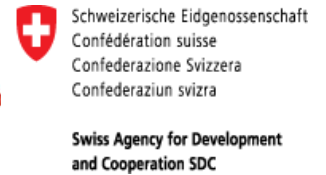KNOMAD PAPER 40

# Future Demand for Migrant Labor in Costa Rica

Koen Voorend, Daniel Alvarado and Luis Ángel Oviedo

December 2021

# Future Demand for Migrant Labor in Costa Rica

*Koen Voorend, Daniel Alvarado & Luis Ángel Oviedo* [1]

## Abstract

This paper discusses current and future migrant labor demand in Costa Rica. It looks at the evolution of migrant labor demand and its sectoral and occupational structure for the 1990-2020 period and projects its evolution at the 2030 horizon. The general objective of the analysis is to provide information that enables Costa Rica as an important country of destination, in coordination with countries of origin, to formulate and implement labor migration policies, and design appropriate education and training policies in consonance with the evolution of the sectoral and occupational structures of labor markets in Costa Rica.

Migrant labor plays a key role in Costa Rica's economy, mainly in low-skilled sectors such as agriculture, construction, domestic work, and services. Its contribution to GDP is around 12%, but the duality of the labor market implies many migrants work in informal settings. This paper shows how informality has gained relative importance in the labor market, both for nationals and especially for migrants. Despite their importance in the economy, there are currently no systematic mechanisms that enable estimating future migrant labor demand.

The prospective exercise in this paper shows a slow and steady increase of the total number of migrant laborers active in the Costa Rican economy at the 2030 horizon. This increase in migrant workers is explained by economic growth but maintaining their affluence in the traditional sectors that require their labor and not diversifying into other sectors. In fact, pre-pandemic, their relative importance in the economy was expected to stabilize, if not reduce. That is, a stabilization in the growth of migrant labor demand in Costa Rica was expected, mainly due to the to the consolidation of labor sectors as receivers of this migrant population and the stable trend shown in migratory flows in recent years. However, the uncertainty generated by the Covid-19 crisis makes forecasts challenging, and now migrant labor demand is expected to substantially decrease in the short run, and the recovery to pre-Covid-19 levels is projected to be relatively slow.

# Future Demand for Migrant Labor in Costa Rica

## CONTENTS

# EXECUTIVE SUMMARY

This study provides an analysis of the evolution of migrant labor demand in Costa Rica, and its sectoral and occupational structure for the 1990-2020 period. Also, it projects its evolution at the 2030 horizon. The general objective of this analysis is to enable countries of origin and Costa Rica as an important country of destination to formulate and implement labor migration policies and design appropriate education and training policies in consonance with the evolution of the sectoral and occupational structures of labor markets in Costa Rica. The study was conducted during 2020, the year of the Covid-19 pandemic, which implied methodological challenges and uncertainty for the future. However, the data used for the analysis and the projections runs up to the first trimester of 2020, meaning that the data do not capture the effects of the pandemic. For the projections of the evolution of migrant labor demand at the 2030 horizon, however, the Covid-19 pandemic and its first effects on Costa Rica's economic growth, and labor demand, were contemplated by using data from the first half year of 2020, thereby including the first effects of the Covid-19 pandemic (see Appendix 2).

The restructuring and diversification of the Costa Rican economy during the 1990s and 2000s happened alongside a substantial influx of migrants, especially from Nicaragua, in the 1990s and early 2000s. Census data from 2011 (INEC, 2011) show that migrants represented 9% of the total population. Nicaraguans currently make up 75% of the migrant Costa Rican population, that is, 6.7% of total population. Migrant labor employment is predominantly related to the less dynamic, more traditional sectors, especially agriculture and construction, as well as services sectors, such as service workers and show vendors. Over the period under review, relatively fewer migrants find jobs as mid-level technicians and professionals, or as scientists and intellectuals, and only a small percentage is employed as directors or managers. This speaks to the low-skilled and more informal nature of migrant labor: informality. Migrants are drawn to informal sectors as they are required less documentation to work, and it is easier for them to access employment upon arrival in the country. In 2010, about half of all employed migrants worked in the informal sector. This grew to 60% in 2020.

Migrants' incidence has been historically highest in domestic work (although slowly declining), construction and agriculture. The data seems to show that there is a stabilization of these trends in recent years. That is, migrant incidence is quite stable in these sectors and the overall growth of migrant labor is expected to stabilize, if not decline. There is relative consensus that the labor market's dependence on migrant labor is not expected to change soon, even though for specific sectors the economic effects during and in the aftermath of the Covid-19 pandemic might temporarily lower demand. What becomes clear when looking at the skill level of occupations by nationality, is that the labor market is segmented by nationality. A Nicaraguan migrant is much less likely to have a high skilled job than nationals, or migrants from other nationalities.

The projections of migrant labor demand at the 2030 horizon are quite novel. Currently, there is almost a complete lack of prospective studies in Costa Rica, and business sectors struggle to estimate their future demand for labor. There are periodical studies carried out by the Department of Labor Migrations of the Ministry of Labor and Social Security (MTSS, 2018a; 2018b; 2019b) which are used to determine the quota of work permits that should be approved by sector. They seem to be focused more on ensuring complementarity between the migrant and national workforce than technical criteria for determining labor demand. It should be noted that the migrant population contributes 12% to GDP (OECD, 2018).

Based on ARIMA models, the generated projections showed a slow and steady projected increase of the number of migrant workers in the Costa Rican economy at the 2030 horizon, with a 95% confidence interval that represents quite a large range between minimum and maximum values. The Covid-19 situation was considered for these projections. This increase in migrant workers is explained by economic growth, and not by a growth in their incidence in different economic sectors. In fact, their relative importance in the economy is expected to stabilize, if not reduce. That is, the projections seem to indicate that there is a stabilization in the growth of demand for migrant labor in the Costa Rican economy, something also confirmed by information from in-depth interviews with key stakeholders and recent academic literature.

However, the Covid-19 crisis is expected to substantially decrease the demand for migrant labor in the short run, and the recovery to pre-Covid-19 levels is expected to be relatively slow. The most likely explanation for this comes from declines of economic activity in certain sectors harder hit by the economic effects of the Covid-19 crisis, such as the construction sector. The longer the crisis continues, the larger the marginal effect on migrant labor demand. In fact, the projection in the Covid-19 scenario presumes that migrant labor demand only recovers to the 2010-2019 *average* of 223,600 employed migrants by 2023, and indicates that even in 2030, demand will not have recovered to the 2016, 2018 and 2019 levels.

As recommendations, the study argues for the importance of prospective studies to effectively monitor labor migration in the country and empirically support political decisions related to the labor market. It is necessary to engage in social dialogue with companies, government, employers´ and workers´ organizations and other stakeholders to lay the foundations for a clear structuring of the recruitment of migrant labor. The process of regularization of migratory status for migrant workers should be made more agile, less expensive, and less bureaucratic to foment formal recruitment. Also, stricter control policies should ensure compliance of companies with a formal and regularized hiring process. The current situation does the opposite, leaving large parts of the migrant working population in vulnerable working conditions.

The uncertainty generated by the Covid-19 crisis not only affects the migrant population disproportionately, but also shows the country's dependence on migrant labor, especially in more traditional, labor intensive and low-skilled sectors. Without effective policy measures to ensure formal and regular employment, the higher migrant vulnerability combined with the structural (albeit slightly reduced) demand for migrant labor will foment informal and irregular recruitment practices.

## INTRODUCTION

Costa Rica's economy, like that of all developing and industrialized countries, is in continuous transformation. The evolving structure of its economy and its population impact the demand for labor. In Costa Rica, despite fluctuating levels of unemployment over the last forty years, there has been a structural demand for migrant workers, especially in low-skilled occupations in crucial economic sectors, like agriculture, construction, security services and domestic work. Demographic and socio-economic factors among the national population in Costa Rica also weigh on this demand through their effects on labor supply. Studying the evolution of demand for labor in Costa Rica, as an important country of destination of labor migration in the global South, should help identifying labor shortages in specific sectors and occupations that permit the country to adapt its immigration and integration policies and institutions. Also, it could help understand scenarios for future migrant labor demand, so that countries of origin could formulate education, training and recruitment policies that enable them to meet it without affecting the functioning of their domestic labor markets.

This paper presents a case study of Costa Rica providing an analysis of the evolution of migrant labor demand and its sectoral and occupational structure for the 1990-2020 period and projects its evolution at the 2030 horizon. The general objective of this analysis is to enable countries of origin and Costa Rica as an important country of destination to formulate and implement labor migration policies, and design appropriate education and training policies in consonance with the evolution of the sectoral and occupational structures of labor markets in Costa Rica. The study was conducted during 2020, the year of the Covid-19 pandemic. However, the data used for the analysis and the projections runs up to the first trimester of 2020, meaning that the data do not capture any effects of the pandemic. For the projections of the evolution of migrant labor demand at the 2030 horizon, however, the Covid-19 pandemic and its possible effects on Costa Rica's economic growth, and therefore labor demand, were contemplated in our estimations.

The study is part of a larger research project lead by KNOMAD, the Global Knowledge Partnership on Migration and Development. KNOMAD is a brain trust for the global migration community that aims to generate a menu of policy choices, based on analytical evidence, evaluation of policies, data collection, and quality control through peer-review. It provides technical assistance and undertakes pilot projects in close coordination with the Global Forum on Migration and Development (GFMD) and U.N. agencies working on migration. Through its Labor Migration thematic working group (TWG), KNOMAD aims to contribute to evidence-based policy choices including by generating data for policies to improve labor migration outcomes.

In what follows, first a brief methodological section is presented, after which the following section provides economic and political context to the Costa Rican setting in relation to migrant labor. Third, the evolution of migrant labor's occupation structure during the period 1990-2020 is analyzed based on household and labor market data. Also, this section presents an analysis of the evolution of the demand for foreign skills and qualifications during the period 1990-2020, based on the same statistical sources. The fourth section reviews the projected evolution of the demand for migrant labor, by skill levels and the evolution of the sectoral and occupational structure, at the 2030 horizon. The final section presents conclusions and policy recommendations.

# 1. METHODS AND DATA

## 1.1.    Methodological approach

Methodologically, qualitative and quantitative methods were combined. Data collection included the revision of secondary sources. This was especially important for Section 2, which provides a characterization of the migratory context and labor demand in Costa Rica during the period 1990-2020. For Section 3 and 4, data related to economic and enterprise structure, labor force and sectorial distribution and migrant labor in Costa Rica was used from surveys by the National Statistics Institute (INEC). Specifically, two different data sources were used. First, the Population Census of 1984, 2000 and 2011, which as a census is arguably the most reliable source of data. To cover the most recent period, we relied on the Continuous Employment Surveys (ECE) of 2010 through 2020, which are quarterly surveys specifically aimed at capturing the evolution of the labor market.

Finally, both Sections 2 and 3 were complemented with information from 16 interviews with selected key informants, representing institutions or organizations for which a full list is presented in Appendix 1. Interviewees included representatives from the business sector, public institutions, NGOs and labor unions. They were selected for either having labor migration in their professional portfolio, or because they dealt with issues related to labor migration that seemed important for this study.

Concerning the analysis techniques, again a mix of quantitative and qualitative methods was used. Besides the critical revision of the existing literature, content analysis was used both for legal and policy documents (Section 2), and for the information collected in the interviews (Section 2 and 3). Descriptive statistics was used to analyze the survey data from INEC (Section 3). For the projections of future labor demand presented in Section 4, we made use of autoregressive–moving-average, or ARIMA, models. They were used based on the time series data of total employed persons (by national-migrant divide), the total population and Gross Domestic Product. Therefore, based on the projected population (by INEC) and GDP (based on data from the Central Bank), we proceeded to estimate several integrated autoregressive–moving-average models based on a specified equation. The results from these statistical projections were triangulated with inputs derived from the interviews and the literature review and seemed to confirm experts' expectations of the future scenario of migrant labor demand in the country. In Appendix 2, we present more methodological details about these projections.

## 1.2.    Limitations of the study

Methodological limitations arise from the data sources, even though survey data in Costa Rica is generally strong and periodical, especially in comparison to countries in the region. However, there is some difficulty in comparability across sources, between the Census data (last version done in 2011) and the ECE survey data. The sampling of the latter survey, although more pointed on measuring employment, is based on small samples by occupation types in different sectors. Therefore, the ECE does not allow the same level of disaggregation of the data as the more

complete Census, and there is possibly a sub-registry of migrants because it was not specifically designed to capture data on migrants' participation in the labor market.[2]

The Census data, however, is from 1984, 1990, 2000 and 2011, meaning few observations, which makes it harder to make precise predictions. The time between measuring points, then, is too large to continue the trendlines. While plans were underway for a new Census in 2020, the National Statistics Institute has postponed them, in part due to the current Covid-19 situation.

Also, representatives of sectorial chambers and state institutions alike agree that estimating migrant incidence in the labor force is "challenging". This is largely explained by the fact that Costa Rica does not have a specialized survey for the migrant population (personal communication, 2020) and, also because, as several interviewees pointed out (personal communications, 2020), it seems to be "difficult" for the companies and employers to provide that type of information. In part, this is because the business sector fears problems with the authorities regarding the regularization of their workers, avoidance of red tape and complex institutional process, or simply because they "do not have this type of data organized" (personal communication, 2020). As such, the incidence reported by INEC is sometimes hard to match with perceptions of representatives of specific sectors, such as construction where the figures produced by these formal survey instruments "do not always seem to coincide with the reality that they observe daily" (personal communication, 2020). This is an unsurmountable limitation of this study unless more specific data is gathered.

Finally, the Covid-19 situation has created a lot of uncertainty. This affects the research in two ways. First, the projections presented in Section 4 also suffer from the uncertainty of the current situation. It is hard to predict how long the current crisis will persist, and how quick Costa Rica will be to show signs of economic recovery. For some sectors, like agriculture, migrant labor demand is less elastic than others, like the construction sector or domestic service. Therefore, it is challenging to make predictions in times of economic crisis. Second, physical distance measures implied that the data collection process was somewhat affected, especially the interviews. We had to recur to virtual platforms. Luckily, most key informants were very willing to collaborate with us, and the perspectives of diverse actors were included. However, it made it impossible to gain access to migrant workers firsthand. This was partly solved by relying on available secondary sources and by talking with labor union representatives.

---

[2] Surveys would normally be expected to have a higher level of specificity on employment variables than censuses, however the sample sizes are quite small in the surveys utilized, making disaggregation by sector or subsectors more difficult for measuring migrant labor demand. The employment survey is not designed to measure migrant incidence, and if disaggregated to (sub)sectors, the data is not as strong because sample sizes are small.

## 2. MIGRATION IN THE COSTA RICAN CONTEXT

### 2.1. General

Costa Rica is a small country in Central America with a total land area of 51,100 km$^2$, bordered by Panama to the south, Nicaragua to the north and the Atlantic and Pacific oceans to the east and west, respectively. In 2018, Costa Rica's gross domestic product (GDP) totaled US$ 60.1 billion and with a population of just under 5 million, GDP per capita was US$ 19,762 (PPP, current international $) (World Bank, 2020)[3]. With this, it classifies as an upper middle-income country.

Costa Rica is generally regarded as having a stable and democratic government, based on its constitution of 1949, which establishes a unicameral legislature, an independent judicial system, and an independent electoral body. The constitution not only abolished the country's army, but established women's suffrage, and extended social, economic, and educational guarantees for all its citizens. Throughout the 1970s and 80s Costa Rica managed to keep conflict away, while its Central American neighbors were war-torn. Towards the end of the 20th century, public institutions expanded to meet the new demands of national development, which significantly expanded citizens' rights and state obligations to the population (Vargas Cullel and Durán, 2016). However, in recent years, Costa Rica has entered in a period of different challenges to the stability of the public institutional system, even though compared to other countries in Central and Latin America the panorama is still positive (PEN, 2020).

Costa Rica's comparative performance in terms of life expectancy is remarkable. In 2018, the World Bank (2020) reported high life-expectancy at birth: 80 years for the total population, 77.5 years for men and 82.7 years for women (World Bank, 2020), not far behind some of the most advanced North European countries like Norway (82.6 years), The Netherlands (81.8 years) and Germany (81 years). Currently, a Costa Rican lives on average 6 years longer than any of his or her Central American counterparts (Voorend, 2019). Similarly, over 90% of births are attended by skilled health staff, primary school enrollment is 99% and the under-five mortality rate is 9 per 1,000 live births (World Bank, 2020). This strong performance is explained by its universalist and free primary education (although it has difficulty achieving this for secondary education), a strong and universal public health system with high rates of health insurance coverage, including for vulnerable and non-contributing groups. Indeed, the country is hailed as a healthcare "success story" (Noy, 2012), and a promising case of "health without wealth" (Noy, 2013).

Notwithstanding, a fifth of the population lives under the national poverty line (21.1% in 2018, according to World Bank, 2020 and PEN, 2019). INEC (2020) shows that urban poverty affected 19.8% of households, and 24.2% of rural households in 2019. Even though Costa Rica has been recognized for its strong and universal health and education system, the country also has one of the most unequal income distributions in Latin America. The lowest quintile only held 4.3% of total national income in 2018 (World Bank) and the Gini coefficient has been consistently high over the last 30 years. The World Bank estimated it at 0.48 in 2018, although the National Statistics Institute (INEC – ENAHO), based on household data, estimated it to be 0.51 for the same year.

---

[3] Sources available at: Costa Rica | Data (worldbank.org)

The Costa Rican economy depends strongly on tourism, industry, agriculture and electronic components exports. While agriculture accounted for 16% of GDP in 1990, and agricultural products like banana, pineapple and coffee still account for substantial shares in total exports today, the relative importance of agriculture had dropped to below 5% in 2018. Industry fell from 26% to 19% in the same period. In contrast, the share of services in GDP increased from 52.6% to 68.4%. This diversification of its changing economic structure since the 1990s has been well documented by academia (E.g., Beverenotti, Chang, Corrales y Vargas, 2015; Adamson y Badilla, 2014; Segovia, 2004; Lizano; 1999), and is closely related to the structural adjustment policies that were implemented in the 1980s and early 1990s.

### 2.2.    Evolution of migration to Costa Rica

"Nicaraguan migration to Costa Rica is one of the most prominent cases of South-South human mobility in Latin America" (Sandoval, in Voorend, 2019: xxv). Currently, the country hosts the highest share of migrants in the total population in Latin America (Voorend, 2019), save for particular contexts like Belize and the Dominican Republic.

The literature on migration to Costa Rica typically identifies three distinct phases of contemporary migration. First, in the 1980s the country consolidated as a destination country especially for politically motivated migration (Voorend, Robles and Venegas, 2013; Rosa, 2008; Segovia, 2004). Many Central Americans fled the political conflicts in their countries (Voorend and Robles, 2011; Morales and Castro, 2006; Acuña, 2005), which caused substantial mobilizations in the isthmus. Costa Rica was an attractive destination because of its political stability.

Second, after the signing of the Esquipulas agreements, which ended armed conflict in the region, many of these political refugees returned home in the 1990s[4]. However, because of a lack of economic opportunities in the wake of structural adjustment (Morales Gamboa, 2004) and following natural disasters like Hurricane Mitch in 1998 (Gatica, 2005), extra and interregional migration surged to unprecedented levels (Voorend and Robles, 2011; Castro; 2008; Sandoval, 2008). This migration was inspired by economic and labor motivations, although family reunification was also an important reason (BCCR, 2018; Mora and Guzmán, 2018). Much of labor migration flows from the Northern Triangle (Guatemala, Honduras, and El Salvador) went to the United States and Spain. Most Nicaraguans, however, chose Costa Rica as their destination (Baumeister, Acuña and Fernández, 2008).

Third, migration inflows to Costa Rica continued to grow in the first decade of 2000 at an average rate of 2.4% annually, still strongly motivated by economic reasons driven by relative strong economic growth in Costa Rica and a demand for foreign labor in sectors such as construction and agricultural production, as well as domestic work (Lerussi, 2007). The last led to an increase in women's participation in labor migration (Martínez-Franzoni, Mora and Voorend, 2009; Morales, 2007).

In the 2010s, labor migration to Costa Rica continued, although conflict and intensified violence in countries such as Honduras, El Salvador, Venezuela, and Colombia added other reasons to the

---

[4] The Esquipulas Agreements was an initiative in the mid-1980s to resolve the military conflicts that several Central American countries had been experiencing for years. Costa Rica, was not involved in military conflict and became a destination for many refugees from other Central American countries. After the Esquipulas peace agreement, many returned to their country of origin.

already known motivations related to the search of employment and better socio-economic conditions: the escape from violence (Salazar and Voorend, 2019). Costa Rica's reputation as a democratic and peaceful country with a high level of human development (Mora and Guzmán, 2018; Voorend, Robles and Venegas, 2013) in combination with structural demand for migrant labor solidify the country as an attractive combination for migrants (Gatica, 2018).

### 2.3. Migration: Legal and policy context

Despite migration scenarios changing rapidly in the early 1990s, especially with the onset of unprecedented migration flows from Nicaragua to Costa Rica (Sandoval, 2008), migration laws were not quickly adjusted. Up until very recently, Costa Rican immigration was governed by a law, which dated back to 1986. However, the legislative framework underwent two significant reforms in 2005 and 2009 (Asamblea Legislativa, 2009).

