, cement, and food products (flour, bulk wheat, barley, malt, rice, bananas, soybean flour). Transportation routes run from the western part of the country to ports in Chile and destinations in Argentina. Ferroviaria Andina has the international projection and connection with the bioceanic rail system that connects it to the eastern network.
5. Grupo Romero del Perú has been investing in developing a differential and integral option that provides logistics, maritime, and port services through the companies Ransa (warehousing and transport), Tisur¹⁹¹ (the company that manages the concession of the Matarani Port), and Alpasur (maritime and land transport, cargo transfer, and port service). The consolidation of these services is oriented to generate an integral offer of high potentiality so that Bolivian companies might have access to integral logistics services and see other options in using South Pacific ports such as Matarani-Ilo.¹⁹²

APPENDIX F. USERS OF LOGISTICS SERVICES PERCEPTION OF THE LOGISTICS SERVICES OFFERED

Access to logistics services by ULSs	<ul style="list-style-type: none"> • Road trucking highly atomized, high informal services provided by small companies • Poor supply in warehousing • Fragmented service in customs agency with little differentiation in the service offered • Lack of logistics operators with a focus on services for SME • Reduced supply in the provision of specialized integrated logistics services, including 3PL and 4PL • ULSs with reliable and robust logistics operations have become PSL offering integral logistics solutions to third parties
Affordability	<ul style="list-style-type: none"> • No regulated market in freight transport logistics services such as warehousing • Logistics service providers can establish the price in agreement with the client • Some market prices determined by freight truckers organized in association or union structures
Quality of the service provided (valued by the ULSs)¹⁹³	<ul style="list-style-type: none"> • ULSs satisfied with the provision of freight transport services despite the high level of informality: good (47.3 percent), very good (40.2 percent) • Reliability of the warehousing service affected by the lack of technology to manage cargo inventories in real time • The provision of reverse logistics services and services oriented to the cold chain is poorly valued by users, reflects the low development of the provision of these services
Environmental and Financial Sustainability	<p>Environmental</p> <ul style="list-style-type: none"> • No elements of environmental sustainability are incorporated in the provision of the logistics services currently offered • Low level of modernization of the freight vehicle fleet, implying a potential large impact on greenhouse gas emissions • Warehousing logistics infrastructure requires investments for its modernization <p>Financial</p> <ul style="list-style-type: none"> • Low profitability of the services offered • Productivity gaps in trucking that impact business sustainability¹⁹⁴ <ul style="list-style-type: none"> – Vehicles on standby more than 50 percent of the time – Only 23 percent of the trips have return loads – Performance of the trucking fleet is low in terms of vehicle rotation (cycle of a truck from Santa Cruz to Arica in a month is 1.5 times) – High uncertainty in obtaining a return load

Source: World Bank staff analysis of National Logistics Survey results.

APPENDIX G. CHALLENGES RELATED TO LOGISTICS FOR FIRMS IN AGRICULTURE VALUE CHAINS

Limitation of production and export growth levels. Bolivia has imposed restrictions on its agricultural sector designed to increase both its productivity and its export volume in different export chains. Some of the restrictions on export volumes have been liberalized, so the main restriction currently results from a lack of raw materials for processing. To solve this deficiency, it is required to increase agricultural productivity and the extension of hectares that produce it. To this end, it is necessary to eliminate the following five main restrictions:

- Land titling insecurity of productive land, which reduces the capacity to invest in productive chains and discourages investment in technology that allows for productive scales and efficiencies
- Regulation regarding authorization to export surpluses¹⁹⁵
- Lack of access to biotechnological product that stimulates the increase of crop productivity per hectare
- Unclear regulation of soil use modifications on land that is suitable for crops or livestock, provided that this change in use is made within environmentally acceptable parameters
- Construction of access roads to the new agricultural frontier

Limited number of trade agreements that affect growth potential. Bolivia has built a quality value proposition at the international level in terms of organic and healthy products of high nutritional value, but it is limited in terms of export destinations. These facts reduce the growth in volume and value of exports with a value-differentiating approach. A road map of commercial diplomacy and logistics is required in order to open new markets through market access, the negotiation and operation of free trade agreements, and the review of nontariff measures through the work of SENASAG, the foreign ministry, and a recently created agency (ProExport Bolivia).

Logistical restrictions in the port infrastructure and the Parana- Paraguay Hydroway (HPP). For this foreign trade route, the following operational and environmental restrictions are observed:

- **Delays in inspections by government entities.** A barge can currently be loaded in six hours, for instance, but export inspection, seals, and authorizations with SENASAG can take an additional day. These delays result in the loss of one barge travel cycle per month, which translates into a restriction quantified at approximately 4,500 tons per month, equivalent to 54,000 tons per year. This affects the cycle rotation of the barges and creates higher logistical costs.

- **Limited capacity of port infrastructure.** Currently, there is a lack of warehousing capacity and silage for handling bulk cargo, as well as limited equipment for handling containers and limited facilities for refrigerated cargo.
- **Physical restrictions on navigation in the Tamengo Canal.** The canal, where the three main Bolivian ports are located, has a passage restriction in the Corumba water intake. This narrows the canal, allowing the passage of only one barge at a time and forcing barges with Bolivian cargo to reconfigure themselves as convoys in Brazilian territory, specifically at Puerto Ladario. This is a critical limitation if the volume handled by these ports increases because of either a diversion of cargo from the Pacific side to the HPP or the generation of cargo from increased crop productivity and the elimination of restrictions to the productive growth mentioned above. In the significant cargo growth scenario (assuming that the growth is sustained over time), additional options for cargo handling through the waterway need to be considered. One of the options under discussion is the construction of Puerto Busch, which would in turn allow sovereign access to the HPP. The need for continued dredging and maintenance because of the accumulation of silt and coarse grass is also an important restriction for navigability in the canal.
- **Restrictions on navigation.** There are other restrictions to navigation at different points of the HPP that become serious depending on the time of year and water levels. Approximately three to four months per year, water flow decreases to minimum levels, limiting the navigability of the river at several critical points along the HPP. In March 2020, this situation worsened; the HPP's water level reached the lowest level since 1971, which trapped between 15 to 18 convoys in a section of the waterway (Mundo Maritimo 2020). To overcome the situation, shippers handle barges at lower loads than their capacity allows and split the convoys in critical points. These result in increased operational costs for shippers that get passed along to cargo owners. A permanent dredging of the waterway to allow year-round navigability would be a more sustainable solution, a solution needed not only by Bolivia but by Argentina, Brazil, Paraguay, and Uruguay.

