Kemper, Johanna (Ed.)

Book

KOF factbook education system Costa Rica

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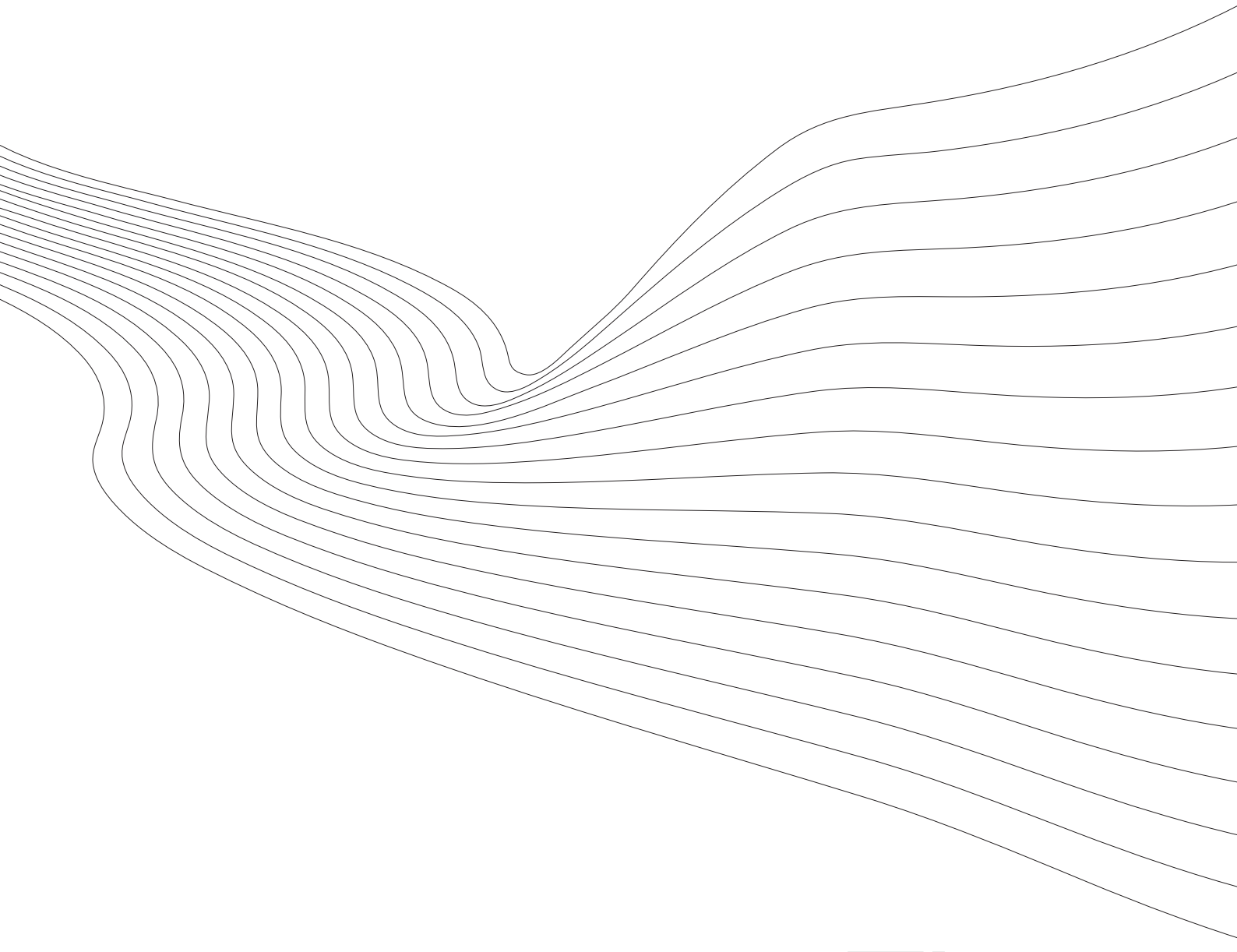

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List of Abbreviations

CAF	Latin American Development Bank
CIA	Central Intelligence Agency
COMEX	Ministry of Foreign Trade of Costa Rica
ECLAC	Economic Commission for Latin America and the Caribbean
FDI	Foreign Direct Investment
FFOG	Federal Foreign Office Germany
GDP	Gross Domestic Product
GCI	Global Competitiveness Index
GII	Global Innovation Index
GNI	Gross National Income
GVA	Gross Value Added
HDI	Human Development Index
IBE	International Bureau of Education of the UNESCO
ILO	International Labour Organization
IMAS	Institute for Social Aid of Costa Rica
INA	National Institute of Apprenticeship of Costa Rica
INEC	National Institute of Statistics and Census of Costa Rica
ISCED	International Standard Classification of Education
KOF	Swiss Economic Institute
LAC	Latin America and Caribbean
LFPR	Labour Force Participation Rate
MEP	Ministry of Public Education
MTSS	Ministry of Labour and Social Security of Costa Rica
OECD	Organisation for Economic Co-operation and Development
SINETEC	National Technical Education System of Costa Rica
TEC	Costa Rican Institute of Technology
TFP	Total Factor Productivity
UACA	Autonomous University of Central America
UCR	University of Costa Rica
UIS	UNESCO Institute for Statistics
UNA	National University of Costa Rica
UNDP	United Nations Development Programme
UNED	State University at a Distance of Costa Rica
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNEVOC	International Centre for Technical and Vocational Education and Training
UTN	National Technical University of Costa Rica

VET	Vocational Education and Training
VPET	Vocational Professional Education and Training
WDI	World Development Indicators
WEF	World Economic Forum
YLMI	Youth Labour Market Index

FOREWORD

In the last years, vocational education and training has received more and more attention. The increased pressure to upgrade the skills of the workforce through an increasingly competitive world economy, or the high youth unemployment rates in the aftermath of the world economic crises putting pressure on politicians to provide solutions could be part of the reason why. In fact, vocational education has been suggested as one major solution to these problems since it provides an education pathway for those who do not continue with tertiary level education and helps upgrading the skills of those who would have started working immediately and would have received some form of on-the-job training.

The increased attention for vocational education and training was in particular perceptible among policy makers. In Europe, the European Commission defined common objectives for the further development of the vocational education and training systems of the European countries for 2020 and an action plan for the upcoming years in the *Bruges Communiqué on enhanced European cooperation in vocational education and training for 2011-2020* (European Commission, 2010). In the United States, Obama mentioned in a speech that he wanted to increase the investment in vocational education and training system of the United States of America (The White House 2015). But also many other countries worldwide, such as South Korea or Hong Kong, show increased interest in extending their vocational education system.

Worldwide, only a few countries have a well-elaborated and efficient vocational and professional education and training (VPET) system, among these the Swiss VPET system. It is a good example of how an education system can contribute to the successful matching between market demand and supply. It is highly efficient in getting the adolescents into the labour market (7.7% from 2005-2012, compared to the OECD average of 14.6%, OECD, 2015).

Though not many countries have VPET system that is comparable to Switzerland, many have a vocational component in their education system. To provide information about the education systems of other countries, with a special focus on the part of the education system teaching vocational skills, is the major purpose of the KOF Factbooks Education System.

SUMMARY

In the KOF Factbook Education System Costa Rica, we will describe the vocational system of Costa Rica in general and in particular refer to factors which are crucial for the functioning of the system. Among others, these comprise the regulatory framework and the governance of the VPET system, specifying the actors that are involved and which competencies and duties they have. Further, the curriculum development and the actors involved in this process, as well as the financing of the system, etc.

The Factbook is structured as follows. We will refer to Costa Rica's economy, labour market, and political system in the first part of this Factbook. The second part is dedicated to the description of the entire formal education system. The vocational part of Costa Rica's education system will be explained in the third part. And finally, the last section gives a perspective about the set of reforms Costa Rica's education system went through in the past and will face in the future.

EDITING AND ACKNOWLEDGEMENTS

This Factbook is edited by Johanna Kemper. For the elaboration of the contents, we want to thank Marius Stoll and Reto Odermatt. Without you, the realisation of this Factbook would have been impossible!

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

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1. The Economy of Costa Rica 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, they will briefly be described in the first part of this Factbook. In addition, this part provides an overview of Costa Rica's political system with emphasis on the description of the education politics.

1.1 The Economy of Costa Rica

According to the World Bank (2015), Costa Rica is an upper middle income country[1]. In 2013, Costa Rica had a gross domestic product (GDP) per capita of 5,839 US$ (in constant 2005 US$). With a total population of 4.87 million people in 2013, it can be considered as a rather small economy. In 2013, about 75% of the population lived in urban areas, which represents a quite new development, considering the urban population proportions of 63% in 2003 and 53% in 1993. The country ranks on the 68th position of 191 countries of the Human Development Index (HDI) of the United Nations and is with 0.76 points a so-called high human development country (UNDP 2014a, b). Still, Costa Rica has achieved significant integration into the world economy due to export-oriented foreign direct investment (FDI) and an increasingly diversified export base (OECD, 2013).

Costa Rica is considered as an economic and social success story in the developing world and especially in the Latin American and Caribbean (LAC) region: Over the past decades the government has considerably transformed the economy and reduced poverty. Thereby, two factors were very important. First, since 1949 Costa Rica has had no army and second, due to a well-functioning democratic system, it has enjoyed political stability since 1948 (OECD, 2013).

Before the 1960s, Costa Rica was highly dependent on its agricultural sector. The economy was based on exports of agricultural commodities (mainly coffee, bananas and sugar). As a result, it was vulnerable to external price shocks and faced limited growth prospects (OECD, 2012 and OECD/CAF/ECLAC[2], 2013). As a consequence, Costa Rica adopted a state-led industrialisation programme aimed at reducing its dependence on primary products, like many other developing countries at that time. The industry sector became a considerable source of growth and Costa Rica entered a long period of economic expansion between

[1] Which is classified by a gross national income (GNI) per capita between 4,126 and 12,000 USD and calculated using the World Bank Atlas method.

[2] CAF: Latin American Development Bank; ECLAC: Economic Commission for Latin America and the Caribbean

1960 and 1980, with an average annual GDP growth of 6% (OECD 2012). In the beginning of the 1980s the debt crisis affected most Latin American countries, which led in most cases to a deep and lasting recession. But Costa Rica experienced only a remarkable short-term impact of the Latin American debt crisis[3] during the early 1980s. The reason for this rapid recovery can be found in an export-oriented development strategy of the government to expand and diversify Costa Rica's export structure: the country opened its economy through major reforms and a policy mix of trade liberalisation and the promotion of export-oriented FDI, combined with the creation of some restrictions on private investment in certain key sectors. This led again to a good economic development until a short contraction through the global financial crisis in 2009, without a long-lasting impact (OECD, 2013).