In November 2005, Migration Law No. 8487 was enacted and came into force on the 12th of August 2006. This Law meant to solve the perceived problems migration created, especially from Nicaragua (Morales, 2008), establishing strict control mechanisms that were "not well developed in the previous law, such as the surveillance of undocumented migrant populations, or the introduction of new regulation mechanisms to police criminal activities perpetrated by foreigners" (López, 2012: 84). The Law was punitive in nature, and notably the border police was given much authority, increasing its budget and improving border control infrastructure and enforcement. Immigration was positioned as an issue of national security, and the law criminalized the trafficking and aiding of undocumented migrants, allowed for the confiscation of identity documents and indefinite detentions by migration authorities.

Following heavy criticism from civil society (Fouratt, 2014; López, 2012; Kron, 2011), there was a proposal to reform the 2005 Migration Law in 2007. Law 8764 was approved in August 2009 and came into effect in March 2010. The Law has a remarkably inclusive discourse referencing "principles of respect for human rights; cultural diversity; solidarity; and gender equity" (Law 8764, art. 3). In that respect, on paper it comprises a more integrated approach to migration policy, including various ministries (Housing, Social Security, Health and Labor) as well as migrant organizations in reporting and planning. Indeed, it orients immigration not only as an issue of security but places much emphasis on its importance for development.

The General Law of Migration and foreigners (*Ley General de Migración y Extranjería* - No. 8764), sets the stage for migration policy in the country. It is regulated and implemented by the General Directorate for Migration and Foreigners (*Dirección General de Migración y Extranjería* – DGME), which enacts border control and processes applications for and renovations of regular migratory status. Since 2009, it is also in charge of policies that enable the integration of migrants for which it created a specialized subdepartment. It is also the institution with the final decision on the number of work permits. This decision is based on a technical suggestion by the Department of Labor Migration (*Departamento de Migraciones Laborales - DLM*) of the Ministry of Labor and Social Security (MTSS), which recommends productive activities where foreign labor is required, and the quota of people required by activity to the DGME (IOM, 2009).

During interviews, it became clear that the Department of Labor Migration (DLM) carries out technical occupational reports and coordinates with individual businesses, how many workers are required. For agricultural sectors, for example, such coordination is based on the number of hectares of arable land and a standard number of workers per hectare. One person representing

DLM (personal communication, 2020) underscored that this type of analysis is "carried out individually", company by company, and not as a sector.

Although these analyses have been questioned for clarity and technical rigorousness (UCR, UNA, UNED, 2019), the DLM explained they are based on data from INEC, information provided by the DGME and site visits to companies throughout the country. The resulting recommendation of the number of work permits is also dependent on an "analysis of the hiring company, its sustainability, the company's situation with the State (up-to-date with payments to social services, policies, taxation, registration)", as well as the "national market situation" (personal communication, 2020), referring to the existing supply of national labor by geographic location where the companies are located. The DLM then send their recommendation to the DGME, which usually endorses the recommended number of work permits to be granted to each company.

When work permit requests are denied, companies hardly ever appeal them (personal communication, 2020), and the follow-up depends on the "interest of the contracting company". However, the business sector claims this process of soliciting work permits through the MTSS and DGME is too bureaucratic and time-consuming, not considered adequate to match the fluctuating hiring needs and "specific realities of different sectors, which need specific and faster [institutional] processes" (personal communication, 2020). The business sector (personal communications, 2020), as well as organizations such as the International Organization for Migration (IOM) (personal communications, 2020) and trade unions (personal communications, 2020), have shared proposals and suggestions to streamline the processes of issuing work permits but until now the issues remain to be unsolved as institutional responses have not been effective.

For example, in 2019 a decree was signed to enable the so-called "agriculture category" as a figure that facilitated the regularization of migrant workers working in agriculture. Also, in 2020 and in response to the crisis caused by the Covid-19 pandemic, a process was facilitated to regularize migrants who were working in the country since 2016. However, in both cases, the requirements for receiving these special procedures (such as proof of date of entry into the country and place of residence since that date) are difficult to obtain for irregular migrants (Barquero, June 2020; personal communication, 2020).

However, in interviews with Labor Migration Specialists in the country, it was argued that experiences in other Latin American countries, like Colombia, prove that "it is possible to make these institutional processes more flexible" (personal communication, 2020) and all interviewees called for an intersectoral social dialogue (involving employer´s and workers´ organizations), to build more efficient mechanisms and procedures to hire migrant labor. In such a dialogue, labor unions representatives (personal communications, 2020) argue, "it is important to grant voice to migrant workers".

In addition, the MTSS and the DGME together must ensure labor rights of migrants are respected, and that the conditions for employment are suitable, ensuring implementation of the Migration Law's directive that only people with regular migratory status can be hired.

Migrant workers can also enter the labor force in a regularized way in Costa Rica, through the binational agreements with Nicaragua and Panama[5], which regulate the entry of migrants for

---

[5] In 2018, Costa Rica and Canada agreed to sign a "Memorandum of understanding to strengthen refugee status procedures". Although on paper, this agreement will reportedly allow the creation of a permanent communication mechanism between the countries' migration authorities, the exchange of good practices and the organization of periodic visits, in order to strengthen the capacity of judges to resolve appeals of applicants for refugee status (Padra,

certain specific work activities (essentially agricultural, for coffee crops for example) and the creation of systems to coordinate the requirements of the workforce (Changala, 2014; ILO; 2016).

***The Migrant Labor Convention between Nicaragua and Costa Rica,*** signed in 2007, known as the Bi-National Agreement (BNA) is an agreement to legally recruit temporary migrants, and formalize Nicaraguan workers' incorporation in different sectors, especially agriculture (Bolaños, 2009; López, 2012). In the framework of the imminent Dominican Republic and Central America Free Trade Agreement (DR-CAFTA), which was expected to create at least 500,000 new jobs related to US exports (López, 2012), the BNA would become an important mechanism to ensure the ordered and regular inflow of migrants to sectors of the economy in need of labor. Under the BNA, employers can recruit temporary migrants both in Nicaragua and Costa Rica[6]. Workers residing in Nicaragua need an authorization from the Nicaraguan Department for Migration and the Nicaraguan Ministry of Labor (MITRAB), which provides a list of authorized migrants to the DGME. These temporary migrants are exempt from visa fee payments, but employers, who are responsible for ensuring that the migrants have passports or safe-conduct certificates and travel documents, do have to pay the DGME an entry fee per worker (López, 2012).

Although still in place, the BNA is not considered a success and has been heavily criticized (Bolaños, 2009; González and Hobarty, n.d.; López, 2012). Employers consider it a bureaucratic hassle and complain about the time and costs involved with regular recruitment, while the MTSS's institutional weakness to determine and negotiate realistic quotas and create an agile and quick recruitment process has become painfully obvious (Voorend and Robles Rivera, 2011). This has discouraged employers from taking part in the program (López, 2012; Voorend and Robles Rivera, 2011)[7]. On the other hand, workers are left vulnerable because the BNA requires the signing of a labour contract, but contains no control mechanisms to ensure compliance, leaving them legally vulnerable to unjustified lay-offs, and hinders migrants appeal of substandard labour and living conditions (Bolaños, 2009). In interviews with union representatives, it was corroborated that this is the case in sectors such as agricultural farms in the north of the country, where the mechanisms for labor inspection and monitoring of working conditions for these people who arrive through the BNA or other channels, are very limited. The unions have even filed complaints with the ILO (ILO, 2014a), alluding "non-compliance with the conventions protecting this population" and emphasizing that "it is urgent to improve labor inspection" (personal communication, 2020).

***Bi-national agreements between Costa Rica and Panama***. These agreements mostly concern Ngäbe-Buglé indigenous groups, among whom there is constant cross-border movement for economic, labor and cultural reasons (Law No. 7518. Agreement with Panama on Cooperation for Border Development). The Agreement on the Organization of the Binational Border Security Commission Mechanism signed in 2011 is one of the most important instruments that aims to

---

2018), in practice there is little progress regarding actual collaboration. Also, the Agreement document is not publicly available.

[6] Migrants already living in Costa Rica can only be recruited if their tourist visa has not expired, and the BNA excludes undocumented migrants.

[7] Bolaños (2009) lists a series of other critiques. First, the BNA is optional and does not constitute the only form of recruiting temporary migrants. Second, the BNA does nothing to regularize the status of the vast majority of permanently settled Nicaraguan migrants in Costa Rica. Therefore, does not counter the irregular recruitment of immigrant labour. Third, as it is aimed mainly at the agricultural, agro-industrial and construction sectors, it omits large populations in other labour markets, such as domestic labour and tourism. Fourth, the BNA requires the signing of a labour contract, with no control mechanisms to ensure compliance. Finally, recruitment is limited to a single employer, making it impossible for migrants to switch between sectors.

regulate movements between Panama and Costa Rica. It is an agreement to promote the dialogue, cooperation and the development of strategies to solve common problems, mostly related to border control and security.

These instruments are not directly appointed to labor migration subjects and are orientated to build dialogue and articulation mechanisms for the development of the border area (OECD - ILO, 2018; Changala, 2014). Morales, Lobo and Jiménez (2014) argue that, even though they regulate and facilitate work permits to enter to Costa Rica for agricultural labor, the protection of indigenous migrant worker's labor and human rights is a challenge still ahead, requiring the intensification of the practice of generating bilateral coordination mechanisms for the improvement of the living and working conditions of these indigenous groups.

Finally, there are also **regional agreements** and plans of action at the level of the Central American Integration System (SICA), including figures such as the Council of Ministers of Labor of Central America and the Dominican Republic (OCAM) and the Strategic Agenda for Labor and Labor Affairs (Changala, 2014; LMO, 2011). Besides the subscription of the Universal Declaration of Human Rights (1948), Costa Rica has also ratified several international human rights protection instruments which include migrants. Specifically, the United Nations Protocol to prevent, suppress and punish trafficking in persons, especially women and children (2000), the Convention Relating to the Status of Refugees and Stateless Persons (1951) or the Inter-American Convention on the forced disappearance of persons (1996), among others. However, of important note is that Costa Rica has not ratified key instruments that directly protect migrant workers, such as the ILO Migration for Employment Convention (Revised), 1949 (No. 97), the ILO Migrant Workers (Supplementary Provisions) Convention 1975 (No. 143) and the International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families (1990, entered into force on 2003).

Currently, Costa Rica has signed no bilateral agreements with other countries that allow for the recognition of skills, or the portability of pensions etc. At the multilateral level, Costa Rica forms part of regional organizations such as the Central American Council for Higher Education Accreditation (CCA), or associations such as the Central American Agency for Postgraduate Accreditation (ACAP)[8]. Back in the 1960s, Costa Rica also signed and ratified, along with other Central American countries, the Convention on the Practice of University Professions and Recognition of University Studies (1962); however, its application to date is unclear and seems to have been largely forgotten in practice. The range of action of such agreements in practice is limited and there are many talents and degrees that are not recognized or validated between countries in the region. In general, any person who wants his or her higher education abroad recognized in Costa Rica must go to the National Council of Rectors (CONARE) to start a process of recognition and validation of degrees obtained abroad. This process is based on the Agreement for the Coordination of State University Higher Education in Costa Rica, signed in 1982 and is a straightforward, albeit slow bureaucratic process[9]. Individual public universities do have international agreements with foreign academic institutions. For example, the University of Costa

---

[8] Costa Rica is part of the Central American Integration System (SICA, for its Spanish acronym), but SICA as such does not have a body in charge of skills and qualification issues, not does it cover the portability of social protection. It has, however, called upon member countries to work on the issue and has met with CCA, ACAP and other organizations to enable multilateral work on skill recognition.

[9] For this process, one is required to fill an application form, present documents duly legalized and, if they are in a foreign language, translated by a certified official translator in the country, a valid ID, the required academic certifications and the receipt of payment for the right of recognition and matching procedures.

Rica (UCR) has agreements with over 50 universities in 35 different countries, that facilitates the procedure of recognition and validation of degrees.

Such processes and agreements are, however, applicable to tertiary education, and therefore do not apply to most migrant laborers in low-skilled or medium-skilled jobs. Indeed, only about 6% of migrants in Costa Rica have higher education level (Mora and Guzmán, 2018; Morales, 2018), meaning that this type of procedures is irrelevant to most.

Certifications of technical titles obtained in a foreign country can be recognized by the National Institute of Apprenticeship (INA). However, most migrants neither access the validation process of their technical skills because they consider it complex or expensive (ILO, 2014b). Time procedures is another reason that makes skill recognition difficult for migrants. Once incorporated into the labor market, often work schedules complicate matters for migrants to carry out the procedures (ILO, 2014b). Finally, the issue of certification is complicated by the requirement of having regular migratory status and the institutional requisites stipulated by the INA itself, like copies of the degrees or certificates obtained and original content of the modules approved during their training (INA, 2020).

Indeed, this situation may not be considered a political priority given the literature has suggested an inability of the Costa Rican labor market to absorb more qualified migrants, with complete secondary education or university degrees (OECD, 2018; FLACSO, 2012; Martínez, Mora and Voorend, 2009). The Labor Market Observatory - LMO (2011) adds that there are few education and training programs accessible to adult migrants and when they exist, they are accessible only to migrants with a regular migration status[10].

### 2.4.    Migrant labor demand in Costa Rica

The systematic demand for migrant labor in Costa Rica is concentrated in what the literature calls "niche" labor markets (Morales et. al, 2011; Baumeister et.al, 2008; Acuña and Morales, 2004). Most notably: agriculture, construction (mostly men) and domestic work (mostly women) (Mora and Guzmán, 2018; MTSS; 2013; Morales et.al, 2011; Bonnie, 2010; IOM, 2009; Martínez-Franzoni, Mora and Voorend, 2009). Also, the presence of migrants has increased since the early 2000s in the tertiary sector, employing 64% of all immigrants in Costa Rica in 2018 (among women, 91% is employed in the services sector, while 48% of the men) (Morales, 2018; MTSS, 2013).

The Labor Migration Specialists in Costa Rica interviewed for the study (personal communication, 2020), added that sectors, such as surveillance (private security) and services related to trade, transport and tourism also require migrant labor, albeit to a lesser extent. However, "there is very limited information of the real number of migrants in those positions (sectors/branches of economic activity)" (personal communication, 2020).

Studies and data show that migrants tend to have higher labor market participation rates than nationals (in part explained by the fact that they tend to migrate in productive years), and slightly lower unemployment rates (save for the 15-to-24-year age bracket, where migrants have higher unemployment rates than nationals) (Mora and Guzmán, 2018; OECD – ILO, 2018; Morales, 2018; INEC, 2016; MTSS, 2013). However, most migrants find jobs in low-skilled and low-paid jobs,

---

[10] An exception are education programs for adolescents between the ages of 15 and 18, who can access these training opportunities regardless of their immigration status.

and often conditioned by their migratory status (Voorend, 2019). Agricultural workers, for example, are usually migrants in irregular conditions (Morales et al., 2011), who are typically paid below the minimum wage with no or limited access to social security and labor rights (Bonnie, 2010; Renzi, 2004). In addition, the duration of the working day is usually longer (Mora and Guzmán, 2018; LMO, 2011). A study by Voorend, Anker and Anker (2018), for example, found that banana workers are paid total wages that are above the minimum wage, but that this includes overtime payment for standard average workdays that exceed 11 hours (compared to the legally allowed 8 hours).

Lerussi (2007) explains that the demand for low-skilled migrant labor is because the country has turned towards a new productive organization that "opens up employment opportunities for middle-level Costa Ricans (in socioeconomic and educational terms) generating labor demand for less qualified people, fundamentally in the agricultural, construction and domestic work sectors" (p.12. Own translation). The dependence on migrant labor in these traditional sectors has increased since the early 1990s, according to interviewees. The explanation offered for this development lies in the fact that the occupations in these sectors are no longer attractive to large sections of the national population. In the past decades, a greater number of Costa Ricans "have reached an educational level of at least high school", which allows them, in theory, to access higher skilled jobs with better conditions of employment (personal communications, 2020). As such, it seems that the terms and conditions of employment in the traditional sectors are not acceptable by Costa Rican workers.  A representative of the National Chamber of Agriculture and Agroindustry mentioned that in agriculture, even the new generations of migrant harvest workers have managed to benefit from the rising educational offer that Costa Rica has experienced; also leading them to "aspire to be linked to other types of jobs with higher qualifications" (personal communication, 2020).

In this context, the already characteristic low labor flexibility of these sectors, with low salaries and absence of social security, was added to a lack of interest on the part of national workers to seek to join them, as they considered they had opportunities to aspire to other medium or high qualification jobs with better working conditions. Thus, following classic labour market segmentation theory, migrant dynamics in Costa Rica are directly related to systematic labor shortages in specific sectors in which nationals are discouraged from working because of inferior working conditions and pay. As such, the labor market sectors in which there is high migrant participation are typically considered secondary labor markets (LMO, 2011; Cortés, 2008). For migrants, this represents an opportunity to fill the gaps in the labor market (Mora and Guzmán, 2018; Gatica, 2013). For Segovia (2004), migrants labor allows to take pressure off the local labor market, contributing to the expansion of economic sectors in the country, such as agricultural export activities, tourism, real estate development, and the general expansion of the tertiary sector (LMO, 2011).

Regarding the agricultural sector, Baumeister et. al. (2008) explains that demand for temporary migrant labor is closely related to the productive cycle of the harvesting productive sectors. The temporary or seasonal nature that characterize many of the agricultural tasks often implies temporary hiring of migrant workers. In between productive cycles, in the weeks leading up to a new productive season of a different crop, migrants tend to move to other temporary jobs (e.g. other crops, or manual and occasional jobs). In some cases, however, there is competition for migrant labor when different sectors need workers at the same time. For example, in northern Costa Rica, the almost exponential expansion of pineapple plantation has led to shortages of seasonal

coffee pickers in the harvesting months of October, November and December (Aravena and Carazo, 2016; Baumeister et.al, 2008).

## 2.5. *Migrants' contribution to the Costa Rican economy*

The contribution migrants make to the Costa Rican economy has been well documented. There are at least three studies that largely confirm the same story: the contribution to GDP of the migrant population that represents approximately 9% of the total population, is around 12% (Gatica, 2018; OECD-ILO, 2018; Ramírez and Acuña, 2014). The OECD-ILO (2018) study confirms that Costa Rica has required migrant labor to fill the gaps left by processes of social mobility that have meant the transfer of local labor to increasingly qualified activities; and due to the geographical rearrangements of the national population, processes of urbanization and the structural demand for labor in specific sectors in the country.

However, the same OECD-ILO (2018) shows that migrants' contribution is lower than their share in total employment (14%) (although higher than their incidence in the total population – 9%). This is because migrant workers are concentrated in low productivity sectors and because a substantial share of their work takes place in the informal sector, which makes it difficult to estimate their real contribution to the economy.

Several studies have linked positive effects to the national economy to the argument that migrants have higher levels of entrepreneurship than nationals, because of previous knowledge in specific trades, and because in between salaried jobs they tend to be self-employed – presumably as a last resort (Lassmann and Busch, 2015; Fairlie and Lofstrom, 2015; Kahn, Mattina and MacGarvie, 2017). However, the OECD-ILO study (2018) question this argument, finding no evidence for differences between migrants and nationals in entrepreneurship.

Additionally, Morales (2008) and Voorend (2019) challenge strongly rooted views in public opinion concerning migrants' contribution and their costs to the national economy. One general perception on migrants' fiscal contributions centers around the idea that migrants cost more tax money than what they contribute. To disclaim this idea, the OECD-ILO (2018) study argues more empirical studies are needed. They find that it is true that migrants' contribution to tax revenue is smaller than that of the nationals (CRC 935.553/ USD 1,600 versus nationals' CRC 1,208.998/USD 2,075), as well as their contributions through production and consumption. In any case, to calculate this, OECD-ILO admits that many assumptions had to be made, and other studies question the high costs related to migrant populations that public opinion assumes to be true. For example, Voorend (2019) shows that the incidence of migrants in health services is actually lower than migrants' incidence in the national population, and of the users of (urgency) health services, 75% has a health insurance (compared to 89.4% of nationals). Indeed, in relative terms, migrants contribute more to social security than nationals, as they have higher rates of direct insurance, whereas a large share of about 41% of nationals is covered by indirect, family insurance (Voorend, 2019). Concerning other public resources, channeled through assistance programs such as conditional cash transfers (CCTs), agricultural subsidies, non-contributive pensions and educational assistance, migrants' incidence and cost is well below their incidence in the total population (Voorend, 2019; FUNDEVI/OECD, 2017).

Finally, an underrepresented case of migrants' economic contribution is the case of migrant women in domestic service. While their direct contribution is extremely difficult to measure, because of the informal and domestic nature of their labor, it has been argued that the incorporation in the

labor market of high- and middle-class national women in Costa Rica is facilitated by migrant women that take care of domestic work. As national women began to obtain jobs, resulting in higher incomes, this in turn facilitated the hiring of services for migrant domestic workers (MTSS, 2013; LMO, 2011; Bonnie, 2010; ILO, 2010).

