Book

The KOF education system factbook: Bolivia

ETH zürich

KOF Swiss Economic Institute

The KOF Education System Factbook: Bolivia

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List of Abbreviations

GCI	Global Competitiveness Index
GII	Global Innovation Index
GDP	Gross Domestic Product
INS	Institutos Normales Superiores (Higher Normal Institutes)
ISCED	International Standard Classification of Education
KOF	Swiss Economic Institute
NGO	Non-Governmental Organisation
OECD	Organisation for Economic Co-operation and Development
OPCE	Observatorio Plurinacional de la Calidad Educativa Plurinational (Observatory of Educational Quality)
PET	Professional Education and Training
SINAMED	Sistema Nacional de Acreditación y Medición de la Calidad de la Educación (National System for Accreditation and Measurement of the Quality of Education)
SIMECAL	Sistema de Medición de la Calidad (Quality Measurement System)
UNESCO	United Nations Educational, Scientific and Cultural Organization
VET	Vocational Education and Training
VPET	Vocational Professional Education and Training
VPETA	Vocational and Professional Education and Training Act
WEF	World Economic Forum
YLMI	Youth Labour Market Index

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FOREWORD

The increasing competitiveness of the world economy as well as the high youth unemployment rates after the worldwide economic crises have put pressure on countries to upgrade the skills of their workforces. Consequently, vocational education and training (VET) has received growing attention in recent years, especially amongst policy-makers. For example, the European Commission defined common objectives and an action plan for the development of VET systems in European countries in the *Bruges Communiqué on Enhanced European Cooperation in Vocational Education and Training for 2011-2020* (European Commission, 2010). In addition, a growing number of US states and other industrialized, transition, and developing countries (for example Hong Kong, Singapore, Chile, Costa Rica, Benin and Nepal) are interested in either implementing VET systems or making their VET system more labour-market oriented.

The appealing outcome of the VET system is that it improves the transition of young people into the labour market by simultaneously providing work experience, remuneration and formal education degrees at the secondary education level. If the VET system is optimally designed, VET providers are in constant dialogue with the demand-side of the labour market, i.e. the companies. This close relationship guarantees that the learned skills are in demand on the labour market. Besides practical skills, VET systems also foster soft-skills such as emotional intelligence, reliability, accuracy, precision, and responsibility, which are important attributes for success in the labour market. Depending on the design and permeability of the education system, VET may also provide access to tertiary level education (according to the ISCED classification): either general education at the tertiary A level or professional education and training (PET) at the tertiary B level. PET provides occupation-specific qualifications that prepare students for highly technical and managerial positions. VET and PET systems are often referred to together as “vocational and professional education training (VPET)” systems.

Few countries have elaborate and efficient VPET systems. Among these is the Swiss VPET system, which is an example of an education system that successfully matches market supply and demand. The Swiss VPET system efficiently introduces adolescents to the labour market, as shown by Switzerland’s 2007-2017 average youth unemployment rate of 8.1 percent compared to 14.8 percent for the OECD average (OECD, 2017).

Though not many countries have VPET systems that are comparable to Switzerland’s in terms of quality, efficiency and permeability, many have education pathways that involve some kind of practical or school-based vocational education. The purpose of the KOF Education System Factbook Series is to provide information about the education systems of countries across the world, with a special focus on vocational and professional education and training.

In the KOF Education System Factbook: Bolivia, we describe Bolivia's vocational system and discuss the characteristics that are crucial to the functioning of the system. Essential components comprise the regulatory framework and the governance of the VPET system, the involved actors, and their competencies and duties. The Factbook also provides information regarding the financing of the system and describes the process of curriculum development and the involved actors.

The Factbook is structured as follows: First, we provide an overview of Bolivia's economy, labour market, and political system. The second part is dedicated to the description of the formal education system. The third section explains Bolivia's vocational education system. The last section offers a perspective on Bolivia's recent education reforms and challenges to be faced in the future.

EDITING AND ACKNOWLEDGEMENTS

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The KOF Education System Factbooks should be regarded as work in progress. The authors do not claim completeness of the information that has been collected carefully and in all conscience. Any suggestions for improvement are highly welcome!

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1. The Bolivian Economy and its Political System

One of the main purposes of an education system is to provide the future workforce with the skills needed in the labour market. The particularities of a country's economy and labour market are important factors determining the current and future demand for skills. Therefore, these will briefly be described in the first part of this Factbook. In addition, this part provides an overview of Bolivia's political system with emphasis on the description of the education politics.

1.1 The Bolivian Economy

Bolivia is a country positioned in the west-central part of the South American continent. It is one of only two landlocked countries in South America (and so is Paraguay). Further, the country shares Lake Titicaca, South America's second largest lake, with Peru. A third of the territory of Bolivia lies in the Andes Mountains, where are also most of the nation's major cities. Therefore, Bolivia is usually considered as a highland country (McFarren & Arnade, 2018).

Despite its rich natural gas reserves, Bolivia is the poorest country in South America. The KOF Globalisation Index[1] scores Bolivia at 59.9 for 2015, just below the world average of 60.9 (Gygli, Haelg, & Sturm, 2018). Bolivia's GDP per capita for 2016 of $3'117. It is below the GDP per capita average for Latin America and the Caribbean, which is $8'407 for 2016 and well below the OECD average of $38,109 for the same year (OECD, 2016) (World Bank, 2018i). For the year 2016, Bolivia had a World Bank estimated GINI index of 44.6. A GINI index of 0 represents perfect income equality in a country, while a value of 100 represents perfect inequality. Bolivia's index of 44.6 is relatively high, compared to other countries. For example, the OECD average in 2014 was 31.8 (OECD, 2018a). GINI values for other South American countries include Colombia (50.8), Ecuador (45) and Uruguay (39.7) (World Bank, 2016).

In spite of the country's low GDP per capita, it has experienced strong growth in the last few decades. Since the year 1990, Bolivia's GDP growth has in average been 4.2 percent per year, significantly higher than the OECD average of 2.1 percent for the same time period. In 2016 Bolivia had a GDP growth of 4.3 percent, also well above the OECD average of 1.7 percent. (World Bank, 2018b). Between 2004 and 2014 the country averaged an impressive 4.9 percent growth rate, which the World Bank attributes to high commodity prices, increased natural gas

[1] The KOF Index of Globalisation measures the economic, social and political dimensions of globalisation. Here, we focus on the economic dimension of globalisation, the KOF Index of Economic Globalisation. It is constructed by using indicators for long distance flows of goods, capital and services (that is, data on trade, FDI and portfolio investment), as well as information and perceptions that accompany market exchanges (restrictions to trade and capital, using hidden import barriers, mean tariff rates, taxes on international trade and an index of capital controls).

exports to Argentina and sensible macroeconomic policy. In this period, moderate poverty[2] declined from 59 percent to 39 percent of the population, and the Gini inequality coefficient for the country fell from 0.60 to 0.47. Thereafter, a reduction in the natural gas demand from Brazil (among other factors) led to reduced growth, declining every year from its peak in 2013 (6.8 percent) to 4.2 percent in 2016 (World Bank, 2018c).

Table 1: Value added and employment by sector, 2016[3]

Sector	Bolivia: Value added[4] (%)	EU-28: Value added (%)	Bolivia: Employment[5] (%)	EU-28: Employment (%)
Primary sector	13.7	1.5	27.4	4.5
Agriculture, hunting and forestry, fishing	13.7	1.5	27.4	4.5
Secondary sector	31[6]	24.6	22.6	21.6
Manufacturing, mining and quarrying and other industrial activities	31	19.3	n/a	15.3
of which: Manufacturing	13.4	16.3	n/a	13.8
Construction	n/a	5.3	n/a	6.3
Tertiary sector	55.4	73.9	50.0	73.8
Wholesale and retail trade, repairs; hotels and restaurants; transport; information and communication	n/a	24.1	n/a	27.6
Financial intermediation; real estate, renting & business activities	n/a	27.4	n/a	16.4
Public administration, defense, education, health, and other service activities	n/a	22.4	n/a	29.8

Source: Eurostat (2016a; 2016b), World Bank (2018d).

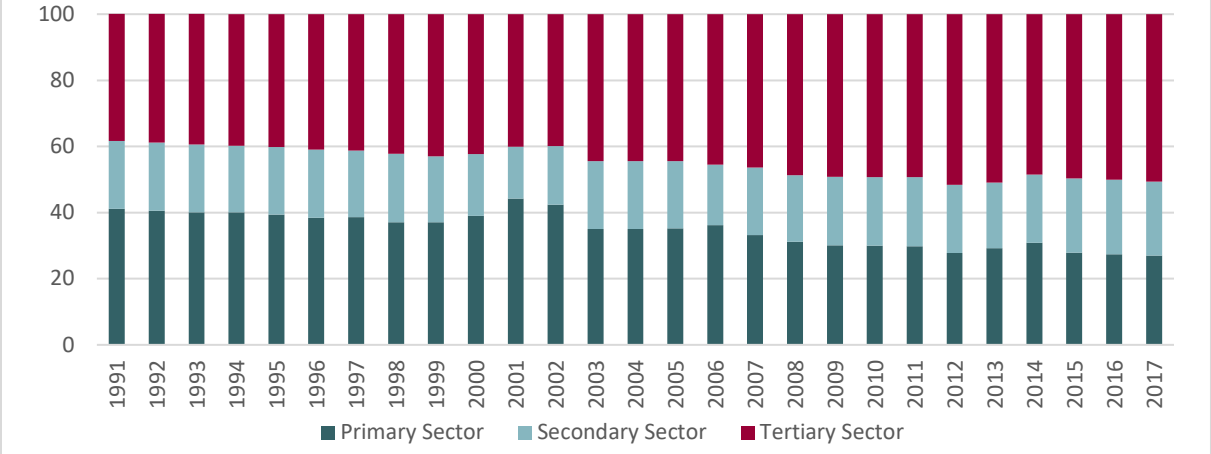
Table 1 shows value added as well as employment by sector for Bolivia in 2016. The percentages for the 28 member states of the European Union (EU28) are included for comparison. The most value added comes from the tertiary sector for both Bolivia and the EU28, followed by the secondary and then primary sector, as is common for most countries around the world. Despite this similarity, there are some immediately visible differences between the value added figures for Bolivia and the EU28. The primary sector in Bolivia is far more important in terms of value added than in the EU28, which is to be expected from a relatively poor developing country such as Bolivia. The secondary sector in Bolivia is also relatively larger, although slightly less value added is derived from manufacturing than in the EU28. Mining is an important part in the secondary sector of Bolivia's economy. Bolivia is a major producer of gold and thin. The exports of silver and zinc account for a significant part of the export earnings, despite being just a small fraction of the world market. The country also has reserves of copper,

[2] Moderate poverty is defined as the percentage of the population living between $1.90 and $3.10 per day (Castaneda, Doan, Newhouse, Nguyen, & Uematsu, 2016).
[3] Due to rounding differences, the sum of all sectors may fall below 100 percent in some cases.
[4] Within sector breakdowns of value added and employment were unavailable for Bolivia.
[5] Employment by sector percentages for Bolivia are modelled ILO estimates.
[6] This figure includes value added from construction.

lithium, tungsten, lead and antimony (McFarren & Arnade, 2018). Lastly, the tertiary sector is much larger in the EU28 than in Bolivia.

In terms of total employment, where unfortunately only figures for the three broad sectors in Bolivia were available, we can see a similar pattern in the distribution. Bolivia once again has an expectedly larger focus on the primary sector than in the European Union. Over 27 percent of total employment in Bolivia is in the primary sector, which provides only 4.5 percent of total employment in the EU28. The secondary sector is still slightly more prominent in Bolivia in terms of employment, although this difference is much larger in terms of value added. The Bolivian tertiary sector accounts for half of total employment in the country, which is once again much smaller than the 74 percent of total employment it accounts for in the EU28.

Figure 1: Employment by sector (as % of total employment), 1991-2017



Source: World Bank (2018d).

Figure 1 shows the percentage of total employment covered by each of the three sectors in Bolivia from the year 1991 until 2017. It indicates that all three sectors have experienced some degree of fluctuation in terms of employment since 1991. The tertiary sector for example accounted for 38 percent of total employment in 1991. Thereafter it experienced relatively steady growth (with a slight dip in the early 2000s) to its peak of 51.6 percent in 2012 before settling at 50.6 percent in 2017. The primary and secondary sectors each accounted for 41.2 and 20.4 percent of total employment respectively in 1991. While the secondary sector remained relatively stable until 2017 when it accounted for 22 percent of total employment, the primary sector has been slightly more volatile. Its percentage of total employment climbed to 44.2 percent in 2001, but fell steadily thereafter down to 27 percent in 2017.