Between 1973 and 2013, the economy of Costa Rica grew on average 4% p.a. and about 4.4% p.a. over the last 10 years in this period. This average growth is accordingly higher than the OECD average GDP growth of 2.3% (resp. 1.8% over the last 10 years), but lower than that of Panama with 4.3% (1973-2013) and particularly with an average growth of 7.6% over the last 10 years of this period.

Despite its economic success, inequality in Costa Rica is still high: according to the World Bank (2015) the country had a Gini coefficient[4] of 0.49 in 2012. This level is quite usual in South and Central America (e.g. Panama with 0.52 in 2012), but it is high in contrast to developed countries (e.g. Switzerland with 0.32 in 2004) (ibid.).

As a consequence of economic achievements, Costa Rica has managed to raise its standard of living significantly and to reduce poverty to one of the lowest levels among all Central American countries (OECD, 2013). According to the World Bank (2015), the percentage of the population living with less than USD 2 a day (in purchasing power parity terms) has dropped from around 15% in 1990 to 3% in 2012. Thus, extreme forms of poverty could be greatly reduced. In terms of a national poverty line a proportion of 21% of the population lived below this income level.

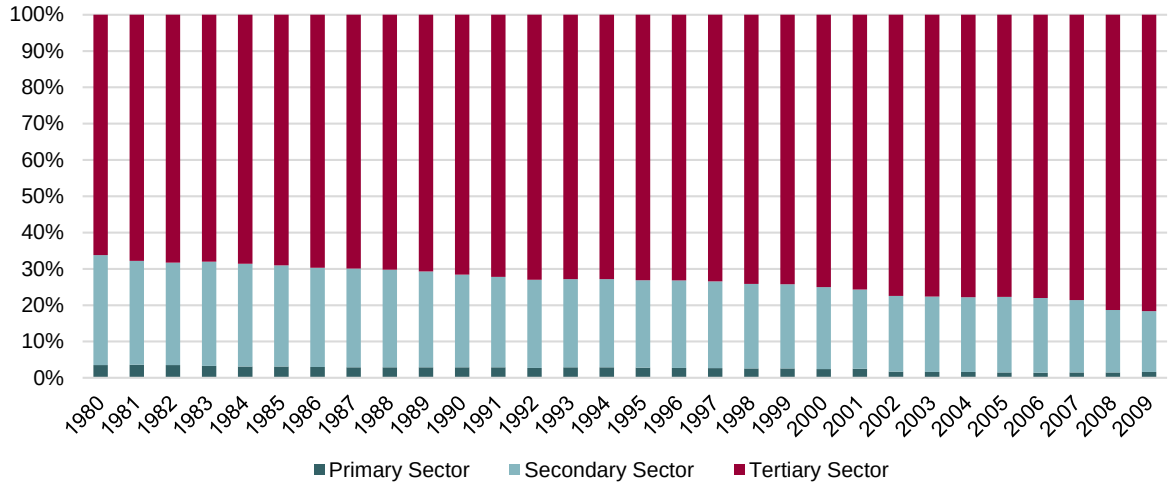
Labour input was the most important driver of GDP growth in the time period from 2002 to 2012 (Sosa, Tsounta and Kim, 2013). However, its importance deceased slightly relative to the input factor capital and total factor productivity (TFP) in the period from 2003 to 2012. The growing importance of TFP for output growth is a particularly interesting development,

[3] During the Latin American debt crisis, many countries were not able to re-pay their foreign debt. The origins of the crises dated back to the two oil price shocks in the 1970s. In the course of the price shocks (increase), the oil-importing Latin American countries went into current account deficits. The money they burrowed came from the oil-exporting countries which were storing their money in US banks, which in turn lent the money to the Latin American countries (Federal Reserve History 2013).

[4] The Gini coefficient measures the differences in the income distribution (in some cases the consumption expenditure) of individuals or households. A coefficient of 0 means equal distribution of income. 100 resp. 1 corresponds to complete inequality where one individual or household possesses the total income (World Bank 2015).

as it very likely indicates the first fruits of a restructuring process with the aim to upgrade the economy, moving away from an industry-driven towards a more diversified economy. This undertaking was supported by foreign direct investment (FDI). In fact, Costa Rica has attracted one of the highest levels of FDI per capita in Latin America, due to political stability and it's relatively well educated labour force, as well as the incentives offered in the free-trade zones (CIA, 2014).[5] The influx of FDI led to the production of high value-added goods and services (including microchips), which reinforced the economy and broadened the export base (ibid.). Very likely, these and maybe other investments spurred TFP growth in Costa Rica.

Figure 1: Total Employment and Sector Employment, Costa Rica 1980-2012



Source: The World Bank (2015).

As Figure 1 shows, the proportion of the single economic sectors has changed clearly since 1980. The employment in agriculture declined continuously, mainly leading to an increase in employment in services. As described, this development began already in the 1950s. In 2012, the majority of the population worked in the service sector (67%) and only a small part of the population still worked in agriculture (13%). The employment in the industry sector fell slightly from 26% in 1991 to 20% in 2012. The shift of employment from the industry to the service sector indicates the above mentioned a restructuring of the economy.

According to the World Bank (2015), the most important sector of Costa Rica was the services sector with a share of 69.2% in gross value added (GVA) in 2012, followed by the industry sector with 25.2% (including manufacturing) and the agriculture sector with 5.6% of GVA (World Bank, 2015) (Table 1). Unfortunately, there is no current data on subcategories of each sector. Nevertheless, the World Bank (2015) provides data on the composition of the

[5] The US-Central American-Dominican Republic Free Trade Agreement (CAFTA-DR) entered into force in January 2009, which has increased FDI in key sectors of the economy, including the insurance and telecommunications sectors, which have recently opened to private investors (CIA 2014).

industrial sector in 2010: the majority of the industrial sector consisted of manufacturing (67.1%), which in turn mainly composed of chemicals (8%), textiles plus clothing (3.5%) and notably food, beverages and tobacco (45.1%). Compared to the EU-28 countries, the share of manufacturing and agriculture is much larger in Costa Rica according to the 2012 data.

Table 1: Breakdown of total value added and employment by sectors in 2012

Sector	Costa Rica: Value added (%)	EU-28: Value added (%)	Costa Rica: Employment (%)	EU-28: Employment (%)
Primary sector	5.6	1.7	13.4	5.0
Agriculture, hunting and forestry, fishing	5.6	1.7	13.4	5.0
Secondary sector	25.2	19.1	19.5	15.6
Manufacturing, mining and quarrying and other industrial activities	25.2	19.1	19.5	15.6
of which: Manufacturing	16.1	15.3	-	14.0
Tertiary sector	69.2	73.8	66.9	72.9

Source: The World Bank (2015), Eurostat (2015a,b)

According to the Global Competitiveness Index (GCI) of the World Economic Forum (WEF), Costa Rica reveals a very stable profile and is well positioned to engage in a rapid transition towards a more knowledge-based economy (WEF, 2014: 33). The traditional strengths of the country include a high level of basic requirements (especially the strong primary education plus health system and solid institutions) as well as important efficiency enhancers, as the higher education and training and the technological readiness. Beside these important strengths, Costa Rica has some persistent weaknesses concerning its competitiveness: the financial market is still economically underdeveloped (difficult access to equity and loans), the government bureaucracy is inefficient (also with high budget deficits) and the supply of transport infrastructure is still inadequate. In contrast, the ICT supply and infrastructure is good, which has – thanks to one of the highest FDI and technology transfers – led to the high technology readiness (WEF, 2014).

The goal of the Global Innovation Index (GII) is to indicate the range of innovations of an economy (Dutta et al., 2014: 170). The GII shows that there is still quite a lot of potential for innovation activities in Costa Rica: the country only achieved a GII score of 37.3, ranking on position 57 of 143 countries in 2014. The GII confirms the results of the GCI, pointing out similar weaknesses, which can be found mainly in the general transportation infrastructure as well as the credit and investment sector.

1.2 The Labour Market

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

1.2.1 Overview of Costa Rica's Labour Market

In 2013, 67.8% of the Costa Ricans aged between 15 and 64 were either employed or actively searching for a job (World Bank, 2015). To make meaningful comparisons with equivalent data, it was necessary to resort to more extensive data from the year 2010. Table 2 shows that the labour force participation rate (LFPR) with 64.1% in 2010 is slightly lower than in 2013. This rate is not quite as good as the OECD average with 70.7% in 2010, mainly due to the relatively low participation rate of women (48%) in the Costa Rican labour force. The LFPR of the youth (15-24 years) was with 45.2% a little bit lower than the OECD average (47.5%) and both had an almost identical youth unemployment rate of 16.7% in 2010. The unemployment rate of the workforce of Costa Rica was about 7.4%, which is around 1% better than that of the OECD countries. The part of the Costa Rican population with less than upper secondary education had a LFPR of 55.8% in 2010, which is in comparison to the OECD average (63.3%) relatively low. The same applies to for the other two categories of school qualification (see Table 2).

Table 2: Labour force participation and unemployment in Costa Rica and OECD 2010

	Labour force participation rate	OECD average	Unemployment rate	OECD average
Total (15-64 years)	64.1	70.7	7.4	8.5
Youth (15-24 years)	45.2	47.5	16.7	16.7
Women (15-64 years)	48.0	61.7	9.5	8.2
Less than upper secondary education	55.8	63.3	8.5	12.5
Upper secondary, post-secondary level education	61.3	79.9	7.1	7.5
Tertiary education	72.7	87.0	4.6	4.7

Source: ILO (2015); OECD (2014a)

One possible explanation for the low LFPR (48%) and the comparable low unemployment rate of women in Costa Rica (9.5%) could be the high absence of women in the labour force (e.g. as non-working housewives) and the presence of informal occupation. According to the International Labour Organization (ILO) (2014), the transition from an economy with a large informal employment sector towards a more formal labour market has been recognized as a priority by the countries in Latin America and the Caribbean. Since 1988, Costa Rica has implemented policies that have reduced informal labour to a level below that of many other countries in the region. In 2013, still 20.2% of all employees worked in so-called vulnerable

employment, consisting of unpaid family workers and own-account workers, who are more likely to have informal work arrangements or missing decent working conditions (World Bank, 2015).

According to the OECD (2012: 18), Costa Rica is confronted with an increasing divergence between the skilled-labour supply and demand. There is a misalignment between the supply of specialised graduates and the skills required by industry (particularly the absence of PhDs in engineering and computer sciences). However, the problem is known and addressed by government, through the creation of a working group tasked with the identification and implementation of corresponding policies (ibid.). Immigration from Nicaragua has become another issue for the government of Cost Rica: estimated 300,000 to 500,000 Nicaraguans (6-10%) live in Costa Rica (legally plus illegally) and represent an important source of mainly unskilled labour, but create a growing challenge for the welfare system (CIA, 2014).