## 2.6. Migrants' socio-demographic and occupational profile

The literature, mostly based on the last two national censuses (2000 and 2011), the National Household Survey (ENAHO 2009-present; before 2009: EHPM) and the Continuous Employment Survey, provides some general characteristics of the migrant population in Costa Rica. First, about 3 in every 4 migrants come from Nicaragua, followed by migrants from other Central American countries such as Panama and El Salvador (around 7%), and as well as from Colombia, United States and other countries (together around 15%) (BCCR, 2018; Mora and Guzmán, 2018). The total migrant population in Costa Rica had oscillated around 9% of the total population in the last decade[11] (Morales, 2018; Voorend, Robles and Venegas, 2013). Second, the migrant population is predominantly in its early productive ages, in an age range of 15 to 45 years (around 58%). That is, it is an economically active population that corresponds to the labor motivations for their migratory movements (Morales, 2018). Third, labor participation rates among migrants are larger than among nationals, and higher among migrants from El Salvador and Colombia than among Nicaraguans (MTSS, 2013). In absolute terms, most migrants settle in country's central regions, however, their presence as a share of the total population is larger in rural areas such as *Huetar Norte* (Morales et. al, 2011). Fourth, migrant labor insertion is highly informal. For example, in a typical construction site, depending on the conditions and the area, estimates of informality range as high as 65% of migrant workers. Also, depending on the season, in some agricultural sectors like sugarcane or orange, up to 80% migrants make up the workforce, many of whom are hired informally for the harvesting season (Voorend and Robles, 2011).

A common form of hiring in agriculture is through an intermediary, whose labor relations are typically formal. However, informality is the norm for the work crew under him or her (Voorend, Robles and Venegas, 2013). A company then can formally hire intermediaries, whose task is to assemble a crew of workers for agricultural farm work on contract basis. This is an appealing form of hiring for companies, as it allows for flexible hiring practices and quick reactions to peaks in production, allowing to reduce the disparity between supply and demand of labor in these sectors. Also, administratively, the intermediary often is with a formal wage contract but the crew that works for him is usually without the same formal labor guarantees (Sanchez, 2012).

Despite a slightly higher presence of female migrants in the migrant population, Morales (2018) indicates that the unemployment rate among migrant women[12] is four times higher than among migrant men (10.4% vs. 2.5%). However, both rates are low compared to the national average (12% and 6.6%, respectively). Provinces located near the borders (Puntarenas, Guanacaste and Alajuela) have a higher concentration of male migrants, while provinces located more towards the central valley (San José and Heredia) have a greater presence of female migrants (Voorend, Robles and Venegas, 2013). This is directly related to the demand for migrant labor in the predominant

---

[11] Such figures usually sub-register an unknown number of irregular and temporary migrants (Voorend, 2013).

[12] This inequality by sex reproduces the gender gaps in access to employment that are similar for the national population. Explanatory factors include labor discrimination, lags in the traditional role imposed on women as housewives, and others (Morales, 2018).

activities and occupations carried out in rural and urban areas, respectively agricultural work and domestic work (services) (LMO, 2011).

Again, migrants predominantly find work in low-skilled jobs, with high incidence of informality. This is reinforced by the relatively low education levels of migrants. Voorend (2019) finds that the average number of years of formal education among Nicaraguan migrants is only 5.3 years. A study by the MTSS (2013) shows that 27% all Costa Ricans work in one of the three most qualified occupational categories (managers, professionals and technicians), while 53.6% works in middle level occupations and only 28.7% in elementary occupations. Among migrants, the distribution between high, middle and low-level occupations is quite different: 15.7%; 46.9% and 37.4% respectively.

The high levels of informality imply larger vulnerabilities among migrant workers. Access to the social security system in the country is lower for migrants (63.5%) than among nationals (85.3%) (Voorend, 2019) and, as will be discussed further on in this report, labor rights are often not respected for migrants. And if such rights are claimed, Baumeister et. al (2008) argue that migrant people face threats of being fired. This is enforced by the fact that usually migrants have little knowledge of the legal and institutional mechanisms that could protect them, which makes them afraid to claim their labor rights (Bonnie, 2010; Goldsmith, 2007). For Changala (2014), it is an evidence that legal protection ends up being effective almost exclusively for highly qualified jobs, where migrants are underrepresented.

# 3. MIGRANT LABOR'S OCCUPATIONAL STRUCTURE 1990-2020

This section analyses the evolution of migrant labor's occupational structure during the period 1990-2020, based on data from the Population Census of 1984, 2000 and 2011, and data from the Continuous Employment Surveys (ECE) of 2010 through 2020, which are quarterly surveys specifically aimed at capturing the evolution of the labor market. Based on these sources, this section briefly examines growth in national labor supply in the thirty-year period 1990-2020 and its skill composition, after which it examines the volume and occupational structure of migrant labor in the country under study in 1990, 2000, 2010 and 2020.

## 3.1. Economic and enterprise structure

The structural change of Costa Rica's economy in the 1990s has been well documented (Robinson, 2003; Segovia, 2004; Rosa, 2008; Voorend and Robles, 2011). Following the 1980s debt crisis and the structural adjustment policies that ensued, and a loss of profitability of agriculture and traditional industry, Costa Rica's economy diversified and became more reliant on the participation of the secondary sector (manufacturing, mining, industry and construction) and the tertiary sector (trade and services), which in the early 2000s came to represent 90% of GDP (Segovia, 2004). This is shown in Figure 1. It implied a rearrangement in the sources of foreign exchange, especially focused on agribusiness, high-tech maquila, services and tourism. Also, on the financial market there was a restructuring of credit in favor of consumption and speculative activities, and Foreign Direct Investment (FDI) was redirected towards services.
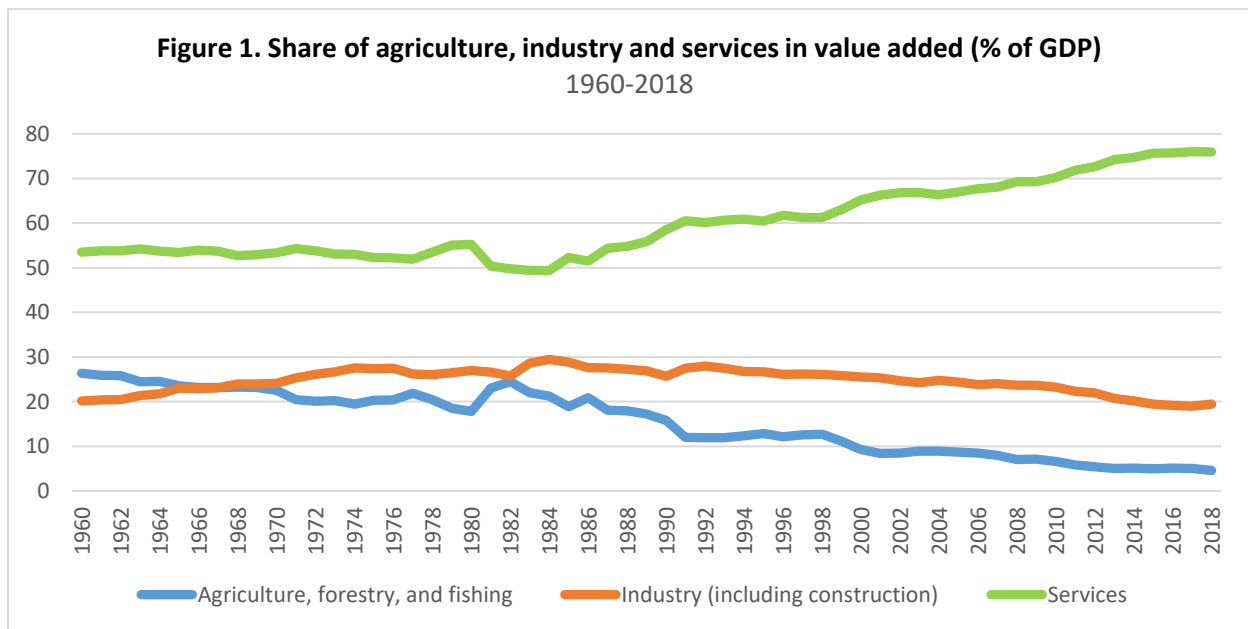


*Source: Own elaboration based on data from World Bank (2020).*

This restructuring of the Costa Rican economy in turn led to extensive financial, commercial, and labor market liberalization. For the labor market, the decline of traditional agriculture and the gradual abandonment of work in peasant and family agriculture, in favor of export-oriented agriculture, above all, prompted an internal migration of Costa Rican nationals from the countryside to the city. This, in turn, explained the rise in demand for migrant labor in the

agricultural sector (Robinson; 2003), while there was growing labor demand for the upcoming tourist sector. The latter was sparked by deliberate policy to encourage growth and investment, by the granting of exemptions, certificates of tourist incentives, promotion of infrastructure for tourism projects, broad guarantees for its capital and credit. This also boosted the construction sector (tourist complexes, hotels, condominiums), which also demanded migrant labor.

This economic restructuring happened alongside a substantial influx of migrants, especially from Nicaragua, in the 1990s and early 2000s. While migration flows from Nicaragua to Costa Rica have a long history (Cortés, 2008), immigration peaked in the 90s following measures of economic liberalization in the aftermath of the 1980s debt-crisis. Between 1984 and 2000, the immigrant population in Costa Rica grew at an average annual rate of 7.5%, most of it explained by the influx of Nicaraguans (INEC, 1984, 2000). Between 2000-2011, the migrant population in Costa Rica still grew annually by 2.4% on average (INEC, 2000, 2011). For the approximately 40,000 Nicaraguans per year who migrated between 2005 and 2017 (United Nations, 2009, 2017), the United States and Costa Rica represented the main destination (Baumeister, Fernández and Acuña, 2008). Census data from 2011 (INEC, 2011) show that migrants represented 9% of the total population. Nicaraguans currently make up 75% of the migrant Costa Rican population, that is, 6.7% of total population.

### 3.2. Labor force and sectorial distribution

Demand for labor is strongly linked to this structure and conditioned by the growth of the labor force and the aging population. Figure 2 shows the growth in the total, national and migrant labor force between 2010 and 2020. The national labor force grew by almost 9% in the last decade, at an average annual rate of 0.86. Migrant labor growth was lower at 5.5%, with an annual average rate of 0.53%.



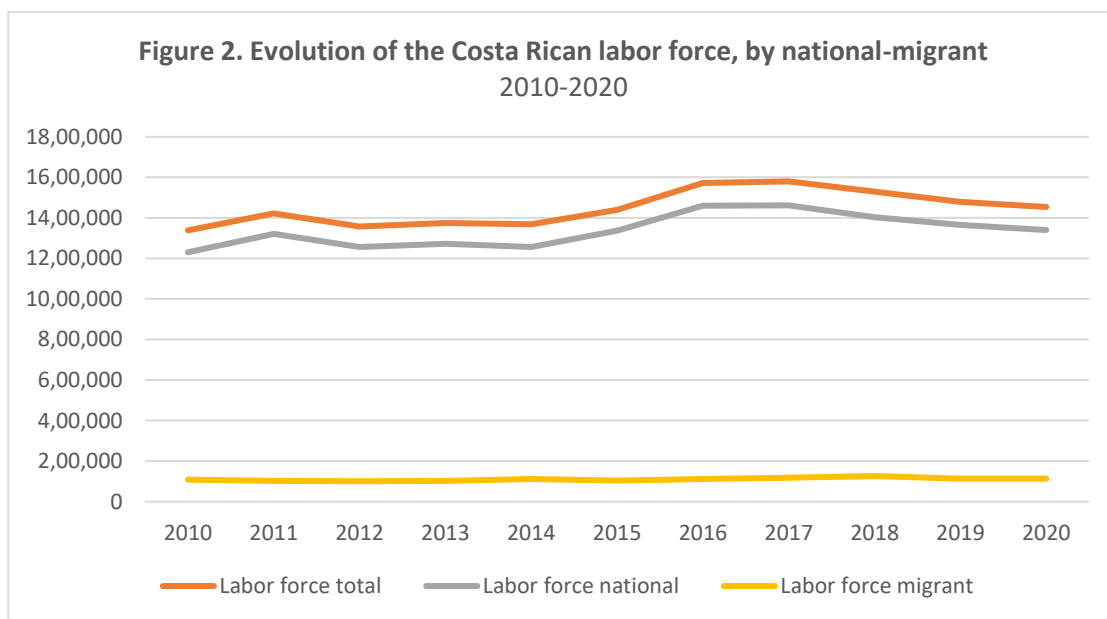Figure 2. Evolution of the Costa Rican labor force, by national-migrant 2010-2020

Figure 3 shows how the sectoral distribution of national labor closely follows the developments of the country's economy diversifying over the last four decades. Employment among Costa Rican

nationals in the primary sector, mainly agriculture, has steadily dropped from 32.7% in 1984 to 10.6% in 2020, while the tertiary sector gained importance employing 70.9% in 2020, up from 39.8% in 1984.
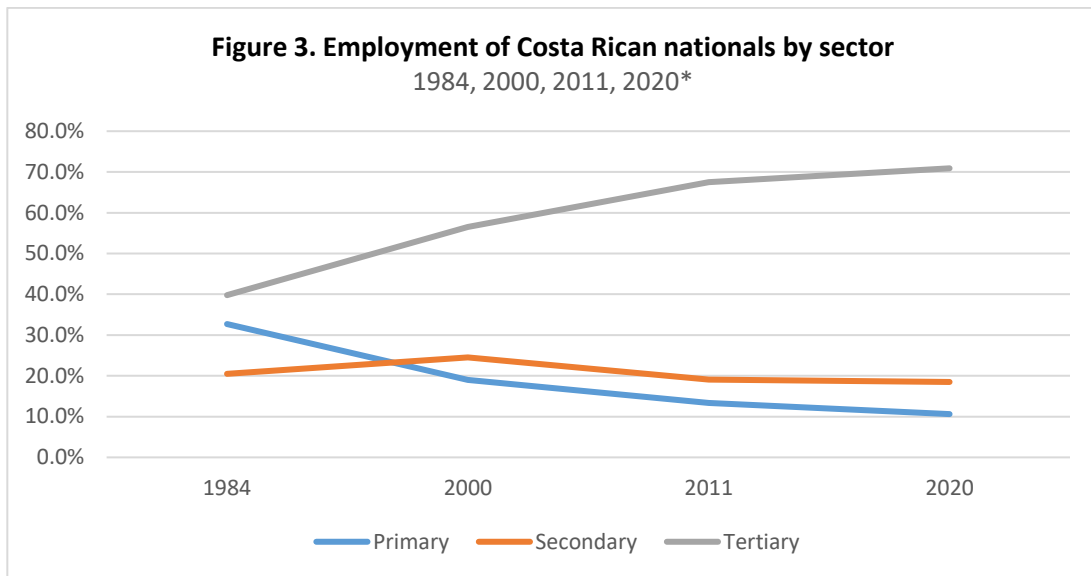


**Figure 3. Employment of Costa Rican nationals by sector**
1984, 2000, 2011, 2020*

\* Data for 2020 is based on INEC, ECE and represents an average of 2019 and the first quarter of 2020.
*Source. Own elaboration based on data from INEC (1984, 2000, 2011 and 2020)*

However, the structural diversification of Costa Rica's economy has marked the development of dual labor markets: on one hand, more traditional and less dynamic sectors, such a domestic-oriented agriculture, manufacturing, construction, and domestic services. The sectors employ workers that tend to be low-qualified, earn lower salaries and have stagnating or decreasing employment opportunities. On the other hand, high value manufacture exporting and services sectors, operating in the free trade zones. These employ higher qualified workers offering new and better paid, but fewer, job opportunities (González Pandiella, 2016, p. 19-20). The shift towards higher value-added activities has increased demand for high-skilled labor, but employers report difficulties in finding workers with the skills they need, especially medium level technicians and engineers (ManPower, 2015). Such jobs imply a high skills-wage premium in the more dynamic sectors of the economy (González Pandiella, 2016, p. 19-20).

This duality in the labor market generated a disconnection between economic dynamism and job creation, due to the coexistence, on the one hand, of sectors with high productivity, growth and links with international markets, but with a minority and segmented weight in labor demand, and on the other, low productivity and growth sectors, on which the employment of a large part of the population depends. This disconnection has intensified in recent years, as the economic slowdown worsened (PEN, 2020, p. 52).

Among Costa Rican nationals, this has meant a change in the sectoral composition of employment. In Figure 4, employment is shown by sector. Again, the decline of agriculture's relative importance as employment sector is apparent, while the services sector has gained importance.

**Figure 4. Employed Costa Rican nationals by sector**
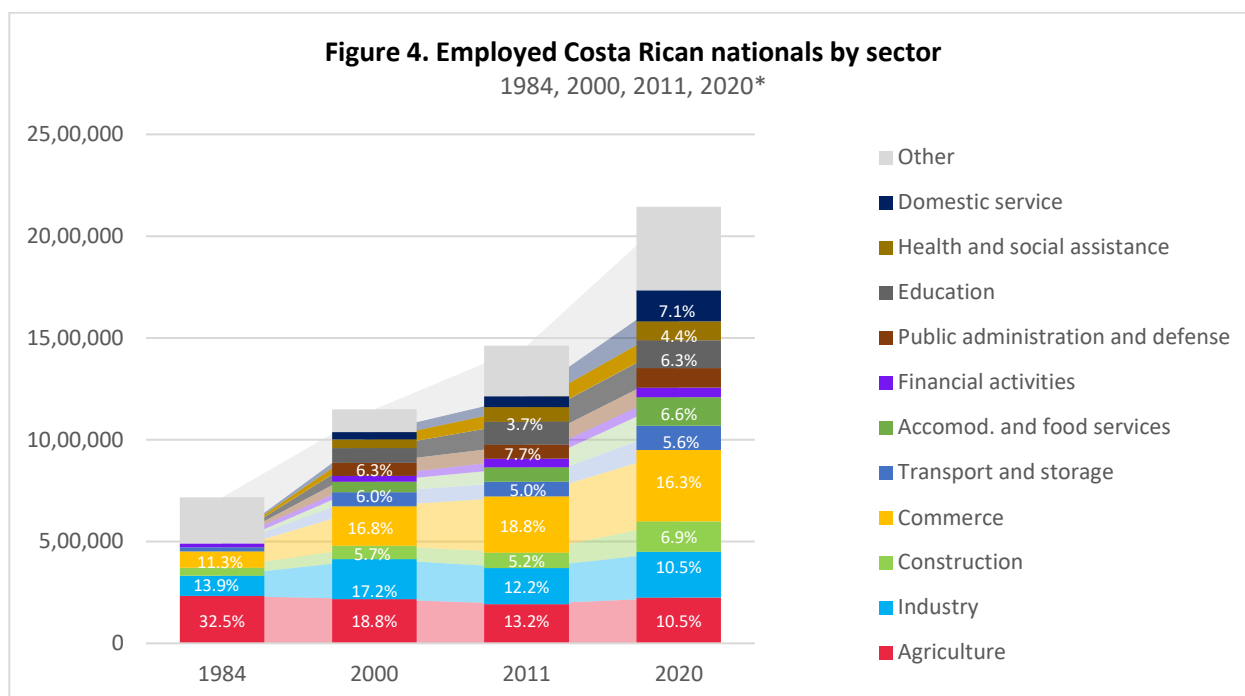1984, 2000, 2011, 2020*



* Data for 2020 is based on INEC, ECE and represents an average of 2019 and the first quarter of 2020.
*Source. Own elaboration based on data from INEC (1984, 2000, 2011 and 2020)*

The evolution of occupational groups is possibly even more telling. Among nationals, there is a clear move away from agriculture (farmers and skilled farm workers), towards more service-oriented and technical occupations, such as administrative support staff, machine operators, mechanical workers and operators, mid-level technicians and professionals. While elementary occupations remained relatively stable at about a fifth of employment, some of these more skilled categories grew in relative importance through the 1990s and early 2000s but seem to have stalled or are even in decline in between 2011 and 2020. Good examples of this are the "Professionals, scientists and intellectuals" and the "Mid-level technicians and professionals" categories. Notably, the category of directors and managers has shown a steady decline in relative importance over the entire 1984-2020 period, probably because most employment growth has been in low skilled and informal jobs.