Logistical restrictions in Pacific ports on the coast of Chile and Peru. Currently these ports present for Bolivia several restrictions to be overcome:

- **Lack of containers for export and the infrastructure to maintain container inventory.** There is no infrastructure for the handling of containers such as container yards or logistics platforms strategically located to manage the procurement and return of containers and thus optimize costs and time. Currently, the lack of food containers for export requires greater planning of logistics by cargo owners, who need to plan months in advance. This sometimes results in the loss of sales because of the failure to meet delivery times to customers. The reduction of imports during the pandemic has made this situation worse. In the case of quinoa, many of the containers suitable for export are in Santa Cruz and Cochabamba, and freight companies are currently charged to transport empty freight to La Paz from these regions or from Chile and Peru. The same happens with refrigerated containers that travel empty from Arica to Santa Cruz. An alternative for overcoming the lack of containers for exports in Bolivia is to use containers from shipping lines located in Chile or Peru, where there is greater availability. This option is usually not considered, though, because of the risk of contamination by containers carrying illegal substances or contraband, which threatens cargo owners with associated legal risks.
- **Infrequency of maritime deliveries by international shipping companies, which increases inefficiency and cost overruns.** The shipping companies that arrive at Pacific ports used by Bolivian cargo owners deliver to these ports infrequently (only once every week or two). Sometimes shipping lines skip a port call to fulfill itineraries at other ports with greater cargo volumes, and other times, port congestion and climate factors can play a role. Additionally, when a ship arrives at one of these ports and the quantity of containers is greater than that available on the ship (overbooking), the shipping lines roll the containers over. This gives priority to cargo from Peru and Chile and puts Bolivian cargo at a disadvantage. When rollover happens, shipping lines try to avoid the extra costs associated with container storage by transferring the cost to cargo owners (raising issues with documentation that are their responsibility, for instance). This practice can cost more than the sea freight cost, and it causes logistical reorganization problems for exporters and a loss of customers resulting from this failure to meet deadlines.
- **Delays at border crossings, especially at the border points of Desaguadero and Tambo Quemado, because of cargo inspection procedures.**

Lack of connection of the northern corridor to alternative export routes via Brazil.

The northern corridor is currently used by the timber industry but is a potential option for the transport of other products such as Brazil nuts. There is no logistical infrastructure for companies in the northern corridor to take other products through Brazil on the Porto Velho-Manaus route. The route from Riberalta to the border is only 90 kilometers, but an international bridge connection with Brazil through Guayaramerín is needed to enable time- and cost-efficient export activity. Of the 23 companies producing Brazil nuts in the region, only one has exported using this route, while the rest do it directly through Arica. The region does not have internationally certified transportation companies to get to Brazil, so they use Brazilian companies to pick up the product.

High atomization of transport services and limited capacity to handle large volumes that lacks the higher reliability from using technology. Large cargo generators are forced to manage several different transport companies to obtain the required service levels (one company interviewed mentioned that they have subcontracts with 200 different transport providers). The low specialization of trucking services affects quality of service. Traceability of routes using GPS is limited. Some companies are beginning to demand the use of GPS technology to track the location of vehicles, which could optimize operations by identifying backhaul cargo or the closest truck for a specific location.

Low development of warehousing infrastructure and services in both capacity and quality. Capacity problems have surfaced because of disruptions. Issues with silo capacity, for instance, have been exacerbated during 2020 because of the drought in Puerto Quijarro, forcing the ports to the use of barges as temporary warehouses. In terms of quality, warehouse design does not always correspond to the storage needs of products. Compliance with storage requirements is low. There is no evidence of the use of technology for warehouse management. To improve warehousing processes, Bolivia needs to generate a strategy to promote outsourcing to warehouse companies in the dry and cold chains through coordination between suppliers and buyers in order to raise current standards while maintaining cost competitiveness. Such outsourcing is possible because of industry economies of scale that produce service specialization and a knowledge of efficient operations.

Use of double trailer trucks (high-capacity vehicles) is not allowed. Currently, the General Transport Law and the Law on Maximum Weights and Dimensions have restrictions in place for the use of double trailer trucks. These laws do not take into account the different geographic and infrastructure conditions in each of the regions since it is not feasible to use these trucks in the western region because of geography, and they were prohibited nationwide. It is proposed that transport by double trailer trucks could be approved for some routes and areas in Santa Cruz. Enabling this freight transport technology could improve transport competitiveness and at the same time reduce transport logistics costs.

Lack of maintenance of the primary, secondary, and regional road networks, low connectivity, and high vulnerability to climate factors. The road network requires maintenance and repair to ensure the transport of products to consolidation centers and export routes. At the national level, there are few logistical alternatives. Cargo cannot reach its destination when roads are cut off because of social conflict, adverse weather conditions, or natural disasters (CADEX 2020). In the area of Beni and Pando, the roads are unpaved, and there are still many roads without bridges over the rivers of the Amazon region, which requires the costly and time-consuming use of ferries. Similarly, an international bridge to Brazil is needed in Guayaramerín, which would enable the export route through Porto Velho and Manaus. Likewise, it is important to maintain and repair the main road from Riberalta to La Paz to ensure the transit and exit of production since a trip can currently take between three to seven days to reach La Paz, depending on the weather conditions and the state of the road.

Weak cold chain infrastructure and services. The current demand for temperature-controlled vehicles is not covered because of the shortage of reefer containers in the country. In addition, specialized infrastructure or container parks for temperature-controlled management are lacking. Some export products require certified companies to handle reefer containers, and only two companies with a joint fleet of only 20 trucks specialize in such operations. This lack of specialized companies has led exporting companies to develop their own fleets. A few players are starting to consider building temperature-controlled warehouses and operating as 3PL providers. Warehousing as a service in this chain is practically nonexistent.