1.2.2 The Youth Labour Market

Around 19% of the 4.5 million people in Costa Rica were aged 15-24 and 24.7% were below the age of 15 in 2010 (INEC, 2013). Just as around 44% of the population were younger than 25 years in this year (ibid.). This fact is converse to high developed countries as for example Switzerland and has a huge impact on the future of Costa Rica.

According to the labour force participation rate (LFPR) and unemployment rate of 2013, the youth is not well integrated in the labour market of Costa Rica: 48.3% of the 15 to 24 years old persons were in the labour force and 21.8% were unemployed in 2013 (see also Table 2 for 2010; ILO 2015). This becomes even more obvious when considering the proportion of the youth who are neither in employment, nor in education or training (NEET rate), which was the case for 19.2% of the persons aged 15 to 24 years in 2012 (ibid.). These figures underline the fact that very few of the unemployed young people are in education or training programmes. Especially young women are affected by this stage of inactivity: 25.8% of the young women fell into this category in 2012, but only 13.2% of the young men (ILO, 2015).

Young people of both sexes in Latin America and the Caribbean usually face particular barriers to entering the labour market. This is reflected by the fact of high unemployment rates, precarious jobs and the low income of youngsters (ECLAC and ILO, 2012). In the past few years, there has been a diverse set of policy measures to improve the working conditions and access to the labour market for young people in Costa Rica, as for example conditional cash transfer programmes to improve school enrolment and retention rates (ibid.).

In 2011 the public-private initiative EMPLEATE has been launched by the Costa Rican Ministry of Labour and Social Security (MTSS) to bring unemployed or socially disadvantaged young people (aged 17 to 24) into the labour market by providing them with

grants for technical training (ECLAC and ILO, 2012): the policies of EMPLEATE target the generation of synergies between entities and organizations (in the public, private and social sectors) by means of agreements in the form of letters of understanding with major corporations in the country. The Ministry of Foreign Trade (COMEX) and the MTSS have established a commission which analyses the youth labour market, identifies niches with potential for investment in human capital and reviews the training required to fulfil the labour demand (ibid.). The National Employment Directorate established, together with the municipals, 16 EMPLEATE service desks, where information, guidance and labour intermediation services are provided for around 2000 young people (ibid.). An further approach under this programme is RETO EMPLEATE, which organizes events targeting all the stakeholders in the strategy, including role-playing workplace scenarios, practical demonstrations of training possibilities, assistance in obtaining grants and awareness campaigns (led by young people) designed to overcome the challenges of integrating the youth into the labour market (ECLAC and ILO, 2012).

Child labour is actually prohibited in Costa Rica, but still 2.5% of the children (ages 7-14) were economically active in 2011, whereof the largest parts went to school at the same time (81%) and worked in agriculture (46%; World Bank, 2015).

The KOF Youth Labour Market Index (KOF YLMI)

To compare the labour market situation of adolescent across countries, the KOF Swiss Economic Institute developed the KOF Youth Labour Market Index (KOF YLMI) (Renold et al., 2014). The basic idea behind this index is that a single indicator, such as the unemployment rate, does not suffice to describe the youth labour market adequately and to provide enough information for a comprehensive cross-country analysis. To improve the information content of such an analysis and to foster a multi-dimensional approach, the index consists of twelve labour market indicators[6], which are summarized in four categories.

The first category describes the *activity state* of the young, specifically of those between 15-24 years old, on the labour market. Therein, the adolescents are classified according to whether they are employed, in education or neither of both (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 kind and the quality of jobs of the working youth. The *education* category accounts for the share of adolescents in education and training and for the relevance of and need for their skills on the labour market. The fourth category, *transition smoothness*, shall connect the other three categories by

[6] The data for these indicators are collected from different international institutions and cover up to 178 countries for the time period between 1991 and 2012.

capturing the school-to-work transition phase of the youth. Each indicator of the KOF YLMI ranges from 1 to 7. Thereby, a higher score reflects a more favourable situation on the youth labour market and a more efficient integration of the youth in the labour market.

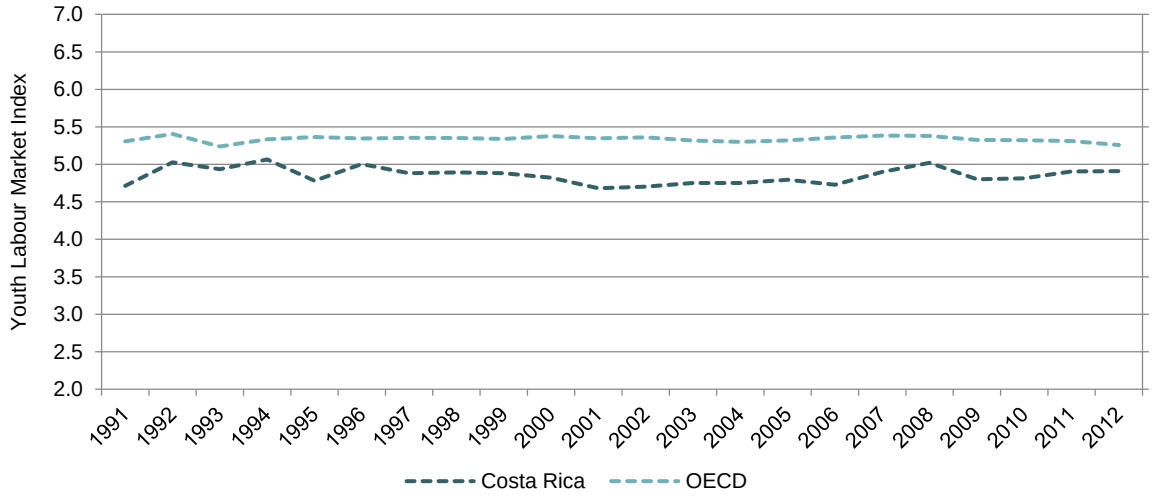
One of the major drawbacks of the KOF YLMI is the data availability. Often, a category is based on a single indicator or no indicator for that category exists at all. This could make comparisons across countries or groups of countries problematic or even impossible.

Dimensions of the KOF YLMI
Activity state - Unemployment rate - Relaxed unemployment rate[7] - 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[8] Vulnerable unemployment rate[9]
Education - Rate of adolescents in formal education and training - Skills mismatch rate
Transition smoothness - Relative unemployment ratio[10] - Long-term unemployment rate[11]
Source: Renold et al. (2014).

The KOF YLMI for Costa Rica

In the case of Costa Rica, there are only three indicators of the above mentioned indicators, namely the unemployment rate, vulnerable employment rate and relative unemployment ratio. Therefore, conclusions based on this index are very limited.

Figure 2: KOF YLMI Costa Rica versus Panama, Switzerland and OECD average, 1991-2012



Source: KOF (2014), Youth Labour Market Index.

Figure 2 shows the evolution of the (limited) KOF YLMI for Costa Rica compared to the OECD average over the time period from 1991 until 2012. In order to make a meaningful

[7] 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").
[8] Those who cannot make a decent living out their earnings, being at risk of poverty as a percentage of the working population.
[9] 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.
[10] 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 more affected, then the ratio will be bigger than one.
[11] Those unemployed for more than one year (52 weeks) in the total number of unemployed (according to the ILO definition).

comparison in Figure 2, the index for the OECD average has been calculated with the same (above mentioned) three indicators. Over the entire time period, Costa Rica constantly scored below the OECD average. This corresponds to saying that Costa Rica constantly had a higher overall unemployment rate than the OECD countries on average, that a higher share of the employed population worked on their own account or in their family business and that the youth unemployment rate in Chile was higher than adult unemployment if compared to the OECD average.

1.3 The Political System

1.3.1 Overview of Costa Rica's Political System

Costa Rica is known as a long-standing and well-functioning democracy with successive democratically elected governments since the end of the civil war against dictatorship in 1948 (OECD, 2012: 30f, OECD, 2013: 39, Rankin, 2012). It is one of the most politically stable countries in the Latin America and Caribbean (LAC) region, with relatively efficient and strong institutions (OECD, 2013). Due to this political, economic and social stability, the mountains and the proclaimed neutrality in 1983, Costa Rica is also known as the Switzerland of Central America and has also gained a reputation as a defender of democracy and stability (Gratius, 2008: 168, Rankin, 2012: 9). The country has as the image of a role model country in Central America: political freedom as well as pluralism of parties are guaranteed and it is also far ahead with respect to human rights (FFOG, 2015). By regional standards, the country has several special features: a functioning legal state (*Rechtsstaat*), a welfare state with a relatively high distributive justice, a non-violence and peace tradition (no army since 1949) and, despite the budget cuts in recent years, still good functioning public education and health system (Gratius, 2008: 168, 175).

Nevertheless, Costa Rica has suffered a loss of its excellent reputation due to two problems within the last 25 years: drug trafficking and corruption scandals (Lehoucq 2005, Rankin, 2012: 156-159). Since the 1990s, Costa Rica has become part of an intricate Central American drug network: drug shipments (designated for the US) are transported through Costa Rica by land or boat close to the country's shore, which has led to a deeply rooted system of corruption in Costa Rica's political and business circles, allowing drug trafficking and money laundering activities in the country (Rankin, 2012: 156-157). The relatively good security situation has thus unfortunately deteriorated in recent years (FFOG, 2015). In addition to these insecurities, also a number of corruption and bribery scandals around prominent politicians had come to light between 2002 and 2005, as for example in the case of the former president of Costa Rica Rafael Ángel Calderón Fournier (Lehoucq 2005, Rankin, 2012: 157-158). These events disillusioned many residents of Costa Rica, which in

turn led to a political change, replacing the two-party system by a new multiparty system with a variety of opposition parties in 2002 (Rankin, 2012: 158-159).

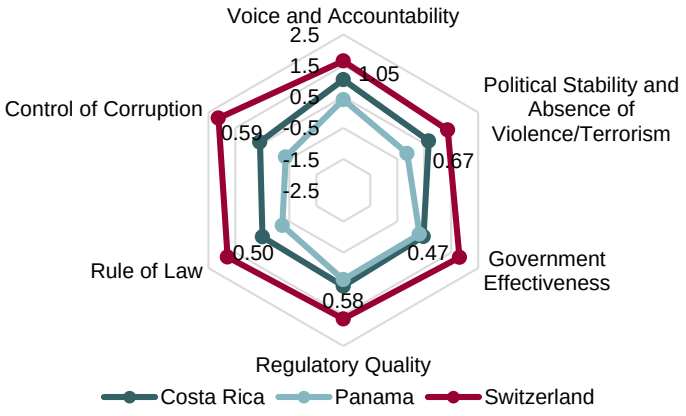
The government operates as a democratic republic under a constitution, which was revised and rewritten in 1949 (Rankin, 2012: 9). Costa Rica partly follows the North American presidential system (constitutional and institutional): the president is elected by popular vote for four years and an immediate re-election is impossible according to the constitution (FFOG, 2015; Rankin, 2012: 9). The separation of powers is guaranteed by the constitution and the three branches of government are clearly defined: (1) the executive branch is made up of the president, two vice presidents and the cabinet, (2) the legislative consists of a unicameral parliament (*asamblea legislativa*) with 57 deputies, and (3) the judiciary (*Corte Suprema de Justicia)* is independent and self-governing, but the allocation of the necessary budget is made by the parliament under constitutional requirements (FFOG 2015, Rankin 2012: 9-10). The Supreme Electoral Tribunal (*Tribunal Supremo de Elecciones*) operates as a kind of fourth branch of government, overseeing elections, campaigning, political party activities and other events concerning the electoral process (Rankin, 2012: 9).