The Global Innovation Index (GII) ranks countries by their capacity for innovation. In the 2017 version of the index, Bolivia is ranked 106th out of 127 countries with available data. This was a slight improvement from its rank of 109 in 2016. While this is a very low ranking, the report does note some strengths (as well as weaknesses) of the Bolivian Economy. These include

the subcategories of Education (52nd overall, 11th in expenditure on education as % of GDP), Credit (25th overall, 1st in microfinance gross loans as % of GDP) and business sophistication indicators such as FDI net inflows (% of GDP, 55th overall) and intellectual property payments (% of total trade, 57th overall. As Bolivia's overall rank reflects, it has many weaknesses mirrored by the 2017 GII, the most glaring of which being the main category of Institutions. Bolivia is ranked dead last at 127th in this category, a ranking which is driven by a poor regulatory environment (127th overall, 124th in rule of law, 117th in regulatory quality) and an equally poor business environment (127th overall, 125th in ease of starting a business, 127th in ease of paying taxes). Other weaknesses include the innovation linkages subcategory (125th overall, 120th in university/industry research collaboration) and logistics performance (120th overall) (Dutta, Lanvin, & Wunsch-Vincent, 2017).

Bolivia was excluded from the World Economic Forum's Global Competitiveness Index (GCI) for 2017-2018 due to insufficient data (WEF, 2018).

1.2 The Labour Market

In the first part of this section, we will describe the general situation of Bolivia's labour market. In the second part, we will refer to the youth labour market in particular.

1.2.1 Overview of the Bolivian Labour Market

Contrary to its extremely low GDP per capita relative to the rest of the world ($2'457.6, lowest in South America for the year 2016), Bolivia boasts an impressive rate of unemployment (% of labour force) in comparison to other countries. Unemployment in Bolivia was 3.1 percent in 2017, lower than all but Guatemala and Cuba in the Latin and South America regions for that year. This rate is also much lower than the OECD average of 5.8 percent for 2017. The unemployment rate in Bolivia has also been surprisingly resilient to the shocks of the global financial crisis from 2008 onwards. Unemployment actually fell during this period from 4.9 percent in 2007 to its lowest point in recent years at 2 percent in 2014 (World Bank, 2018e).

The OECD Index of Employment Protection is a multidimensional index that quantifies the strictness of Employment Protection legislation (EPL) across countries. It is scaled between zero to six, where zero refers to a low level of EPL, and six to a high level of protection. Bolivia performs rather well in this regard with an index value of 2.71 (for protection of permanent workers against individual dismissal) for the most recent year available (2014). This is the 12th highest index value out of 72 countries with data[7], and above the OECD average of 2.03. EPL

[7] Index values for various countries range from the years 2013 to 2015 due to data availability from the OECD.

index values for other countries include Venezuela (2nd, 3.5), Portugal (7th, 3.01) and the United States (last, 0.49) (OECD, 2018a).

The World Bank's *Doing Business* indicators state that the minimum wage in Bolivia is 291.7 US$ per month (World Bank, 2018f). Not being an OECD member means that trade union density information for Bolivia is unavailable. It is worth noting however that the Bolivian constitution provides protection of strikes and allows any employed individual the right to join a union. Only one union per business is allowed, and the government is legally permitted to administratively dissolve any union (United States Department of State, 2017).

Table 2: Labour force participation rate, unemployment rate by age 2017

	Labour force participation rate		Unemployment rate	
Age Group	Bolivia	OECD average	Bolivia	OECD average
Total (15-64 years)	69.3	72.1	3.1	5.9
Youth (15-24 years)	44.9	47.3	6.6	11.9
Adults (25-64 years)[8]	n/a	77.7	n/a	5.1

Source: OECD (2018b), World Bank (2018e), World Bank (2018f).

Table 2 shows the labour force participation and unemployment rates for Bolivia and the OECD, split by age group. As previously mentioned, Bolivia's unemployment rate fairs well when compared to that of the OECD. Its youth unemployment rate is also far lower than the OECD's. Bolivia performs less favourably in the labour force participation categories. Total labour force participation in Bolivia is slightly lower than the OECD at 69 percent (relative to 72 percent). Youth labour force participation is also slightly lower in Bolivia at 44.9 percent (compared to 47.3 percent).

A 2014 report by the Danish LO/FTF Council (Denmark's trade union council for international development cooperation) notes that despite its relative industrialization, a large share of employment in Bolivia is informal. It was estimated that 75 percent of non-agricultural employment was informal in Bolivia in 2014.The report states that obstacles in the Bolivian labour market and business environment can be attributed mainly to practices in the informal sector, political instability and lack of access to finance (Ulandssekretariatet LO/FTF Council, 2014). This is reinforced by the results of the Global Innovation Index, where Bolivia is ranked dead last in the business environment category (out of 127 countries with data) (Dutta, Lanvin, & Wunsch-Vincent, The Global Innovation Index 2017: Innovation Feeding the World, 2017).

[8] Data on adult labour force participation and unemployment was unavailable for Bolivia.

The World Bank Enterprise Surveys are a series of firm-level surveys covering various topics concerning a countries economy/private sector, covering topics such as infrastructure, competition and informality. The 2017 survey for Bolivia notes that 79 percent of firms surveyed reported that they were competing against unregistered/informal firms. This is well above the averages for Latin America & the Caribbean and all countries surveyed which had percentages of 63 and 54 respectively. Bolivia also had a high percentage of firms (47 percent) that reported that they identified practices of competitors in the informal sector to be a major constraint on their business. This is again well above the averages for Latin America & the Caribbean (31 percent) and all countries surveyed (28 percent) (Enterprise Surveys, 2017).

Table 3: Labour force participation rate, unemployment rate by educational attainment 2017 (persons aged 25-64)

	Labour force participation		Unemployment rate	
Education Level	Bolivia	OECD average	Bolivia	OECD average
Less than upper secondary education	77.1	64.6	3.5	11.6
Upper secondary level education	63.1	80.5	5.1	6.5
Tertiary education	n/a	88.6	6.9	4.2

Source: OECD (2019); ILO (2019).

Table 3 shows the labour force participation and unemployment rates for Bolivia and the OECD, split by education level. Bolivia exhibits a much higher labour force participation rate for those with less than upper secondary education than that of the OECD. This is not surprising for a low income country such as Bolivia, considering its large informal sector, and the fact that a large percentage of the population do not reach upper secondary education (In 2012, a reported 48 percent of individuals aged 25 and above had not completed upper secondary education in Bolivia (World Bank, 2018g)). The labour force participation rate for individuals with at least upper secondary education is considerably lower in Bolivia than the OECD. With regard to unemployment, Bolivia once again exhibits lower rates than the OECD. The unemployment rates for upper and less than upper secondary education are significantly lower than those of the OECD, while the rate for tertiary education is slightly higher than the OECD rate.

1.2.2 The Youth Labour Market

The KOF Swiss Economic Institute developed the KOF Youth Labour Market Index (KOF YLMI) to compare how adolescents participate in the labour market across countries (Renold et al., 2014). The foundation for this index is the critique that a single indicator, such as the unemployment rate, does not suffice to describe the youth labour market adequately nor provide enough information for a comprehensive cross-country analysis. To increase the

amount of information analysed and to foster a multi-dimensional approach, the KOF YLMI consists of twelve labour market indicators[14] that are grouped into four categories.

Dimensions of the KOF YLMI
Activity state - Unemployment rate - Relaxed unemployment rate[9] - Neither in employment nor in education or training rate (NEET rate)
Working conditions Rate of adolescents: - with a temporary contract - in involuntary part-time work - in jobs with atypical working hours - **in work at risk of poverty**[10]Vulnerable unemployment rate[11]
Education - Rate of adolescents in formal education and training - Skills mismatch rate
Transition smoothness - Relative unemployment ratio[12] - Long-term unemployment rate[13]
Source: Renold et al. (2014).

The first category describes the *activity state* of youth (ages 15-24 years old) in the labour market. Adolescents are classified according to whether they are employed, in education, or neither (unemployed, discouraged and neither in employment nor in education or training; see info box to the right). The category *working conditions* and the corresponding indicators reflect the type and quality of jobs the working youth have. The *education* category accounts for the share of adolescents in education and training and for the relevance of their skills on the labour market. The fourth category, *transition smoothness*, connects the other three categories by capturing the school-to-work transition phase of the youth. Each country obtains a score of 1 to 7 on each particular indicator of the KOF YLMI. A higher score reflects a more favourable situation regarding the youth labour market and a more efficient integration of the youth into the labour market.

One of the major drawbacks of the KOF YLMI is data availability. When data is lacking, a category can occasionally be based on a single indicator or must be omitted entirely when not a single indicator for that category exists in a given country. A lack of indicators can make comparisons across certain countries or groups of countries problematic and sometimes even impossible.

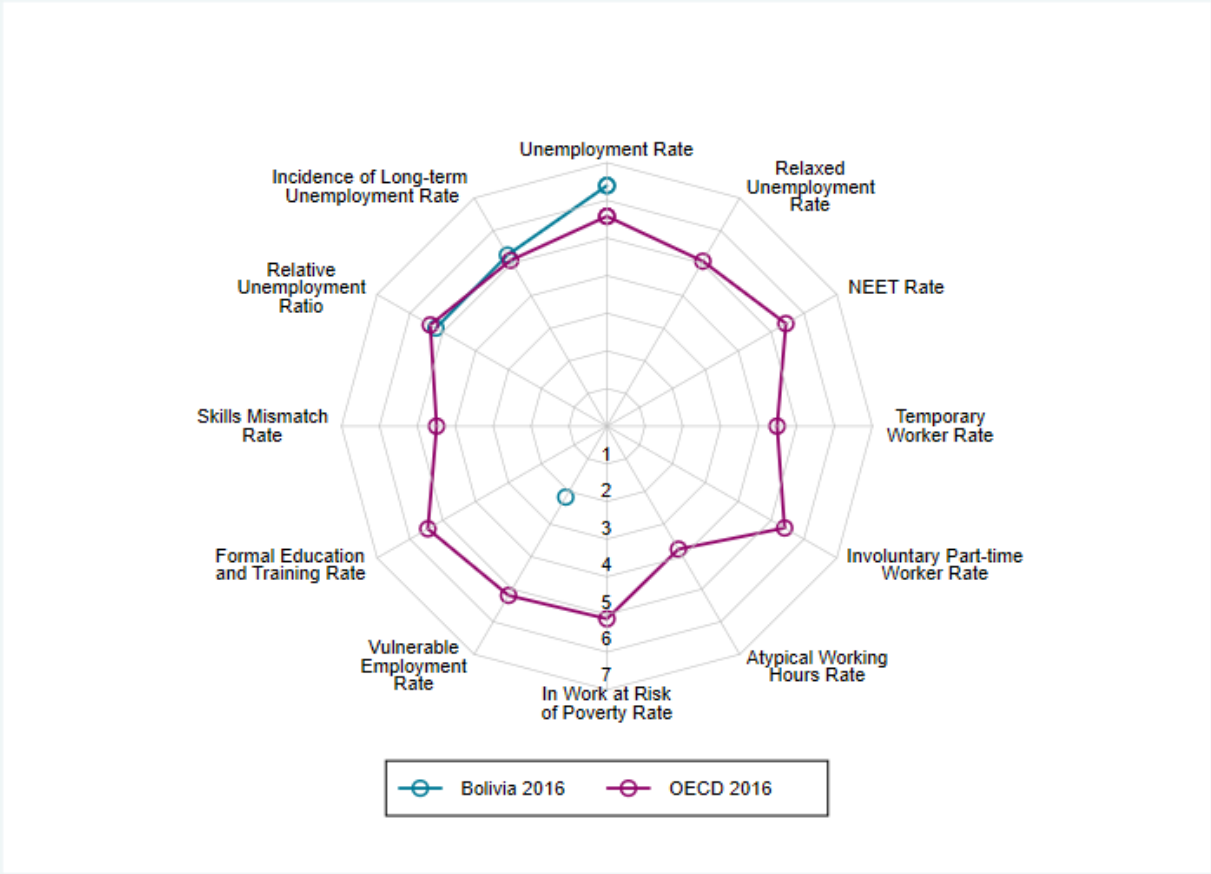
1.2.3 The KOF Youth Labour Market Index (KOF YLMI) for Bolivia

As with many countries, Bolivia suffers from a lack of data across several indicators. Only four out of twelve total indicators were available for the year 2016. The available indicators were

[9] It is calculated as the number of unemployed and discouraged workers as a share of the entire labour force. Discouraged workers have given up the search for work (not actively seeking), although they have nor job and are currently available for work (also: "involuntary inactive").
[10] Those who cannot make a decent living out their earnings, being at risk of poverty as a percentage of the working population.
[11] Share of the employed population working on their own account or those working in their family business and thus contributing to the entire family income. Both are less likely to have formal work arrangements and are therefore less protected by labour laws and more exposed to economic risk.
[12] Is defined as the youth unemployment rate (15-24 years) as a share of the adult unemployment rate (25+). If the youth cohort is affected in the same way than the adult group with respect to unemployment, then the relative unemployment ratio will be equal to one. If the youth are relatively more affected, then the ratio will be bigger than one.
[13] Those unemployed for more than one year (52 weeks) in the total number of unemployed (according to the ILO definition).
[14] The data for these indicators are collected from different international institutions and cover up to 178 countries for the time period between 1991 and 2016.

unemployment rate, vulnerable employment rate, relative unemployment ratio and incidence of long-term unemployment rate.