**Figure 5. Nationals' employment by occupation type**
1984, 2000, 2011, 2020*

| | | | | Legend |
|---|---|---|---|---|
| | | | | ■ Directors and managers |
| | | | | ■ Farmers and skilled farm workers |
| | | | | ■ Administrative support staff |
| | | | | ■ Plant/machine operators/assemblers |
| | | | | ■ Mid-level technicians and professionals |
| | | | | ■ Professionals, scientists and intellectuals |
| | | | | ■ Mechanical arts workers/operators |
| | | | | ■ Service workers and shop vendors |
| | | | | ■ Elementary occupations |

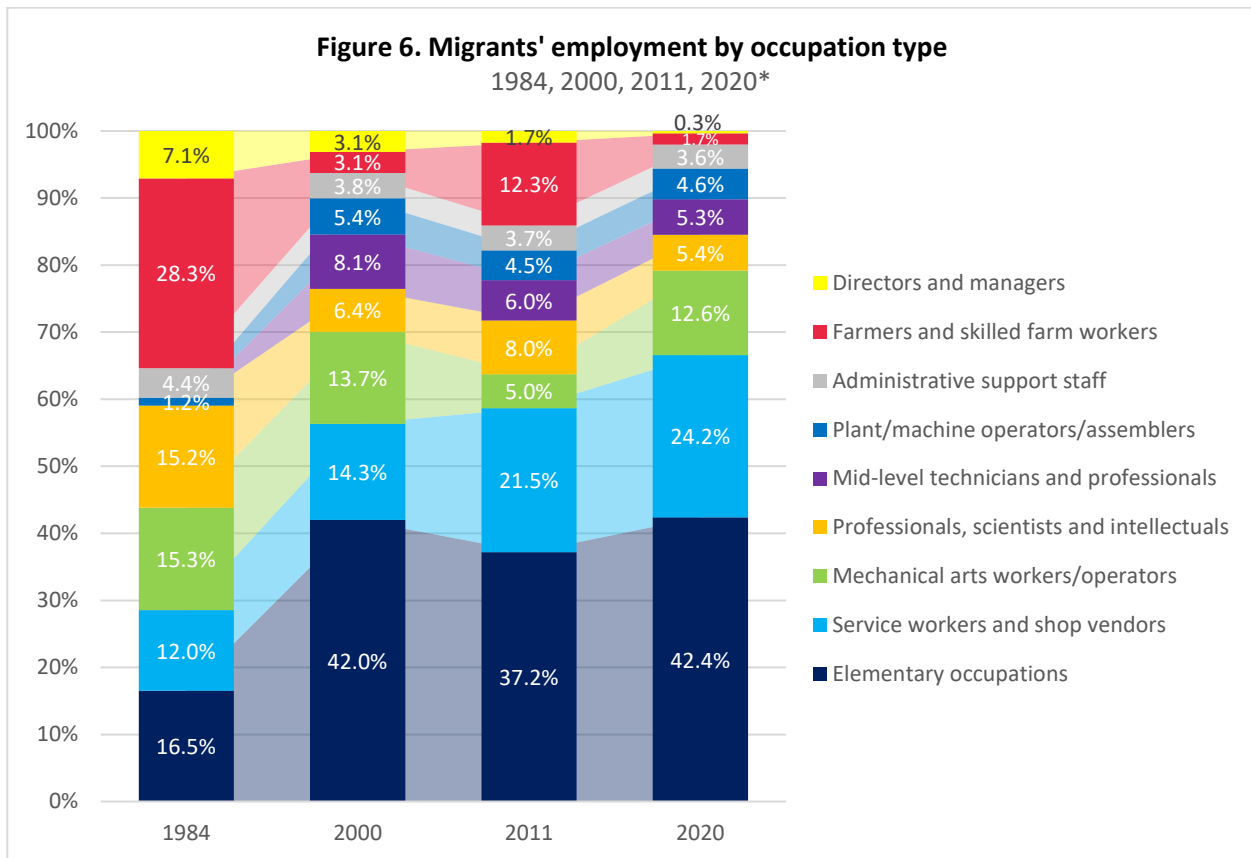| Occupation | 1984 | 2000 | 2011 | 2020 |
|---|---|---|---|---|
| Directors and managers | 3.0% | 2.8% | 1.5% | 1.0% |
| Farmers and skilled farm workers | 31.2% | 6.2% | 11.2% | 3.9% |
| Administrative support staff | 7.9% | 8.3% | 8.4% | 8.7% |
| Plant/machine operators/assemblers | | 11.4% | 9.4% | 9.4% |
| Mid-level technicians and professionals | | 13.3% | 10.7% | 9.7% |
| Professionals, scientists and intellectuals | 10.3% | 9.2% | 14.9% | 12.9% |
| Mechanical arts workers/operators | 17.8% | 11.2% | 4.6% | 11.7% |
| Service workers and shop vendors | 8.8% | 14.1% | 20.0% | 21.2% |
| Elementary occupations | 18.0% | 23.6% | 19.3% | 21.4% |

\* Data for 2020 is based on INEC, ECE and represents an average of 2019 and the first quarter of 2020.
*Source. Own elaboration based on data from INEC (1984, 2000, 2011 and 2020)*

Migrant labor employment is predominantly related to the less dynamic, more traditional sectors, as well as services sectors, such as service workers and shop vendors. The same evolution of migrant labor by occupation type shows elementary occupations are twice as important than for nationals, representing over two fifths of employment. Over the period under review, relatively fewer migrants find jobs as mid-level technicians and professionals, or as scientists and intellectuals, and only a small percentage is employed as directors or managers. This speaks to the low-skilled and more informal nature of migrant labor.

Interviewees for this study remarked that there is "ignorance about the bureaucratic processes" required to certify knowledge and that "the process tends to be complex" (personal communication, 2020). This causes many companies to eventually give up the procedures, and this, in turn, pushes migrants to informal sectors where such procedures are not required. For example, a representative of the domestic workers' association - Astradomes (personal communication, 2020), expressed that it is known that "many Nicaraguan women doctors, nurses, teachers, in Costa Rica end up doing domestic work". This being a lost opportunity for Costa Rica to take advantage of such knowledge and being an example that migrant workers tend to end up in low-skilled jobs, regardless of their qualification levels.
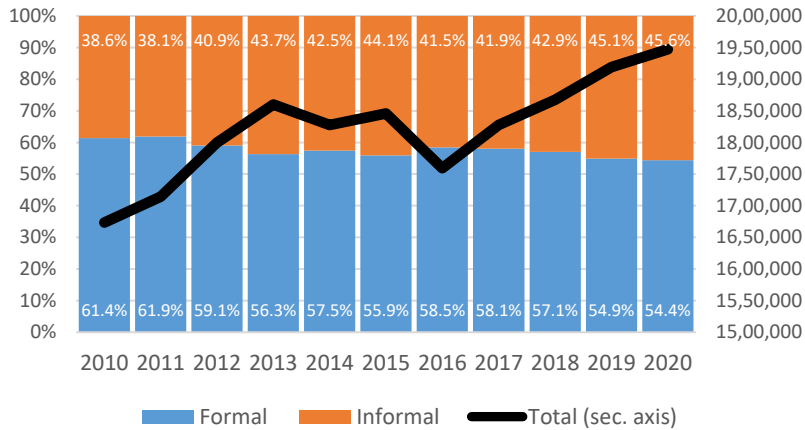
**Figure 6. Migrants' employment by occupation type**
1984, 2000, 2011, 2020*

Legend (top to bottom):
- Directors and managers
- Farmers and skilled farm workers
- Administrative support staff
- Plant/machine operators/assemblers
- Mid-level technicians and professionals
- Professionals, scientists and intellectuals
- Mechanical arts workers/operators
- Service workers and shop vendors
- Elementary occupations

* Data for 2020 is based on INEC, ECE and represents an average of 2019 and the first quarter of 2020.
*Source. Own elaboration based on data from INEC (1984, 2000, 2011 and 2020)*
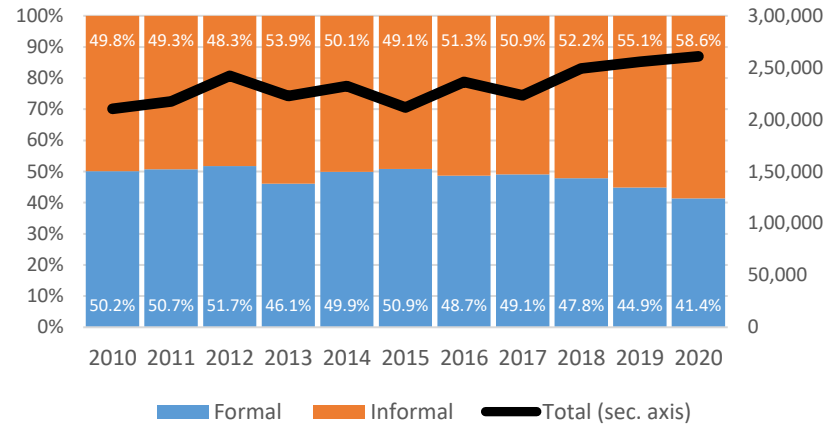
Indeed, the capacity of the labor market to provide formal jobs is limited and seems to be in decline over the last decade, both for nationals and migrants. Figures 7.1 through 7.2 show that the formality of employment was around 60% for nationals in 2010 but dropped to 54.4% in 2020. Among migrants, informality rates are considerably higher than among nationals although both show similar trends of growing informality. Migrants are drawn to informal sectors as they are required less documentation to work and it is easier for them to access employment upon arrival in the country. In 2010, about half of all employed migrants worked in the informal sector. This grew to 60% in 2020.

In Figure 7.3, average employment growth rates are shown by nationality and formality. It is telling that only among Honduran and Mexican migrants, formal employment had higher average growth rates than informal employment. However, these migrant groups, especially from Mexico represent relatively small percentages in the total migrant population in Costa Rica. Most importantly, the average annual growth rate of formal employment was 0.19% among nationals, versus 1.34% of informal employment. Among Nicaraguan migrants, the most substantial migrant population, formal employment grew 0.47% on average, whereas informal employment grew by 1.16% on average.
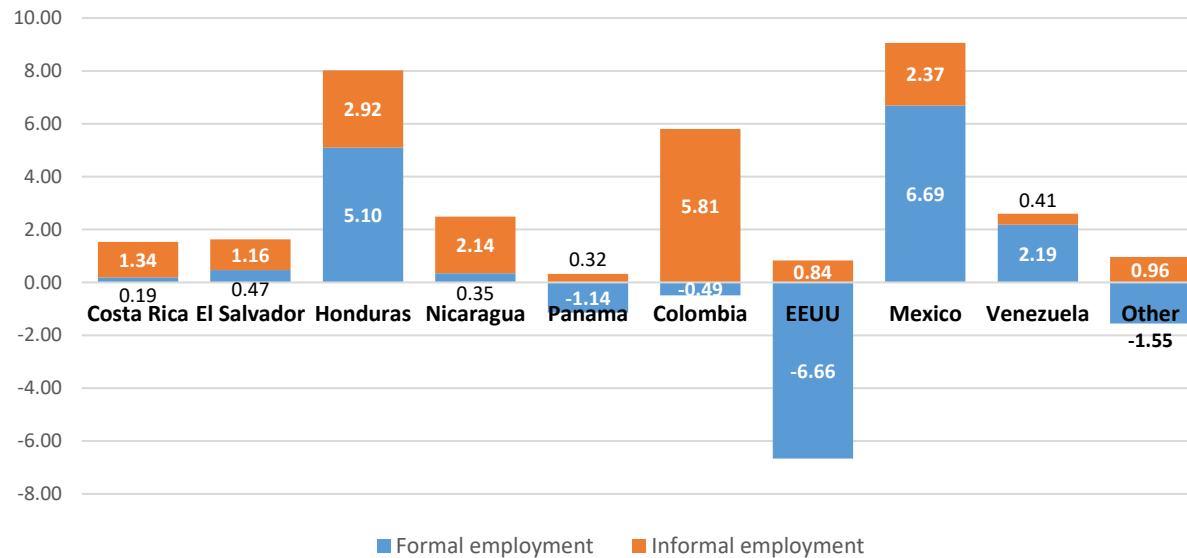
## Figure 7.1. Employment of nationals by formality
### 2010-2020



| Year | Informal | Formal |
|------|----------|--------|
| 2010 | 38.6% | 61.4% |
| 2011 | 38.1% | 61.9% |
| 2012 | 40.9% | 59.1% |
| 2013 | 43.7% | 56.3% |
| 2014 | 42.5% | 57.5% |
| 2015 | 44.1% | 55.9% |
| 2016 | 41.5% | 58.5% |
| 2017 | 41.9% | 58.1% |
| 2018 | 42.9% | 57.1% |
| 2019 | 45.1% | 54.9% |
| 2020 | 45.6% | 54.4% |

Legend: Formal, Informal, Total (sec. axis)

## Figure 7.2. Employment of migrants by formality
### 2010-2020



| Year | Informal | Formal |
|------|----------|--------|
| 2010 | 49.8% | 50.2% |
| 2011 | 49.3% | 50.7% |
| 2012 | 48.3% | 51.7% |
| 2013 | 53.9% | 46.1% |
| 2014 | 50.1% | 49.9% |
| 2015 | 49.1% | 50.9% |
| 2016 | 51.3% | 48.7% |
| 2017 | 50.9% | 49.1% |
| 2018 | 52.2% | 47.8% |
| 2019 | 55.1% | 44.9% |
| 2020 | 58.6% | 41.4% |

Legend: Formal, Informal, Total (sec. axis)

## Figure 7.3. Average employment growth rate by nationality and formality
### 2010-2020



| Country | Formal employment | Informal employment |
|---------|-------------------|---------------------|
| Costa Rica | 0.19 | 1.34 |
| El Salvador | 0.47 | 1.16 |
| Honduras | 5.10 | 2.92 |
| Nicaragua | 0.35 | 2.14 |
| Panama | -1.14 | 0.32 |
| Colombia | -0.49 | 5.81 |
| EEUU | -6.66 | 0.84 |
| Mexico | 6.69 | 2.37 |
| Venezuela | 2.19 | 0.41 |
| Other | -1.55 | 0.96 |

Legend: Formal employment, Informal employment

The literature sustains that migrant women tend to face more difficulties entering the workforce than migrant men. This might explain why even though there are slightly more migrant women in Costa Rica than migrant men, the former only make up 42% of the migrant labor force. This is mainly explained by higher levels of unemployment, underemployment, and informality among migrant women (Morales, 2018). Indeed, informality is high among migrant men and women alike, and informality of employment increased between 2010 and 2020 for both sexes. Informal jobs among migrants are common in agriculture, construction, informal commerce, and domestic service (Voorend, 2019). However, it is notable that migrant women face significantly more informality than men (60% versus 54.8%), respectively. This is partly explained by the difficulties migrant women face for obtaining regular migratory status (Fouratt, 2014; Goldade, 2011) and partly by the fact that women are overrepresented household heads' of single parent households (Voorend, 2019).
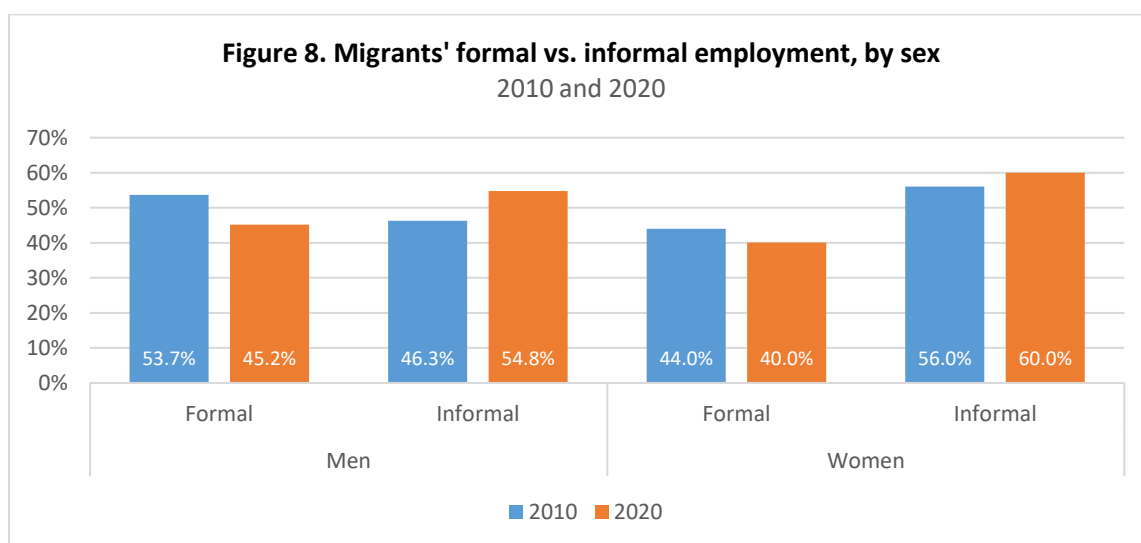


**Figure 8. Migrants' formal vs. informal employment, by sex**
2010 and 2020

*2010 considers an average of the 3rd and 4th quarters of 2010, while 2020 is composed of the 3rd and 4th quarter of 2019 and the 1st quarter of 2020.
*Source. Own elaboration based on data from INEC (2010-2020).*

The tedious regularization process, in part, explains migrants' growing presence in the informal sector with more vulnerable labor conditions. In interviews (personal communications, 2020) it was sustained that migrants are pushed into informality, without social guarantees, employment contracts, etc. The working conditions for irregular migrants are generally poor in most informal sectors that hire migrants. Also, the informal hiring of irregular migrants is perceived to have been increasing, or at least becoming more conspicuous in the last decade (personal communications, 2020). From the union sector[13], there have even been complaints about abuses that are carried out regarding labor rights for migrant population before the ILO, alluding to "non-compliance with the protection agreements of this population" by both the employer parties and the subcontractors. As such, "it is urgent to improve labor inspection" in sectors such as agriculture" (personal communication, 2020).

---

[13] Migrant workers are admitted in Costa Rican trade unions, with the only exception that they cannot hold managerial positions in them. However, there is hardly any record of unionization rates among migrants.

To avoid such practices, together with streamlining institutional processes of regularization, "prospective studies to determine more precisely the demand for migrant labor in the country, is a more than necessary step" (personal communication, 2020).

### 3.3. Migrant labor in the country

Migrant labor has been an integral and important part of Costa Rica's economic structure, especially since the 1990s. In this section, the volume and occupational structure of migrant labor is analyzed, often in comparison with characteristics of the national population. Not surprisingly given that migrants come predominantly in their productive ages, in the labor force they make up a larger share of the total. Over the last four decades, their increasing importance in the labor force can clearly be traced back to the 1990s.

**Figure 9. Employed population and average growth rate, by nationality.**
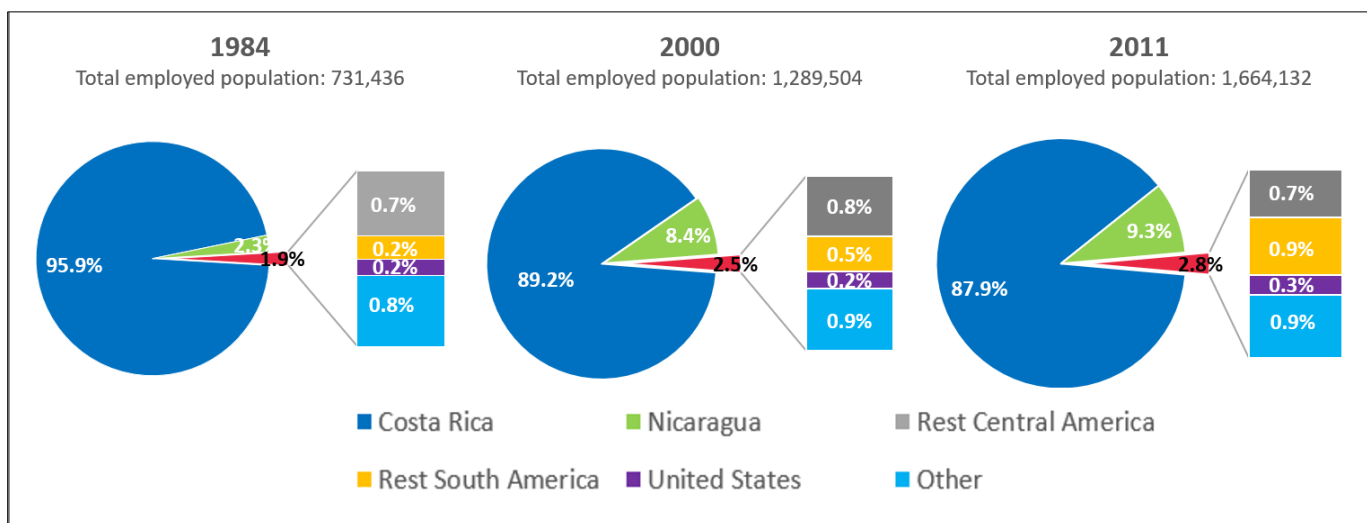


*Source. Own elaboration based on data from INEC (1984, 2000 and 2011).*

Between 1984 and 2000, migrants' incidence in the employed population went up from 4.2% to 10.9%, and then grew steadily to 12.1% in 2011. Most of this is explained by the influx of Nicaraguan migrants, whereas other nationalities' share grew only slightly from 1.9% in 1984, to 2.5% in 2000 and 2.8% in 2011.

In the last decade, the national employed population grew on average 1.53% annually, while growth of employed Nicaraguan migrant averaged 2.4% annually. Of the sectors with high migrant incidence, construction shows average annual growth of 3.5% and 1.3% for nationals and migrants, respectively. Accommodation and food services grew by 2.9% and 5.0%, respectively, while agricultural employment grew on average by 2.8 and 3.3 for nationals and migrants, respectively Average growth of employment was largest in education, at 6.6% annually compared to 1.8% for nationals. Figures 18.1 through 18.6, further below in this document, show the evolution of national and migrant growth in employment by selected sectors.