There is also an ombudsman, serving as the defender of the people (*Defensoría de los Habitantes*), who is an important person of contact for citizens who feel violated in their rights or being treated unfairly by the state or the administration (FFOG, 2015). The ombudsman reports annually to the parliament and forms an important feature concerning the observance of human rights (ibid.). The legal system of Costa Rica has deficits, such as very long legal proceedings over many years, but the judiciary is professional, independent and largely present in all parts of the country (Gratius, 2008: 177).

According to the Worldwide Governance Indicators of the World Bank (2014), it can be observed that Costa Rica has a relative good position, compared to its neighbour Panama. The Indicators, which measure different aspects of government performance, range between -2.5 (weak) and 2.5 (strong).

As Figure 3 shows, all governance performance indicators for Costa Rica are positive and, broadly speaking, somewhere between Panama and Switzerland. Costa Rica is especially in 4 of the 6 indicators a fair way ahead of Panama: the country scores not only better in the indicator rule of law and control of corruption, but also in voice and accountability – expressing the ability of citizen to participate in selecting their government, as well as the level of freedom of expression, freedom of association, and a free media – and the indicator political stability and absence of violence or terrorism. Compared to Switzerland, there is, as expected, still potential for improvements in every indicator.

Figure 3: Worldwide Governance Indicators, Costa Rica alongside other countries 2013



Legend: Worldwide Governance Indicator Scores of Costa Rica.

Source: The World Bank (2014), own display.

1.3.2 Politics and Goals of the Education System

Education has historically been considered as very important for the Costa Rican society: since the 19th century, the government established the formation of a solid (public) education system to promote political and social development of the country and to ensure its stability and independence through mental emancipation of its citizens (Mata Segreda, 2008: 122-127, MEP, 2004: 1-2). This is also why the first nine years of school are compulsory and the amount of annual government spending on education is fixed at 6% of GDP at least by law (in article 78 of the constitution of Costa Rica) since 1997 (MEP, 2004: 2; UNESCO-IBE, 2010: 4). The country has one of the highest levels of public investment in education in Latin America, amounting to 6.3% of GDP in 2012, which is higher than the average rate of the OECD countries with 5.6% and LAC countries with 5.0% in 2012 (OECD/CAF/ECLAC, 2014).

Costa Rica is characterized by a relative strong centralism since its liberal reform era in the decades after the independence from Spain in 1821 (Rankin, 2012: 39-41). As a consequence, the Ministry of Public Education (MEP) is the central government's organism in charge of the governance and development of the national education system (MEP, 2004: 5). To administer this system all over the country, there are 20 regional headship posts with regional directors of education, which in turn are each in charge of the different schools and education centres in the region – respectively of their boards (ibid.). The MEP is the organ of executive power in the field of education and culture, whose function is the administering of all related elements, as the implementation of associated provisions, laws and regulations

(UNESCO-IBE, 2010: 2). Except of some basic administrative functions of the municipality, concerning the maintenance and the local organisation of schools, the decisions for public education are made by the ministry (UNESCO-IBE, 2010: 2-9). Public universities operate as autonomous organisations, but they are restricted in their independence by legal objectives and financed by a state fund (MEP, 2004: 3). In order to allow competition in the education sector, there are also private schools and education centres, which are controlled and inspected by the state (ibid.). Further, the state provides food and clothing for indigent students, facilitates them superior studies, combats illiteracy and provides sponsoring plus organisation of the education of adults (MEP, 2004: 2).

According to the law regulating the Costa Rican education system, its objectives are: (1) the formation of patriotism of the citizens, including an awareness of their rights and fundamental freedoms as well as a deep sense of responsibility and respect to the human dignity; (2) to enable the complete development of the human personality; (3) the formation of citizens for a democracy, in which the individual interests are reconciled with those of the community; (3) the stimulation of the development of solidarity and human understanding; (4) the preservation and expansion of the cultural heritage, the impartation of knowledge of the history of mankind, the masterpieces of literature and the fundamental philosophical concepts (MEP, 2004: 3-4; UNESCO-IBE, 2010: 2).

Although the education system in Costa Rica is considered as a positive example in the LAC region, serious problems became apparent. Currently, the provision of secondary education is insufficient (especially in outlands) and many of the young people aged between 13 to 18 do not participate, drop out of school before finishing it or are not able to successfully graduate from high school (Mata Segreda, 2008: 136-137). The OECD (2014b) also confirms this result by showing a survival rate to the last grade of lower-secondary education of 69% for Costa Rica (even 63% for male students), which is relatively low compared to the OECD average (94%) or the average of the entire LAC region (84%).

For quite some time it is also known that there are low standards in teacher training and practice, due to a drop in the quality of teaching practice in the newer generation of educational professionals (Mata Segreda, 2008: 137). This problem emerged on the one hand due to poor training, which these teachers received in private universities and on the other hand because of a vicious circle that has been transforming the professional culture of young teachers: an increasing number of people, who received a substandard education, entered university, chose a major in education and later took jobs in schools (ibid.). This problem is also underlined by the fact that more low scores results were obtained in the national test at the end of high school, which in turn makes it impossible for many students to graduate (ibid.). The PISA 2012 results of the OECD (2014b) confirm these relative low

scores: Costa Rica reached an average score of 407 – resp. rank 56 – in mathematics in 2012 (OECD average: 494), 441 in reading (resp. rank 51, OECD average: 496) and 429 in science (resp. rank 47, OECD average: 501). Nevertheless, the supplementary survey of PISA 2012 showed that students in Costa Rica were among the happiest and most motivated of all participating countries (OECD, 2014b).

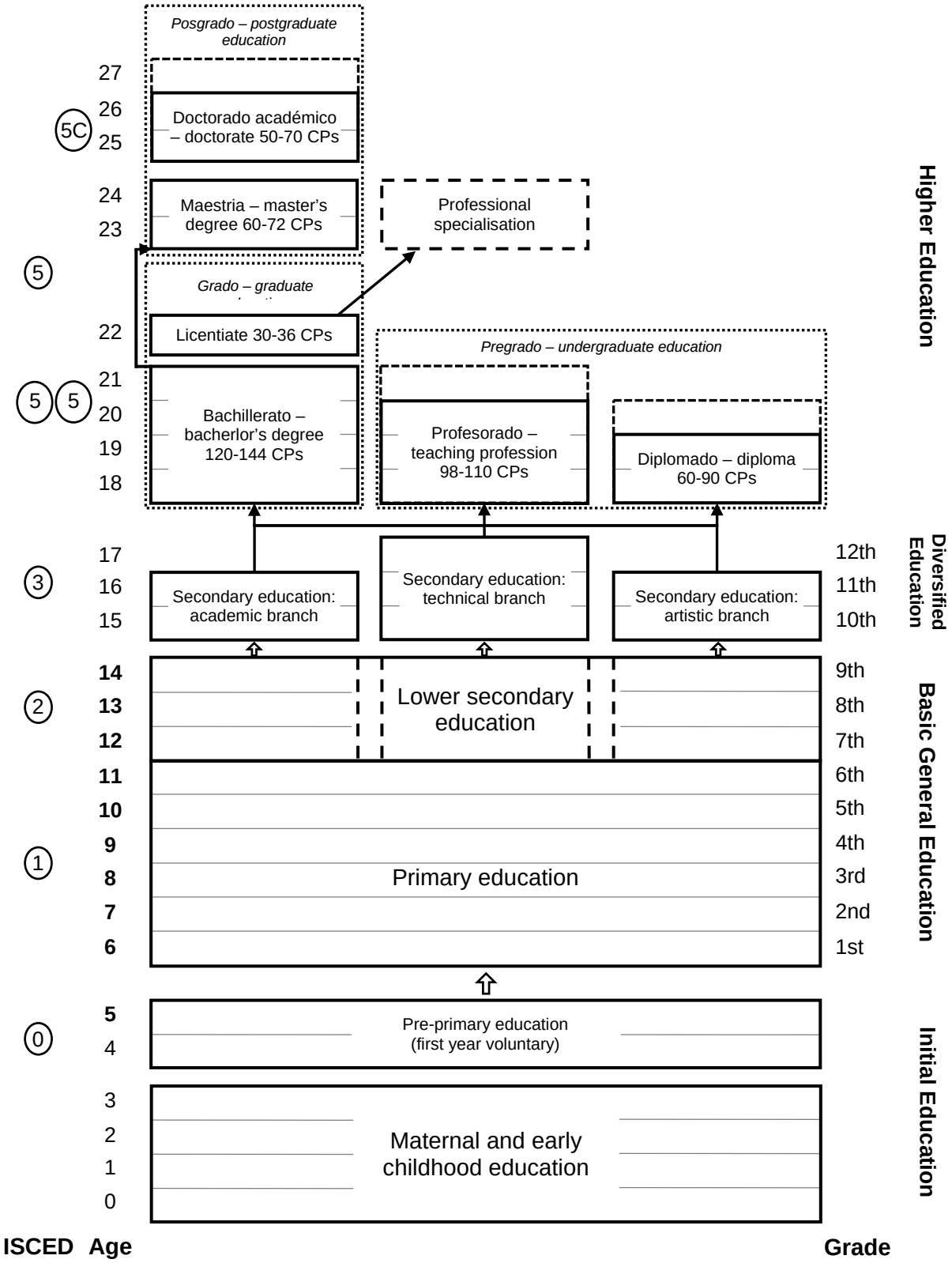
The Costa Rican government has acknowledged the mentioned problems and taken various measures. To improve the quality of teacher training and management the education ministry's quality management and assessment department set a mathematics test to all of the 1733 active teachers in 2010 (OECD/CAF/ECLAC, 2014). Additionally, the Professional Development Institute (Instituto de Desarrollo Profesional Uladislao Gámez Solano) has been created in 2007 and started a new model of training and updating of teachers as well as the implementation of further policies and arrangements to improve the performance and quality at schools in 2008 (UNESCO-IBE, 2010: 8). To ensure a higher participation rate in secondary education, efforts have been made to enable more people to benefit from the Avancemos conditional cash transfer programme, which is run by the MEP and the Institute for Social Aid (IMAS) since 2006 (OECD/CAF/ECLAC, 2014). To improve the quality of higher education, a new law has been introduced in 2010: the National Accreditation System for Higher Education (SINAES) will regulate and strengthen the accreditation of higher-education institutions, as universities and para-universities (OECD/CAF/ECLAC, 2014). A major factor in the current situation will probably gain more importance in the future quality of education: the MEP is faced with the challenge of implementing the constitutional provision introduced in 2010, to raise expenditure on education to 8% of GDP by 2014 (OECD/CAF/ECLAC, 2014).