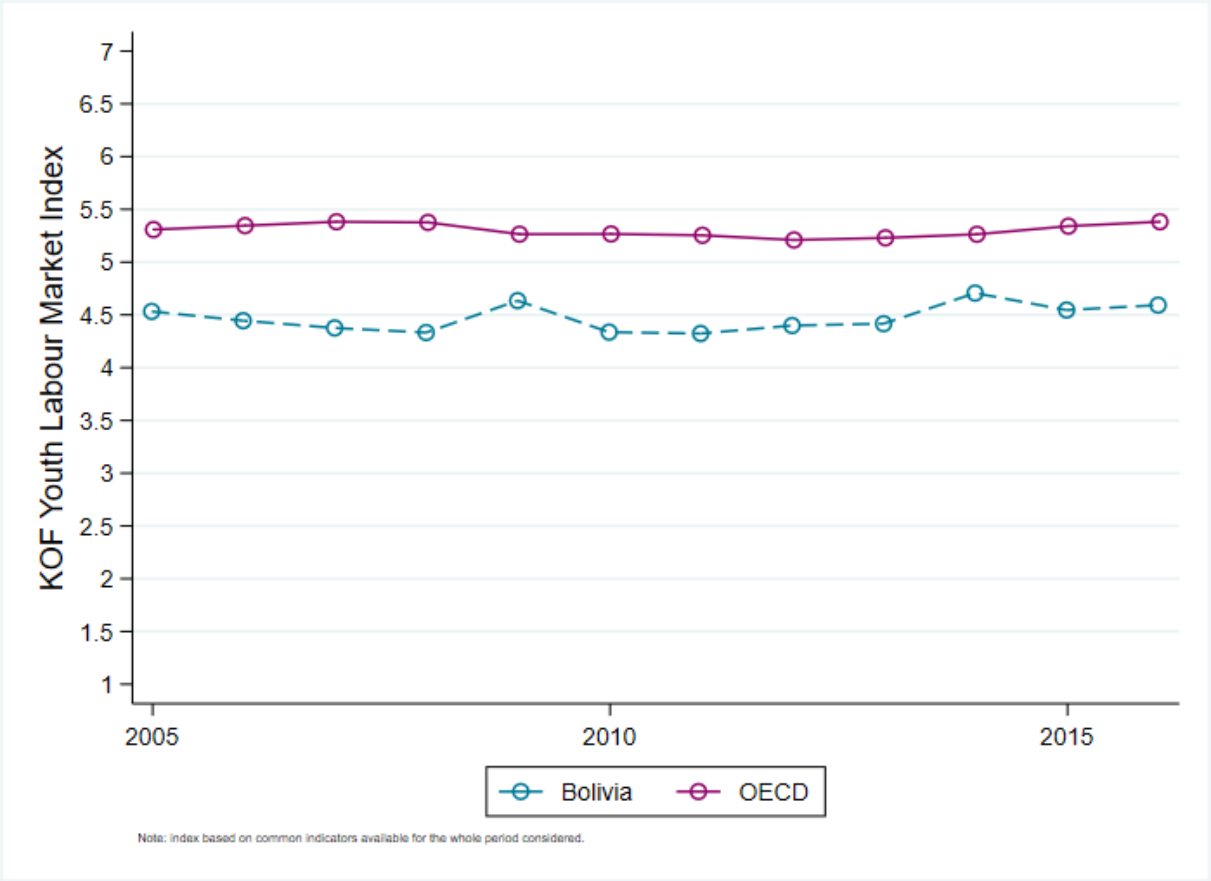
Figure 2: KOF YLM Spiderweb for Bolivia and OECD in 2016



Source: Own figure based on: KOF Swiss Economic Institute (2018).

Figure 2 shows the KOF YLMI Spiderweb for Bolivia and the OECD for the year 2016. Bolivia's overall index, or average across all indicators, is 4.60, below the OECD average of 5.09 for the same year. In terms of individual indicators, Bolivia exhibits lower rates/ratios than the OECD in the categories of vulnerable employment rate and relative unemployment ratio. In the other two indicators, unemployment rate and incidence of long-term unemployment rate, Bolivia has higher rates than the OECD. It is worth noting, however, that comparisons should be made cautiously on account of the lack of data available (4 out of 12 indicators).

Figure 3: YLM-Index over time, 2005-2016



Source: Own figure based on: KOF Swiss Economic Institute (2018).

Figure 3 shows the overall YLM-Index from 2005 to 2016 for Bolivia and the OECD. We can see from the graph that Bolivia has never (since 2005) had a higher index value than the OECD. Furthermore, Bolivia's index value has remained fairly steady around 4.5 across the time period. Bolivia's lowest index value was posted in 2008 (4.27), while its highest was achieved in 2014 (5.67). Historically, the highest index value ever attained by Bolivia was 5.94 in 1998, although this value is only based on two available indicators for that year.

1.3 The Political System

Understanding the basics of a country's political system and getting to know the political goals with respect to its education system are crucial points for the understanding of the education system in a broader sense. In the first part, we explain Bolivia's political system in general. The politics and goals regarding the education system will be referred to in the second part.

1.3.1 Overview of the Bolivian Political System

The Plurinational State of Bolivia is a presidential representative democratic republic of nine geographical departments. The president is both the head of state and the head of government in this system. The government of Bolivia is divided into four independent branches: legislative,

executive, judicial and electoral. The executive branch contains 21 ministries overseen by the president. The legislative branch contains two chambers, the chamber of senators and the chamber of deputies, each containing 36 and 130 members respectively. The judicial and electoral branches are responsible for the legal system and the electoral process of Bolivia (World Atlas, 2017).

The Economist Intelligence Unit (EIU) publishes a Democracy Index every year, accumulating scores (out of 10) of 60 indicators in five categories in order to rate the democracy level of a country. In the 2017 edition of this index, Bolivia has a score of 5.49. This ranks Bolivia joint 89th globally, and classifies the country as a "hybrid regime", the second lowest category in the index above "authoritarian". Other hybrid regimes in the index include Turkey (100th overall), Guatemala (80th overall) and Pakistan (110th overall). Bolivia has the second lowest index value in South America, higher than only Venezuela (3.87). Bolivia's score has remained relatively stable since 2006, never dropping below 5.49 (2017) but never rising higher than 6.15 (2008). Of the five categories that comprise the index, Bolivia scores well in electoral process & pluralism (7.00) and civil liberties (7.06), but fares extremely poorly in functioning of government (4.64) and political culture (3.75). The EIU report notes that these scores are at least in part due to the Bolivian president Evo Morales overriding the result of a referendum which rejected presidential term limit extensions by having the supreme court declare him eligible for a fourth presidential campaign in 2019 (Economist Intelligence Unit, 2017).

The Worldwide Governance Indicators are a set of six indicators that evaluate different aspects of governance within a country. The six categories are voice & accountability, political stability & absence of violence, government effectiveness, regulatory quality, rule of law and control of corruption. In the most recent publication of these indicators, Bolivia performs poorly in comparison to the average for the region (Latin America & Caribbean), falling below the regional average across all indicators. Bolivia performs worst in the rule of law indicator (10th percentile) and best in the voice & accountability indicator (47th percentile) (Kaufmann & Kraay, 2016).

The Corruption Perception Index published by Transparency International scores 176 countries on a scale of 0 to 100, 0 meaning highly corrupt and 100 meaning very clean. Bolivia is ranked 112th out of 180 countries in the ranking in 2017. With a score of 33 Bolivia ranks behind other South American nations such as Uruguay (23rd) and Brazil (96th) but ahead of Ecuador (117th) and Venezuela (169th) (Transparency International, 2018). A 2012 Transparency International report noted that while efforts were being made to reduce corruption, a lack of resources and training, as well as high levels of bureaucracy still incentivize corruption in various institutions of the country (Wickberg, 2012).

1.3.2 Politics and Goals of the Education System

Education in Bolivia is controlled by the Ministry of Education. The official ministry website states that it strives to guarantee quality community education for all, regardless of socio-economic background, as well as contributing to a fair society via the improvement of education management. The ministry's self-stated mission is to design and implement policies and education strategies that are inclusive, equitable, multicultural, multilingual and of a high quality. The ministry is run by the minister of education as well as by four vice-ministers in charge of different subsections of the education system. These vice-ministers are in charge of regular education, alternative and special education, science and technology and higher education & professional training (Ministerio de Educación, 2018).

Recent significant reforms of the education system include the Primary Education Reform Law and the Popular Participation Law, both passed in 1994. These pieces of legislation furthered the decentralization of the education system, giving municipalities the responsibility for infrastructure and supplies (World Bank, 2018g).

As previously mentioned in section 1.1, Bolivia performs fairly well in several education indicators in the 2017 Global Innovation Index, despite being a low-income country (Bolivia's GDP per capita for 2016 of $2'457.6 is well below the OECD average of $38,109 for the same year). For the education subcategory, Bolivia performs well, ranking 52nd out of 127 countries. Bolivia's highest ranking in the entire index comes in expenditure on education (% GDP), where Bolivia ranks 11th overall. Some less favorable education indicators in the index include its score for the QS university ranking, where Bolivia ranks 75th globally. Bolivia was ranked 76th overall in pupil-teacher ratio in secondary schools (Dutta, Lanvin, & Wunsch-Vincent, 2017).

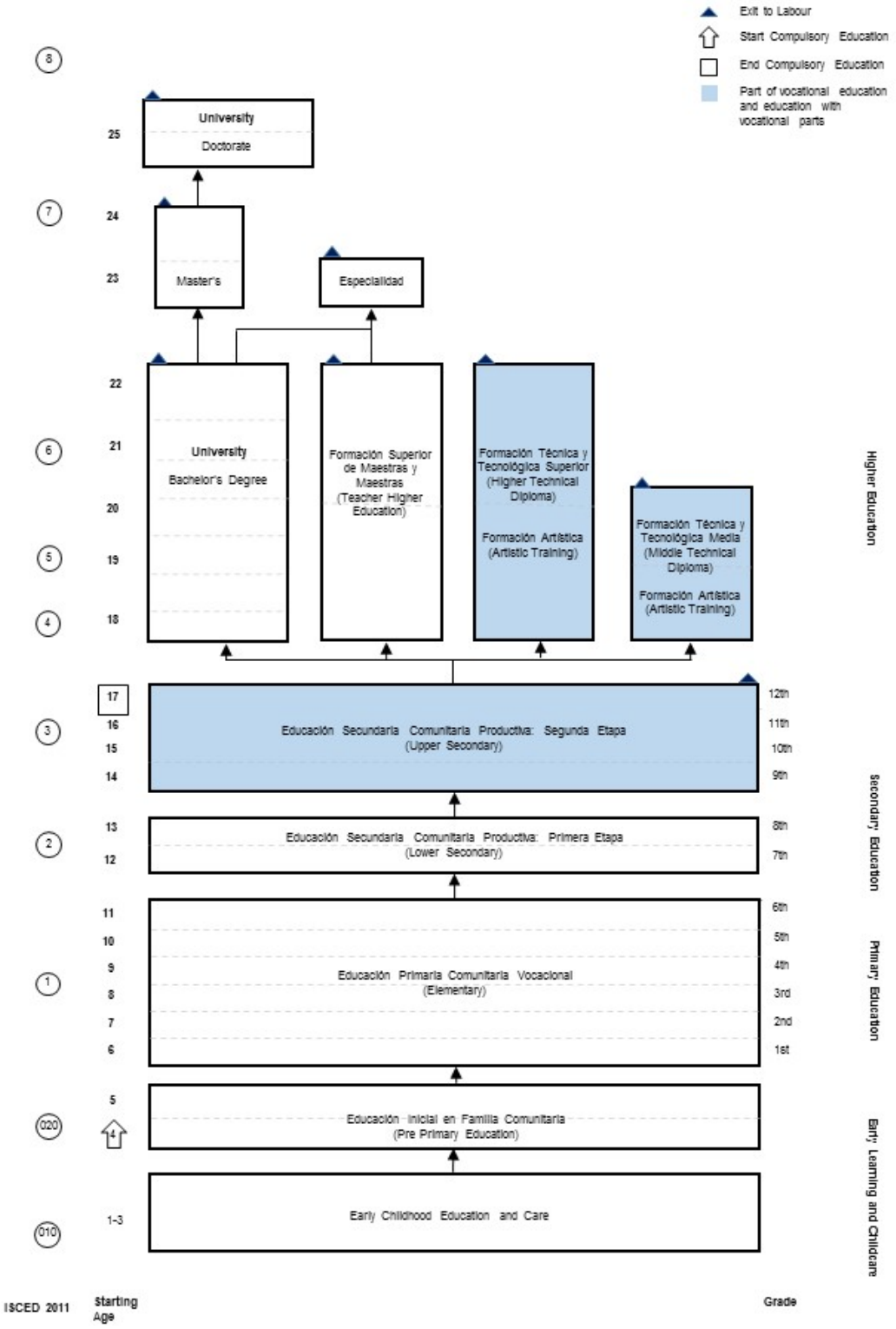
2. Formal System of Education

Figure 4 shows a map of the Bolivian education system in accordance with the 2011 International Standard Classification of Education (ISCED). Compulsory education in Bolivia begins at age 4 and ends at age 17. Formal education begins at age 4 with pre-primary education, known in Bolivia as *Educación Inicial en Familia Comunitaria* (initial education in community family). This lasts for two years until the age of 6, at which point a child will begin primary education, known as *Educación Primaria Comunitaria Vocacional* (vocational community primary education). This is the name given to normal primary education and does not reflect any kind of vocational content in the curriculum. Primary education in Bolivia lasts for 6 years, typically from ages 6 to 12.