NOTES

- 1 The update in the consumer basket and poverty lines using the new *Encuesta de Presupuestos Familiares* 2015–16 restricts the comparison of prior poverty measures. The new poverty headcount nonetheless shows progress in poverty reduction between 2016 and 2019, with a decrease from 43.0 percent to 37.2 percent, respectively.
- 2 The efficiency gap is the distance between Bolivia and the best-performing country in terms of the coverage and quality of infrastructure (output) for a given level of public capital stock (input) (IMF 2015).
- 3 Latest estimation by the International Monetary Fund (IMF) in 2018.
- 4 In May 2020, just after the onset of the COVID crisis, 70 percent of workers interviewed in a World Bank phone survey reported that they had not been working or had lost their jobs.
- 5 Data from the employment survey comparing the third quarters of 2019 and 2020 show a 21 percent increase in agricultural jobs in urban areas and contraction in all other sectors (hotels and restaurants by 23 percent, services by 19 percent, and commerce by 7 percent).
- 6 Poverty changes decomposition analysis shows that the role of private labor earnings accounts for nearly all of the poverty changes in the period.
- 7 Estimates obtained using the social accounting matrix multiplier approach based on a macro-micro model, which matches individuals to the new jobs and imputes income using parameters from models estimated on past baseline data (IFC 2020; World Bank 2014).
- 8 Using data from the 2019 Household Survey.
- 9 Bolivia Enterprise Survey 2017.
- 10 The *doble aguinaldo* policy emerged as a serious constraint to businesses in focus group discussions with small entrepreneurs in La Paz, Santa Cruz, and Cochabamba. Group members said things like: "I had two branches and had to close one because of the famous *doble aguinaldo*" (entrepreneur in Santa Cruz); "the *doble aguinaldo* affects microenterprises greatly, costs cannot be managed, the majority has had to let workers go, they don't want to hire" (entrepreneur in La Paz). Qualitative data collected for the World Bank's Bolivia Poverty Assessment (World Bank 2020a) in 2018.
- 11 The LPI ranges from 1 to 5, with a higher score representing better performance.
- 12 Sectors not subject to caps and quotas, in other words.
- 13 Based on a labor market structural model (World Bank 2020a).
- 14 Labor reforms include removing the double Christmas bonus, reducing severance pay, and reducing informal costs associated with employment termination. Tax reforms include eliminating the transaction tax (chain tax) and eliminating tax procedures related to legal costs borne by firms.
- 15 International Labour Organization, ILOSTAT database.
- 16 See MPD 2015.
- 17 Of the 284 firms that were surveyed, only 26.6 percent measure their logistics costs.
- 18 The logistics costs for agriculture and livestock firms are 8.0 percent of sales, while for manufacturing and retail, they are 15.1 percent and 18.1 percent, respectively. Of the firms that reported their logistics costs, 43.0 percent belong to the manufacturing sector, 33.0 percent to retail, 10.0 percent to mining, and 8.8 percent to agriculture. Surveyed firms identified three priority areas that need attention: (a) improvements to road infrastructure quality (23.8 percent), (b) the facilitation of freight movement with fewer restrictions (15.7 percent, and (c) investment in technology for logistics and communications (11.4 percent).
- 19 The country is wealthy in natural resources, not only in hydrocarbon and in mining but also in forestry and arable land, but Bolivia has nonetheless been highly vulnerable to commodity price shocks as primary products have averaged about 95 percent of its total merchandise exports since 2013. Agricultural commodities; fuels; and ores, metals, and precious stones accounted for 18 percent, 46 percent, and 31 percent, respectively. For more details, refer to UNCTAD 2019a.
- 20 This is in line with the key challenges described in the ongoing Systematic Country Diagnostic for Bolivia (World Bank 2015a).
- 21 World Bank, Enterprise Surveys, www.enterprisesurveys.org. Between January and June 2017, 364 firms were interviewed.
- 22 The level of efficiency is represented by the distance of the country from the frontier, defined by the countries with the highest coverage and quality of infrastructure (output) for a given level of public capital stock (input). Based on IMF 2015.
- 23 The boliviano is now about 26–33 percent stronger in real effective terms relative to its long-run equilibrium level (IMF 2018).
- 24 Public debt includes the non-financial public sector external debt, the treasury internal debt, the Central Bank credit to the SOEs, the Central Bank credit to the Fondo Nacional de Desarrollo Regional, and Fondo para la Revolución Industrial Productiva credit to SOEs.

- 25 Employment fell 17 percent, 4 percent, and 1 percent for workers 25–34, 35–44, and 45–64 years old, respectively.
- 26 See De Paula and Muller 2018.
- 27 In this sense, results from the same Labor Force Survey show that employment in urban areas fell by 15 percent in May (compared to the previous year) for women, while it declined 12 percent for men. The disproportionate burden of the crisis on women might not only be explained by an increase in childcare responsibilities due to schools closure, but also a higher participation of women in sectors intensive in face-to-face interactions and most affected like commerce (22 percent of employed women worked in this sector pre-pandemic compared to 11 percent of men), social and personal services (18 percent of women vs. 7 percent of men), and hotels and restaurants (11 percent of women vs 2 percent of men).
- 28 Preliminary results from the *Encuesta Continua de Empleo* (ECE) for April and May 2020 are available at <https://www.ine.gob.bo/index.php/metadatos-y-microdatos/>.
- 29 See World Development Indicators, Bolivia. <https://data.worldbank.org/indicator/SL.ISV.IFRM.FE.ZS?locations=BO&view=chart> and <https://data.worldbank.org/indicator/SL.ISV.IFRM.MA.ZS?locations=BO&view=chart>.
- 30 For details, see OECD/ILO 2019.
- 31 The “productivity gap” is defined as output per worker (GDP constant 2011 international dollars, purchasing power parity) compared with a competitor’s output, according to International Labour Organization modeled estimates.
- 32 See previous note.
- 33 See Sakho et al. 2009; World Bank 2015a; and World Bank 2020a.
- 34 World Bank 2015a.
- 35 See Goodwin and Pirola 2015. Empirical literature shows that industries with more intense domestic competition will export more. Competition law enforcement can be traced to export performance and is complementary to trade reforms. Domestic competition promotes firm-specific productivity. It also generates efficiency-enhancing reallocation that increases industry-wide productivity. More intense competition in input products and services further benefits downstream producer productivity. Competition promotes export competitiveness through all of these channels.
- 36 Controls include dichotomous variables for age in years; the number of wage-earning workers, the number of nonwage workers; the ownership of premises, equipment and machinery, vehicle, furniture, technology equipment; the economic sector; and location in the country.
- 37 After controlling for firm characteristics, formal SMEs are 70 percent more likely to access credit and 14 percent less likely to experience access credit as a barrier to their business. In addition, Sakho et al. (2009) reported that the lack of access to capital represents one of the more important barriers to productivity in Bolivia.
- 38 International Trade Centre (ITC) calculations based on UN COMTRADE and ITC statistics.
- 39 World Bank technical note, *Resolviendo la Encrucijada del Sector Hidrocarburos*, 2019 (unpublished).
- 40 Harvard University, Growth Lab data, 2019.
- 41 World Bank technical note, *Inversión Privada para un Mayor Crecimiento y Diversificación*, 2019 (unpublished).
- 42 Harvard University, Growth Lab data, 2019.
- 43 The social accounting matrix multiplier approach is based on strong assumptions, including unlimited resources and supply responses in the economy, fixed prices, no substitution effects, and a static or unchanged structure of the economy with respect to technology. The microsimulation matches individuals to the new jobs and imputes income, using parameters from models estimated on past baseline data. Reported results are rounded and should be interpreted as an approximation that provides orders of magnitude of expected economic impacts (IFC 2020; Olivieri et al. 2014).
- 44 The LFP rate for women ages 15–64 grew from 57.1 percent in 1990 to 64.9 percent in 2006, and it decreased again in 2019 to 58.1 percent, 22.8 percentage points below that of men.
- 45 World Bank (2020).
- 46 Violence against women is an important challenge: 27 percent of Bolivian women between 15 and 49 who are married or in other kinds of relationships suffered physical or sexual violence in the past 12 months (Bott et al 2019). The cost of gender-based violence to the economy in Bolivia is high, estimated at 6.5 percent of GDP. Although legislation on sexual harassment exists, violence against women is among the highest in the region, and more than half of women (58.5 percent) have in their lifetime experienced physical or sexual intimate partner violence (<https://evaw-global-database.unwomen.org/en/countries/americas/bolivia-plurinational-state-of#1>). Analysis based on the Bolivia Sources of Growth Study (World Bank 2015).
- 47 Analysis based on the Bolivia Sources of Growth Study (World Bank 2015).
- 48 IMF (2018).
- 49 Additional diagnostics on other constraints (skills, innovation and technology, and customs and trade regulations) are in appendix A.