2. Formal System of Education

This chapter addresses the education system of Costa Rica. In addition, this chapter provides the basic framework to integrate the information about the vocational education and training (VET) system, which will be explained in chapter 3.

Figure 4 illustrates the Costa Rican education system, which is planned and managed at all levels by the Ministry of Public Education (MEP) and structured into maternal and early childhood education, pre-primary education, primary education, lower secondary, secondary and higher education (university).

Figure 4: Structure of Costa Rica's education system



Sources: Castro (2010), INEC (2014), ISEP (2015), MEP (2004), UIS (2015), UNESCO-IBE (2010), Universia (2011), own display. The ISCED classifications are approximate and do not originate officially from the UNESCO.

Overall, the education system comprises 10 years of compulsory education: 1 year of pre-primary education (called transition cycle), 6 years of primary education and 3 years of lower secondary education (UIS, 2015). The last 9 years of this period constitute the basic general education (*educación general basica*). The entire public school system, from pre-primary to upper-secondary education, is free of charge. In addition, the government has also fostered the provision of (inspected) private education in order to allow freedom of choice within the education system (MEP, 2004: 2; UNESCO-IBE, 2010: 2, 10-11). Historically, the proportion of private education has been relatively low in Costa Rica (UNESCO-IBE, 2010). In 2011 the enrolment rate in private education was about 11% of all enrolled students (without higher education and including private schools with state subsidy). This relative participation rate of private institutions (measured by its students) was about 16.9% in pre-primary, 8.9% primary and 12.6% in secondary education in 2011 (INEC, 2014).

The education system in Costa Rica is organised through so-called cycles (*ciclos*). Thus, different stages in the education system are separated and organized in such cycles. For example the primary education is divided in two cycles consisting of 3 years each. For simplicity, the detailed description of these different cycles and their curricular differences have been omitted.

2.1 Pre-primary Education

The first level of education in Costa Rica is called initial education (*educación inicial*) and aims to provide a comprehensive care for children from birth until the entry into primary education (UNESCO-IBE, 2010: 10).

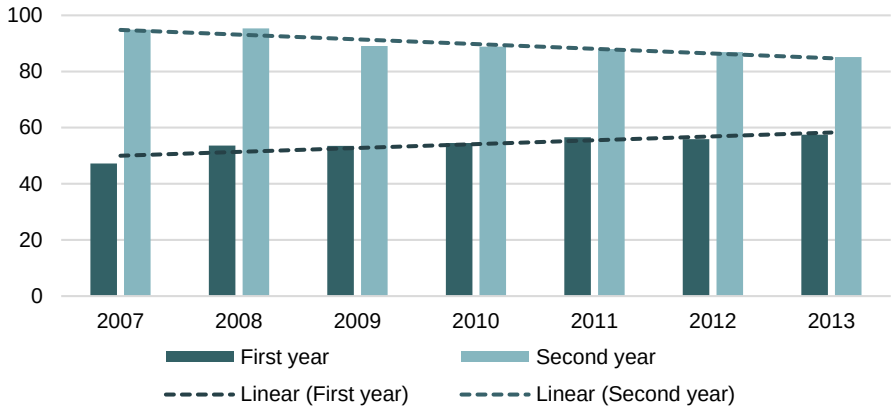
Beside the regular pre-school education, there is a so-called maternal and infant education cycle (*ciclo materno-infantil*) since 2000, which provides maternal and early childhood education and builds the first level of the education system (MEP, 2004: 28, UNESCO-IBE, 2010: 10, 15). This cycle lasts from birth up to the transition into pre-primary education and is voluntary (ibid.). This type of care is commonly known as day care and includes – as the entire pre-school education – a curriculum that is designed for a holistic development of the child, based on current scientific findings of child development and learning (MEP, 2004: 7-10, UNESCO-IBE, 2010: 15-16).

According to the age of a child, there are different levels within the maternal and infant education cycle (Babies I + II, Maternal I + II, Interactive I + II), which are designed to meet the different needs and stages of the child development (ibid.). The last of these levels (Interactive II) is already part of the pre-primary education and compared to the previous stages far more advanced in the elaboration of its curriculum (MEP, 2004: 7-10, UIS, 2015).

The second year of pre-primary education is part of compulsory education and called transition cycle or preschool. This year of preschool education prepares the children for the transition into school and fosters the child's development and its intelligence through a playful manner of education (UNESCO-IBE, 2010: 15-16).

Figure 4 shows the level of education according to the International Standard Classification of Education (ISCED) 1997 of the UNESCO. Since there is no official ISCED classification for Costa Rica provided by the UNESCO, the classification scheme in Figure 4 has been compiled according to the classification guidelines of the ISCED 1997 (UIS, 2012). All forms of pre-primary education in Costa Rica are classified as ISCED 0 level.

Figure 5: Net enrolment rates in pre-primary education 2007-2013 (incl. special education)



Source: INEC (2014).

In 2013, 119,880 students attended the preschool or transition cycle (INEC, 2014). Unfortunately, there is no such recent data on the first year of pre-primary education (Interactive II). Figure 5 shows the net enrolment rates of the two pre-primary years: the net enrolment rate of the first year of pre-primary has been rising continuously since 2007, whereas the rate of the second year has declined. In 2013, about 58% of all 4 years old children were enrolled in the first year and 85% of all 5 years old in the second year of pre-primary education. The increase in the first year could be related to the fact that the government has expanded all levels of child care continuously in the last years, also in the countryside (MEP, 2004: 27-29, UNESCO-IBE, 2010: 19-20). The relative decline in the enrollment rates in the second year is problematic since it is part of compulsory education. Normally, this should not be the case. The reasons for this are unexplored yet.

There are no enrolment rates for the maternal and early childhood education, but previous data from 2003 suggest that this rate is similar to the one of the first year of pre-primary (MEP, 2004: 67).

2.2 Primary and Secondary Education

With the age of 6 years, pupils start with primary education, which can be classified as ISCED level 1, as depicted in Figure 4 (INEC 2014, UIS 2015). Primary education usually lasts for six years, up to the age of 1. It is divided into two cycles, each of which takes 3 years. The lessons in primary education consist mainly of Spanish, social studies, mathematics, science and agricultural education, as well as a foreign language (English or French), visual and industrial arts, musical, physical and religious education.

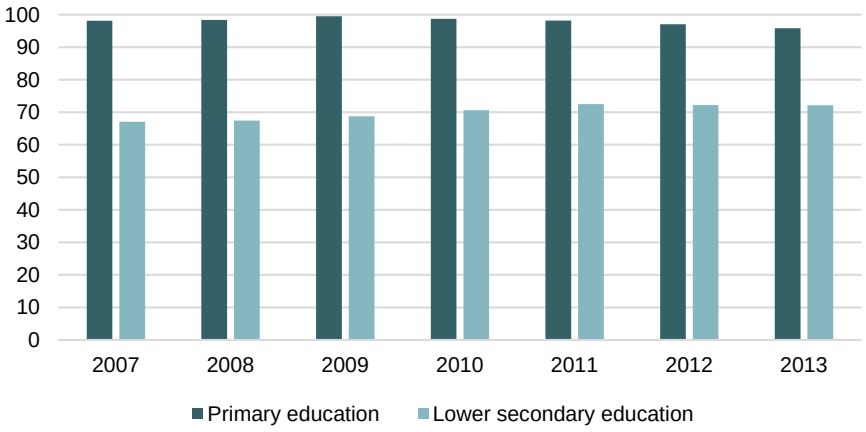
Lower secondary education starts at the 7th grade and last for 3 years until the 9th grade when pupils leave compulsory education, usually with the age of 14 (ISCED level 2). The lower secondary education level is also referred to as the third and last cycle of basic general education. In addition to the school subjects mentioned above, the students of lower secondary education attend classes in civics, household education and computer science education (UNESCO-IBE, 2010: 26). Further, the students receive a lesson to make improvements in specific individual areas and a consultation lesson (including subjects as time management). The lower secondary school students attend a total of 42 hours of school per week.

After lower secondary school, there is a form of (higher) secondary school, called *diversified education*, which consists of three different types of secondary education: an academic branch, a technical branch and an artistic branch (ibid.). These areas of diversified education are described in more detail later.

The decisive factor is that students who plan to attend the technical or artistic branch after the lower secondary education, have already the opportunity to attend specific modalities of schooling during lower secondary education (MEP, 2004: 15, UNESCO-IBE, 2010: 25). The technical modality includes already diversified education classes with agricultural, industrial and commercial topics as well as subjects on services (ibid.). Students interested in the artistic branch are carefully selected by the art schools after the 6th grade, taking into account their attitude and artistic aptitude (UNESCO-IBE, 2010: 25). Like the technical type of lower secondary education, also the curriculum of the artistic branch consists of the mentioned school subjects as well as branch-specific subjects, such as art theory and various artistic practices (ibid.). In lower secondary education, every student has to achieve an annual average grade of at least 65 points out of 100 in order to pass each subject of the official curriculum, and to be entitled to enter the next school year (UNESCO-IBE, 2010: 27). In 2013, 480,125 students attended primary education and 364,654 students were enrolled in secondary education (lower secondary and diversified education together; INEC, 2014).

Figure 6 shows the enrolment rates of the primary and the lower secondary education level: the net enrolment rate of primary education has been relatively stable over time, but it fell slightly from 99.5% in 2009 to 95.8% in 2013. This decline is similar to that of the aforementioned rate of preschool with its possible explanatory approaches.

Figure 6: Net enrolment rates of primary and lower secondary education 2007-2013 (incl. special education)



Source: INEC (2014).