Lower secondary education is called *Educación Secundaria Comunitaria Productiva, Primera etapa (Grados 1 y 2)* (Stage 1 of productive community secondary education (Grade 1-2)). A child will usually begin lower secondary education at age 12 and complete it after 2 years (grades 1 and 2). Upper secondary school in Bolivia lasts for 4 years and is known as *Educación Secundaria Comunitaria Productiva. Segunda etapa (Grados 3 a 6)* (Stage 2 of productive community secondary education (Grade 3-6)). Upper secondary school is usually attended between the ages of 14 and 17 (the end of compulsory schooling in Bolivia).

Once compulsory education has ended, students may choose a vocational or academic pathway should they wish to pursue further education. An academic pathway in Bolivia would generally consist of a bachelor's degree (*Formación Superior Universitaria*) followed by a master's degree (*Maestría)* and a doctorate (*Doctorado*). Other higher education qualifications also exist, such as the *Formación Superior de Maestras y Maestros* (teacher's higher education) and the *Cursos de especialidad*. A bachelor's and teacher's degree in Bolivia typically requires five years of study to complete, a master's requires two years and a doctorate usually requires at least four years of study. The *Cursos de especialidad* is a one year specialization programme completed after a bachelor's or a teacher's degree. The vocational pathway in Bolivia consists of two qualifications: the *Formación Técnica y Tecnológica Media* (Middle technical and technological training) and the *Formación Técnica y Tecnológica Superior* (Higher technical and technological training). These programmes are typically begun after the completion of secondary education and require two and three years to complete respectively. After completion of these programmes, graduates are awarded a middle technical diploma or a higher technical diploma respectively (UNESCO, 2011a; UNESCO, 2018b).

Figure 4: ISCED 2011 Mapping of Bolivia's Education System



Source: UNESCO (2011a).

Table 4: Net and gross enrolment ratio by education level, 2016

Educational level	ISCED 2011	Net Enrolment Ratio	Gross Enrolment Ratio
Early childhood educational development programmes	010	n/a	n/a
Pre-primary education	020	73.90	74.34
Primary education	1	89.84	97.70
Secondary education	2 – 3	77.99	86.46
Lower secondary education	2	65.33	93.94
Upper secondary education	3	69.20	82.63
Percentage of 15-24 year olds enrolled in vocational secondary education	2-3	28.18	n/a
Compulsory education age group	1-3	86.19	93.16
Post-secondary non-tertiary education	4	n/a	n/a
Tertiary education	5 – 8	n/a	n/a

Source: UNESCO (2018a).

Table 4 shows the gross enrolment ratio (GER)[15] and net enrolment ratio (NER)[16] by education level for the year 2016. The NER quantifies the total number of students in the theoretical age group for a given education level enrolled at that level expressed as a percentage of the total population in that age group. The GER quantifies the number of students enrolled at a given education level— irrespective of their age— as a percentage of the official school-age population corresponding to the same level of education. For example, for the primary education level, the NER tells how many students in the typical primary school age are actually enrolled in primary school, while the GER sets the actual number of students in primary education—irrespective of their age—in relation to those who are in the official age to attend primary education[17].

Bolivia's GER of 97.7 for primary education implies that slightly less than all primary age children are enrolled in that level of education. Similar inferences can be made for lower secondary education and the compulsory education age group as a whole. Despite schooling being compulsory as of age 4, pre-primary education in Bolivia exhibits a fairly low GER of 74.34, implying that significantly less than all pre-primary age children are enrolled in pre-primary education. The same can be said for upper secondary (and the whole of secondary) education, although these have slightly higher ratios of 82.63 and 86.46 respectively. This could be because of

[15] The UNESCO Institute for Statistics (UIS) (2017) defines the gross enrolment ratio as the "number of students enrolled in a given level of education, regardless of age, expressed as a percentage of the official school-age population corresponding to the same level of education."

[16] The UIS (2017) defines the net enrolment ratio as the "Total number of students in the theoretical age group for a given level of education enrolled in that level, expressed as a percentage of the total population in that age group."

[17] A gross enrollment ratio of 100 corresponds to a situation where each child in a given country is enrolled in the corresponding education level. A value above 100 could occur due to students who are older than the typical enrolment age for primary education (e.g. have to repeat grade, adult learners). A value below 100 implies that not everyone who is in the typical age for primary education is actually enrolled.

many children in rural areas having to work and support their impoverished families rather than going to school (Binns, 2015).

With regard to NER, Bolivia's ratios vary across education levels. The primary education NER of 89.84 suggests that almost 90 percent of primary aged students are enrolled in the corresponding education level. This number drops to around 80 percent for secondary education aged students. 86 percent of compulsory schooling aged students were enrolled in some form of education in Bolivia in 2016. Table 4 also shows that 28 percent of 15-24 year olds were enrolled in vocational education in 2016.

Table 5: Economically active population by maximum level of approved education and activity status. Population aged 15-65 years Bolivia (2011)

Highest approved level of education	Working population		Unemployed population	
	Number	%	Number	%
None	212.432	4.5	1.045	0.8
Literacy course	62.442	1.3	300	0.2
Pre-school	1.815	0.0	-	0.0
Primary	1.568.854	33.2	22.072	16.3
Secondary	1.658.546	35.1	54.345	40.0
Adult Primary Education	5.349	0.1	281	0.2
Adult Secondary Education	33.956	0.7	2.067	1.5
Adult Technical Education	3.001	0.1	-	0.0
Normal	158.164	3.3	1.872	1.4
University	731.424	15.5	42.761	31.5
University Technician	22.812	0.5	825	0.6
High School Technician	224.446	4.7	9.172	6.8
Other	45.661	1.0	1.002	0.7
Total	4.728.902	100.0	135.742	100.0

Source: Contreras Callisaya (2013) (based on a Household Survey in 2011).

2.1 Pre-Primary Education

The pre-primary stage is the first level of child education in the education system. This stage is divided into two cycles. In the first cycle, children from 0 to 4 years are educated in a non-formal way in their families and communities supported by public and private entities. In these education years, called *Educación en Familia* (family education), it is all about taking care of the children generally, preserving the health and developing the very first and basic abilities, with play as a major part and fundamental activity. The formal and compulsory education begins with the second cycle, for children between the age 4and 6, called *Educación en Familia Communitaria* (community family education). It also serves as a bridge between education in the family and education in a school environment. The Ministry of Education is responsible for the formal, school-based education. Cycle two provides more systematic ways of learning and is assessed. In an ongoing process and with various pedagogical tools the teacher assesses the children in this initial level of education. Moreover, the report by UNCESCO also lists self-assessment by the children and co-assessment (UNESCO, 2011b).

2.2 Primary and Lower Secundary Education

Primary education (*Educación Primaria Comunitaria Vocacional*) is compulsory, free of charge and attended by children ages 6 to 12. It lasts six years and is divided into two cycles. Thirty hours of weekly teaching is provided in all these years in subjects ranging from language to mathematics and life sciences. The timetable is completed with modules in expression and creativity, physics as well as religion or ethical and moral training alternatively. The assessment tools on primary level are the same as on the initial level. The *carpeta de informes de aprendizajes* (learning portfolio) is the official information report in regard of the assessment. It includes a yearly learning report and a cycle report after each cycle. The former includes the performance rating (*satisfactory* or *support needed*) for the respective competencies and space for explanations by the teacher for the student's situation. The latter reports about the previous cycle generally. After full completion of primary education, students are eligible and obliged to continue with lower secondary education (UNESCO, 2011b).

Lower Secondary education is mandatory and aimed at students from 12 to 14 years. It is called *Educación Secundaria Comunitaria Productiva, Primera etapa (Grados 1 y 2)* (Stage 1 of productive community secondary education (Grade 1-2)) and lasts for two years. The general purpose of the lower secondary level is to consolidate the learning achieved at the primary level. After finishing the first stage, students receive a record of qualifications similar to the ones at primary and pre-primary level (UNESCO, 2011b).

2.3 Upper secondary Education

Upper secondary education (comparable to High School) is mandatory and for learners between 14 and 17 years. It is called *Educación Secundaria Comunitaria Productiva. Segunda etapa (Grados 3 a 6)* (Stage 2 of productive community secondary education (Grade 3-6)) and lasts for four years. The main goal of the upper secondary education is to prepare adolescents for their incorporation into the world of work or for continuing to higher education and for their integration as responsible and active members of the country and its socio-cultural groups. The curriculum is flexible and not graded during the years to guarantee the learners individuality within the frame of this level of education. Nevertheless, the students must achieve the respective objectives. This stage of education is traditionally split in an academic-humanistic and a technical-vocational pathway with various specialization fields in the last two years. A new law in 2010 (*Avelino Siñani - Elizardo Perez*) intends to eliminate this separation. One step to overcome this separation is to make EPT (Technical Vocational Education (*Enseñanza Profesional y Técnica*)) electives available to all students. However, it is only implemented poorly and therefore most schools still follow the structure with two separated pathways on the

upper secondary education level (M. Sevilla B.[18], personal communication, August 6, 2018). The humanistic pathway prepares for further education in the academia while the technical-vocational pathway prepares for work in production and other fields (UNESCO, 2011a), (Sevilla B., 2017).

Students receive a Humanistic Technical Baccalaureate certificate (*certificado como Bachiller Técnico Humanístico*). Additionally, students can take specialization courses and obtain the degree of Intermediate Post-Baccalaureate Technician (*el grado de Técnico Medio-post-bachillerato*) (Sevilla B., 2017).

With full completion of upper secondary education, students have finished compulsory schooling in Bolivia and are enabled to enter postsecondary vocational education or higher education (UNESCO, 2011b).

2.4 Postsecondary / Higher Education

After the mandatory school years, students have different options for further education, which can be categorized as vocational and academic pathways. The vocational pathway consists of the following options: First, the *Formación Técnica y Tecnológica Media* (middle Technical and Technological Training) leading to a *Diploma de Técnico Medio* (Middle technical Diploma) after two years of education. Second, the *Formación Técnica y Tecnológica Superior* (higher technical and technological training) leading to a *Diploma de Técnico Superior* (Higher technical Diploma) after three years of education. Both programmes are offered mainly in technical institutions or, alternatively, in universities. The academic pathway consists of the *Formación Superior Universitara* (university higher education) beginning traditionally with Bachelor studies (five years) leading to a Bachelor's degree (*Licenciatura*), followed by Master's (two years) and Doctororal studies (four years) awarding a Master's and Doctor's degree respectively. Students in Bolivia need to take the Aptitude Entrance Exam (*Prueba de Suficiencia Académica*) to enroll at any state public university in any subject they want to. Studying at public universities is free while studying at private universities comes at a cost. Another option, not clearly belonging to one pathway or the other, is the *Formación Superior de Maestras y Maestros* (Teacher Higher Education) on Bachelor's level (five years) leading to the *Título de Maestro con grado de Licenciatura* (Teacher's degree as a Bachelor). Both Bachelor's and Teacher's degree allow to enter the Specialization programmes (*cursos de especialidad*) as a second degree called *Especialidad* (UNESCO, 2011b).