- 50 This differs from policies adopted in other countries of the region, where schools continued by using other means, such as radio, television, and the internet.
- 51 Bolivia Enterprise Survey 2017.
- 52 Between 2006 and 2016, a total of US\$8.8 billion in public investment was allocated to transportation.
- 53 The LPI ranges from 1 to 5. A higher score represents better performance.
- 54 Of the 284 firms that were surveyed, only 26.6 percent measure their logistics costs.
- 55 Infralata is a data platform that makes available data supplied by Economic Commission on Latin America and the Caribbean (ECLAC), IDB, and CAF Development Bank of Latin America (see <http://infralata.info/>).
- 56 Ecuador mobilized 50.805 million ton-km and Peru 340.335, according to the information from the International Civil Aviation Organization, available at World Development Indicators. [https://data.worldbank.org/indicator/IS.AIR.GOOD.MT.K1?end=2019&locations=BO-PE-EC&start=2013\(OACI 2019\)](https://data.worldbank.org/indicator/IS.AIR.GOOD.MT.K1?end=2019&locations=BO-PE-EC&start=2013(OACI 2019)).
- 57 World Bank High Frequency Phone Survey in Bolivia, May 2020.
- 58 In this sense, developments in the banking sector like low deposit rates and financial stability risks could potentially affect pension savings in Bolivia.
- 59 Defined as non-service sectors that include agriculture, mining and manufacturing.
- 60 Profitability was modest to low across all segments, although slightly higher than in the previous year (2018), with returns on assets ranging from 1.7 percent to 0.4 percent and returns on equity from 13.1 percent to 3.5 percent. It was highest for Bancos Múltiples and for the state-owned bank. Among the factors that affect banking sector profitability are the strict rules imposed by the Financial Services Law that set interest rate caps and lending quotas. Taxation on bank income has additionally been used in a rather discretionary manner in the past and has negatively affected profitability. The low returns on equity reduce incentives for shareholders to invest in equity above the regulatory minimum threshold and are one of the reasons behind the relatively low capital buffers of many banks.
- 61 Recent international evidence shows a negative effect on financial inclusion by the introduction of interest rate caps (Ferrari, Masetti, and Ren 2018), such as in the case of Chile (Madeira 2019) and Kenya (Safavian and Zia, 2018; Alper et al. 2019).
- 62 Sectors not subject to caps and quotas, in other words.
- 63 This is especially true for commercial banks and housing financing institutions.
- 64 Literature has identified the benefits and gains, such as increased efficiency, competition, and interoperability or a wider menu of options for consumers with better adaptation to local markets. For example, see Philippon 2016 and 2019.
- 65 See <https://www.latamfintech.co/articles/the-state-of-the-rising-bolivian-fintech-startup-ecosystem> for a list with some start-ups in Bolivia.
- 66 Regulation is often important for correcting market failures and advancing social or environmental objectives, but some regulatory design unnecessarily restricts private sector development or competition. In those cases, there are alternative options for regulation that achieve the desired policy goal with fewer distortions to the market.
- 67 Differing from the practice in almost all countries in Latin America and the Caribbean and worldwide, Bolivia's merger control system and power functions are distributed among several sectoral bodies such as the telecommunications, electricity, oil and gas, and transportation regulatory agencies as opposed to a single competition authority.
- 68 Banco Central de Bolivia (database), 2019, https://www.bcb.gob.bo/webdocs/2020/informacion_economica/estadisticas/estadisticas_por_sectores/01/02-01A.pdf.
- 69 See World Trade Organization, Trade Policy Review. 2017. http://www.sice.oas.org/ctyindex/bol/WTO/ENGLISH/s363_e.pdf
- 70 See <https://www.derechoteca.com/gacetabolivia/decreto-supremo-no-4024-del-23-de-agosto-de-2019/>.
- 71 See articles in Bnamericas, March 29, 2019 <https://www.bnamericas.com/en/news/bolivia-legislation-to-boost-state-cement-plants>; and Cement Americas, Marzo 18, 2020 <http://cementamericas.com/2020/03/18/the-cement-industry-in-bolivia/>.
- 72 See <https://www.economista.com.mx/empresas/Cementos-Chihuahua-busca-opciones-ante-expropiacion--20100906-0104.html>.
- 73 See <https://www.itu.int/itu-d/apis/clients/publications/res/bdt/BDT-REPORT-ICTPRICES-2017-PDF-E.pdf>.
- 74 Bolivia Enterprise Survey 2017.
- 75 The Enterprise Survey covers Santa Cruz, La Paz, and Cochabamba.
- 76 Among wage employees in medium and large firms and self-employed workers, these rates are 94 percent and 58 percent, respectively.
- 77 World Bank (2020a) using the OECD/IAB Employment Protection Database, 2013 update.
- 78 World Economic Forum data for 2016–17.