The net enrolment rate of lower secondary education has risen from 67.1% in 2007 to 72.5% in 2011 and remained stable in the following two years. This increase is very positive, but the attendance rate in this part of compulsory education should be clearly higher. The government has already recognized this problem and found out that the main reason for this deficiency is a high drop-out rate during lower secondary education, especially in rural areas (UNESCO-IBE, 2010: 27). In 2013 the drop-out rate for lower secondary education and diversified education together was about 19.6% (INEC, 2014). Also, the failure rate in these two secondary education stages was high and about 14.4% in 2013, which means that these people have to repeat the particular school year (ibid.). The government has identified the fact that drop-out is a complex and multi-causal problem, which can be attributed to socioeconomic and familial aspects, but also to the education system itself (UNESCO-IBE, 2010: 27). However, currently there are no specific measures known against this condition.

As already mentioned, the diversified education consists of three different types: an academic branch, a technical branch and an artistic branch, which are taught in specific schools (e.g. technical schools). This type of secondary education is voluntary and free of charge (UNESCO-IBE, 2010: 11). It starts at the 10th grade and lasts for 2 or 3 years and can be classified as upper-secondary education (ISCED level 3), as depicted in Figure 4. However, the minority of students continues education after having finished compulsory education (Figure 7).

The academic and the artistic branch takes 2 years and the technical branch lasts for 3 years (ibid.). Provided that a student passes the annual tests and the final exam of the diversified education, he or she obtains a degree (baccalaureate) with a general qualification and legitimation for university entrance (UNESCO-IBE, 2010: 11, 24).

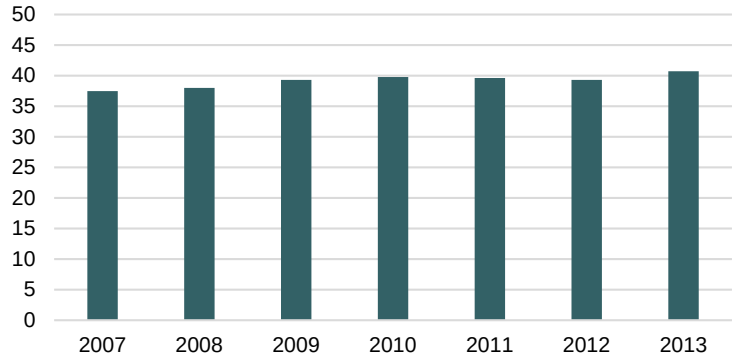
The academic branch mainly prepares for the possible subsequent higher education or a direct entry into the labour market (MEP, 2004: 16). The technical branch includes technical and vocational education and training, which will be explained in detail in the next chapter. It consists of an extra 12th school year, because the students have to complete a supervised internship or a graduation project in their last year (MEP 2004: 17). This type of diversified education is provided in professional technical colleges (*colegios técnicos profesionales*) in the country, giving the possibility to obtain two different diplomas: at the end of the 11th or 12th school year the students have the possibility to graduate with the already mentioned baccalaureate. After the successful 12th year, the students can achieve the title of a so-called medium technician (*técnico medio*) with the mention of their chosen subject (UNESCO-IBE, 2010: 11, 24). It is also possible to become qualified as medium technician without passing the final exams of the diversified education respectively receive the baccalaureate diploma (ibid.). The possible subjects of study are divided in to the three economic sectors: agriculture (with subjects as agribusiness or irrigation and drainage), industry (e.g. electrical engineering or precision mechanics) and trade and services (e.g. accounting or healthcare)[12].

The curricula of the diversified education are different in each branch with a focus on the chosen subject area, but there is a common nucleus, containing Spanish, mathematics, philosophy, psychology, biology, chemistry, physics, technology, visual arts, English or French and physical, musical and religious education (MEP, 2004: 16, UNESCO-IBE, 2010: 25-26). All in all, the students of diversified education attend 44 hours a week within the 10th and 11th school year. In addition to the already mentioned branches, there are also other particular types of school, as sport schools, scientific schools and bilingual schools (MEP, 2004: 17).

Figure 7 shows that the net enrolment rate of the diversified education has been relatively stable over the last few years, but it increased slightly from 37.5% in 2007 to 40.7% in 2013.

[12] A complete list of all possible subjects can be found on the website of the MEP: http://www.mep.go.cr/educacion-tecnica.

Figure 7: Net enrolment rates of diversified education 2007-2013 (incl. special education)



Source: INEC (2014)

2.3 Postsecondary / Higher Education

Higher education in Costa Rica is offered at public and private universities, colleges (*colegios universitarios*) and institutes of higher education (*institutos de educación superior*) with different types of degrees (UNESCO-IBE, 2010: 11). As shown in Figure 4, there are three levels of higher education: undergraduate education (*pregrado*), graduate education (*grado*) and postgraduate education (*posgrado*), which can all be classified as ISCED level 5 (UIS, 2012, Universia, 2011).

The undergraduate education consists of two possible courses of education: the qualification for a teaching profession (*profesorado*) and the possibility of a professional education and training (PET) diploma (*diplomado*), which is classified as ISCED level 5B (UNESCO-IBE, 2010: 11). The PET diploma can be achieved mainly in trade and industry, lasting 2 to 3 years, resp. 60 to 90 credit points (CPs) and will be explained further in the next chapter. The academic title of a teacher is awarded by the university to the person who fulfils the exams and further conditions during 3 to 4 years (resp. 98 to 110 credit points) of study (Universia, 2011).

Access to graduate education can be achieved through two possible university degrees: a bachelor's degree (*bachillerato*) or a licentiate (*licenciatura*), which both correspond to the ISCED level 5A (UNESCO-IBE, 2010: 11). A bachelor's program lasts four years and requires, depending on the institution and course of study, 120 to 140 credit points (ibid.). The licentiate can either be completed in addition to the bachelor's degree, lasting 1 year with 30 to 36 CPs, or as a single 5-year study, which requires 150 to 180 CPs (Universia, 2011).

There are two courses of postgraduate education in Costa Rica: On one hand, the master's program (maestria) with a possible subsequent doctoral programme (doctorado académico) and on the other hand a professional specialization (see also Figure 4). The prerequisite for admission to a master's programme is a bachelor's degree or a licentiate and the corresponding duration of the study is at least 2 years, including 60 to 72 CPs (UNESCO-IBE, 2010: 11, Universia, 2011). A doctorate takes at least 2 to 3 years and corresponds to the ISCED level 5C (ibid.). Following a licentiate, there is the possibility of a professional specialisation: it consists of at least one year practice-oriented education at the university in the corresponding discipline and a minimum of 1,620 hours of supervised professional practice, in the form of a trainee programme or an internship (Universia, 2011). For certain professions, such as physician or surgeon, this professional specialisation is mandatory after the licentiate (UNESCO-IBE, 2010: 11).

There are two types of higher education institutions in Costa Rica: the parauniversity (*parauniversitaria*) and the university. This type of institution can be either private or public (Palacios Palacios and Jiménez Olivares, 2013: 634). Parauniversities are institutions of higher education, modelled after the community college system in the United States (Castro, 2010: 4). But according to Castro (2010: 23-24), public and private parauniversities have lost their importance today: the total student population of these institutions declined by about 47% in just 5 years, from 21,369 in 1998 to 11,272 in 2003. In particular, private parauniversities have practically disappeared after a general loss of reputation of this type of higher education.

The University of Costa Rica (*Universidad de Costa Rica, UCR*) is the oldest and most important public university with 39,130 students in 2013 and 10 campuses around the country, which was established 1940 (Castro, 2010: 4, INEC 2014). In the 1970s another three public universities and the first private university were founded: the Costa Rica Institute of Technology (*Instituto Tecnológico de Costa Rica, TEC*) and the National University of Costa Rica (*Universidad Nacional de Costa Rica, UNA*) were opened by the government in 1971 resp. 1973, counting 9,552 resp. 17,331 students in 2013 (INEC, 2014, Palacios Palacios and Jiménez Olivares 2013: 635). In 1976 the private Autonomous University of Central America (*Universidad Autónoma de Centro America, UACA*) was founded, which was followed by another 49 private institutions to the present (Castro, 2010: 4). In 1977, another important public university opened: the State University at a Distance (*Universidad Estatal a Distancia, UNED*), offering distance learning, counted 21,423 students in 2013 and had 44 campuses around the country (INEC 2014, Palacios Palacios and Jiménez Olivares 2013: 635). The fifth and newest public university was founded in 2008: the National

Technical University (*Universidad Técnica Nacional, UTN*), which already counted 8,757 students in 2013 (ibid.).

In the past thirty years the higher education student population increased rapidly from 12'913 students in 1970 to approximately 157,053 students in 2007 and also higher education institutions and campus locations mushroomed around the country (Castro, 2010: 4). The rise of enrolled students is mainly caused by a rapid increase of students at private higher education institutions: between 1985 and 2010 the number of students at public universities increased about 76.4% (from 50,083 to 88,350), whereas the number of students at private institutions has risen over 10 times (from 8,360 to 87,765) in the same period (Palacios Palacios and Jiménez Olivares, 2013: 636). Thereby, it can be assumed that approximately the same number of students are enrolled in private institutions of higher education as in public universities.

Table 3: Enrolment in tertiary education in Costa Rica

	2011	2012	2013
ISCED level 5A	172,951	174,860	176,925
D level 5B	21,471	27,810	27,814
ISCED level 6	511	505	508
Total enrolment	194,933	203,175	205,247

Source: UIS (2015).

As shown in Table 3, there were 176,925 students enrolled on the ISCED level 5A, which accounts for most of the enrolled students in postsecondary education with 86.2% of them (see also Figure 4). In the same year 13.6% of all students studied on ISCED level 5B (27,814) and 508 persons have been doing their doctorate (ISCED level 5C), which are only about 0.02% of all enrolled students. As already mentioned previously, the misalignment between the supply of specialised graduates with a doctorate and the skills required by industry has been addressed by the government.

3. The System of Vocational Initial and Professional Education and Training

In 1951, Costa Rica joined the UNESCO and an associated team of scientists visited the country to study its education system (Mata Segreda, 2008: 132). This UNESCO team assisted the government in enhancing the education system. One of the most important results was the creation of technical programmes for students in secondary education, who should specifically be prepared for an altered labour market since then (ibid.). This was the

first step towards a formal vocational education system, implemented in the fundamental law of education in 1958 (MEP, 2004: 4). Over time, this type of education evolved into the already described technical branch of the diversified education, which is the vocational track in upper secondary education.

Another important part of today's vocational education and training (VET) system in Costa Rica is the National Institute of Apprenticeship (*Instituto Nacional de Aprendizaje*, INA), which was founded in 1965 (INA, 2011: 54). The INA was developed as an autonomous public body, which is independent from the formal education system. The main idea behind this institution was to solve social and economic problems at that time: thousands of young people had no proper training, no access to the formal education system and the fast industrialization of the economy required more and more skilled labour with a technical education, which was not available at that time (ibid.). Today's VET System has become far more complex over the years. The next section is dedicated to this actual state of affairs. As such, institutions of higher education even offer the possibility of obtaining diplomas of vocational professional education and training (VPET) (post-secondary education level), which will be explained further in section 3.2.