**Figure 10. Evolution of the employed population and average growth rate, by nationality.**

2010-2020



**Costa Rican nationals**

**Nicaraguan migrants**
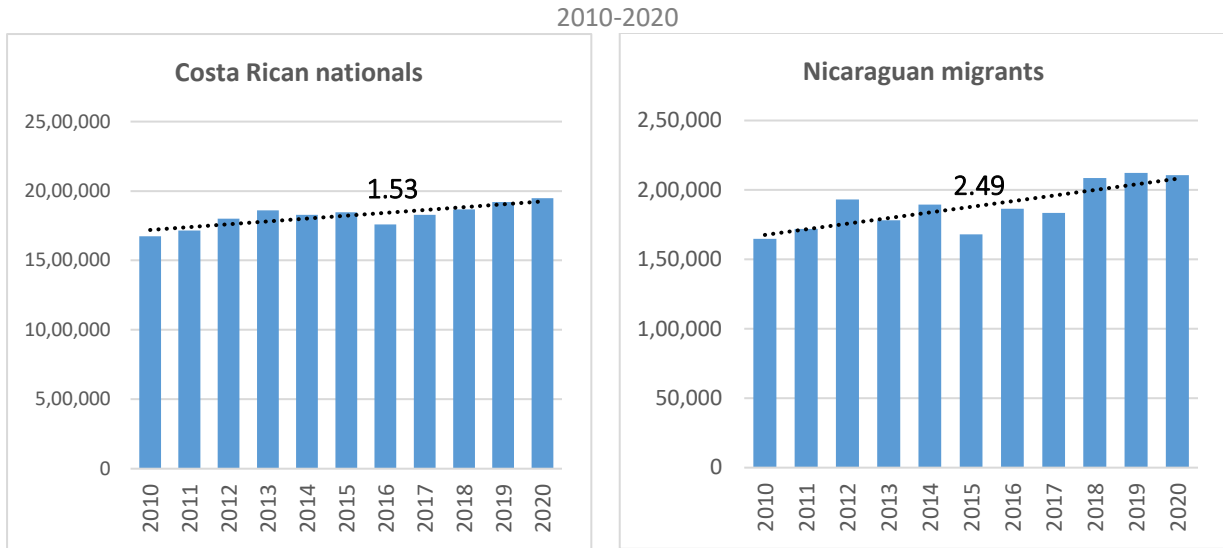
*Source. Own elaboration based on data from INEC (2010-2020).*

However, between 2010 and 2020, based on data from the Continuous Employment Survey[14], Figure 11 shows that migrants' incidence in the total labor force has been relatively stable.



**Figure 11. Migrant incidence in the labor force by nationality**
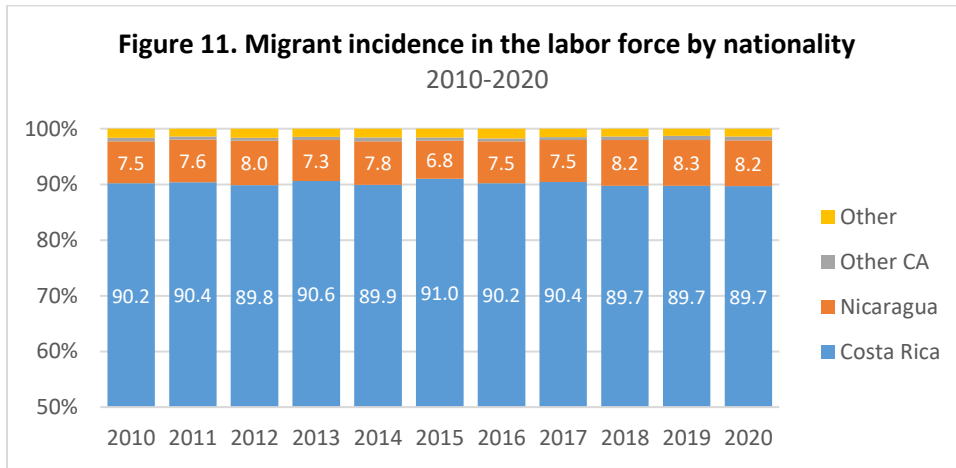
2010-2020

*Source. Own elaboration based on data from INEC (2010-2020).*

This incidence is largely explained by the fact that most migrants come to Costa Rica in productive ages, whereas Costa Rica's population is aging. Data from the World Bank shows that the age dependency ratio (that is, the elderly population and population below working age, as a percentage of the working-age population) increased from 5.8 in 1960, to 6.9 in 1984, to 8.8 in 2000, to 10.7% in 2010 and is currently around 14. In figure 12 and 13, the evolution of the age structure among nationals and migrants are shown compared by age groups, showing a clearly

---

[14] The differences in the data from the Population Census and the Continuous Employment Survey (ECE) can be explained by the sample size, and extrapolation formulas.

younger age structure among the migrant population than the national population. Figure 12 shows the aging process of the national labor force.
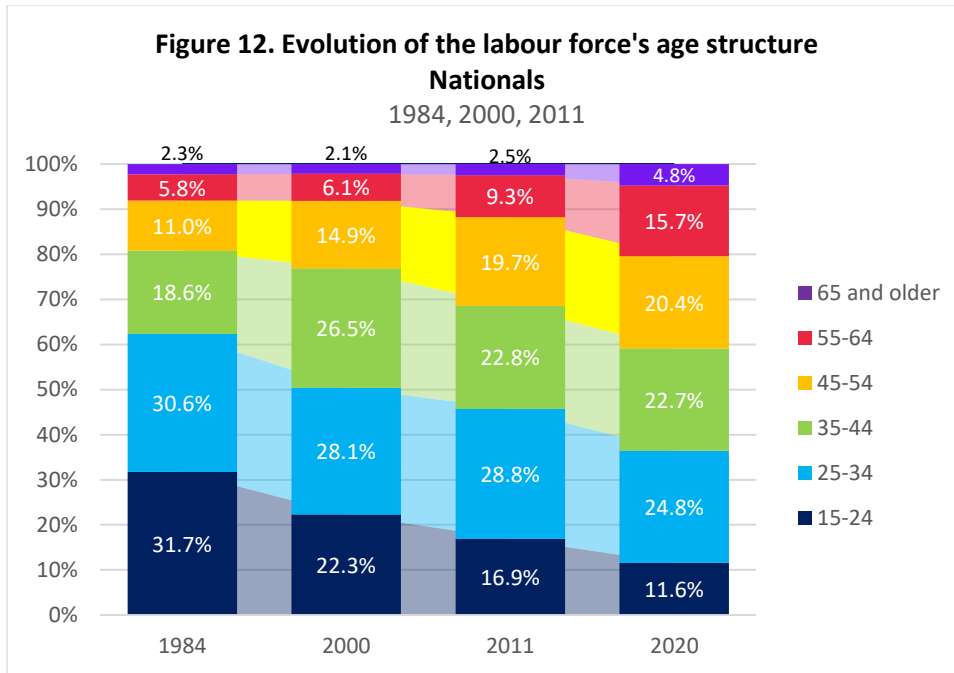


**Figure 12. Evolution of the labour force's age structure**
**Nationals**
1984, 2000, 2011

* Data for 2020 is based on INEC, ECE and represents an average of 2019 and the first quarter of 2020.
*Source. Own elaboration based on data from INEC (1984, 2000, 2011 and 2020).*

Among migrants, the 45 to 54 and 55 to 64-year age groups represent substantially smaller shares in the labor force. In 2020, 76.9% of all migrants were aged between 25 and 54 years, compared to 67.9% of nationals.
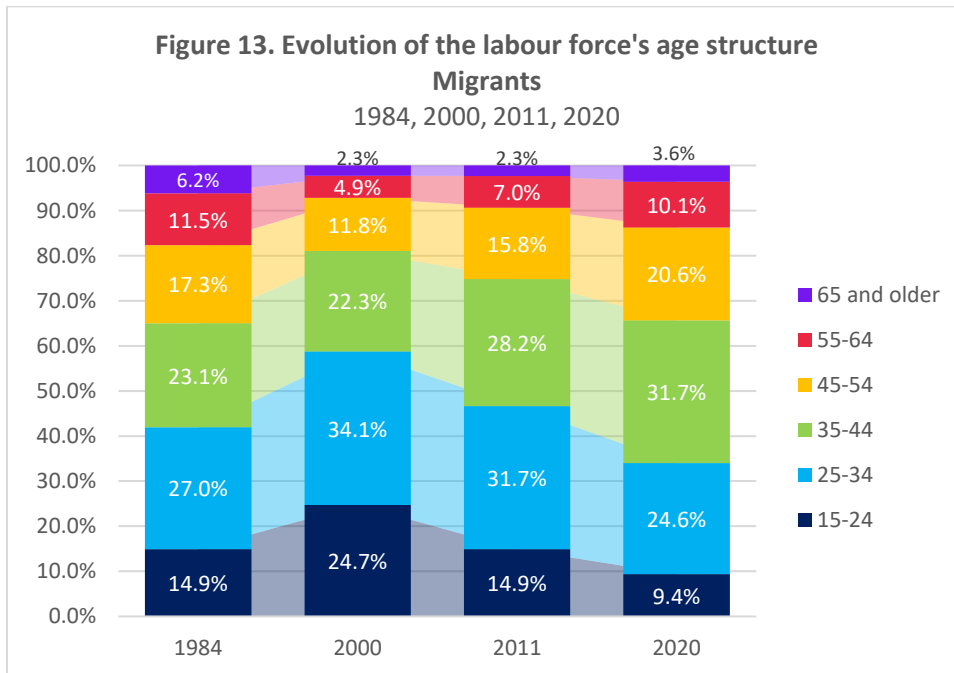


**Figure 13. Evolution of the labour force's age structure**
**Migrants**
1984, 2000, 2011, 2020

* Data for 2020 is based on INEC, ECE and represents an average of 2019 and the first quarter of 2020.
*Source. Own elaboration based on data from INEC (1984, 2000, 2011 and 2020).*

Figure 14 clarifies this comparison of age structure between nationals and migrants for 2020, clearly showing the different age structures between nationals and migrants.

**Figure 14. Age structure comparison: nationals vs. migrants**
2020*



* Data for 2020 is based on INEC, ECE and represents an average of 2019 and the first quarter of 2020.
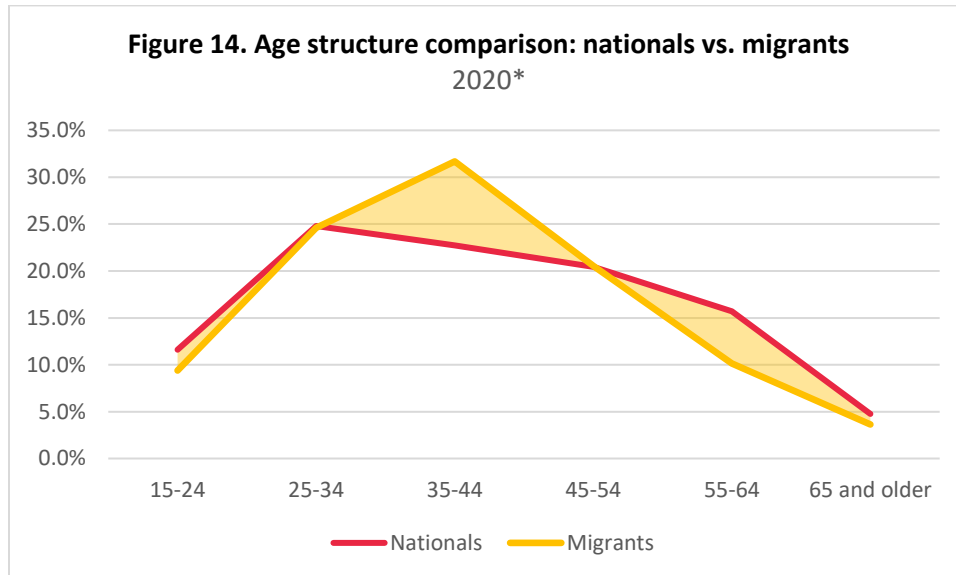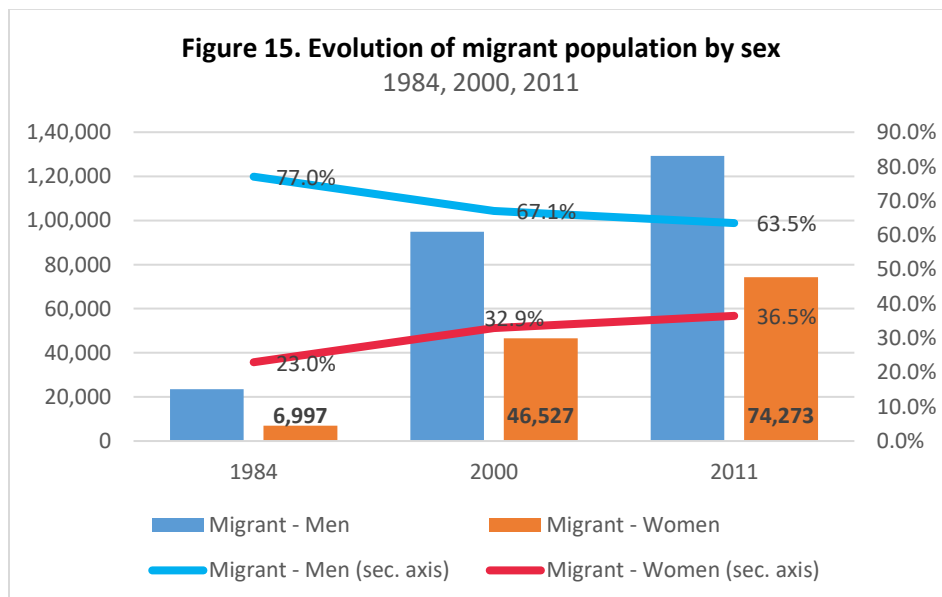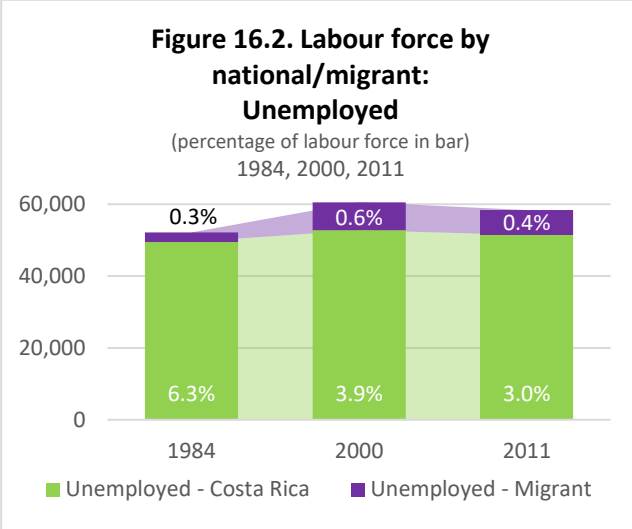*Source. Own elaboration based on data from INEC (1984, 2000, 2011 and 2020)*

Over the years, the incidence of women in the migrant population has increased. This has a lot to do with the decline of real household income in the 1980s in Costa Rica, the changing family structures in most of Latin America (Arriagada and Aranda, 2004) and the subsequent necessity for women to join the labor force in search of paid wage. As such, migrant women's incidence in the Costa Rican labor force also increased. Figure 15 shows how the migrant women in working ages increased from 6,997 in 1984 to 74,273 in 2011, representing 36.5% of the total migrant labor force.

**Figure 15. Evolution of migrant population by sex**
1984, 2000, 2011



*Source. Own elaboration based on data from INEC (1984, 2000 and 2011).*

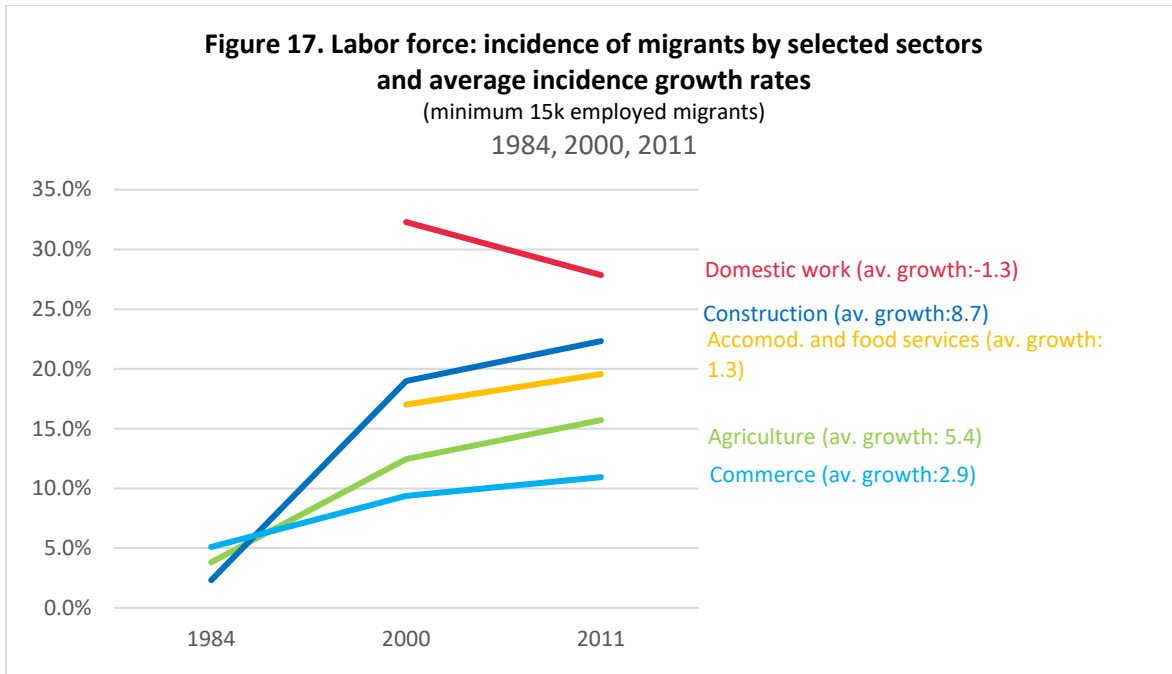Despite the productive age structure of the migrant population, and their willingness to find work in economic sectors with labor demand such as agriculture and construction, historically unemployment rates among migrants have been slightly higher than among nationals. In 1984, for example, nationals' unemployment rate was 6.6%, compared to 7.9% among migrants. Still in 2000, migrants had a 0.8 percentage points higher unemployment rate (5.2% versus 4.4% among nationals). However, comparing Costa Rican nationals and Nicaraguan migrants for more recent years based on the ECE (INEC, 2010-2020), the Nicaraguan migrant unemployment rate seems to be lower than that among nationals, albeit much more linked to seasonality, as is to be expected given their high incidence in the agriculture sector. In the total unemployed population, however, migrants make up 11-12%, like their incidence in the labor force.



**Figure 16.1. Unemployment rates among Costa Rican nationals and Nicaraguan migrants** 2010-2020.

**Figure 16.2. Labour force by national/migrant: Unemployed** (percentage of labour force in bar) 1984, 2000, 2011
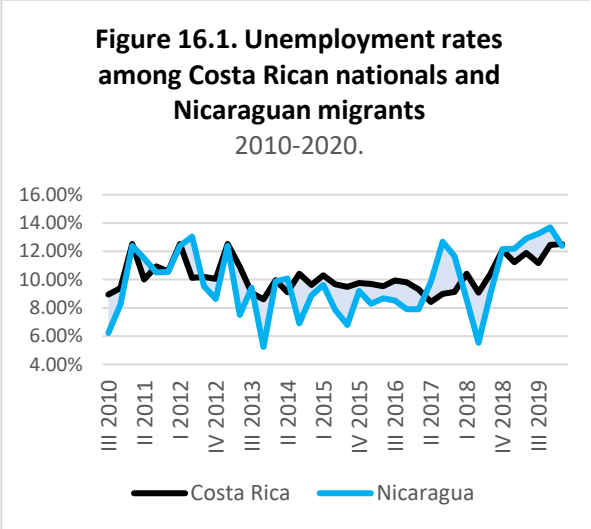
*Source. Own elaboration based on data from INEC (1984, 2000 and 2011)*

As the academic literature has established, migrants' incidence has been historically highest in domestic work (although slowly declining), construction and agriculture. Figure 17 shows the evolution of their incidence in selected sectors between 1984 and 2011. The selection criteria used was that migrant incidence was at least 5% and the sector employed at least 15,000 migrants in 2011. Save for domestic work, migrant incidence rose between 1984 and 2011 for the selected sectors.

**Figure 17. Labor force: incidence of migrants by selected sectors and average incidence growth rates**
(minimum 15k employed migrants)
1984, 2000, 2011

Domestic work (av. growth:-1.3)
Construction (av. growth:8.7)
Accomod. and food services (av. growth: 1.3)
Agriculture (av. growth: 5.4)
Commerce (av. growth:2.9)

*Source. Own elaboration based on data from INEC (1984, 2000 and 2011)*

The trendlines presented in Figures 18.1 to 18.6 seem to show that there is no substantial change in the incidence of migrants in different sectors where their incidence is largest.