- 79 This policy was identified as an overwhelming constraint to businesses in focus group discussions with small entrepreneurs in La Paz, Santa Cruz, and Cochabamba, who said things such as “I had two branches and had to close one because of the famous *doble aguinaldo*” (entrepreneur in Santa Cruz); and “The *doble aguinaldo* affects microenterprises greatly, costs cannot be managed, the majority has had to let workers go, they don’t want to hire” (entrepreneur in La Paz). Qualitative data collection carried out as part of the World Bank’s Bolivia Poverty Assessment (World Bank 2020a) in 2018.
- 80 Results using a labor market structural model adapted from the SIMLAB tool (World Bank 2020c).
- 81 This package includes removing the double Christmas bonus (*doble aguinaldo*), reducing severance pay by 90 percent, and reducing informal costs associated with employment termination mandated by the restrictive labor regulations, also by 90 percent.
- 82 This package includes eliminating the transaction tax (chain tax) and eliminating the tax simplification–related legal costs borne by firms.
- 83 The World Enterprise Survey shows that Bolivian entrepreneurs spend 15 percent of their time dealing with regulations, while the average for Latin America is 10.8 percent. The Global average is 8.8 percent.
- 84 Doing Business 2020 data.
- 85 SENASAG, for example, faces serious institutional restrictions such as understaffing and short-term contracts that, if removed, could promote competitiveness. Another example is the institutional capacity to protect intellectual property rights (SENAPI-*Servicio Nacional de Propiedad Intelectual*) and the promotion of innovation within specific sectors (INIAF, activities managed by the Vice Ministry of Science and Technology as part of the Ministry of Education).
- 86 Decreto Supremo No. 29026, 2007.
- 87 See <https://rulemaking.worldbank.org/>. The Global Indicators of Regulatory Governance present new measures of transparency, civic participation, evidence-based rulemaking, and government accountability across the life cycle of regulations. The indicators collect data for 186 countries.
- 88 An entrepreneur in Cochabamba stated during focus group discussions, “I had to borrow to pay the *doble aguinaldo* the first time because it is not something that was announced a year before but only half a year prior.” Qualitative data collection carried out as part of the World Bank’s Bolivia Poverty Assessment in 2018 (World Bank 2020a).
- 89 Mexico has the Catalogo Nacional de Regulaciones, Tramites y Servicios (<https://catalogonacional.gob.mx/>), a single source for regulation announcements, administrative procedures, and services from all three levels of government in Mexico. The portal provides information and, in some cases, it is also transactional. This solution emanates from a legal mandate (a national law on better regulation).
- 90 In Canada, regulators are obliged to prepare and publish in advance a list with all regulations they will review or prepare within a two-year period. Health Canada provides an example: <https://www.canada.ca/en/health-canada/corporate/about-health-canada/legislation-guidelines/acts-regulations/forward-regulatory-plan/plan.html>. Besides having a list with upcoming regulatory changes, the system allows a viewer to zoom in on a specific regulation and then provides descriptive information on regulatory cooperation efforts, potential impact, and consultations, among other details.
- 91 In El Salvador, the Access to Public Information Institute and the Better Regulation Agency collaborated to develop a portal called Legisla (<https://participacion.iaip.gob.sv/>). An analysis of more than 40 portals from OECD and developing countries that captures best practices is available. IFC has supported the creation of public consultation portals for Malaysia (<https://upc.mpc.gov.my/>) and Zambia (<http://www.businesslicenses.gov.zm/notices/>).
- 92 Usually, countries do not have electronic systems for RIA. Instead, they have requirements and guidelines for regulators to conduct RIA when preparing a new regulation. One example is New Zealand, which requires that the description of their ex ante system and materials be developed to guide and support the implementation of RIA (<https://www.treasury.govt.nz/publications/legislation/regulatory-impact-assessments> and <https://www.treasury.govt.nz/information-and-services/regulation/impact-analysis-requirements-regulatory-proposals>).
- 93 The Dominican Republic has an ex post review guideline (Guía de Análisis de Impacto Regulatorio Ex Post) as an initial step to establish better regulation practices (<https://rdmassimple.gob.do/biblioteca/informes-y-documentos/>).
- 94 Ley General de Mejora Regulatoria (http://www.diputados.gob.mx/LeyesBiblio/pdf/LGMR_180518.pdf).
- 95 This section draws from a background note prepared for the Bolivia CPSD. For detailed information, consult the following references: *Confederación de Empresarios Privados de Bolivia (CEPB) – Mesas de Diálogo Público Privado: Resumen Ejecutivo – Bolivia, 2018*; *Comisión Económica para América Latina y el Caribe (CEPAL) – La Construcción de las Asociaciones Empresariales al Desarrollo de las Políticas Productivas: Elementos para la Elaboración de un Marco Analítico – 2020*; *Confederación de Empresarios Privados de Bolivia (CEPB) – Memoria Anual 2019 – Bolivia, 2020*; *Alvarado, Jennifer - Asociaciones público-privadas como instrumento para fortalecer los objetivos del Proyecto Mesoamérica – Comisión Económica de América Latina y el Caribe (CEPAL), Sede Subregional en México, 2017*; Herzberg, Benjamin & Wright, Andrew - *The Public-Private Dialogue Handbook: a toolkit for business environment reformers - Small and Medium Enterprise Department The World Bank Group – 2006* <http://www.publicprivatedialogue.org/papers/PPD%20handbook.pdf>; OCDE/PNUD – *Hacia una Cooperación al desarrollo más eficaz: Informe de avances 2014*, OECD Publishing.