3.1 Vocational Education and Training (Upper Secondary Education Level)

3.1.1 Formal Vocational Education and Training

The formal vocational education and training system is embedded in the *diversified education* branch, beginning with the 10th grade and lasting for 3 years (see previous ection). It is realised in the so-called technical branch (rama técnica), which takes place in 80 professional technical colleges (*colegios técnicos profesionales*) which are distributed all over the country (López Oviedo and Avila Villalobos, 2002: 17). This type of secondary education is free of charge and part of the public education, provided by the government (UNESCO-IBE, 2010: 2-5). The MEP controls the formal VET system, including the curriculum development and the quality assessment (ibid.).

The first two years of the technical branch are school-based, consisting of full-time schooling programmes (MEP, 2004: 16, UNESCO-IBE, 2010: 25-26). The curriculum is branch-specific and also subject-specific, depending on the chosen area of specialisation, which a student has to choose (ibid.). But in the first year of diversified education, a large part consists of general subjects, which facilitates a possible horizontal reorientation of a student in the second year (UNESCO-IBE, 2010: 25-26). After the second year, the students have the possibility to graduate with the already mentioned baccalaureate. In the third year the students have to complete a supervised internship or a graduation project (MEP, 2004: 17). All in all, the students have to complete 3'200 hours of vocational education and training,

thereof 2'624 hours are dedicated to the chosen area of specialisation (UNESCO-IBE, 2010: 25-26). After passing the final exams of the technical branch, the students are awarded the title of a so-called medium technician (*técnico medio*) with the mention of their chosen area of specialisation, which is possible with or without a baccalaureate (UNESCO-IBE, 2010: 11, 24). The possible specialisations are assigned to the three economic sectors and shown in Table 4.

Thus, the formal VET qualifications can on the one hand be used to directly enter the labour market or as a mean to access higher education (e.g. PET), but also as a preparation for the INA.

Table 4: Possible areas of specialisation in the formal VET system

Discipline of study	Area of specialisation
Agriculture	Agribusiness, agricultural gardening, agricultural ecology, agro-industrial food technology with agricultural technology, agro-industrial food technology with livestock farming, farming with agricultural production, livestock farming, irrigation and drainage
Industry	Car remodelling, civil construction, architectural drawing, technical drawing, design and construction of furniture and structure, design and construction of wood furniture, graphic design, advertising design, electromechanics, electrical engineering, industrial electronics, telecommunications electronic, electronics of computer equipment repair, offset printing, textile industry, industrial maintenance, automotive engineering, general mechanics, precision mechanics, graphical production, refrigeration and air conditioning, naval mechanics
Trade and services	Accounting, administration and customs matters, banking and finance, accounting and costs, accounting and finance, accounting and auditing, informatics in computer networks, informatics in support, informatics in programming, informatics in software development, bilingual informatics in computer networks, bilingual informatics in software development, occupational health, bilingual secretary, executive secretary, executive of service centres, coastal tourism, rural tourism, ecotourism, food and beverages in tourism, hospitality and special events in tourism

Source: MEP (2013).

3.1.2 Non-Formal Vocational Education and Training

Non-formal vocational education and training is provided by the National Institute of Apprenticeship (*Instituto Nacional de Aprendizaje*, INA): the INA is an autonomous public institution which ismainly financed through payroll taxes: varying between 0.5% and1.5% of the total payroll tax rate (INA, 2015, Monge-Naranjo, 2007: 37). The statutory mission of the INA is to provide (1) VET to all citizens over 15 years, (2) manpower for all sectors of the economy and thereby (3) improving the living conditions and the socio-economic development of the country (INA, 2015). Its main aim is to be the leading institution, providing a nationwide VET system in order to supply the country's demand for qualified workforce (ibid.). Consequently, the INA is also monitoring the labour market (as well as its requirements) and reacting to economic changes (INA, 2014: 2, 5). The INA offers VET all over the country: there are about 53 regional education centres, which differ with respect to

their offer (INA, 2013, INA, 2015). There is also a certain regional specialisation in subjects, meaning that some training programs are offered only in certain regions. But attending the INA is completely free of charge and it offers also financial assistance to needy students, covering aspects as accommodation, transportation and food (INA, 2015).

There are three different types of education at the INA: (1) the classical VET programme, which is called the apprenticeship type (*modalidad de aprendizaje*) and lasts 2.5 years; (2) the enabling programme (*programa de habilitación*), which is designed for the integration into employment and lasts only 3 months; and (3) the complementation programme (*programa de complementación*) is a further training programme for people, who are already incorporated into the labour market and which lasts also 3 months (INA, 2015, Monge-Naranjo, 2007: 37).

The requirements to enter the VET programmes are low: applicants must be aged between 15 and 20 (inclusive), have at least a completed primary education and have to be approved in the selection process (INA, 2015). In general, this selection process is not so difficult, given the legal obligation of the INA to act as a kind of substitute to the formal education system that ought to include preferably all students, who did not succeed in formal education (Monge-Naranjo, 2007: 37). Nevertheless, there are some VET programmes with stricter requirements in order to take account of the varying abilities of the students: in certain areas, such as electronics or trade and commerce, a successfully completed lower secondary education is required and in rare cases even a baccalaureate (INA, 2015).

The VET programmes are organised by branches of economic activity, which in each case also form organizational units, located in different training centres across the country (INA, 2015). Table 5 shows the different fields of education of the training programmes in the non-formal VET system.

Students receive practice-oriented vocational education and training. This takes mostly place in the training centres as full-time training programmes, but there is also on-the-job training, taking place in firms (INA, 2014: 16-17). In 2014, the INA offered 246 different VET programmes in total, whereof about 28% included a supervised practical work placement and 2% took place as a dual VET programme (ibid.). These forms of on-the-job training are defined in the corresponding curricula (including a didactic framework) and are supervised by the INA in each case (ibid.).

The supervised practical work placement is called *supervised educational practical training* (*práctica didáctica supervisada*) and takes place at the end of such a VET programme (INA, 2014: 16-17). As the name suggests, this practical training has a clear learning objective, which means that the already acquired skills and knowledge are put into practice. The aim of

this last stage of the training process is also an assessment of the expertise and fitness of the students (INA, 2014: 16).

Table 5: Fields of education in the non-formal VET system

Branch of economic activity	Field of education of the VET programmes
Agriculture	Plant breeding, animal breeding, forestry and environment, agricultural technology, soil and irrigation technology, business management
Trade and services	Administration, computer science, public relations, locution, English, accounting and finance, secretarial work and management, occupational health, marketing and sales, training of trainers, production
Food industry	Conservation of fruits and vegetables, bakery, preparation and handling of food, processing of dairy products, processing of meat products, food processing, chocolate and confectionery
Printing Industry	Flexographic printing, screen printing, offset printing, graphic printing, prepress
Vehicle mechanics	Mechanics of agricultural machines, mechanics of light vehicles, mechanics of heavy vehicles, heavy mechanics, mechanics of commercial vehicles
Metal construction and engineering	Metal construction, straightening and painting of metal and body work, industrial mechanics and maintenance, precision mechanics, moulding and smelting works
Nautical science and fishery	Shipbuilding, naval mechanics, fishery, sport fishing and diving, navigation, processing of marine resources, aquaculture
Craftsmanship	General crafts, leather crafts, wood crafts, embroidering, footwear, hairdressing, beauty care
Electricity	Electricity, electronics, refrigeration, telematics, microelectronics
Material technology	Industrial design, computer-aided design (CAD), construction industry, timber industry, plastic industry, upholstery, material technology
Textile and garment industry	Mechanics of textile and garment machines, textile production, tourism, tailoring, industrial tailoring, custom-made design and dressmaking, textile and clothing, industrial clothing
Tourism	Gastronomy, lodging, tourist services

Source: INA (2015).

The supervised educational practical training is regulated by a standardised agreement of the INA between all involved actors that is the student, the company and the INA. This agreement determines the obligations of each actor (INA, 2014: 16-17). To ensure the quality of this practical training, further measures are carried out. These are regulated in the corresponding contract too. Therefore, a training instructor is assigned who guides the student during the agreed time. This person has to be a qualified worker and instructor, who carries out weekly controls of the achieved work, which are reported both internally in the company and to the INA (INA, 2014: 17-18). The INA assigns also a supervisor, who visits the company regularly and accompanies the student and the instructor pedagogically. This supervisor also evaluates the training in order to verify the fulfilment of the agreement. The INA also delegates a second supervisor, usually a social worker, who is responsible for the monitoring of different aspects, such as the aptitude of the student and the integration into the work environment (INA, 2014: 17-18).

The dual VET programmes of the INA are called dual training (*formación dual*) and are implemented so far only in some areas, namely the printing industry, vehicle mechanics and tourism (INA, 2014: 16). Organizationally, it is working similar to the practical training (with a corresponding agreement and supervision), but everything takes place simultaneously: the student is practising and working in the company a part of the week and in the other part she or he is doing the regular training in the training centres of the INA (ibid.). In contrast to the practical training, the student is hired by the company during this time and receives a statutory minimum wage (INA, 2014: 16-17).

At the end of each VET programme, there are exams, whereby the acquired knowledge and skills of the student are tested and subsequently a diploma is awarded by the INA, certifying the professional specialty (UNESCO-UNEVOC, 2012: 7). The degrees can differ in their designation, due to the level of qualification of the programme: a degree can certify a graduate as qualified worker (*trabajador calificado*), technician (*técnico*) or specialized technician (*técnico especializado*), depending on the chosen course of study (INA, 2013: 43, INA, 2014: 10).

Table 6: Participating students in VET programmes of the INA per sector and branch in 2013

	Total	Men	Women
Agriculture	2476	1493	983
Agriculture	1826	913	913
Nautical science and fishery	650	580	70
Industry	9461	4101	5360
Electricity	1090	1025	65
Food industry	1929	506	1423
Printing Industry	490	271	219
Vehicle mechanics	422	415	7
Metal construction and engineering	657	627	30
Craftsmanship, health and culture	2145	324	1821
Material technology	1195	822	373
Textile and garment industry	1586	133	1453
Trade and services	28501	11917	16584
Trade and services	26827	11047	15780
Tourism	1585	809	776
Pedagogical teaching unit	178	97	81
Total	39936	17302	22634

Source: INA 2013.

In 2013, a total of 39,936 students attended a VET programme of the INA, whereof 309 students did the dual training, which corresponds to 0.8% of all INA students (INA, 2013: 47, 67). No information was found about the share of the students, who participated in a supervised educational practical training. Table 6 shows the number of students per sector

and branch participating in the VET programmes of the INA. The overall drop-out rate of the VET programmes at the INA declined in recent years from 17.1% in 2010 to 11.9% in 2013 (INA, 2014: 9).