[18] Consultant in the Social Development Division of the Economic Commission for Latin America and the Caribbean (*Comisión Económica para América Latina y el Caribe (CEPAL)*)

2.5 Continuing Education (Adult Education)

Adult Education in Bolivia is intended for people who could not begin or complete formal education on any level. It comprises the modalities of Primary Adult Education (EPA, *Educación Primaria de Adultos*), Secondary Adult Education (ESA*, Educación Secundaria de Adultos*), Adult Technichal Education (ETA, *Educación Técnica de Adultos*) as well as Alternative Youth Education (EJA, *Educación Juvenil Alternativa*). Adult Education also contains literacy programmes and projects to enable the illiterate population over the age of fifteen to read and write in their mother tongue. In Bolivia, the Ministry of Education is coordinating Adult Education (Pollinger, 2000). There exist various types of education centers: the Bolivian Institute of Learning (IBA, *Instituto Boliviano de Aprendizaje*), Accelerated Basic Education (EBA, *Educación Básica Acelerada*), Adult Secondary Education Centre (CEMA, *Centro de Educación Media de Adultos*), Integrated Centre (CI, *Centro Integrado*), Center for Technical, Humanistic and Agricultural Education (*Centro de Educación Técnica, Humanística y Agropecuaria*), Center for the Integral Development of the Rural Community (CEDICOR, *Centro de Desarrollo Integral de la Comunidad Rural*) and others (otros). The centers focus on different skills in regard of their location in urban or rural areas. While urban education focuses on typical school subjects like those in Primary and Secondary Education, rural education deals with technical and agricultural abilities (Ministerio de Educación, 2004).

Adult education became more important in the last years, however there are still difficulties in the training and availability of adult education teachers, missing budgets and curricular deficiencies which interfere with adult education generally (Ministerio de Educación, 2004). In 2015, 92.5% of the population age fifteen and over can read and write while in 2011 it was 92.2% (CIA, 2019), (UNICEF, 2019).

2.6 Teacher Education

In Bolivia, four types of teachers are recognized: normal teachers (*normalistas*), senior teachers (*titulares por antigüedad*), interim teachers (*interinos*) and graduate teachers (*egresados*). Normal teachers are those who do the regular pedagogical training usually in Higher Normal Institutes (*INS, Institutos Normales Superiores*). They earn the professional certificate that allows them to teach at various levels in the school system. After ten years of teaching, normal teachers become – after successful completion of an exam – senior teachers. Interim teachers do not have the pedagogical training and therefore act as substitutes. Graduate teachers are normal teachers in education (UNESCO, 2011b).

INS organizes and coordinates teacher education in Bolivia. The Higher Normal Institutes, Superior Teacher Training Schools (*Escuelas Superiores de Formación de Maestros/as*, *ESFM*)

and pedagogical universities offer teacher education in Bolivia (BQ-portal, 2018), (Balda Cabello, 2015).

To become a normal teacher, six terms and 3,600 hours of training are scheduled. INS structures the training in four areas: (1) general training; (2) teaching practice and research; (3) specialized training and (4) personal training. The general training (1) is about education, curricula and teaching in general. In this area, the teacher students also learn about educational management, child and adolescent development and the influence of technology. Teaching practice and research (2) stands for practical training and educational tasks based on current research and innovations. Specialized training (3) tackles the subjects and the respective key concepts and areas of knowledge in regard of the level and educational cycle of teaching. The goal of the personal training (4) is to develop personal capacities and leadership skills which support classroom learning (UNESCO, 2011b).

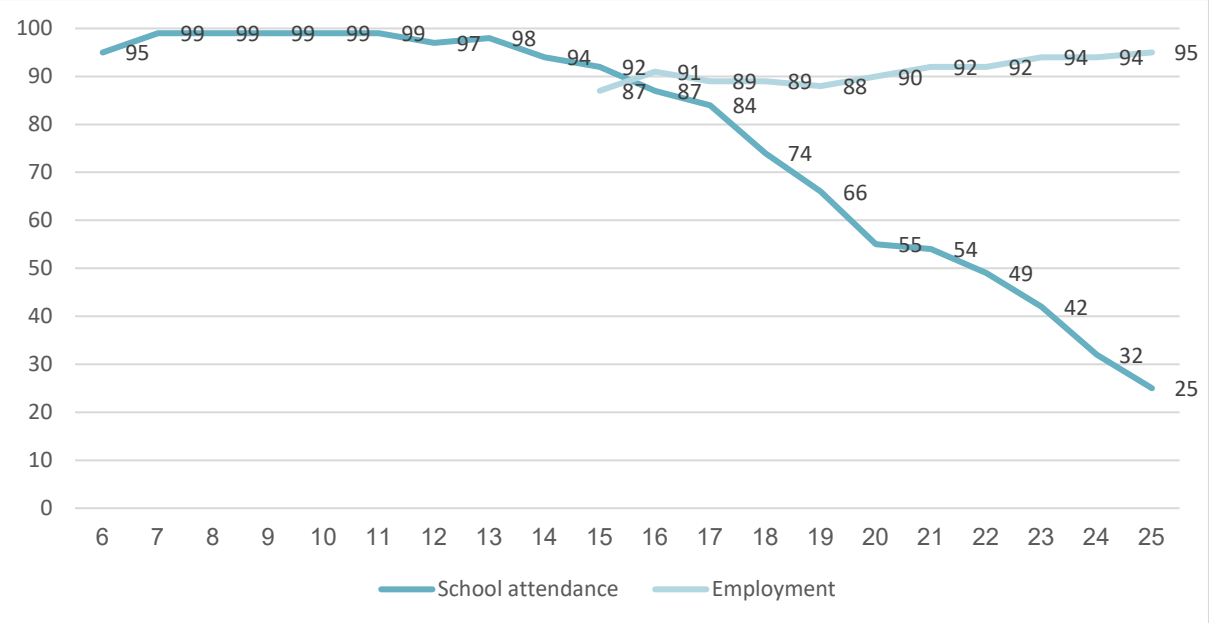
3. The System of Vocational and Professional Education and Training

This section of the Factbook describes the Bolivian vocational education and training (VET) system at the upper secondary level and the professional education and training system (PET) at the tertiary level in more detail. Thereby, the term vocational and professional education and training (VPET) refers to both, the VET and the PET system.

The VPET system in Bolivia is called *Formación Técnica Profesional* (Technical and Vocational Training) (Contreras Callisaya, 2013). On the upper secondary education level, *Educación Secundaria Comunitaria Productiva. Segunda etapa (Grados 3 a 6)* (Stage 2 of productive community secondary education (Grade 3-6)) provides technical and vocational training. *Formación Técnica y Tecnológica Media* (Middle technical and technological training) and *Formación Técnica y Tecnológica Superior* (Higher technical and technological training) offer the equivalent on the tertiary level (UNESCO, 2011a).

The following figure (5) shows school attendance and employment rate for people aged six to twenty-five. One can see that the Bolivian workforce has a shortage of qualifications. However, graduates of universities and technical colleges also have difficulties in finding work. This may indicate an insufficient capacity of the economy to absorb labour force as well as a missing alignment of curricular content and labour market needs. This shows the difficulties but also the potential for vocational and professional education and training in Bolivia.

Figure 5: School attendance rate and employment rate by age (2011)



Source: Controras Callisayay (2013).

Other problems with VPET in Bolivia are the lack of social appreciation of this type of training, difficulties in accessing the VPET system, the poor training of technicians and the high opportunity and monetary costs (UNESCO, 2011a).

3.1 Vocational Education and Training (VET; Upper Secondary Education Level)

VET on secondary level lasts for six years. It is the second stage of a total of eight years of secondary education in Bolivia and is called *Educación Secundaria Comunitaria Productiva. Segunda etapa (Grados 3 a 6)* (Stage 2 of productive community secondary education (Grade 3-6)). Students must complete *Educación Secundaria Comunitaria Productiva, Primera etapa (Grados 1 y 2)* (Stage 1 of productive community secondary education (Grade 1-2)) to enter this stage. When choosing the technical-vocational pathway, students are obliged to attend VET to some degree on secondary education because it is part of compulsory education in Bolivia. However, students can also choose the academic-humanistic pathway. Further, there is a part of the population that does not attend school, as one can see in Figure 5 above.

Compulsory schooling in Bolivia usually ends at age 17 and concurs with the conclusion of education on the upper secondary level, awarding a humanistic technical baccalaureate certificate (*Certificado como Bachiller Técnico Humanístico*) (UNESCO, 2011a).

Traditionally, there are two pathways on the upper secondary education level based on different curricula: academic-humanistic and technical-vocational. With the new law *Avelino Siñani - Elizardo Perez* in 2010, secondary education should become more balanced and integrative, still preparing for both academic and technical-vocational pathways of students. According to the new Bolivian law *Avelino Siñani - Elizardo Perez*, VET provides scientific and technological education with a focus on production. Despite not being implemented very well so far, it is worth to have a closer look at the implications of the *Avelino Siñani - Elizardo Perez* law. This 2010 law tries to eliminate the separation of adacemic-humanistic and technical-vocational training and seeks to implement a more holistic way of education. Along with that, it values and legitimizes the wisdom and knowledge of indigenous cultures in Bolivia and supports an intercultural dialogue with universal knowledge. (UNESCO, 2011b) (Sevilla B., 2017) All the students can choose from a wide range of scientific, humanistic, technical-technological, spiritual, moral, artistic, sports, natural and social sciences modules. (UNESCO, 2011b; bq-portal, 2018; NUHA Foundation, 2013). Depending on the modules chosen, the students can specialize in the various areas (examples are in the list below), in which they receive a degree (UNESCO, 2011b; bq-portal, 2018; Oberliesen & Oberliesen, 2012):

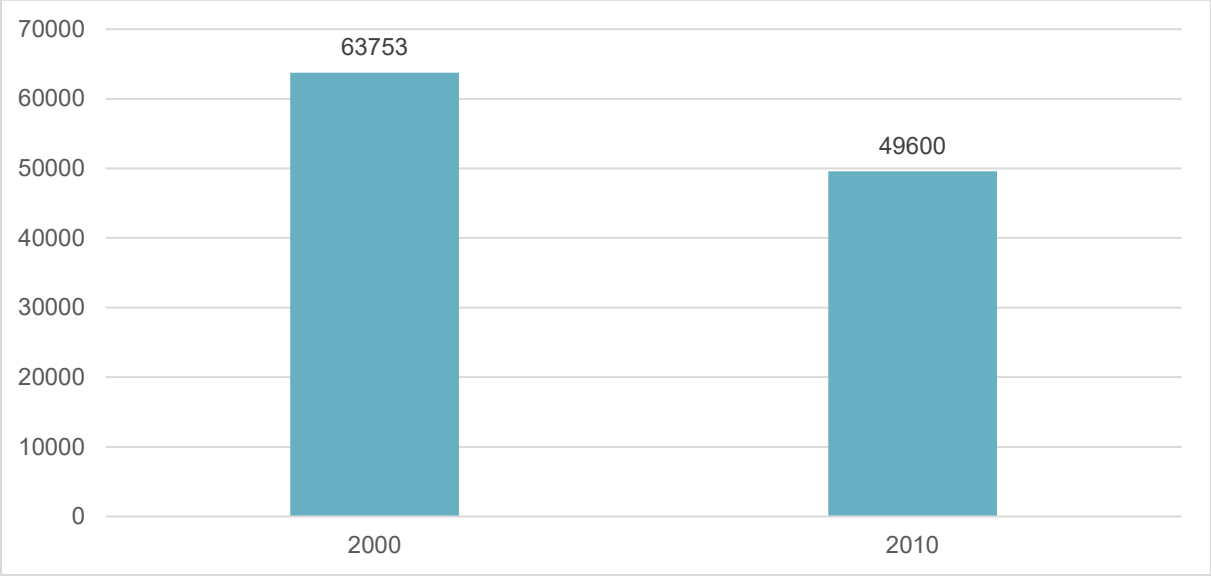
- productive technological science (e.g. agricultural, commercial, industrial, new information and communication technologies)

- services (e.g. commerce, tourism)
- health science
- art (e.g. music)
- physical and sports science
- scientific-humanistic (natural, exact and social sciences)

It is organized into nine community-production areas, from which 40 specialization pathways emerge (Sevilla B., 2017). These curricular areas are generally the same throughout the whole country whereas the specific design of these areas vary regionally (UNESCO, 2011b).

In practice however, this integrative and holistic approach has not found its way properly into the schooling system in Bolivia. There persists a separation between the academic-humanistic and the vocational-technical pathway. When following the vocational-technical pathway, students can take specialization courses in technical-technological training in the last two years of upper secondary education and obtain the degree of Intermediate Post-Baccalaureate Technician (*el grado de Técnico Medio-post-bachillerato*) (UNESCO, 2011b; M. Sevilla B., personal communication, August 6, 2018).

Figure 6: Total number of enrolment at the technical secondary level. Years 2000 and 2010.



Source: UNESCO (2013).

The total number of enrolment at the technical secondary level dropped from 63,753 in 2000 to 49,600 in 2010 (-22.2%). In 2010, only 4.7% of all enrolments at the secondary level were in technical education, with a vast majority choosing the academic pathway. These numbers reflect the evolution of education in Bolivia. Most initiatives to respond to an increased demand for further education happen in general education of the secondary level with a focus on further

university or general tertiary education, not on technical-vocational education (UNESCO, 2013).