- 96 The structural peers (Cameroon, Colombia, Ecuador, Ghana, Kazakhstan, and Mongolia) are nonfragile, middle-income countries that have oil exports constituting 25 to 65 percent of total exports and a population between 1 million and 100 million inhabitants. The regional peers (Brazil, Colombia, Ecuador, Paraguay, and Peru) are middle-income, raw material-producing countries in South America with populations larger than 5 million inhabitants (excluding the Republicana Bolivariana de Venezuela).
- 97 In 2018, the figures revealed a considerable contraction, and the value of agricultural imports were estimated at US\$1.7 million.
- 98 There are approximately 2 million hectares of cropland in Bolivia, of which soybean production occupies 1.3 million hectares, employs about 45,000 workers directly, and in 2016 represented approximately 3 percent of the country's GDP.
- 99 The price of soybean meal has ranged from US\$646 per metric ton in 2012 to US\$319 in 2016, and it is currently hovering around US\$565.
- 100 See Bolivia Dashboard – Global Forest Watch <https://www.globalforestwatch.org/dashboards/country/BOL>.
- 101 See Economic and Social Development National Plan 2016–20 (PDES). <https://www.sedem.gob.bo/sites/default/files/2018-07/pdes2016-2020.pdf>.
- 102 See Waha et al., 2020. Multiple cropping systems of the world and the potential for increasing cropping intensity. *Global Environmental Change*. <https://doi.org/10.1016/j.gloenvcha.2020.102131>.
- 103 “The production, importation and commercialization of genetically altered products shall be regulated by law.”
- 104 This section uses a broad definition of agricultural inputs that includes fertilizers, pesticides, seeds, irrigation, and machinery, as well as logistics, finance, insurance, and research and development.
- 105 See <https://www.yppfb.gob.bo/comercializacion/index.php/precios-de-la-urea>.
- 106 In 2013, Brazil accounted for more than 50 percent of all the resources allocated to R&D in the region, followed by Argentina and Mexico, which contributed 14 percent each to total regional expenditure. Investments in Colombia and Chile accounted for, respectively, 5 and 4 percent of the total, while the remaining countries of Latin America and the Caribbean contributed much lower shares of agricultural R&D spending and operated smaller agricultural research systems (Stads et al. 2016).
- 107 It typically requires 40 days to complete SENASAG inspection and export certification for quinoa shipments. This process could readily be streamlined. Improved coordination of shipping containers could reduce turnaround.
- 108 See <http://documents1.worldbank.org/curated/en/942381591906970569/pdf/Future-Foodscapes-Reimagining-Agriculture-in-Latin-America-and-the-Caribbean.pdf>.
- 109 They are *La Boliviana Ciacruz de Seguros y Reaseguros, Seguros y Reaseguros Credinform Internacional S.A.*, and *Alianza Compañía de Seguros y Reaseguros S.A. E.M.A.*
- 110 The exchange rate was R\$3.92 per US\$1 on December 12, 2018.
- 111 A stochastic frontier analysis (SFA) was conducted by CAINCO to estimate a production frontier that represents the current state of technology in the sector. The frontier defines the industry's maximum potential or optimum level of production. Technically efficient firms operate on the frontier and below the frontier if they are not. The frontier is stochastic as deviations from the frontier include random shocks that affect the production process and a specific distribution function represents technical inefficiency.
- 112 For the period 2017–18, there were 128,000 producers registered for insurance, 50 percent of them potato and corn producers. This figure corresponds only to 254,000 hectares.
- 113 The size of companies is designated using an index that combines criteria like the number of workers, the amount of sales, and equity. This index was approved by Supreme Decree No. 3564/18 (CFB, ASDI, and CAINCO 2004).
- 114 More recent environmental legislation (Law 071 of 2010 and Law 300 of 2012) can serve as a foundation for updating Bolivia's forestry policy to meet 21st century challenges.
- 115 USAID funded two projects related to sustainable forest management: BOLFOR I (1994–2004) and BOLFOR II (2003–08). BOLFOR outcomes included families practicing community forest management (CFM), which increased incomes by 23 percent, and the use of signed timber contracts as financial collateral. The World Wildlife Fund has an ongoing forestry project in Pando focused on improved forest management, training and capacity-building, and nontimber forest production.
- 116 Vertically integrated private actors had access to forests and planned production to meet volumes demanded in the market. By contrast, communities have insufficient management skills to vertically integrate and have not developed stable, long-term relationships with buyers.
- 117 Sustainable forest management certification involves developing plans that reduce the impact of harvesting on forest ecosystems. The major certification groups—largely consumer-driven and voluntary initiatives—cover more than 415 million hectares or around 12 percent of the world's forest area. FAO (2018) reports that 15 million hectares of Latin America and the Caribbean forestland is under sustainable forest management, which amounts to 1.5 percent of the forest area in Central America and 1.6 percent of the forest area in South America. Two organizations that conduct certification globally are the Forest Stewardship Council (FSC) and the Program for the Endorsement of Forest Certification (PEFC), which certify about 28 percent of the region's total certifiable area.

- 118 Although several sources were consulted, no information on comparative costs per country and per node was found. A comparative study on production and transportation costs in countries with tropical timber products supply is recommended to analyze and compare cost structures. Such information would be useful for determining specific bottlenecks that affect the competitiveness of specific tree species, assuming that nodes with higher relative costs are less competitive and vice versa.
- 119 CADEX (Cámara de Exportadores, Logística, y Promoción de Inversiones de Santa Cruz) conducted a sector diagnostic (2019–20), with the Japan International Cooperation Agency's support. It explored the feasibility of a strategy focused on exports to Asia. The study identified constraints along the value chain to increase productivity and proposed short-, medium- and long-term actions for strengthening the country's competitiveness with a view to increasing beef exports to Asia. The analysis was structured around six nodes (regulatory institutions, primary producers, processors, logistics firms, the market, and research and development institutions) and presented a detailed set of recommendations for each that are paramount for a successful targeted export strategy.
- 120 A stochastic frontier analysis (SFA) was conducted by CAINCO to estimate a production frontier that represents the current state of technology in the sector. The frontier defines the industry's maximum potential or optimum level of production. Technically efficient firms operate on the frontier and below the frontier if they are not. The frontier is stochastic as deviations from the frontier include random shocks that affect the production process, and a specific distribution function represents technical inefficiency.
- 121 Forest capacity refers to the potential volume that can be harvested from total area under management (10.8 million hectares), considering a sustainable harvesting volume of 15.9 cubic meters per hectare (Dauber 1999). This capacity could be doubled if permanent production forests were fully utilized. Harvesting capacity is assumed to be the highest volume extracted in the analysis period. Bottlenecks in this node refers mostly to obsolete equipment (between 10 and 20 years old). Sawmilling capacity is estimated based on equipment registered by companies in the ABT (635 companies). Sawmills are also obsolete with limited automation (between 20 to 40 years old). Manufacturing capacity is estimated adding the average annual capacity of registered manufacturing companies (813 companies). Manufacturing companies are mostly small companies with limited productive capacity. More than 72 percent of them are small and near 90 percent belong to a sole proprietor. Commercialization capacity refers to the sum of the average annual capacity of registered timber yards (1,671 companies).
- 122 See https://www.bcb.gob.bo/webdocs/publicacionesbcb/2020/10/00/CPE_JUN-20_iii.pdf
- 123 Of the 284 firms that were surveyed, only 26.6 percent measure their logistics costs.
- 124 The logistics costs for agriculture and livestock firms is 8 percent of sales, while for manufacturing and retail it is 15.1 percent and 18.1 percent. Of the firms that reported their logistics cost, 43 percent belong to the manufacturing sector, 33 percent to retail, 10 percent to mining, and 8.8 percent are in agriculture. Surveyed firms identified three priority areas: (a) improvement of road infrastructure quality (23.8 percent), (b) facilitation of freight movement with fewer restrictions (15.7 percent), and (c) investment in ICT for logistics and communications (11.4 percent).
- 125 Logistical cost data reported in the 2018 NLS.
- 126 This doesn't include pipeline transportation.
- 127 Followed by coconuts, Brazil nuts, and cashews with 12.3 percent. In the case of imports in the two-digit harmonized system (HS2), Bolivia imports 28.2 percent in machinery, 17.8 percent in chemicals and plastics, 16.8 percent in metals and minerals with their byproduct items, 14.64 percent in vehicles and auto parts, 7.8 percent in food products, and 14.6 percent in a variety of manufactured goods.
- 128 The east-west corridor connects Bolivia with Brazil to the east and with some points in northern Chile at the border posts of Tambo Quemado and Pisiga. The north-south corridor connects the departments of Beni, Santa Cruz, Chuquisaca, and Tarija, extending all the way to Yacuiba near the border of the Argentine province of Salta. The west-north corridor connects the departments of Pando and Beni with La Paz and allows access from La Paz to Guayaramerín on the border with Brazil (Rio Branco-Puerto Vello). The west-south corridor links the border post of Desaguadero with La Paz and continues southward through the departments of Oruro, Potosí, and Chuquisaca until it reaches Bermejo south of Tarija and the border with Argentina. The central-southern corridor connects the southwest of the department of Potosí, starting with the border town of Ollagüe on the Chilean-Bolivian border, with the population of Cañada Oruro in the department of Tarija on the border near the northeast corner of Paraguay. Through Ollagüe, it is possible to access the port of Antofagasta.
- 129 This corridor connects the departments of Santa Cruz, Cochabamba, La Paz, and Oruro. It also connects Bolivia with Brazil through Puerto Suarez and Puerto Quijarro, from which one can access the Paraná-Paraguay Hydroway (HPP in Spanish) or the road system of Brazil to reach the port of Santos in São Paulo. On the other hand, towards the west, one of its branches ends in the town and border crossing of Tambo Quemado, from which a connector route runs to the Chilean port of Arica. The other branch to the west reaches the border town of Pisiga, from which it is possible to access the port of Iquique. Through the section of the west-south corridor that connects La Paz with Desaguadero, it is possible to access the ports of Ilo and Matarani on the coast of Peru.
- 130 Peru's network uses a standard-width network, while Bolivia's network uses a metric width that is the same used in Chile, Argentina, and Brazil, making it difficult to connect Bolivia and Peru.
- 131 This does not count products transported by pipeline.