**Figures 18.1 through 18.6. Migrant incidence in selected sectors. 2010-2020.**

Selection criteria: 2020: Must have > 50,000 total employment, and migrant incidence >10%
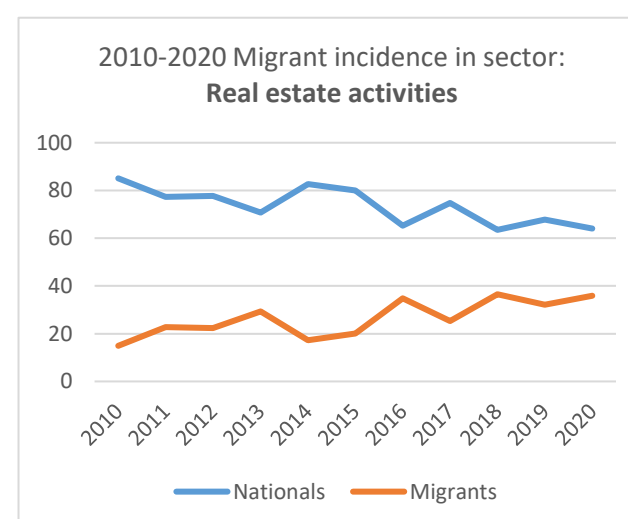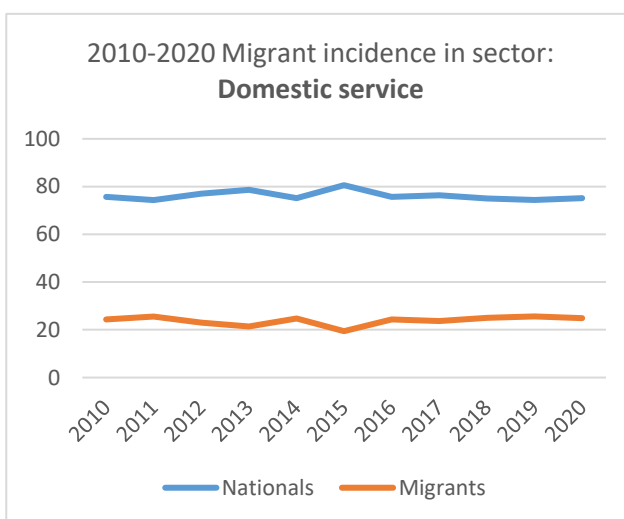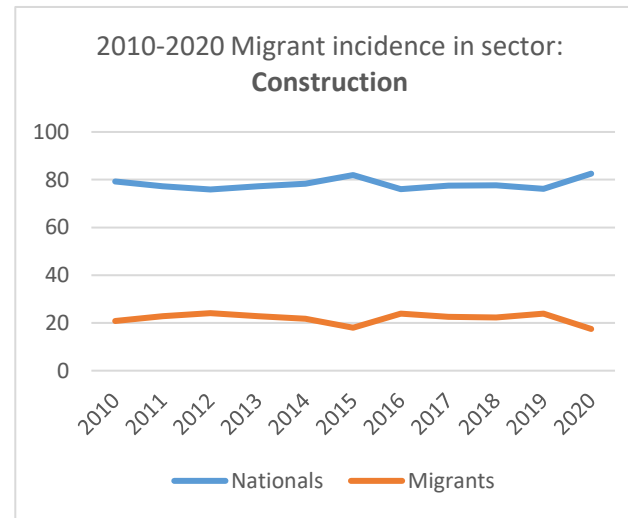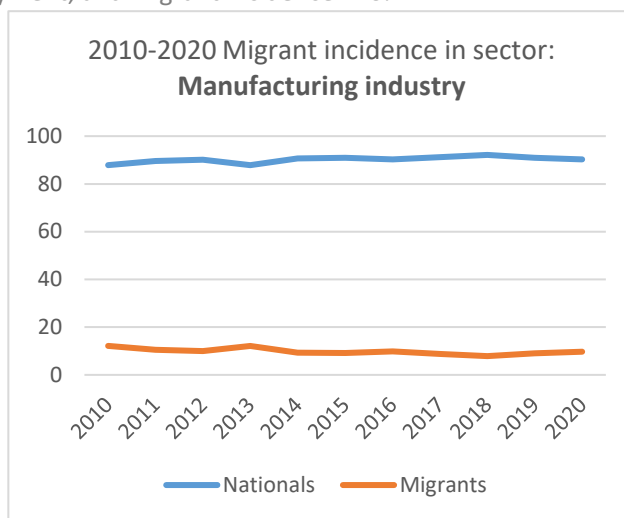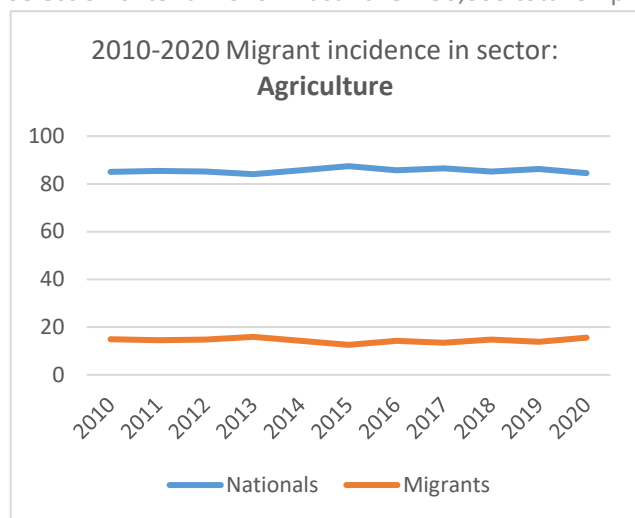


*The only exception to the ">50,000 total employment" criteria, as this sector employs 23,000 people total. However, given the migrant incidence, it was considered interesting to include in this selection.

*Source. Own elaboration based on data from INEC (2010-2020).*

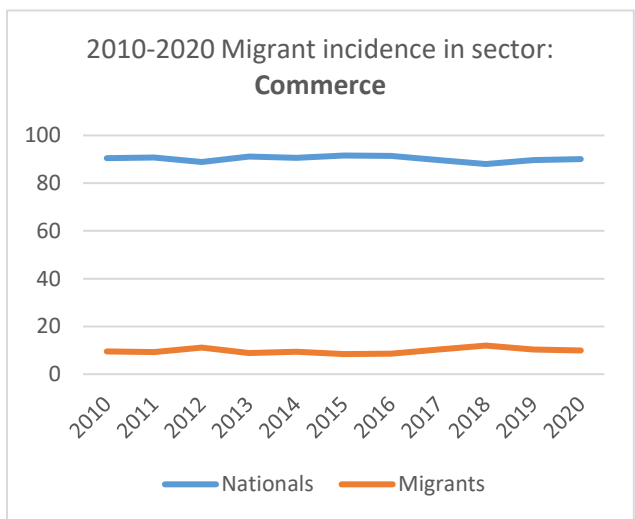There was relative consensus among interviewees that the labor market's dependence on migrant labor is not expected to change substantially, even though for specific sectors the economic effects during and in the aftermath of the Covid-19 pandemic might temporarily lower demand (personal communications, 2020). As such, labor demand is considered less elastic in agriculture than in construction, for example. The current lockdown measures blatantly expose the unmet labor demand, which is normally covered by migrant workers, and now to a large extent left vacant. For the 2020 coffee harvest, the Coffee Institute of Costa Rica *Icafé* projected the sector needs 70,000 coffee pickers, reaching out to the national population to fill this demand. However, their call was largely lef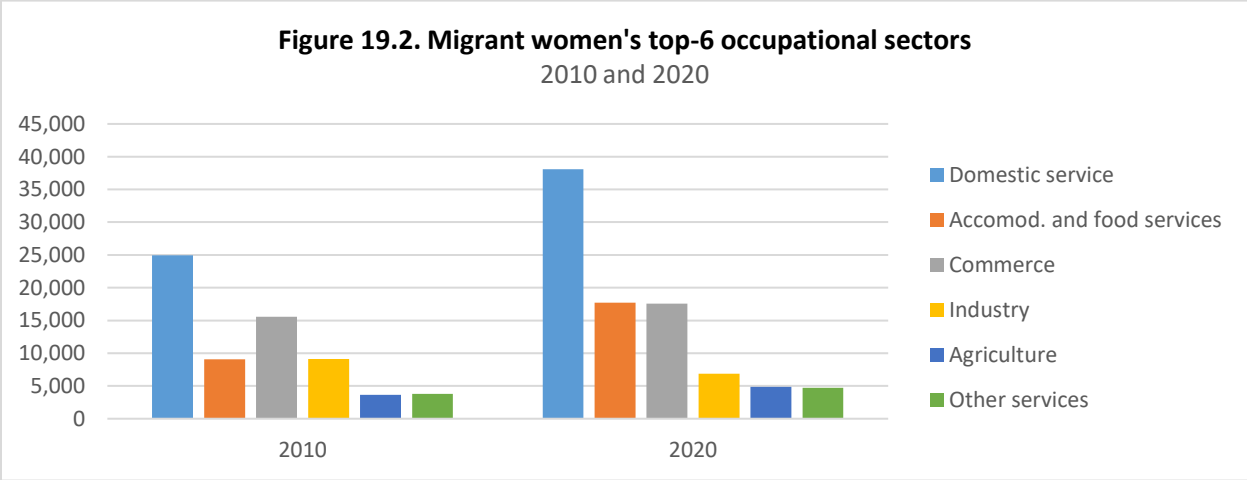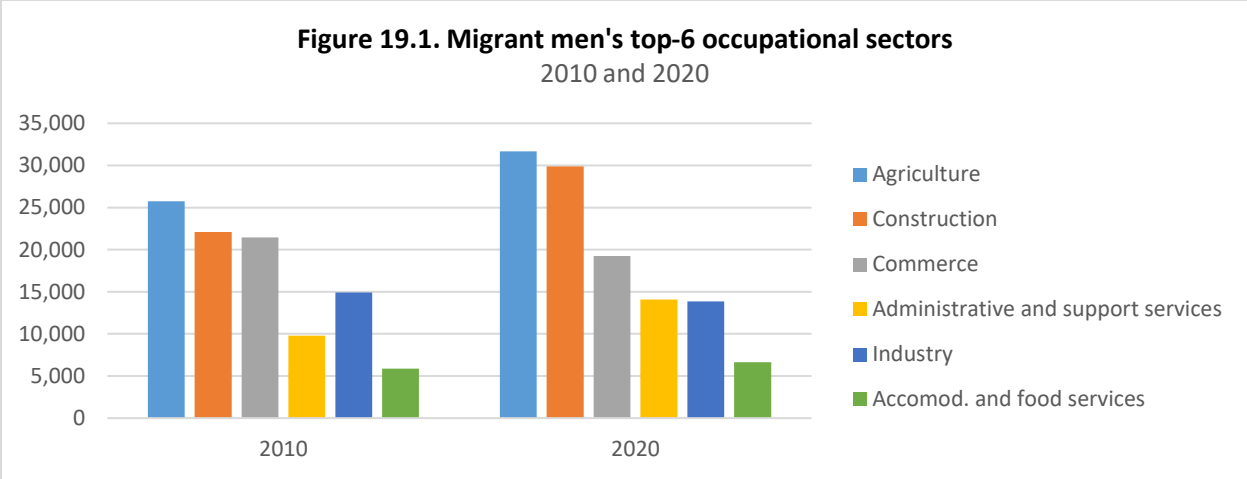t unanswered (Garza, July 2020; Umaña, August 2020), after which in the following months the government authorized the entrance of migrant workers for harvest seasons (Gudiño, 2020; Umaña, 2020).

In contrast, labor demand in construction tends to be more dynamic and dependent on the conjunctural changes that may occur. A representative of this sector (personal communication, 2020) explained that "there are peaks where more personnel are required, and other moments in which personnel already hired are released due to lack of work in the country". As such, migrant labor ensures labor market flexibility. He projected that the Covid-19 situation would temporarily decrease demand for migrant labor substantially, but in the longer run expects it to recover to current levels, although he does not foresee a growth in their incidence.

Overall, migrant labor demand was considered to have grown substantially over the past few decades but seems to have stabilized. If anything, some interviewees suggested that in the longer run it might slightly decrease, as processes of automatization, especially in agriculture, could displace some of the current manual jobs. In contrast, the large availability of migrant workers might also slow the process of automatization or mechanization. None of the current agricultural policies in Costa Rica currently seem to be betting on the path of automatization (SEPSA, 2016; MAG, 2010). Also, politically (or academically for that matter) it seems there is currently not a lot of interest for this issue. As such, the future will have to show how these dynamics play out.

Moreover, an analysis of employment in occupational sectors by sex, shows that the migrant population, both men and women, tend to engage in low-skilled activities. Figures 19.1 and 19.2 show the top six occupational sectors for men and women. Agriculture and construction employ most migrant men, accounting for 20.8% and 19.7% of employment. Commerce employs 12.7% while administrative and support services, and industry employ just over 9% of all employed migrant men, each. In contrast, among migrant women, the domestic service sector continues to be, by far, the most important sector despite a recent drop in relative importance. In fact, this sector alone employed 35% of all migrant women in 2020. Following at a distance, accommodation and food services, and commerce employed just over 16% of all migrant women each.

**Figure 19.1. Migrant men's top-6 occupational sectors**
2010 and 2020



Legend:
- Agriculture
- Construction
- Commerce
- Administrative and support services
- Industry
- Accomod. and food services

**Figure 19.2. Migrant women's top-6 occupational sectors**
2010 and 2020



Legend:
- Domestic service
- Accomod. and food services
- Commerce
- Industry
- Agriculture
- Other services

*2010 considers an average of the 3rd and 4th quarters of 2010, while 2020 is composed of the 3rd and 4th quarter of 2019 and the 1st quarter of 2020.
*Source. Own elaboration based on data from INEC (2010-2020).*

Migrants, men and women alike, are predominantly occupied in elementary occupations. Figure 20 shows absolute numbers on the primary axis with percentages of the total migrant labor force in the bars. In 2011, 35% of all employed migrants were in elementary occupations, and another 20.1% was not specified, possibly because of the informal nature of their occupations. More importantly, over the years these elementary occupations take up a larger share of total employment among migrants, in detriment of other more skilled occupations, such as farmers and skilled farm workers. Notably, a stable 11.6% of migrants is employed as directors and managers.

**Figure 20. Labour force: migrants by occupational groups**
1984, 2000, 2011
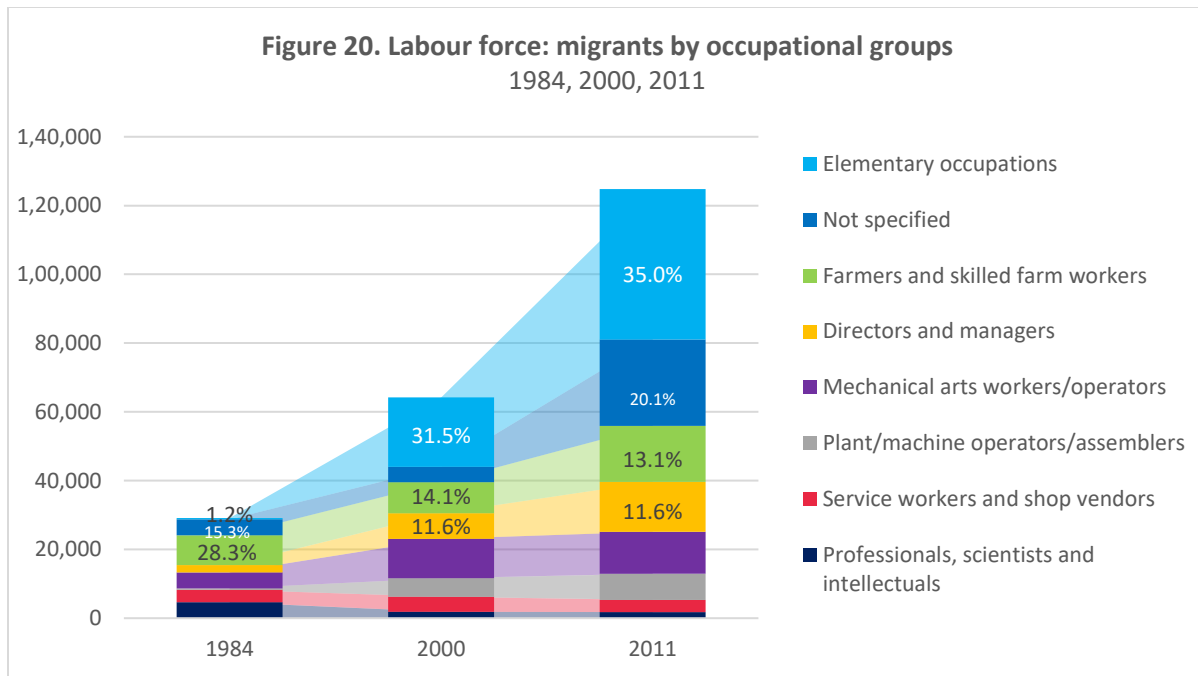
*Source. Own elaboration based on data from INEC (1984, 2000 and 2011)*

What becomes clear when looking at the skill level of occupations by nationality, is that the labor market is segmented by nationality. A Nicaraguan migrant is much less likely to have a high skilled job than migrants from other nationalities. Figure 21 shows different nationalities by skill level: high, medium of low skilled. While 21.6% and 55.8% of the national labor force is employed in high and medium skilled jobs, respectively, among Nicaraguan migrants less than 5% have high skilled jobs. The skill level of employment improves substantially for other groups of migrants, for example from Colombia or the United States. The sample sizes for these nationalities, however, are relatively low in the ECE which help explain erratic yearly variations. Nevertheless, they are more likely to hold medium and high skilled jobs than Nicaraguan migrants.

**Figure 21. Employment of selected nationalities, by skill level, 2010 and 2020.**

*In absolute numbers, with % of total for that year in column*
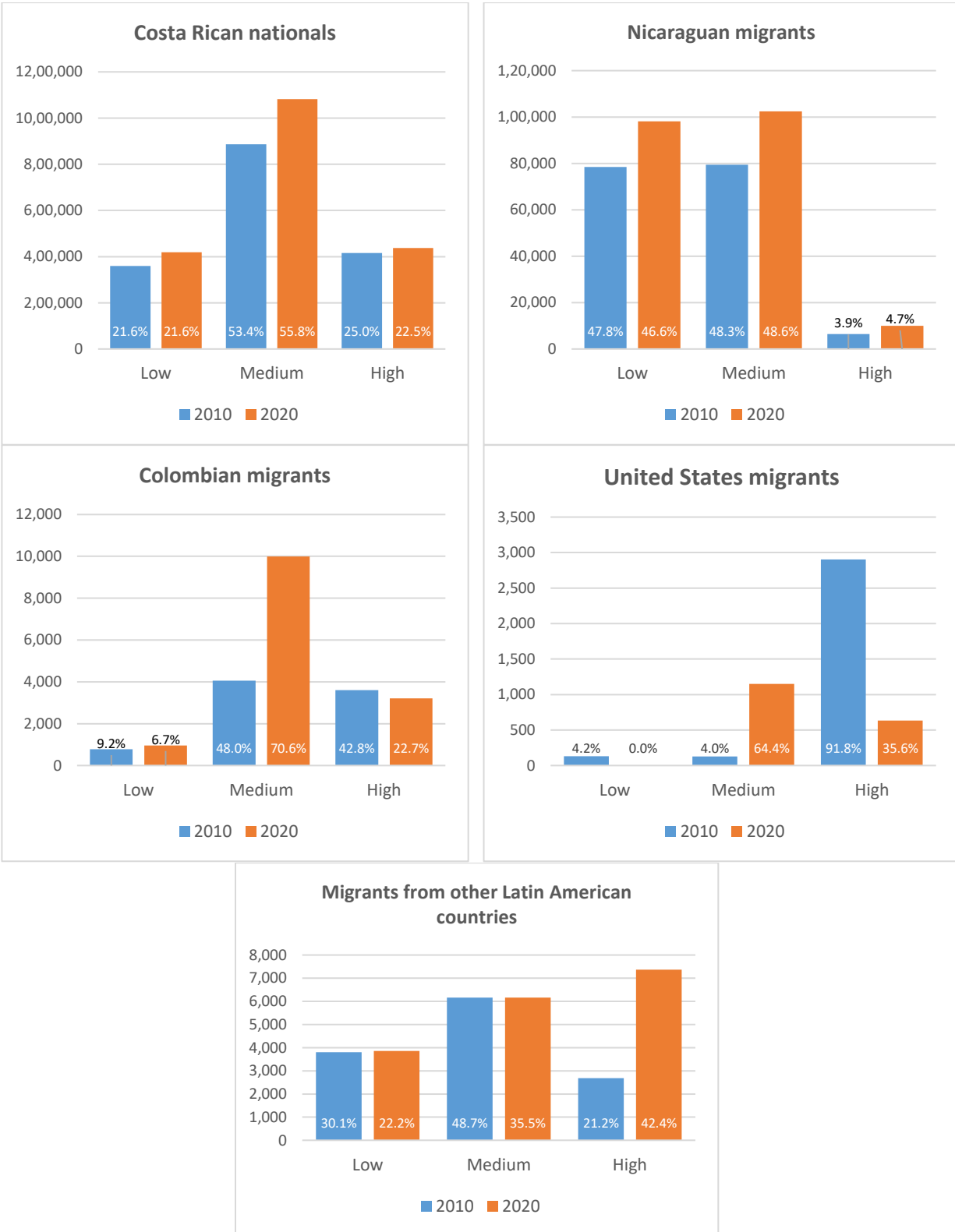
*Source. Own elaboration based on data from INEC (2010-2020).*

While the general pattern of the skill level of employment is quite similar for migrant men and women, there are some important gender nuances to be made. High skilled employment was substantially higher among men than women in 2010 (13.8 versus 8.1%, respectively), but the gap has closed somewhat in 2020 from 5.7 to 1.9 percentage points. Among men, low skilled work has gained importance in the last decade, growing from 38.3% to 40.6% of total migrant male employment. Among women, low skilled work already represented a larger share of total employment than among men in 2010 (43.9%), but it has not grown as fast in the last 10 years (it grew only 0.5 percentage points to 44.4%). In all, in terms of the skill level of employment, this shows some evidence of gender gaps closing somewhat. However, it seems to suggest a "race to the bottom". Even though few women find more high-skilled jobs, in terms of the skill level of migrant employment, the gap between men and women is closing especially because men are finding informal work in even larger numbers than they were doing before.
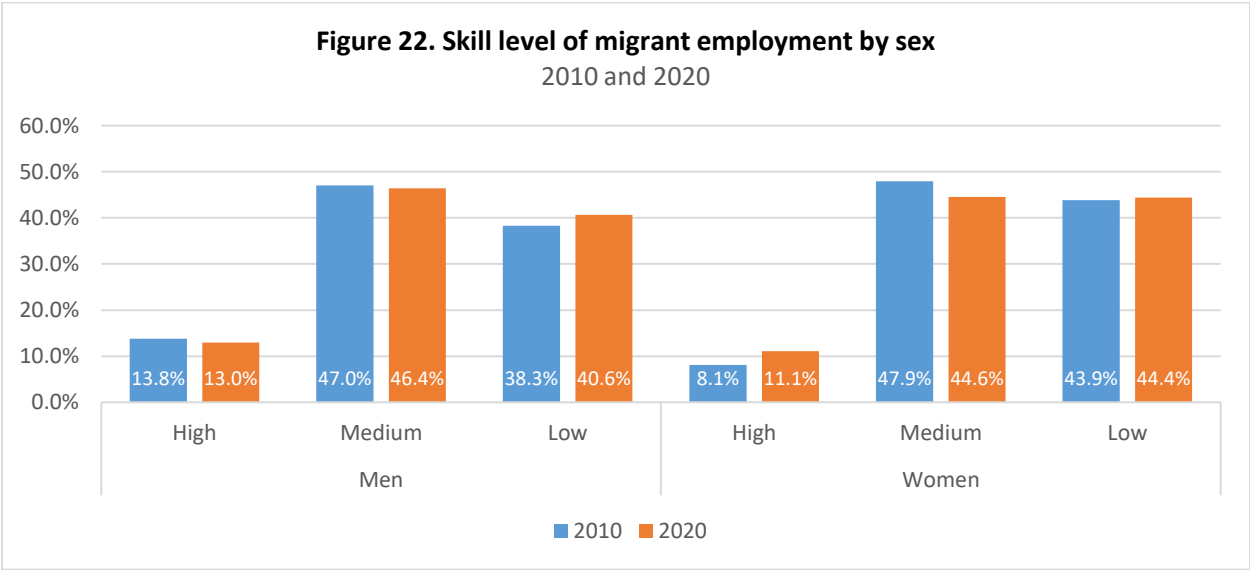


**Figure 22. Skill level of migrant employment by sex**
2010 and 2020

*2010 considers an average of the 3rd and 4th quarters of 2010, while 2020 is composed of the 3rd and 4th quarter of 2019 and the 1st quarter of 2020.
*Source. Own elaboration based on data from INEC (2010-2020).*

This has much to do with the already discussed structural demand for labor in low-skilled sectors and the availability of a Nicaraguan labor force with relatively low levels of education as compared to nationals. Just under half of all Nicaraguan migrants has primary education or less, while three in every four Nicaraguan migrants has not finished secondary education. In comparison, more than a quarter of the national population has attended university.