Monge-Naranjo (2007: 37-40) criticized that there are concerns and dissatisfaction in the private sector with respect to the quality and adequacy of the VET programmes of the INA. However, recent efforts of the INA and surveys with firms show that these problems are partly overcome. The INA admits that a certain dissatisfaction in the private sector is present, especially in the business sector (due to a lack of programmes with higher levels of education), but it revealed that graduates and employers are very satisfied with the training of the INA (INA, 2011: 65). 83% of the employers ranked their INA graduates with a high level of satisfaction and also 81% of these companies ranked the training programmes as highly satisfactory (ibid.).

A market-orientated quality measure of these VET programmes is the employment rate of its graduates: in the period between 2009 and 2011 about 77.2% to 78.8% of these graduates found an employment at that time (INA, 2014: 9). Given the above-mentioned labour market situation for young people, this is a remarkable result. Another well-known problem of the INA is that it cannot immediately respond to technological changes (e.g. due to the necessity of new equipment and new courses), but such time gaps are inevitable to a certain extent (INA, 2014: 50). The INA has also stated that more training programs with supervised educational practical training or the dual training model are needed to overcome this problem, because students can learn from real-life conditions (ibid.).

3.2 Vocational Professional Education and Training (VPET; at Post-secondary Level)

In Costa Rica, institutions of higher education offer the possibility of obtaining diplomas of professional education and training (PET), which corresponds to the ISCED level 5B (UNESCO-IBE, 2010: 11). The PET diploma can be achieved mainly in trade and industry, lasting 2 to 3 years and consisting of 60 to 90 credit points (ibid.).

Several colleges and universities offer PET, such as the Costa Rican Institute of Technology (*Instituto Tecnológico de Costa Rica, TEC*) or the National Technical University (*Universidad Técnica Nacional, UTN*), but there is no adequate data available for this education level (UNESCO-IBE, 2010: 9). For example, the UTN offers PET diplomas in the following fields of study: customs administration, administration of purchasing and inventory control, administration in hosting business, human resources management, administration in food and beverage, administrative assistance, veterinary assistance, foreign trade, accounting

and finance, electricity, electromechanics, electronics, photography, environmental management, agriculture, management, management in tourism, water resource management, industrial production, occupational health, supervision of production, food technology, and information technology (UTN, 2015).

3.3 Administrative and Supervisory Structure and Operation of the VET System

The formal VET system is part of the formal education system, which is planned and managed at all levels by the Ministry of Public Education (MEP). Within the MEP, the so-called Directorate of Technical Education and Entrepreneurial Capacities (*Dirección de Educación Técnica y Capacidades Emprendedoras*) is responsible for the governance of the formal VET system. Its duties include tasks as analysing, studying, formulating, planning, advising, investigating, assessing and reporting all aspects of the formal VET system in Costa Rica (UNESCO-UNEVOC, 2012: 7). The official designation of the formal VET system is National Technical Education System (*Sistema Nacional de Educación Técnica*, SINETEC). The main function of the directorate is to govern this National Technical Education System and to provide formal VET all over the country (ibid.). It develops guidelines and policies. It also promotes programmes and projects to strengthen the cooperation with international partners and the labour market (ibid.).

The non-formal VET is provided by the National Institute of Apprenticeship (INA), which is an autonomous and self-governing public institution and therefore responsible for the governance of the non-formal VET system (UNESCO-UNEVOC, 2012: 8). The INA is governed by a board of directors, an executive president and a management body (INA, 2014: 23). The board of directors is responsible for the implementation of the already mentioned statutory mission of the INA: they develop and adopt corresponding policies, plans, budgets and regulations (ibid.). The board consists of representatives of trade unions, the corporate sector, cooperatives, and other experienced internal leader of the INA and the MEP (INA, 2011: 54, INA, 2014: 31). In this way, both the employee side and the employer side are taken into consideration and other important social partners are involved in the development of the non-formal VET system (INA, 2014: 31). The executive president chairs the board and is the highest authority within the INA. He or she is the judicial and extrajudicial representative of the institution and leads the board (ibid.). The management body is the organizational unit, which is responsible for the development and execution of the decisions of the board and in charge of the standardisation, supervision, advice, control and consolidation of the VET and its organisational entities, as schools, teachers, administration, etc. (ibid.).

Another important counterpart of the board of directors is the presence of different advisory committees, which also contribute to the achievement of the statutory mission of the INA (INA, 2014: 31). These advisory committees represent the private and the public sector, the employees and other organised groups, as regional units and professional associations (ibid.). The committees provide information on labour demand, training needs and problems, the introduction of new technologies, local developments and make recommendations for changes and developments in the VET programmes (INA, 2014: 31-32).

3.4 Educational Finance of the VET System

The formal VET system is financed completely by the state and is part of the annual government spending amount on education, which is fixed at 6% of GDP at least by law (MEP, 2004: 2; UNESCO-IBE, 2010: 4).

Constituting the non-formal VET system, the INA is mainly financed through payroll taxes: varying between 0.5% and 1.5% of the total payroll tax rate (INA, 2015). More precisely, there are different payroll tax rates concerning the funding of the INA: agricultural enterprises with more than 10 worker pay 0.5%; other private enterprises with at least 5 employees pay 1.5%; public institutions and enterprises pay 1.5% (INA, 2015). All other companies, as e.g. small and medium-sized enterprises do not have to pay such a payroll tax (ibid.). In addition, the school receives financial support through alternative sources such as donations, subsidies, service charges, etc. (UNESCO-UNEVOC, 2012: 9).

3.5 Supplying Personnel for the VET System

Teachers of the formal VET system have to complete a degree in their specific field of education at the National Technical University (UTN) or another public university (UNESCO-UNEVOC, 2012: 9). In addition, a training for VET is provided by the Centre for Research and Advancement of Technical Education (*Centro de Investigación y Perfeccionamiento para la Educación Técnica*; ibid.).

To become a non-formal VET teacher at the INA (technical trainer), several conditions have to be fulfilled, depending on the level of education a technical trainer is going to teach (INA, 2014: 34). There are 4 different levels of technical trainers: a trainer for relatively simple training content, requires only an INA degree (or higher) and two to three years of experience in the specific field of training, plus the ability to train others (ibid.). A trainer for the most difficult training content requires a licentiate (or higher) of a university and 12 months of working experience on the job, plus 12 months of working experience in a function as technical trainer at the INA (ibid.). Furthermore, an assessment is carried out in order to

examine the teaching skills of applicants (ibid.). To ensure the training quality over time, the training of each teacher is evaluated regularly and corresponding improvements are made thru further training (INA, 2014: 34).

3.6 Curriculum Development

The MEP is responsible for the curriculum development of the formal VET system (UNESCO-IBE, 2010: 5-6). Within the MEP the Curriculum Development Directorate is in charge of the entire curriculum development at all education levels, including the analysis, study, formulation, planning, assessing, investigation and disclosure of all aspects of the educational curriculum (UNESCO-IBE, 2010: 5). Part of their duties is also the coordination with the Directorate of Technical Education and Entrepreneurial Capabilities, in order to develop an appropriate curriculum of the formal VET system, also with regard to the economic situation and development of Costa Rica (ibid.).

The curriculum development of the non-formal VET system is part of the INA's legal obligations (INA, 2014: 2-3). To offer contemporary vocational education and training, the INA has developed a process for the curriculum development, which is called the model curriculum for vocational training at the INA and is conducted regularly (INA, 2014: 12). This model consists of 4 steps: (1) the identification of the needs and requirements in the VET programme, (2) the conformation of a specific proposal, (3) the design of a regular proposal, and (4) the review and adjustment of this proposal (ibid.). The first step is decisive for the involvement of the private sector and other parties involved, which is also part of this plan. As the name implies, the first step consists of the collection and the processing on information about the needs and requirements of a VET programme, including the demands of the labour market (INA, 2014: 13). To gather this information, different sources are approached and taken into consideration: studies of the needs and requirements of VET programmes by the INA, the different units of the INA (e.g. regional and technological management), governmental and institutional policies and programmes, requirements of national and international organisations, the mentioned advisory committees of the INA, the chamber of commerce, potential domestic and foreign investors, unions, professional associations, specific existing requests (of individuals, companies or communities), media analyses, job centres, and other possible involved parties and market signals (INA, 2014: 13-14). In the case of conflicts of interest, meetings are held with the conflicting parties and negotiations are conducted, after which the INA falls appropriate decisions in accordance with its statutory duty (INA, 2014: 15).

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

A major reform of the formal education system occurred in 1997, after a reformation of the constitution of Costa Rica: this reform aimed at the enhancement of the quality of education, which impacted also on the formal VET system (Mata Segreda, 2008: 134-135). The most decisive changes were the increase of the fixed education spending up to 6% of the GDP, an extension of the formal education system to preschool levels and the establishment of a standardised basic national curriculum (ibid.). Also, evaluative procedures to diagnose the needs of the education system were implemented and the formal VET system was revised: several curricula and policy changes led to an extension of the VET system. The end product of this process is Costa Rica's diversified education system as we know it today (Mata Segreda, 2008: 135-136, MEP, 2004: 71-72). This changes affected especially the rural areas and included new possible specialisations, as for example tourism programmes (ibid.). Also the budget of the VET system was increased and improvements of the equipment as well as the quality of the VET programmes were made (MEP, 2004: 72).

On the side of the non-formal VET system, no comments can be made with respect to major reforms. Since its foundation in 1965, the INA has continuously expanded and developed the VET system and made it adaptable to economic changes (INA, 2014: 2, 44). Notable recent reforms include (among others) the already mentioned model curriculum for vocational training at the INA, which was implemented in 2008 and led to a vast improvement not only in the curriculum development, but also in many VET programmes and in the cooperation with the private sector (INA, 2014: 44). Since 2012, the INA takes part in the "WorldSkills Americas", which is a regional version of the "WorldSkills" competition, which in turn is the biggest vocational education and skills excellence event in the world (INA, 2014: 46-47). The objective of the INA is also a participation in the global version of the competition. This event is an important step towards a better reputation of the VET programmes in Costa Rica and gives students the opportunity and motivation to show their skills (ibid.). The inadequate reputation of the VET programmes in the society is also a known problem in Costa Rica, which has to be enhanced in the future (INA, 2014: 55). Another current challenge is the necessity to expand VET programmes in English and to encourage students for programmes with a higher specialisation and a higher level of training (ibid.). It is also important that the dual training and VET programmes with a supervised educational practical training are fostered and expanded (ibid.). But also teachers are challenged: the use of information and communication technology in the VET has to be broadened and more teachers need to perform internships in companies in order to be able to teach the vocational skills that are needed on the labour market (ibid.).

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