- 132 Ecuador mobilized 50.805 million ton-km and Peru 340.335, according to the information from the International Civil Aviation Organization, available at [https://data.worldbank.org/indicator/IS.AIR.GOOD.MT.KI?end=2019&locations=BO-PE-EC&start=2013\(OACI 2019\)](https://data.worldbank.org/indicator/IS.AIR.GOOD.MT.KI?end=2019&locations=BO-PE-EC&start=2013(OACI 2019))
- 133 The three main international airports handle 82 percent of the national and international passenger market. Air Liberalization Index figures for Bolivia are 8.69 below the Latin America and Caribbean average (11.77), 50 being the score for the most liberal sector. Lack of openness, high rates, limited air traffic growth, and controlled participation of international airlines limits the development of the air transport market.
- 134 Budget summary for the transport sector, Ministerio de Obras Públicas, Servicio y Vivienda, 2020. https://www.oopp.gob.bo/wp-content/uploads/2020/antiguos/287d1b46615c4ea56ede1859ba056b44PEI_ultima_mod.pdf.
- 135 Final Report of the Study for a Transport Information System (SINTRA) and a Transport National Plan (PLANAST), prepared by Consultrans, IDB and MDPyEP (2018).
- 136 Platforms are multimodal and handle different types of cargo (dry and refrigerated). They are located close to logistics clusters and linked to trunk multimodal transport infrastructure like intercity highways, rail lines, waterways, and navigation channels, urban and industrial areas that act as freight-generating and freight-attracting hinterlands.
- 137 Central state level, autonomous departmental governments, and autonomous indigenous governments.
- 138 These services focus on intermodal freight hubs at ports, airports, waterways, and railways where cargo needs to be transferred or requires inspections and clearance by state authorities.
- 139 On February 17, 2017, the Ministry of Public Works enacted the Resolution 028 which was later abolished by Resolution 179 in June 2017.
- 140 Level of outsourcing of eight logistics processes by ULSs. NLS 2018–19.
- 141 Logistics management in companies. NLS 2018–19.
- 142 The growth generated by the companies in the transport and warehousing sector was driven by the fact that Bolivian international trade showed an upward trend for more than a decade, which increased the volume of goods to be transported.
- 143 A 4PL provider represents a higher level of supply chain management for customers and clients, providing a control view of their supply chains, overseeing the mix of warehouses, shipping companies, freight forwarders, and other agents, essentially taking third-party logistics a step further by managing resources, technology, infrastructure, and even managing external 3PLs.
- 144 By 2018, 54 companies had registered and generated US\$57 million in revenue, which is equivalent to 3.1 percent of LSP revenue.
- 145 Information on income and participation of the most representative warehousing companies comes from Fundaempresa, 2018.
- 146 Companies registered for freight transport activities, Fundaempresa, 2018.
- 147 Type of execution of the offer of logistic services NLS Bolivia 2018–2019.
- 148 More than 60,000 authorized transport units exist in Bolivia. Cámara de Transporte de Oriente.
- 149 Cost per procedure for international land transport operators Sinet (Operator Information System), Ministry of Public Works, Services, and Housing.
- 150 Bolivia has 43 companies qualified as Authorized Economic Operator (AEO) since 2017. Transcruz and Inbolpack are the only transport companies qualified as AEO. <https://www.aduana.gob.bo/oea>.
- 151 Euromonitor data, March 2020.
- 152 Cross-border e-commerce and digital trade between countries grew by 25 percent in Bolivia between 2018 and 2019. Euromonitor, March 2020.
- 153 Delivery fees in Bolivia range from US\$2 to US\$8 depending on the city or province.
- 154 Volume through the Tamengo Canal increased by 87 percent between 2012 and 2018 (Cambio, Port Portal).
- 155 Dredging activities are normally carried out by the port authorities, which are normally state entities.
- 156 See Barriga 2014, Montaña 2018, and WCO 2018.
- 157 Users obtain preferential benefits when using AEO certified companies such as priority attention to procedures at the start and end of customs transit, a physical reduction of the percentage of cargo manifests that cover export goods, and a reduction in the percentage of documentary review by foreign customs agencies
- 158 A relevant example is the export of Bolivian quinoa, which can take up to 60 days to reach the destination port. For this reason, it has a market value of US\$2,300/ton-free on board (FOB) despite having a higher quality compared to Peruvian quinoa (US\$2,500/ton-FOB, a current price difference of 9 percent).
- 159 The lessons learned presented below are extracted from various sources that include previous World Bank analytical reports and reviews of similar mechanisms such as the Freight Advisory Committees in the United States, the Freight Quality Partnerships in the United Kingdom, the National Logistics Task Force in Malaysia, and the National Logistics Committee in Thailand.