All educational establishments of the Regular Education subsystem with secondary education are allowed to provide VET in Formal Education. VET is also offered in the Alternative Education subsystem for young people and adults. VET in the Alternative Education is offered by Technical Training Centers (CETAs, *Centros de Capacitación Técnica*). They award the *Diploma de Bachiller Técnico-Humanístico* (Technical-Humanistic Baccalaureate Diploma) after successfully completing all levels of education (two years of basic education and three years of secondary education) (Sevilla B., 2017; bq-portal, 2018).

3.2 Professional Education and Training (PET; Post-Secondary Level)

PET at the post-secondary level consists of various programmes. The major ones are the *Formación Técnica y Tecnológica Media* (Middle technical and technological training) leading to a *Diploma Técnico Medio* (Middle technical Diploma) after two years of education, and the *Formación Técnica y Tecnológica Superior* (Higher technical and technological training) leading to a *Diploma Técnico Superior* (Higher technical Diploma) after three years of education. The latter can specialize and obtain a *Diplomado Técnico* (Technical Diploma). Another route within the PET is the Artistic Training (*Formación Artística*). Further, there is the Teacher Education (*Formación de Maestras y Maestros*) which was described in chapter 2.6 (UNESCO, 2011a; bq-portal, 2018; Sevilla B., 2017).

The focus in this chapter lies on the two major programmes towards the Middle technical Diploma (*Técnico Medio*) and the Higher technical Diploma (*Técnico Superior*). The main provider of these programmes are the Technical and Technological Institutes (*Institutos Técnicos e Institutos Tecnológicos*) and the Technological Higher Schools (*Escuelas Superiores Tecnológicas*). Universities are also qualified to teach the Higher Technical level (Sevilla B., 2017).

Students who finish *Técnico Medio* can obtain the *Técnico Superior* with one more year of studying. Further, those who already have the degree of Intermediate Post-Baccalaureate Technician from the upper secondary education level will be spared the first year of training (BQ-portal, 2018).

The general structure is as follows: at the beginning of the training, there is an orienting qualification phase (Capacitación) with 100 up to 1,200 lessons and a duration of approximately one year. This is followed by another year of theoretical and practical lessons (practical share of 80%). After year two, students receive the *Técnico Medio*. After another year of training (a total of three years of training with approximately 3,600 hours of instruction), the trainees have the opportunity to acquire the *Técnico Superior*. This structure applies for all career paths in

PET (BQ-portal, 2018). There are 8 productive areas and 53 careers to choose from (Sevilla B., 2017).

In the technical area (*Formación Técnica)*, the most demanded careers are (La Razón, 2017):

- General Accounting
- Computer Systems
- Tourism
- Gastronomy
- Marketing

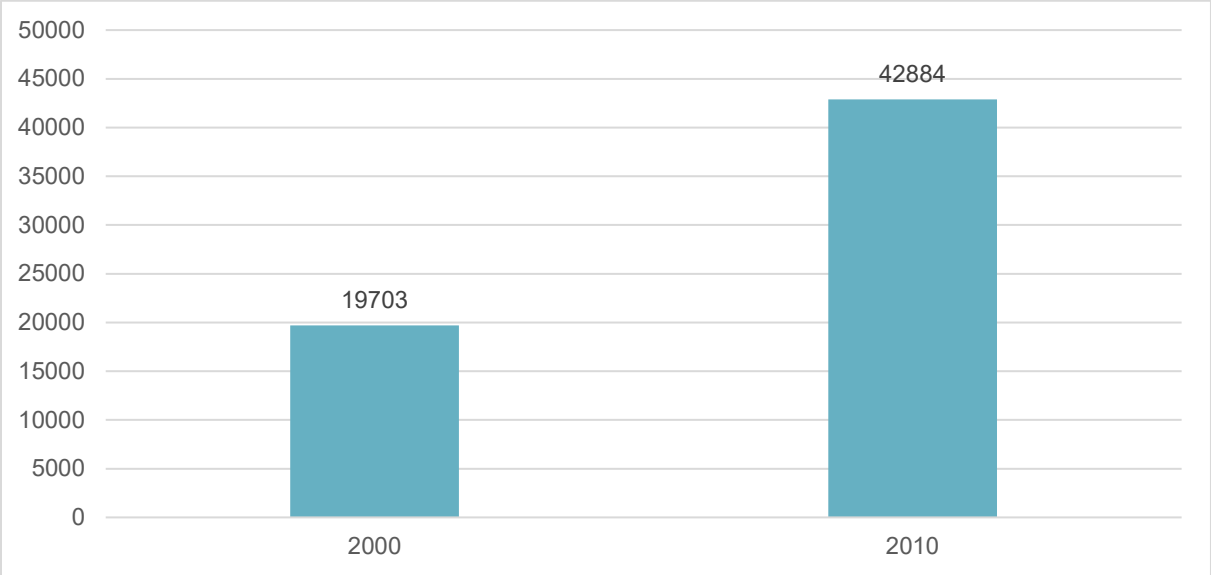
In the technological area (*Formación Tecnológica*), the most required are (La Razón, 2017):

- Agriculture
- Industrial Mechanics
- Industrial Electricity
- Automotive Mechanics
- Electronics
- Civil Construction
- Food Industry

Development in areas such as transport and hydrocarbons is also encouraging the creation of new careers, such as *industrial welding* (La Razón, 2017).

Another area of professional training on post-secondary level is the Higher Artistic Education (*Formación Superior Artística*). It belongs to the vocational path of technical and technological training (*Formación Técnica y Tecnológica*) and therefore follows the same structure. Higher Artistic Education is the professional training aimed at developing artistic skills, competencies and abilities, articulating theory and practice, for the strengthening of cultural expressions and the development of the creative qualities. It is taught in artistic centres, institutes and schools (Gaceta Oficial del Estado Plurinacional de Bolivia, 2010; Sevilla B., 2017).

Figure 7: Enrolment in technical and vocational tertiary level. Years 2000 and 2010.



Source: UNESCO (2013).

The total number of enrolment in the technical and vocational tertiary level rose by 117.7% from 19,703 in 2000 to 42,884 in 2010. However, in 2010, only 7.1% of all enrolments at the higher education level were in technical and vocational education (UNESCO, 2013). The vast majority of students attend university institutions, mainly public ones (Sevilla B., 2017). In general terms, the viability and the reputation of technical education in Bolivia has been rising during the last years, but still lacks behind university education (La Razón, 2017).

The Alternative subsystem (adult education) also offers vocational education at the post-secondary level. The Technical Training Centers (CETAs, *Centros de Capacitación Técnica*) provide mainly technical education for people aged 15 and older. These centres can be public or private, but they comply with the guidelines set by the Ministry of Education. Following the *Diploma de Bachiller Técnico-Humanístico* (Technical-Humanistic Baccalaureate Diploma) received on the upper secondary level and depending on the levels of education completed, the learners can acquire the following titles on the post-secondary level: *Técnico Básico* (general specialist) with 800 hours of instruction (after one year), *Técnico Auxiliar* (specialist assistant) with 1,200 - 1,600 hours (after two years) and *Técnico Medio* (intermediate specialist) with 2,000 - 2,400 hours (after three years) (BQ-portal, 2018).

In Bolivia, there are also short courses of professional training (*cursos de capacitación (cursos cortos)*) offered by NGOs and other organizations (Borlán, 2012). Almost half of all the technical training is currently concentrated in these short courses, which makes those the most popular. Second popular are *Técnico Medio* and *Técnico Superior* while *Técnico Auxiliar* and *Técnico Básico* make third place (Lizárraga, 2012). Further, there exist programmes of the

Ministry of Labour (*Ministerio de Trabajo*), such as My First Decent Job (*Mi Primer Empleo Digno*) (Borlán, 2012).

Table 6: Number of participants by degree modality and type of administration (2007)

Type of degree	Total participants	Type of degree (in %)
Capacitación (Training and education)	793,700	49%
Mano de obra calificada (Skilled labour force)	79,700	5%
Técnico auxiliary (Auxiliary technician)	39,500	2%
Técnico básico (Basic Technician)	37,200	2%
Técnico medio (Middle Technician)	392,600	24%
Técnico superior (Higher Technician)	240,700	15%
Otros (Others)	39,900	2%
Total (Total)	1,623,300	100%

Source: Lizárraga (2011) (based on data from the Ministerio de Educación (MINEDU).

Table 6 shows the number of participants by degree modality in PET for the year 2007. One can see that vocational and professional education on post-secondary level is mostly private. In contrast to that, university education in Bolivia is mainly public, as seen above.

Additionally, foundations like *FAUTAPO (Fundación Educación para el Desarrollo)* offer productive technical education in many programmes in numerous centres throughout the country. FAUTAPO is a foundation that promotes professional technical training linked to production, with a competency-based training approach (FAUTAPO, 2018). Many other, similar and usually rather small initiatives, are running as well. For example, there is also the *Programa de Capacitación Laboral (PROCAP)* financed by the Swiss Development Cooperation (SDC) that supports and strengthens professional training in Bolivia (Contreras Callisaya, 2013; Lizárraga, 2011).

3.3 Regulatory and Institutional Framework of the VPET System

3.3.1 Central Elements of VPET Legislation

All Bolivian education is currently regulated by the 2010 education law *Avelino Siñani - Elizardo Perez*. It states the foundation, aims and objectives of education in Bolivia generally. There are no specific laws for VPET. However, the *Avelino Siñani - Elizardo Perez* includes VPET among all the other education levels and subsystems in Bolivia: VET mainly as part of the Productive Community Secondary Education (*Educación Secundaria Comunitaria Productiva*) in article 14 and PET in various articles about professional and technical education. E.g. articles 28 to 29 about Higher Vocational Education (*Educación Superior de Formación Profesional*) or articles 41 to 46 concerning Higher Technical and Technological Training (*Formación Superior Técnica y Tecnológica*) and articles 47 to 51 to the Higher Artistic Education (*Formación Superior Artística*) (Gaceta Oficial del Estado Plurinacional de Bolivia, 2010).

There is a *Ministerial Resolution 562/2010* that governs the system of Technical Training Centres, Technical Institutes and Technological Institutes (Sevilla B., 2017). Generally, numerous guides written by the Ministry of Education try to support the implementation of the relatively new education law *Avelino Siñani - Elizardo Perez* (Ministerio de Educación, 2018). However, this 2010 law is only implemented poorly (M. Sevilla B., personal communication, August 6, 2018). Anyhow, this does not affect the validity of the *Avelino Siñani - Elizardo Perez* as the main education legislation document in Bolivia.

3.3.2 Key Actors

a) Vocational Education and Training

Various agents contribute to the Bolivian VET System. All relevant actors are briefly described in the following list:

Government

In Bolivia, all education is regulated by the authorities and policies of the Plurinational Education System (*Sistema Educativo Plurinacional*) as part of the Ministry of Education of the Plurinational State of Bolivia (*Ministerio de Educación del Estado Plurinacional de Bolivia*). Specifically within the Ministry of Education, the Vice-Ministry of Regular Education (*Viceministerio de Educación Regular*) regulates the Bolivian education system at the upper secondary level and is therefore responsible for VET (Sevilla B., 2017).

The Minister of Education (*Ministro de Educación*) manages the Ministry, whereas the Vice Minister of Regular Education (*Viceministro de Educación Regular*) chairs the Vice-Ministry. The General Director of Secondary Education as a subordinate in the Vice-Ministry handles

all the issues concerning Secondary Education and consequently VET (Ministerio de Educación, 2018).

Departmental and municipal governments as well as Native Indigenous Autonomies of Peasant Farmers (*Autonomías Indígena Originario Campesinas*) also have some power with regard to educational management within the framework established in the Political Constitution of the Plurinational State and the legal provisions as stated in the education law *Avelino Siñani - Elizardo Perez* of 2010 (Gaceta Oficial del Estado Plurinacional de Bolivia, 2010).

Representation and advisory bodies

Articles 90 to 92 in the *Avelino Siñani - Elizardo Perez* law introduce *Participación Social Comunitaria* (Social Community Participation). The objectives of Community Social Participation are (Gaceta Oficial del Estado Plurinacional de Bolivia, 2010):

- participation in the formulation and guidelines of educational policies
- respect for the specific educational attributions, roles and responsibilities established in the rules and regulations of the Plurinational Educational System
- representation and legitimacy for the divers educational actors and dialogue with these actors
- promotion of consensus across the different actors in education
- planning, controlling, monitoring and evaluation of the educational process
- administrative transparency through social control to optimize the functioning of the Plurinational Educational System

The instances of *Participación Social Comunitaria* in education comprise organizations and institutions related to education, with representation and legitimacy corresponding to their jurisdiction. The *Participación Social Comunitaria* bodies are (Gaceta Oficial del Estado Plurinacional de Bolivia, 2010):

- Plurinational Congress on Education (*Congreso Plurinacional de Educación*)
- Plurinational Educational Council (*Consejo Educativo Plurinacional*)
- Educational Councils of indigenous and aboriginal farming nations and peoples (*Consejos Educativos de Naciones y pueblos indígena originario campesinos*)
- Community Social Education Councils, at the level of Departmental, Regional, District, Nucleus and Educational Units (*Consejos Educativos Social Comunitarios, a nivel Departamental, Regional, Distrital, de Núcleo y Unidades Educativas*)
- Advisory Boards of the Ministry of Education (*Consejos Consultivos del Ministerio de Educación*)

Especially for VPET, the National System of Technical and Technological Education (*Sistema Nacional de Educación Técnica y Tecnológica (SINETEC))* was created. Its task is to coordinate technical and technological education with productive and labour sectors. However, the *SINETEC* is not functioning properly, let alone implemented (Sevilla B., 2017).