**Figure 23. Education level of labor force of Costa Rican nationals and Nicaraguan migrants**
2010 and 2020



**Costa Rican nationals**

| | 2010 | 2020 |
|---|---|---|
| | 17.4% | 23.7% |
| | 7.5% | 5.1% |
| | 14.5% | 16.5% |
| | 22.6% | 23.3% |
| | 28.0% | 23.8% |
| | 8.6% | 6.6% |

**Nicaraguan migrants**

| | 2010 | 2020 |
|---|---|---|
| | 1.1% | 7.5% |
| | 2.8% | 2.0% |
| | 17.5% | 13.9% |
| | 24.2% | 29.5% |
| | 26.3% | 26.6% |
| | 20.9% | 13.1% |
| | 7.1% | 7.3% |

■ No education   ▨ Primary incomplete
■ Primary complete   ▨ Secondary incomplete
■ Secondary complete   ■ University, without title
■ University, with title
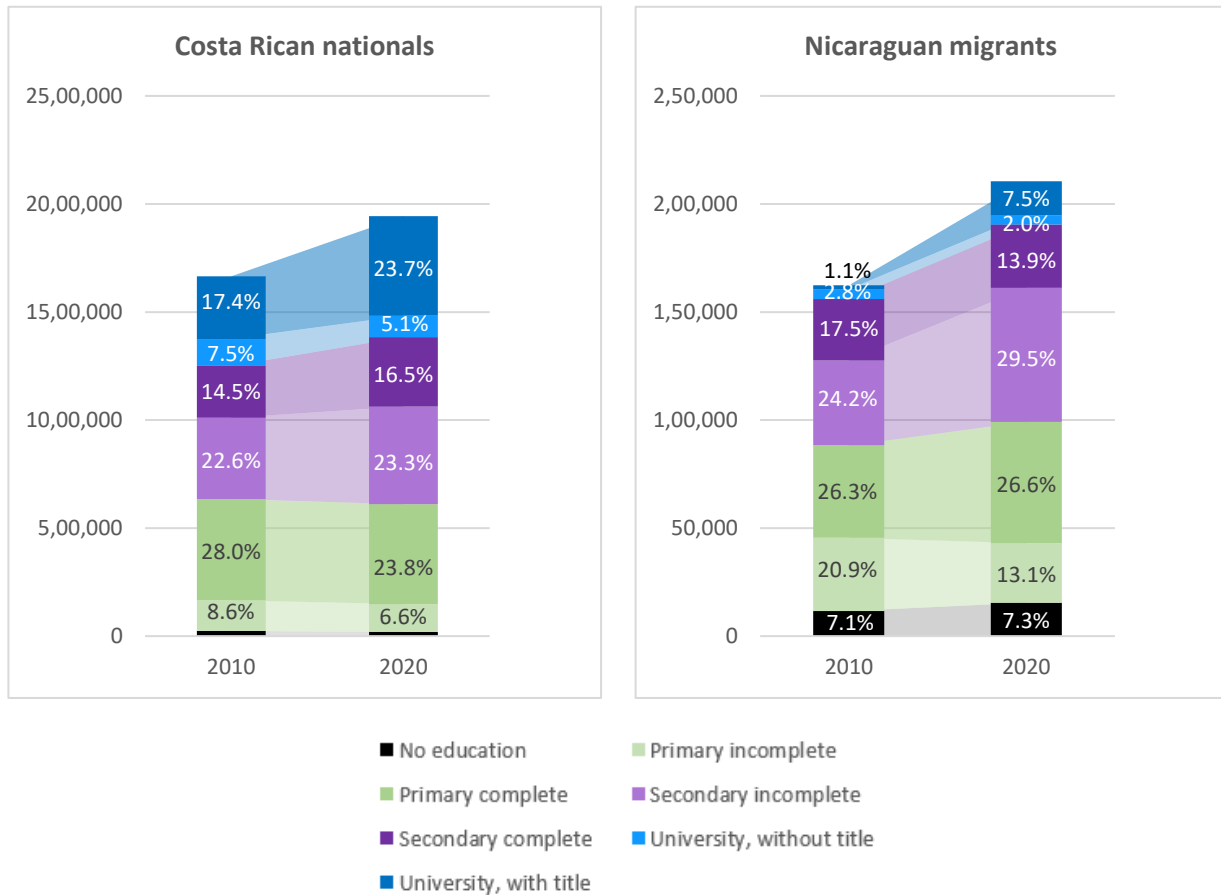
*Source. Own elaboration based on data from INEC (2010-2020).*

Education levels do not seem to differ substantially between migrant men and women, as shown in Figure 24, although slightly higher for women. It is more common among men to have not finished primary school (20.1% vs. 16.5% for women), and while the same proportion of men and women have accessed secondary education, it is slightly more common for women to finish secondary school than men (16.8% versus 14.6% for men). Finally, slightly more women have accessed university (20.1%) than men (18.3%).

**Figure 24. Migrants' education level by sex**
2020

| | Men | Women |
|---|---|---|
| No education | 6.8% | 4.9% |
| Primary incomlete | 13.3% | 11.6% |
| Primary complete | 20.1% | 22.0% |
| Secondary incomplete | 26.8% | 24.3% |
| Secondary complete | 14.6% | 16.8% |
| University, without title | 2.6% | 4.6% |
| University, with title | 15.7% | 15.5% |
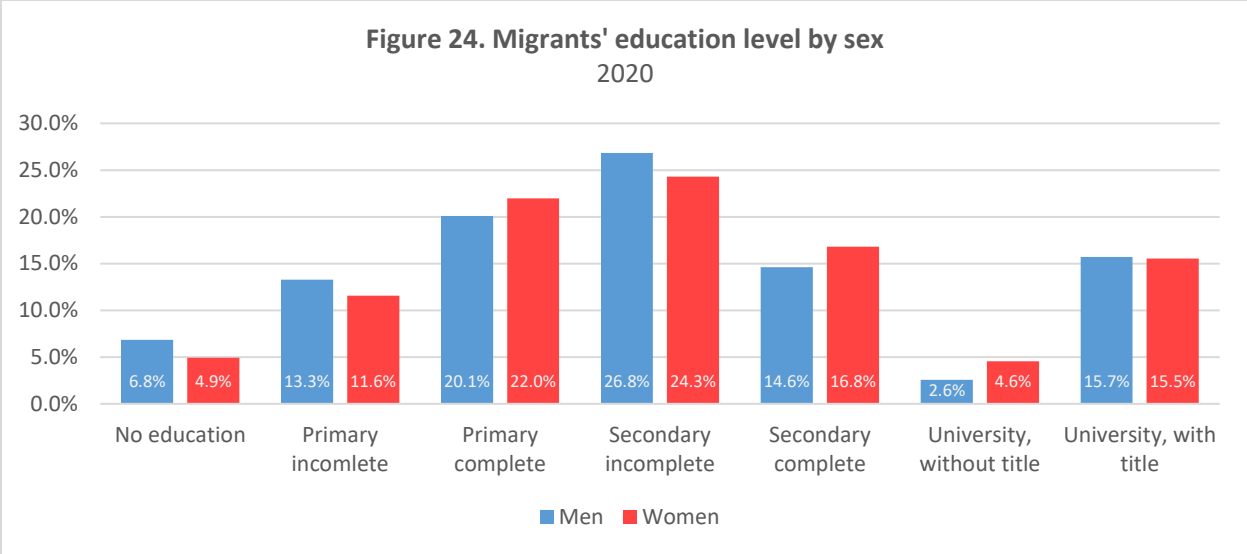
*Source. Own elaboration based on data from INEC (2020).*

In the interviews, when asked about the recognition of skills, representatives of the construction and domestic work sectors (personal communications, 2020) indicated that the country had "no programs that help acquire, train and certify certain skills and knowledge" required for occupations in the sectors that usually hire foreign labor. This creates a problem in the hiring process. It also shows the lack of institutional procedures, or their disproportionate complexity for relatively simple situations. A good example is the construction sectors where good and specialized carpenters or bricklayers are required, but there is no process allows for the emission of certificates that prove these skills. Instead, what is done to test such skills is "a quick test on the work site", which determines whether a person will be hired. Or, in sectors where that is impossible, like in domestic work, jobs related to the care for older adults or children, are offered to people who are not necessarily trained for the tasks, not do they necessarily have the proven skills to undertake them.

Interviewees, therefore, mentioned the need for the state, through its technical training institutes (such as the National Institute for Learning - INA), and economic sectors to work together to create agreements that permit more efficient and quicker recognition of skills. Currently, a Labor Migration Specialist interviewed (personal communication, 2020) argued that only a small proportion of all migrants "are asked for more evidence of their abilities, those in other sectors such as tourism or commerce".

# 4. PROJECTIONS OF MIGRANT LABOR DEMAND, AND SECTORAL AND OCCUPATIONAL STRUCTURE AT THE 2030 HORIZON

Before delving into projections of migrant labor demand at the 2030 horizon, this section briefly highlights the almost complete lack of prospective studies in Costa Rica. In contrast to countries like Panama (ILO, 2014c), there is a gap in prospective studies of the migrant workforce in Costa Rica. There is a long trajectory of studies that discuss migrant's presence and working conditions in segmented labor markets (Mora and Guzmán, 2018; Morales, 2018, OECD and ILO, 2018, Gatica, 2017; LMO, 2011). One of the few studies that looks specifically at the demand for migrant labor in a specific sector is the Voorend and Robles (2011) analysis of the construction sector's demand in the years leading up to the financial crisis. There was high labor demand in an extremely dynamic construction sector, but by the time the study was issued and published, the financial crisis of 2008 had caused one of the construction sector's largest contractions of the last few decades. In any case, the study was not strictly prospective, but aimed to estimate the unmet demand for labor at a certain point in time.

There are periodical studies carried out by the Department of Labor Migrations of the Ministry of Labor and Social Security (MTSS, 2018a; 2018b; 2019b). These studies discuss the state of the labor market and provide loose estimates of the demand for migrant labor. However, these studies are neither very technical nor very elaborate and are concerned with somewhat political objectives of ensuring complementarity between the migrant and national workforce. In a technical report by the top-3 public universities, these studies by the MTSS were catalogued as based on "fuzzy and unclear characteristics" (UCR, UNA, UNED, 2019: 2).

Likewise, instances such as the National Construction Chamber, also carry out periodic reflections on the state of the labor market (Tapia, 2019) and economic monthly reports (CCC, 2019; 2020). Although such reports provide elements that are useful for prospective studies, they provide no direct analysis of migrant labor demand in the future.

Finally, the UCR, UNA and UNED (2019) proposal is possibly the closest thing to a prospective study available in Costa Rica. This initiative presents a technical proposal for the projection of work permits to be granted to migrants in the following year, based on official projections of GDP growth, data on the incidence of migrants in key sectors, estimates of elasticity of sectoral demand and data on unemployment. The report highlights the fact that this type of studies is necessary, as they can promote complementarity between the foreign and national workforce in the Costa Rican economy and serve as a tool for national policy. However, this proposal is still in its initial stages, and when presented to different public institutions and international agencies, it has not yet been picked up for further development. All in all, in Costa Rica there is a notable gap in prospective studies, especially considering the country is such an important destination for migration.

This was confirmed in the interviews conducted. Generally, companies, and employers struggle to estimate their future demand for labor. Although certain sectors like coffee can more easily project the number of required workers for the harvest season, other sectors face high work peaks related to seasonality or fluctuating demand for their products or services. In interviews with specialists of these labour sectors, (personal communications, 2020) they explained that some crops operate under periodic harvest cycles require more fluctuating hiring of personnel (personal communication, 2020). Similarly, in construction, a representative of the National Chamber of

Construction, explained that even projects that are about to start, "may be delayed more than expected due to the procedures of obtaining permits" (Personal communication, 2020).

These sectorial particularities combined with the general lack of prospective studies make hiring practices more ad-hoc in function of immediate labor demand. This also makes it difficult to obtain precise estimates of migrant incidence in specific sectors. Anecdotal evidence suggests that on farms in certain sectors, like yuca or sugar cane, migrant incidence can be as high as 80% of workers (Voorend, Robles and Vargas, 2013). The Costa Rican Coffee Institute (ICAFE), based on own surveys among its affiliated farms, estimates about 60% of its workers to be migrant (personal communications, 2020). Likewise, in domestic work, a participation of 40% of the migrant population in these positions is estimated, mostly of Nicaraguan origin (personal communication, 2020).

## 4.1.   Inputs for projections from the literature

For the projections presented in this report, it should be noted from the start that the global crisis induced by the Covid-19 pandemic has left a highly uncertain situation in which projections for future labor demand, and economic performance more generally are not easy to make. That being said, the literature provides some useful first reflections, which underscore the information from interviews. First, before the Covid-19 crisis, several studies already suggested that the flows of labor migrants seem to be stabilizing (OIT, 2016; MTSS, 2013)[15]. Second, Demoscopia (2017) points out that the migrant (especially Nicaraguan) population living in Costa Rica perceives that employment opportunities in the country have decreased compared to previous years, especially for undocumented and irregular migrants. The labor market does not seem to be producing the same integration opportunities for this population (MTSS, 2013). Also, there is a large gap in wage incomes compared to national citizens (Morales, et. al, 2011).

Third, Baumeister et. al (2008) add to this the fact that "the opening of other migratory fronts at the Central American regional level should not be neglected, which have led to a displacement of migrant labor towards countries such as El Salvador, where the integration situation, the migratory procedures and the dollarized economy, become attractive factors of the migrant labor force" (p. 93, Own translation).

Fourth, the recent migration flows that have been substantial have been related to political crises such as Nicaragua, and Venezuela. These are expected to continue to be important, but create more pressure on the national labor market, which "already presents a high level of unemployment, product of the disengagement between economic growth and job growth, as well as structural problems that limit the growth of the economy, including the high and growing fiscal deficit (Morales, 2018: 71. Own translation).

Fifth, different studies focused on domestic work and the feminization of the labor market seem to suggest that female labor insertion, both in lower skilled and higher skilled jobs, will continue to rise. This could lead to higher demand for Nicaraguan migrant women in the coming years to

---

[15] However, there is the limitation that the last population census in Costa Rica was in the year 2011 and even though there are other instruments like the ENAHO, and the ECE, these instruments are less effective in capturing information about specific populational groups in the country, like migrants.

work in paid domestic work and care (Bonnie, 2010; Martinez, Mora y Voorend, 2009; Lerussi, 2007).

Finally, the Covid-19 crisis may make it considerably more difficult for migrants to integrate in Costa Rican society, as it makes it considerably more difficult to make solid projections. It is still unclear what this situation would entail for migration demand and supply. On the one hand, sectors like construction will be hard hit by the economic crisis and demand less migrant labor, while other sectors such as agriculture have a structural demand that is much less elastic. On the other hand, the effects of the crisis will hit many households in Nicaragua hard, making the necessity to migrate more stringent. This could cause higher supply of migrant labor, but overall lower demand, which may put downward pressure on wages.

At the same time, not only do the immediate limits on mobility make it harder to reach the country, but in the near future, the burgeoning analyses on the crisis' effect on migration policy suggest that stricter measures are likely making regular integration more complicated (Voorend, Alvarado and Marin, 2020). This would foment more informality and irregular labor relations.

### 4.2.    Inputs for projections from interviews

For a representative of the IOM (personal communication, 2020), in terms of future projections in light of the Covid-19 pandemic, "much will depend on the lifting of the closing of borders and the coordination of the health measures and protocols of the Ministry of Health". He considers that a "key test" to see what the behavior will be in this atypical situation will be the coffee harvest of 2020, where the "capacities for coordinated work" between the business sector and public institutions will be tested.

The medium- and long run impacts of the pandemic on labor migration are still unclear, but the more immediate and observable effects relate to the restrictions on cross-border labor dynamics (personal communication, 2020). Faced with the sudden decrease in migrant labor supply, national bodies such as the Coffee Institute have sought to call for nationals to pick coffee. Such measures are a response to "meet the demand for labor that at this time cannot be supplied by migrants, due to the closing of borders" (personal communication, 2020), but at the same time respond to the "high level of unemployment that the country is experiencing due to the pandemic" (idem). This way, the projected shortage of 70,000 workers for this year's coffee harvest is being tried to be covered by national workers and the Ngomé-Buglé population, who carry Costa Rican passports. However, the effectiveness of such initiatives is questioned (personal communication, 2020). Generally, interviewees do not expect national workers to work in these sectors in large numbers. Even if they respond to the call now, they are expected to find it difficult to stay on for longer than "a few days or weeks" (personal communication, 2020).

Despite uncertainty about meeting labor demand in sectors such as construction and agriculture during and after the Covid-19 pandemic, it was mentioned that there were "problems and decreases in production even before the pandemic" (personal communications, 2020). The construction sector has perceived a decrease in activity, leading to an estimated decrease of "around 15 thousand workers" (personal communication, 2020). Similarly, in agriculture, it is expected that employment will not show substantial increase, because the arable land is limited and because environmental policy places limits on the expansion of the agricultural frontier, making "it difficult to develop or expand new plantations", and faced with difficulties of meeting demand in harvesting

seasons, agricultural sectors are pushed to fined technology that can automatize the process. In all, from the interviews a general perception prevailed that, if anything, migrant incidence in labor demand might be expected to stabilize or even drop in the future.

### 4.3. *Projections of migrant labor demand until 2030*

The first projection is the most general, presented below in Figure 25, contains the average projections for a pre-Covid19 situation and a post-Covid19 situation, with a 95% confidence interval. Table 1 in Appendix 2 contains the detailed projections that underlie Figure 25.

The data show a slow and steady projected increase of the number of migrant laborers needed for the Costa Rican economy, with quite a large range between the maximum and minimum scenario (corresponding to the confidence interval) and clear differences between the two scenarios regarding the Covid-19 situation. Figure 25 shows this same data in a more visual representation.

It is noteworthy that the initial drop in projected labor demand, between 2019 and 2020, is not related to the pandemic but, instead, is explained by the ARIMA models' behavior and the more erratic data in the years leading up to the Covid-19 crisis. Given the model is based on moving averages, this higher fluctuation in previous years is picked up and used in the model's projections. As such, the model replicates the 2016-2017 drop in migrant labor demand in the 2019-2020 projection. From there on, the model projections follow linear trends.

All things considered, in line with information from the literature and interviews[16], the projections seem to indicate that, pre-pandemic, there was going to be a stabilization in migrant incidence in the labor force. That is, growth of demand for migrant labor in the Costa Rican economy was expected to stabilize. However, the effects of the Covid-19 crisis are apparent in the substantial difference between the pre- and post- Covid-19 projection lines.