- 160 Logistics clusters (logistics parks, logistics centers, freight villages, inland ports, dry ports, and the like) refer to the geographic agglomeration of logistics activities. Such activities may include transportation terminals (maritime ports, inland waterway ports, rail terminals, trucking terminals, and airports), goods handling and light-manufacturing facilities (warehouses, distribution centers, consolidation and deconsolidation facilities, container freight stations, inland container depots), equipment handling facilities (empty container depots, chassis pools), logistics services (freight forwarding, freight brokerage, customs brokerage), and trade services (trade finance, insurance brokers, export-import facilitation services, commercial banking).
- 161 Discussions with stakeholders suggest that the Government could review the proposed plans for the development of the dry port in Oruro, considering factors such as strategic location on the main transport corridors and proximity to major consumption and distribution centers.
- 162 A number of key lessons have emerged from the international experience around integrated logistics centers: (a) such centers are PPPs between real estate developers and local and national level governments; (b) their development required substantial collaboration among public sector entities and consultations with local communities; (c) the PPP structure of these sites resulted in the mobilization of significant private sector funding compared to a relatively modest provision of public sector funds; (d) among the objectives pursued by the establishment of these centers, public sector aims were as important as and highly complementary of private sector aims; (e) while small compared to the size of private sector investments over time, initial public sector capital expenditure contributions were critical to the early stages of development; (f) early development typically depending upon the capture of one or more credible anchor tenants (blue-chip shippers, carriers and logistics service providers) whose presence at the integrated logistics centers attracts other customers and builds volumes and efficiencies over time; and (g) government oversight of the sites has been an important component of their operational effectiveness.
- 163 The Logistics Platform of Zaragoza (PLAZA) is the largest in Europe with an area of 13 million square meters in a strategic location with road, rail, and area interconnection. It has 350 companies installed and is attached to the Public Business Corporation of Aragon. Guanajuato's most important logistics platform in central Mexico, 1277 hectares, has more than 122 companies, investments of around US\$4 billion, and generates more than 19,000 jobs
- 164 This recommendation is based on the World Bank dialogue with the government in 2018. Indeed, in January 2018, the government of Bolivia issued Supreme Decree No. 3469 to enable "partnerships for development" between public and private entities. It was intended to set the basic conditions for private-public partnerships and represents the first legal vehicle for incentivizing the private sector to invest in infrastructure and service delivery. The Decree needed to be tested with a PPP pilot. The government requested support in the implementation of a modular PPP strategy (following the experience of countries like Nicaragua, Paraguay, and Uruguay) that would start with PPP technical dialogue, support the implementation of a basic institutional and regulatory framework to implement demonstration projects, and would include capacity building. Changes in the country context put an end to this dialogue. The initial discussions provided a sense of the level of maturity on the topic of PPPs in Bolivia and the need for a gradual approach that first entails strengthening the legal and administrative framework and implementing simple pilot projects before considering more ambitious projects and advanced financing mechanisms.
- 165 Both subnational governments from Santa Cruz –municipality and departmental – have submitted to their respective legislative assemblies' bill proposals to establish a PPP framework that enables them to guarantee legal certainty and tax incentives for private investors (August 5, 2021) https://eldeber.com.bo/edicion-impresa/santa-cruz-movera-us-1000-millones-con-las-alianzas-publico-privadas_241371
- 166 Estimates from household survey data.
- 167 World Bank, 2018.
- 168 World Bank, 2019b.
- 169 Authorities from the Vice Ministry of Micro and Small Entrepreneurs.
- 170 One regional example of this type of initiative in the Andean Region is Laboratoria in Peru, which is focused on creating capacities and skills in low-income women in the area of programming and web design to incorporate them into the labor market of the digital sector for firms with technological skills, offering boot camps for women to learn digital skills such as web development and User Experience (UX) design in six months.
- 171 UNCTAD NTM data, 2018. <https://trains.unctad.org/Forms/TableView.aspx?mode=modify&action=search>.
- 172 The frequency index captures the percentage of products that are subject to one or more NTMs. The coverage ratio captures the percentage of imports that is subject to one or more NTMs. The prevalence score captures the average number of NTMs which apply to a product.
- 173 For more information, consult the following references used to prepare the background note: *Confederación de Empresarios Privados de Bolivia (CEPB) – Mesas de Diálogo Público Privado: Resumen Ejecutivo – Bolivia, 2018*; *Comisión Económica para América Latina y el Caribe (CEPAL) – La Construcción de las Asociaciones Empresariales al Desarrollo de las Políticas Productivas: Elementos para la Elaboración de un Marco Analítico – 2020*; *Confederación de Empresarios Privados de Bolivia (CEPB) – Memoria Anual 2019 – Bolivia, 2020*; *Alvarado, Jennifer - Asociaciones público-privadas como instrumento para fortalecer los objetivos del Proyecto Mesoamérica - Comisión Económica de América Latina y el Caribe (CEPAL), Sede Subregional en México, 2017*; *Herzberg, Benjamin & Wright, Andrew - The Public-Private Dialogue Handbook: a toolkit for business environment reformers - Small and Medium Enterprise Department The World Bank Group – 2006* <http://www.publicprivatedialogue.org/papers/PPD%20handbook.pdf>; *OCDE/PNUD – Hacia una Cooperación al desarrollo más eficaz: Informe de avances 2014*, OECD Publishing.

- 174 Ministry of Foreign Affairs.
- 175 Ministry of Development Planning.
- 176 National Customs Service.
- 177 National Export Verification Service.
- 178 State Agency of Medicines and Health Technologies.
- 179 National Service for Registration and Control of Minerals and Metals Marketing.
- 180 National Hydrocarbons Agency.
- 181 Forest and Land Social Control Authority
- 182 National Chamber of Exporters of Bolivia.
- 183 National Chamber of Industries.
- 184 National Chamber of Commerce.
- 185 National Chamber of Commerce.
- 186 The National Confederation of Agriculture of Bolivia (CONFENAGRO) is an entity that after eight years of inactivity was reactivated in 2019 and chaired by the Cámara Agropecuaria del Oriente, or CAO (information available at <https://publiagro.com.bo/2019/07/confeagro-se-reactiva-oficialmente/>; no official website was found).
- 187 Bolivian Chamber of National and International Transport.
- 188 See article in Mundo Marítimo. 2019. <https://www.mundomaritimo.cl/noticias/amplian-tres-puertos-privados-con-mas-de-us30-millones-en-canal-tamengo-bolivia>
- 189 Ferrovía Oriental invested in 27 hectares for the development of a river-sea port enclave in the Rosario area, transporting 2.2 million tons in 1500 wagons.
- 190 According to Delta Financiero web portal, <http://deltafinanciero.com/6155-Ferrovía-Andina-y-Ferrovía-Oriental-encaran-proceso-de-modernización>, April 4, 2019
- 191 Tisur invested US\$283,850,334 in port infrastructure and equipment works by the end of 2019, Port Portal -10/03/2020
- 192 Ilo would require an additional investment of US\$200 million to meet Bolivian demands. Bolivian annual exports total US\$7.846 billion, Portal Portuario (as of October 3, 2020).
- 193 Qualification of outsourced logistics services, NLS 2018.
- 194 In the use of the freight trucking fleet in Bolivia, NLS 2018.
- 195 Since January 2020 the restriction on exports have actually been released, a bureaucratic regulation persists regarding the authorizations to export surpluses.

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