Education and training providers

All educational establishments with secondary education of the Regular Education subsystem are allowed to provide VET in Formal Education. VET is also offered in the Alternative Education subsystem for young people and adults. VET in the Alternative Education is offered by Technical Training Centers (*CETAs, Centros de Capacitación Técnica*; Sevilla B., 2017).

b) Professional Education and Training

Various agents contribute to the Bolivian PET System. All relevant actors are briefly described in the following list:

Government

In Bolivia, all education is regulated by the authorities and policies of the Plurinational Education System (*Sistema Educativo Plurinacional*) as part of the Ministry of Education of the Plurinational State of Bolivia (*Ministerio de Educación del Estado Plurinacional de Bolivia*). Specifically within the Ministry of Education, the Vice-Ministry of Higher Education Professional Training (*Viceministerio de Educación Superior de Formación Profesional*) regulates the Bolivian education system at the post-secondary level and is therefore responsible for PET (Sevilla B., 2017).

The Minister of Education (*Ministro de Educación*) manages the Ministry, whereas the Vice Minister of Higher Education Professional Training (*Viceministro de Educación Superior de Formación Profesional*) chairs the Vice-Ministry. The General Director of Higher Technical, Technological, Linguistic and Artistic Education as a subordinate in the Vice-Ministry handles all the issues concerning PET on post-secondary level (Ministerio de Educación, 2018).

Departmental and municipal governments as well as Native Indigenous Autonomies of Peasant Farmers (*Autonomías Indígena Originario Campesinas*) also have some powers with regard to educational management within the framework established in the Political Constitution of the Plurinational State and the legal provisions as stated in the education eaw *Avelino Siñani - Elizardo Perez* of 2010 (Gaceta Oficial del Estado Plurinacional de Bolivia, 2010).

Representation and advisory bodies

Representation and advisory bodies are not distinguished between VET on the upper secondary level and PET on the post-secondary level. Therefore the articles 90 to 92 in the *Avelino*

Siñani - Elizardo Perez law about *Participación Social Comunitaria* (Social Community Participation) illustrated in the subchapter on VET apply likewise here in PET. The same can be said for the National System of Technical and Technological Education (*Sistema Nacional de Educación Técnica y Tecnológica (SINETEC))*.

Education and training providers

PET is offered in various institutions depending on whether it is technical and technological or artistic.

The main providers of technical and technological training are (Gaceta Oficial del Estado Plurinacional de Bolivia, 2010):

- Technical Institutes (*Institutos Técnicos*)
- Technological Institutes (*Institutos Tecnológicos*)
- Higher Schools of Technological Training (*Escuelas Superiores Tecnológicas*)

Technical Institutes and Technological Institutes develop and offer professional training programmes based on the country's development policies. They can be of fiscal, contractual, and private nature. Higher Schools of Technological Training are of fiscal nature and provide complementary specialized training programmes. All these institutions operate under the plans, programmes and authorities of the Plurinational Educational System, which means that the Ministry of Education regulates all education of this kind (Gaceta Oficial del Estado Plurinacional de Bolivia, 2010).

In the Alternative subsystem, Alternative Technical Education Centres (*CETAs*) provide PET. (Lizárraga, 2011) The Technical Training Centers, educational institutions that develop short-term programmes, are institutions of fiscal, contractual, and private nature that will also operate according to the regulations established by the Ministry of Education (Gaceta Oficial del Estado Plurinacional de Bolivia, 2010).

The following institutions provide artistic training in Bolivia (Gaceta Oficial del Estado Plurinacional de Bolivia, 2010):

- Artistic Training Centers (*Centros de Capacitación Artística*)
- Institutes of Artistic Training (*Institutos de Formación Artística*)
- Intercultural Bolivian Schools (*Escuelas Bolivianas Interculturales*)

The Artistic Training Centers develop and provide programmes of short duration and are of fiscal, contractual, and private nature. The Institutes of Artistic Training offer artistic training programmes at a medium and higher technical level. They are also fiscal, contractual, or private institutions. The Intercultural Bolivian Schools are educational institutions of a fiscal nature

for specialized professional training programmes in the different artistic expressions (Gaceta Oficial del Estado Plurinacional de Bolivia, 2010).

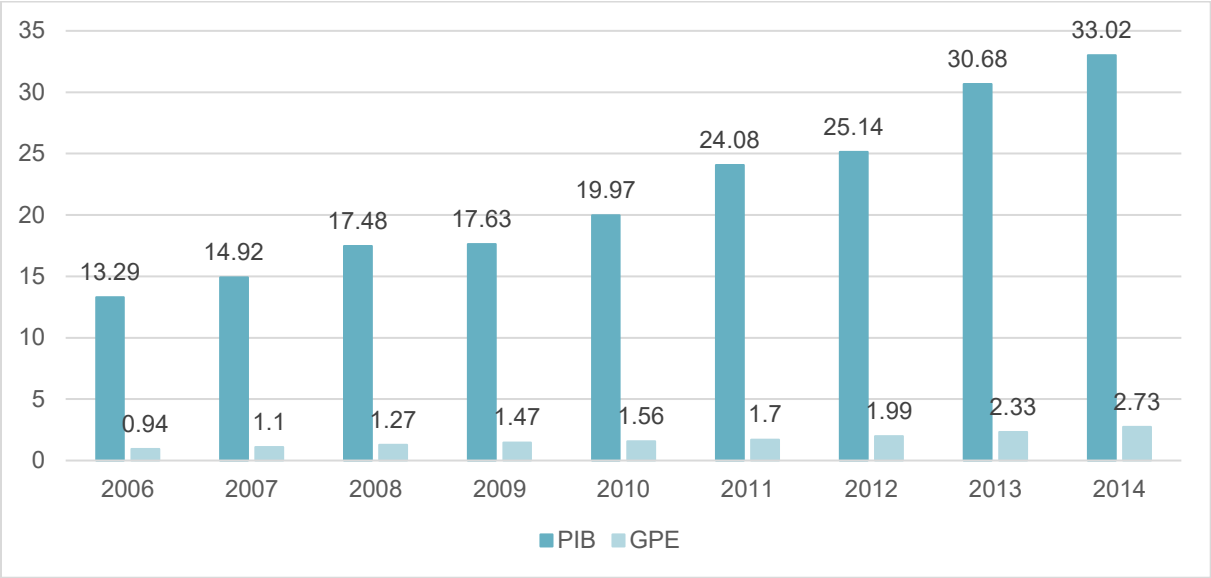
In Bolivia, there are 101 public Institutes for Technical, Technological, Linguistic and Artistic Training, of which 81 are fiscal and 20 are contractual (in 2013). Besides that, there are 176 private Technical and Technological Training Institutes legally recognized (in 2011). However, other results by the Ministry of Education for the year 2005 count a total of 1,958 public and private Technical and Technological Training Institutes (Contreras Callisaya, 2013). Then again other numbers for 2011 count 83 public institutes, 22 under agreement and 615 private ones (Sevilla B., 2017). This might reveal the considerable number of institutes that operate illegally. As many as 67 percent of the training centres are located in urban areas while only 33% are in rural areas (Contreras Callisaya, 2013). In the Alternative Education subsystem, there are 197 public *CETAs* (Centers of Alternative Technical Education (*Centros de educación técnica alternative*)) and *CETHAs* (Centres for Technical, Humanistic and Agricultural Education (*Centro de Educación Técnica, Humanística y Agropecuaria*)). Alternative education is often supported by international cooperation (Lizárraga, 2011).

3.4 Educational Finance of the VPET System

The Ministry of Education funds education in Bolivia. Specifically, according to Article 89 of the *Avelino Siñani - Elizardo Perez* law, the General State Treasury (*Tesoro General del Estado*) and autonomous territorial entities (*entidades territoriales autónomas*) should finance the Bolivian education system in line with the General Budget Law (*Ley del Presupuesto General*) and in accordance with Article 77 of the Political Constitution of the State (*Constitución Política del Estado*) (Gaceta Oficial del Estado Plurinacional de Bolivia, 2010). In practice, The General State Treasury (*TGN, Tesoro General de la Nación*) is the main provider of monetary resources, followed by foreign cooperation (Ministerio de Educación, 2015a). The Ministry of Economy and Public Finance of Bolivia (*Ministerio de Economía y Finanzas Públicas de Bolivia*) regulates state spendings generally (Ministerio de Economía y Finanzas Públicas, 2018).

In Bolivia, there are no specific budget lines for technical education (Sevilla B., 2017). VPET expenditure is therefore just a part of the Total Public Expenditure on Education (*GPE, Gasto Público Ejecutado en Educación*).

Figure 8: Public spending on education (GPE) and gross domestic product (PIB,) Bolivia, 2006 – 2014 (in millions USD)



Source: Ministro de Educación (2015b).

Figure 9 shows the public spending on education (*GPE*) and the gross domestic product (*PIB, Producto Interno Bruto*) for Bolivia in period 2006 to 2014. The real growth in the execution of Public Expenditure on Education (GPE) was 7.0% annual average (Ministerio de Educación, 2015a).

3.4.1 Educational finance of the VET system

VET on the upper secondary level belongs to regular and mandatory education in Bolivia. Therefore, these programmes are financed publicly through the budget of the Ministry of Education (Ministerio de Educación, 2015a).

For students, VET in regular education is free (UNESCO, 2011b).

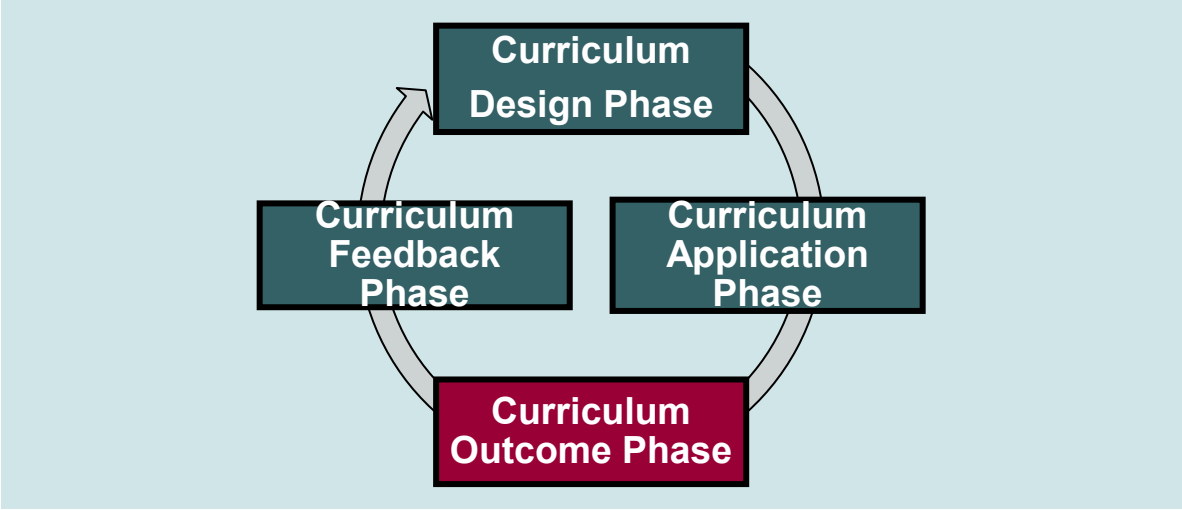
3.4.2 Educational finance of the PET system

The financing of PET is dependent on the kind of institution: public or private. Public institutions are financed through the Ministry of Education while private institutions are financed privately. As PET in Bolivia is mainly private, most of the students pay for it (Sevilla B., 2017).

3.5 Curriculum Development

The curriculum is a central element for the functioning of a VPET system by defining the framework and the (quality) standards for the education system. The development of a curriculum can be decomposed into a three-step process with a curriculum design, a curriculum application and a curriculum feedback phase. This theoretical concept is called the Curriculum Value Chain and is depicted in the picture below (CVC; for more details see (Renold, et al., 2015)).

Figure 9: Curriculum Value Chain (CVC)



Source: Bolli et al. (2016).

In the curriculum design phase, VET curriculum content and qualification standards are decided upon by the relevant actors. Therefore, the discussion in the respective subchapter below focuses on the degree and the amount of stakeholder participation concerning curriculum design in Bolivia. The curriculum application phase revolves around the implementation of the curriculum. Because learning environments differ heavily across countries—especially with respect to the prevalence of workplace learning—the curriculum application phase subchapter in this factbook focuses those learning environments. Specifically, it addresses where learning takes place and whether the curriculum dictates both school and workplace learning or only one of the two. Finally, curriculum outcomes can be collected and analysed in the curriculum feedback phase. This evaluation process is important as it may render a more refined curriculum design than was possible in the first place.

3.5.1 Curriculum Design Phase

The design phase is crucial for the whole curriculum process. In order to ensure that the skills taught in the VPET programmes correspond to the needs of the labour market, experts from companies should be involved in defining the qualification standards and learning contents of the curricula.

In Bolivia, there are two types of curricula: *the core curriculum* and *the regionalized curriculum*. This is due to multiculturalism with widespread socio-cultural and linguistic varieties across the country. The core curriculum can be understood as the uniform basic curriculum applying mostly in urban areas, whereas the regionalized curriculum includes characteristics of indigenous and aboriginal farming nations and peoples in rural areas (Gaceta Oficial del Estado Plurinacional de Bolivia, 2010).

The Ministry of Education is responsible to design, approve and implement the core curriculum with the participation of educational stakeholders. These stakeholders are not defined more precisely in the *Avelino Siñani - Elizardo Perez* law. The management of the regionalized curriculum is a shared competence between the central level of the state (the Ministry of Education) and the autonomous territorial entities (Gaceta Oficial del Estado Plurinacional de Bolivia, 2010).

According to Article 69 of the 2010 *Avelino Siñani - Elizardo Perez* law the curriculum of the Plurinational Educational System in its various subsystems and levels of training should articulate the needs, demands and expectations of the society and the Plurinational State. The curricula link theory to practice and are of an intercultural, diversified and regionalized nature that guarantee the unity and integrity of the Plurinational Educational System, as well as the respect for the cultural and linguistic diversity of Bolivia (Gaceta Oficial del Estado Plurinacional de Bolivia, 2010).

3.5.2 Curriculum Application Phase

The way in which a curriculum is implemented—especially with respect to learning environments—is important to achieve the intended learning outcome.

As described in section 3.1 VET programmes (upper secondary level) in Bolivia are exclusively school-based; therefore, the VET curriculum is implemented at schools only. PET programmes (postsecondary level), described in section 3.2, are partly in schools and partly in companies depending on the programme. Bolivia is the only country in Latin America that currently does not offer any dual technical training, but this is about to change. However, there already exist dual apprenticeships in the commercial field that have a school- and a work based component. Nevertheless, PET is to a large extent school-based education too. This means, that the Ministry of Education is responsible for the learning place, the examinations, teacher and equipment provision and aspects of finance. To sum up, curriculum application mostly relates to schools rather than firms (Kupfer, 2015; Oberliesen & Oberliesen, 2012).

There are no programmes or institutions in place to guide students in the school system in making decisions about their educational career paths. This lack is identified as one of the main causes of the rather low preference for PET in higher education (Sevilla B., 2017).

3.5.3 Curriculum Feedback Phase

The curriculum feedback phase deals with the question, whether and how educational outcomes are analysed. Based on this, the curriculum could be re-worked and improved.

There is no specific evaluation of VPET. VPET evaluation is part of general education analysis. Bolivia has different types of systems and institutions to measure educational outcomes and quality (UNESCO, 2011b; Gaceta Oficial del Estado Plurinacional de Bolivia, 2010):

- *Sistema Nacional de Acreditación y Medición de la Calidad de la Educación (SINAMED)* (National System for Accreditation and Measurement of the Quality of Education)
- *Observatorio Plurinacional de la Calidad Educativa Plurinational (OPCE)* (Observatory of Educational Quality)

The *SINAMED* was created to establish the *Sistema de Medición de la Calidad (SIMECAL)* (Quality Measurement System). *SIMECAL* applies to preschool, primary and secondary education and therefore for VET on the upper secondary level. The objective of this quality measurement system is to provide periodic, valid and reliable information about education. This information serves as foundation to provide inputs at different levels of the education system. It allows the decision-makers to confirm or adjust the requirements for the education levels, the education policy and the modalities of the education system in general (UNESCO, 2011b).

Article 83 of the 2010 *Avelino Siñani - Elizardo Perez* education law introduces the *OPCE*. It is created as a decentralized, technical and specialized public institution, independent in terms of the process and results of its evaluations. Generally, this Observatory is in charge of measuring, monitoring, evaluating and accrediting the educational quality of the education system in the Regular, Alternative and Special subsystems. Therefore, the *OPCE* also evaluates VPET (Gaceta Oficial del Estado Plurinacional de Bolivia, 2010).

Moreover, the *OPCE* has the following functions (Observatorio Plurinacional De La Calidad Educativa, 2018):

- Generate and provide pertinent, timely and truthful information to the institutions of the Plurinational State in order to guide the timely decision-making of public policies in education
- Establish guidelines in the design of methodologies, techniques and evaluation instruments for the Bolivian Educational System.
- Propose intervention actions to the educational system with regard of the identified educational problems, to contribute effectively to the achievement of the educational quality for the “Living Well” (*Vivir Bien*)
- Evaluate the participation and the degree of satisfaction of the actors of education about the situation and quality of education, as an instrument of the process of transformation and development of the country towards the “Living Well” (*Vivir Bien*)
- Promote the dissemination and socialization of the management and practice of educational quality in communities and educational institutions.

- Constitute actions of internal and external relations with institutions and organizations, which allow *OPCE* to socialize their experiences of monitoring, measuring, evaluating and accrediting educational quality, and undertaking coordinated tasks of national and international scope.
- Participate in the management and administration of external resources for educational programmes and projects, in coordination with the Ministry of Education, in accordance with current regulations.

3.6 Supplying Personnel for the VPET System (Teacher Education)

In Bolivia, there is no specific teacher education for the VPET system. VPET teacher education is just part of general teacher education. Teachers are trained at Higher Normal Institutes (*Institutos Normales Superiores, INSs*), Superior Teacher Training Schools (*Escuelas Superiores de Formación de Maestros/as, ESFM)* and pedagogical universities and become normal teachers (*normalistas*).Teacher education does usually not train the specific skills required to teach VPET specialties. Moreover, professionals or technicians from other areas who do not have this professional certificate from INS cannot teach in the school system. Exceptions are made for Interim teachers who act as substitutes (UNESCO, 2011b; Sevilla B., 2017; bq-portal, 2018; Balda Cabello, 2015).

Technical institutes hire technicians to teach, but these technicians enter at the lowest level recognized by the teaching profession and cannot be promoted because they are not normal teachers (*normalistas*) (Sevilla B., 2017). Chapter 2.6 provides more information about teacher education in Bolivia generally.

4. Major Reforms in the Past and Challenges for the Future

4.1 Major reforms

In Bolivia, there have been many changes and improvements in education in the second half of the 20th century. After the revolution of 1952, there have been two major reforms of the education system in 1994 and 2010 that affect education in Bolivia today.

Revolution of 1952

The 1952 Revolution brought great social changes, which also affected education (Arrueta & Avery, 2012). This revolution is known as the National Revolution of 1952 (*Revolución Nacional de 1952*) (Thomson, 2014). Besides the important Agrarian Reform (1953), a new education code was passed in 1955. Its main objectives were universal and compulsory education, and the incorporation of indigenous and aboriginal farming peoples into education. It was the first time all education policies were collected in one code that became the governing legislation of education; education in Bolivia was understood as a national and collective enterprise (Andrade Sánchez, 2014). However, at that time, vocational and professional education was no priority at all, education discussions mainly focused on pedagogical issues in regular education and universities in higher education. Further, strong power groups like the teachers' union and the university were dominating the design of the education system therefore education was guided rather by them than by demand (Lizárraga, 2016).

Education reform in 1994

Bolivia's 1994 education reform (Law 1565) introduced Intercultural Bilingual Education. The reform is based on the education code of 1955, adapted to the country's and the world's development. Article 1 states: "Bolivian education is intercultural and bilingual, because it assumes the cultural diversity of the country in an atmosphere of respect among all Bolivians, men and women." (Law 1565) (Andrade Sánchez, 2014). The implementation of Law 1565 consisted of four tasks of measures (Arrueta & Avery, 2012; Contreras & Talavera Simoni, 2003):

- the Popular Participation Act
- the Curriculum Organisation System
- the Curriculum and Services Administration
- Resource Management

Further, the new standard sought to create conditions for community commitment to education. Education was not a matter of a few influential groups anymore; rather it was now thought to be a common affair with the involvement and participation of social, economic and indigenous actors (Andrade Sánchez, 2014). PROEIB Andes, initiated in 2001, was one of the central

institutional responses to the Education Reform Law 1565 (Arrueta & Avery, 2012). The paradigm of “Living Well” (*Vivir Bien*) emerged in Bolivia as a new approach to socioeconomic transformation (Yapu, 2015).

The paradigm of “Living Well” transcends the educational sphere and promotes access to and enjoyment of material goods as well as full realization in all spheres of life for citizens, within the framework of a sustainable endogenous development that seeks progress, development and improvement of all who live in Bolivia (Balda Cabello, 2015).

Education reform in 2010

The latest education reform is the *Avelino Siñani - Elizardo Perez Education* Law of 2010 (Law 070) which is the current education law in Bolivia (Sevilla B., 2017). It followed the new Constitution of the Plurinational State of Bolivia in 2009. Article 78 of this constitution embeds vocational and professional education in Bolivia’s education system (Lizárraga, 2016): “The State guarantees vocational education and humanistic technical education for men and women, related to life, work and productive development.” (Article 78 subsection IV of the *Constitución de 2009 del Estado Plurinacional de Bolivia* (WIPO, 2009)) The *Avelino Siñani - Elizardo Perez* law regulates all aspects of education in Bolivia.

More specific information on the implications of the 2010 law of education is embedded in the respective chapters of this factbook. Generally, its additional objectives are the elimination of socio-economic differences between urban and rural areas, the establishment of pluralistic, intra- and intercultural, spiritual and multilinguistic education for everyone across the country (Andrade Sánchez, 2014). This new *Law 070* is still being implemented (Sevilla B., 2017).

4.2 Major challenges

The demand for vocational and professional education in Bolivia is still falling behind when compared to general school and university education. Students prefer general school education to VPET. The challenge here is to make VPET education more attractive. This can be done by better information on professional perspectives. Generally, the perception of vocational and professional education by the people of Bolivia still needs to change towards the appreciation of technical and technological professions (Lizárraga, 2016). Another challenge closely related to the one before are the priorities in the education system. The existence of power groups within education, which do not prioritize VPET, prevent the rise of vocational and professional training in Bolivia. Thus, they undermine the possibilities of creating an educational system guided by demand (Lizárraga, 2016). In Bolivia, there is a high share of informal employment, especially in rural areas, which does not value qualifications properly. These usually small businesses do not recruit their personnel under technical-professional academic

criteria, but through familiarity and proximity, called social capital (Yapu, 2015). Another challenge connected to that is the gap between school attendance in urban and rural areas. Many children in rural areas have to work and support their impoverished families rather than go to school (Binns, 2015).

There is a need of agreements between the institutions and actors in the state and the private sector, the inclusion of the Ministry of Labour and an articulation between the national, departmental and municipal administrative levels (Yapu, 2015). All this would make the Bolivian education system more efficient (Jemio, 2014). However, companies have only a limited interest in participating in VPET, despite the fact that they actually lack production capabilities (Lizárraga, 2016). It seems that they are not aware of the huge potential of well-educated, capable and skilled labour. Such human resources could increase the productivity of the companies. If so, the companies would probably also be willing to bear the costs and therefore support VPET (Lizárraga, 2011). The connection with the productive system is crucial for the pedagogical development and the economic support through equipment. So far, technical schools have usually no been able to provide cutting-edge technology that can be used in practical training (Yapu, 2015).

Further, the Ministry of Education, as the guiding and responsible institution for VPET in Bolivia, does not really know how to build bridges towards the productive sector. This hinders the coordination between educational institutions and companies in the productive sector (Lizárraga, 2016). VPET is a specific type of education and therefore needs a specific governing body that has a productive logic and combines theory with practice. That implies the necessity of not only having a public policy for the provision of vocational and professional education, but also to regulate VPET in detail (Lizárraga, 2012).

Another challenge is teacher education. Currently, VPET teacher education is just a part of normal teacher education in Bolivia. A specialised VPET teacher education could include the characteristics of teaching vocational and professional content much better. VPET in Bolivia is relatively new, so there are not lots of data available to evaluate the quality of teacher education in more detail. This leads to another challenge: the availability of data is still limited, although in recent years more and more data has been collected (Yapu, 2015).

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