In fact, as shown in Figure 25, the projection in the Covid-19 scenario presumes that migrant labor demand only recovers to the 2010-2019 *average* of 223,600 employed migrants by 2023, and indicates that even in 2030, demand will not have recovered to the 2016, 2018 and 2019 levels. In fact, the projection for 2030 in the post-Covid19 scenario suggests that migrant labor demand is around 238,099 migrant jobs, which is still just under the level of the 2020 projection for the pre-Covid19 scenario (241,824 migrant jobs). As such, it may take the Costa Rican economy over a decade to reach pre-pandemic levels in terms of migrant labor demand.

---

16

**Figure 25. Projections of migrant labor demand until 2030, with and without Covid-19**

Post-Covid19 — Pre-Covid19 (no Covid19)
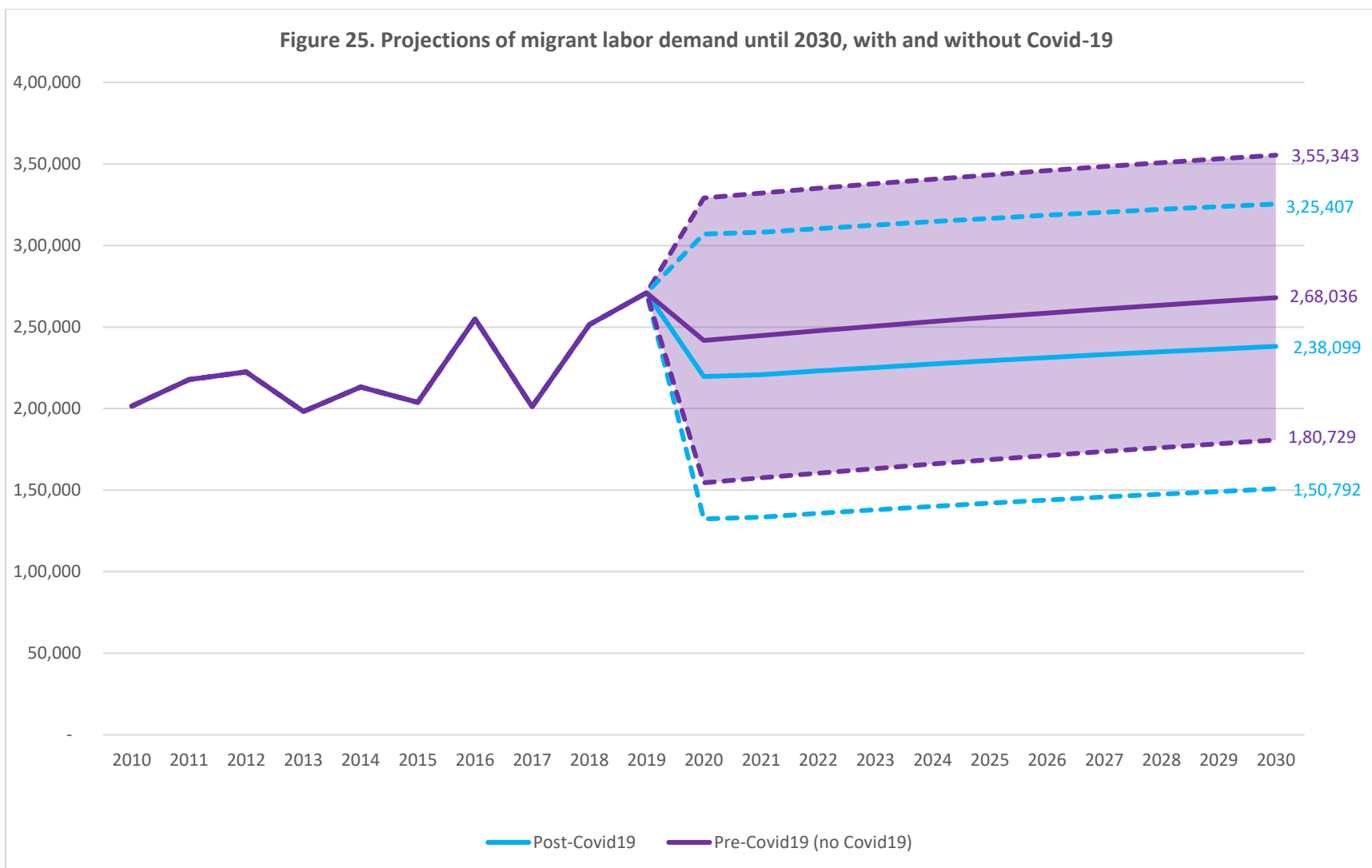
*Source. Own elaboration based on data from INEC (2010-2020) and BCCR (2020).*
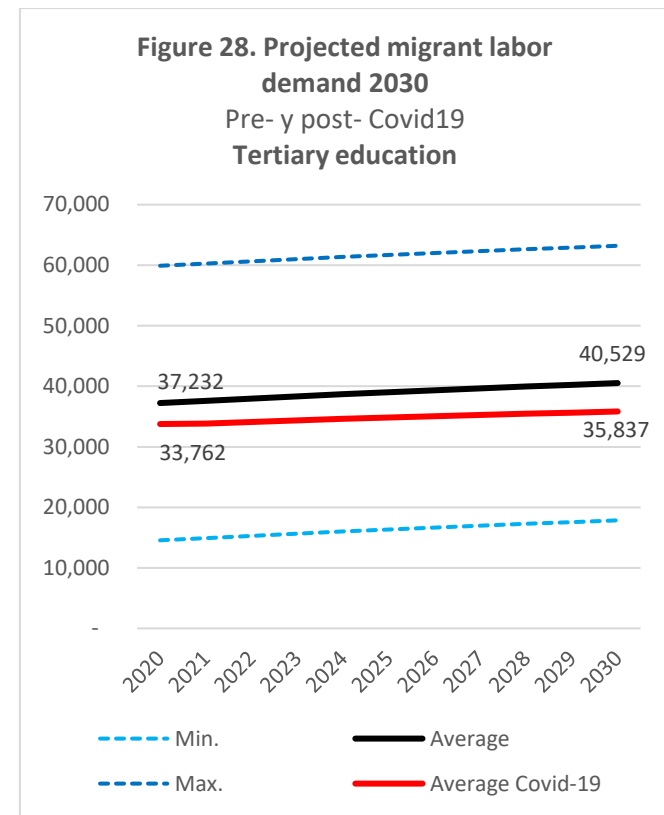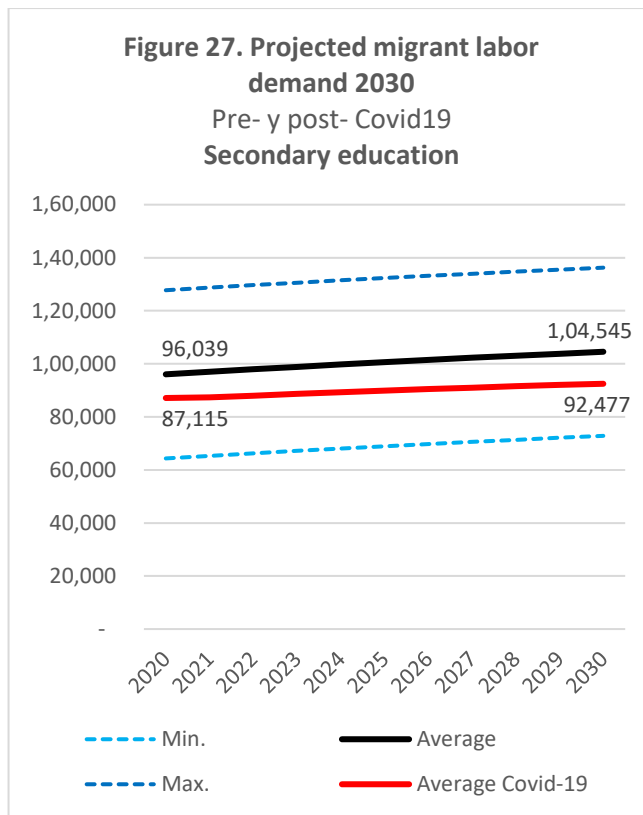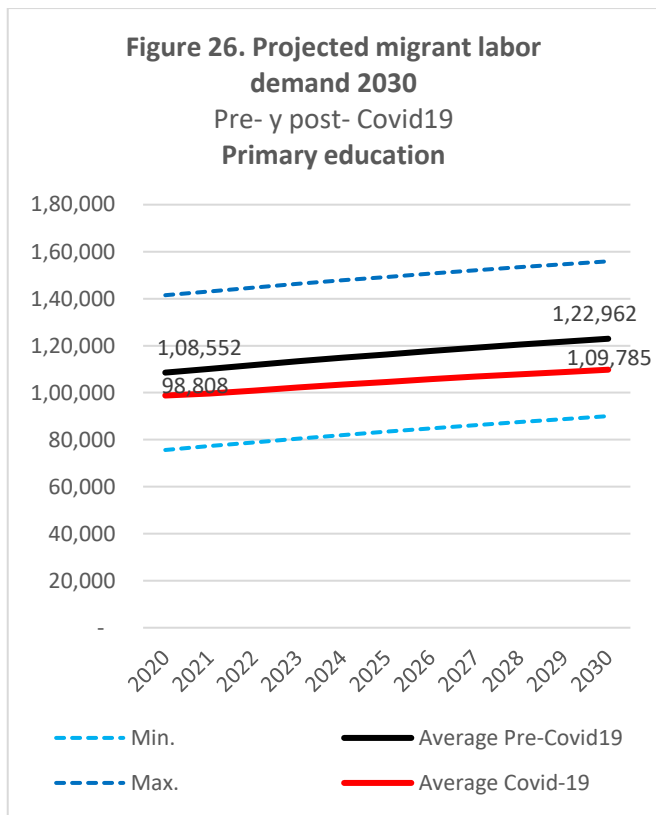
If education level is considered, the projections reinforce the previous sections regarding the type of low-skilled nature of migrant labor demand in Costa Rica. In Figures 26 through 28, projections are shown for three groups of migrants. First, migrants who either have no formal education, attended but dropped out of primary education and those who finished primary school. Second, migrants who attended and/or finished secondary school. Third, migrants who attended and/or obtained a university degree. The black lines show the average assuming no Covid-19 pandemic, with the dotted blue lines showing the minimum and maximum based on the confidence interval. The red lines show the Covid-19 scenario (for clarity's sake, no minimum and maximum are shown for this scenario).

Several things are noteworthy. First, while labor demand for secondary and tertiary schooled laborers grows by 8.9% in the pre-Covid19 scenario, and by about 6.1% in the post-Covid19 scenario, demand for low-skilled labor grows by 13.3% or 11.1%, depending on the scenario. Indeed, the Costa Rican economy is projected to incorporate only about 2-3,000 new migrants with university degrees over the next 10 years. In contrast, between 11,000 and 15,000 low skilled migrants are projected to be incorporated in the work force in the same period. For migrants with intermediate education levels the projections suggest between 5,000 and 8,500 new migrant jobs.

Second, related to the previous, and given the projections for the 2030 horizon the skill and sectorial composition of migrant labor demand is not expected to change dramatically. Instead, Costa Rica is expected to follow the general trend of the last decades, in which migrant labor is needed for niche sectors in low-skilled occupations. That is, migrant incidence in these sectors depends on the structural needs of certain sectors of the economy, such as agriculture, where nationals' general unwillingness to perform jobs in those labor markets will keep incentivizing migrant labor demand.

Third, at the same time, pre-pandemic this structural demand was not expected to grow significantly or exponentially in the coming decade but instead, both the input from interviews and secondary studies as well as the projections, point to a stabilization of migrant labor demand in the coming years. However, the Covid-19 crisis is expected to substantially decrease the demand for migrant labor in the short run, and the recovery to pre-Covid-19 levels will be relatively slow. The most likely explanation for this comes from declines of economic activity in certain sectors harder hit by the economic effects of the Covid-19 crisis, such as the construction sector. The longer the crisis continues, the larger the marginal effect on migrant labor demand.

**Figure 26. Projected migrant labor demand 2030**
Pre- y post- Covid19
**Primary education**

**Figure 27. Projected migrant labor demand 2030**
Pre- y post- Covid19
**Secondary education**

**Figure 28. Projected migrant labor demand 2030**
Pre- y post- Covid19
**Tertiary education**

*Source. Own elaboration based on data from INEC (2010-2020) and BCCR (2020).*

Figure 29 shows the projected growth in absolute numbers of total migrant employment between 2020 and 2030 by occupational sectors. For this, occupational sectors were selected in which at least 1,000 new migrants were projected to be employed in the coming 10 years, while other sectors were excluded from the figure for clarity's sake.



**Figure 29. Projected growth of migrant labor between 2020 and 2030, by selected occupational sectors and pre- and post-Covid19**
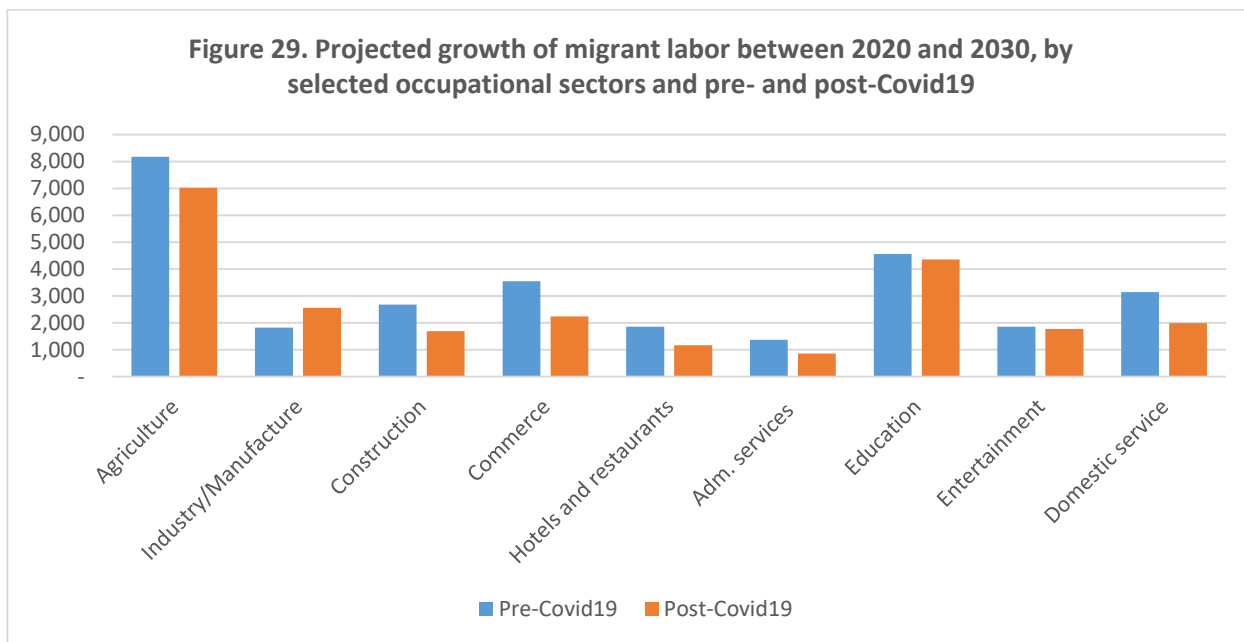
*Source. Own elaboration based on data from INEC (2010-2020) and BCCR (2020).*

The figure shows that agriculture is projected to employ the highest number of new migrants, at just over 8,000. The pandemic does affect this number considerably, but even considering the Covid-19 situation, the sector is projected to require 7,000 migrants in the coming decade, which is a drop of 14.1% compared to the pre-Covid19 projection. In contrast, in sectors like construction, commerce and tourism (hotels and restaurants), the effect of the pandemic on projected growth is much larger, at around 36%. As discussed throughout this report, the demand for migrant labor is predominantly low-skilled. A noteworthy exception is the projected increase in demand in the educational sector, where between 4,300 and 4,500 migrant jobs are projected in the coming years[17]. Possible explanations for this might be found in the aging demographic structure and expected retirements of current teachers.

---

[17] Migrant incidence in the health sector is generally limited. INEC's classification of "Activities related to human health and social assistance" is quite broad and shows that around 6% of the total employed population in this sector is migrant. It also shows that this incidence has been stable for the last 10 years, and migrant growth in employment has been limited. This possibly has to do with the country's exceptionally strong health care system, and the large availability of well-trained Costa Rican health personnel, and a general resistance to incorporate foreign doctors and nurses to practice medicine in Costa Rica, for whom the process of validation of their degrees and skills is not straightforward. This possibly explains why the projections only foresee the incorporation of between 264 and 457 new migrant healthcare workers in this sector in the coming ten years, compared to between 6,000 and 7,000 for nationals.

# CONCLUSIONS

In this report, an analysis was presented of the evolution of migrant labor demand and its sectoral and occupational structure for the 1990-2020 period, as well as projections of its evolution at the 2030 horizon. The general objective of this analysis was to enable countries of origin, and especially Costa Rica as an important country of destination, to formulate and implement labor migration policies, and design appropriate education and training policies in consonance with the evolution of the sectoral and occupational structures of labor markets in Costa Rica.

All in all, several things stand out from the analysis.

- Migrant labor is a structural and integral part of the Costa Rican economy and will remain so in the future.
- Migrant labor demand in Costa Rica comes from specific sectors of the economy, especially agriculture, construction, and domestic services, which require mostly low-skilled labor. There are marked labor niches for the migrant population in Costa Rica, which have consolidated in the period 1990-2020. They are expected to remain largely stable in the immediate future and it is unlikely that other sectors would suddenly display significant migrant labor demand.
- Migrant labor contributes significantly to the Costa Rican economy, by providing labor supply in sectors where nationals are typically not keen on being employed.
- Recent estimates of the contribution to gross domestic product oscillate between 11 and 13% (Gatica, 2018; OECD-ILO, 2018; Ramírez and Acuña, 2014). The migrant population represents about 9% in the total population, and around 11% of the labor force.
- For these reasons, Costa Rica is projected to continue to be an attractive destination for labor migration.
- However, both key informants and technical analysis of projections point at the premises that the growth in demand for migrant labor in Costa Rica is stabilizing, because, on the one hand, the sectors that most employ low-skilled migrant labor are not expected to grow significantly, and on the other hand, the attractiveness of the country as a destination for migrant labor is considered to have declined, because there are fewer available jobs and the working conditions for migrants in scenarios of high informality are generally poor.
- As such, there is a stabilization of migrant labor incidence, and in growth of labor demand. But as the labor force grows, migrant labor in absolute numbers is expected to grow proportionally.
- A substantial increase of migrant labor demand in Costa Rica's economy is unlikely, because of, first, the inability of agriculture to grow substantially given the restrictions to arable land under current environmental policies. Second, the projections of relatively high unemployment among nationals and consequent political unwillingness to stimulate migrants' formal integration in labor markets. Finally, the effects of Covid-19 on Costa Rica's economy make projections of short and mid-term increases less likely.
- The number of formal and high-skilled jobs is limited, even more so for the migrant population. As such, regarding the occupational structure, there is a clear tendency for migrants to find jobs with medium at best, but especially low qualifications, even if they have formal education, skills, or experience in more qualified professions in their country of origin, which may be indicating skill waste for migrant workers and an underutilization of labor in Costa Rica. This situation, added to the growth of the services sector in the country in which migrants' have relatively little incidence, has deepened the duality in the

labor market. Migrants typically take part in the more traditional sectors, with more informality, lower wages, and less labor protection.

- It is especially important to perform gender analyses when studying migrant labor demand, because there are marked differences in the types and conditions of employment that men and women access. This is especially important considering that migrant women have increased their presence substantially in the total migrant labor force between 1990 and 2020. As such, gender-sensitive migration policy is considered an important suggestion.
- Currently, Costa Rican has weak mechanisms to identify and recognize the skills and experience migrants bring with them even for relatively low-skilled sectors like construction, where formal education may not be as valuable as in other sectors, but specific skills such as woodworking or masonry are in demand.
- Currently, in Costa Rica, there is a need for more prospective studies, which could better inform the public institutions charged with the monitoring of the labor market, technical studies of migrant labor demand, the suggestion of the number of work permits and the ensuing granting of such permits.
- Institutional capacity needs to be strengthened to better capture labour demand based on the work permits system, to obtain and monitor a larger overview of the general needs of the labor market, employment conditions and migrant labor demand.
- There are no institutions that carry out periodic prospective studies, or that monitor the behavior of the labor market, specifically regarding migrant labor demand.
- The Covid-19 pandemic came to evidence shortcomings in the management of hiring migrant labor, such as their labor rights or high informality, but it was also forceful in highlighting the dependence of this population for some activities in the country.


*Policy suggestions*

- Prospective studies are needed to be able to effectively monitor labor migration in the country and empirically support political decisions. Currently, migration policy would benefit from estimates that are based on up-to-date and accurate methodological approaches. More studies are needed to ensure a constant monitoring of the evolution of the labor market and migrant labor demand, by sectoral and occupational structure, with sectoral projections of the future.
- Costa Rica has a relatively strong system of data collection, led by the country's National Statistics Institute (INEC). Data collection, through quarterly and yearly surveys is constant and represents an enormous opportunity to provide more and better monitoring of the labor market. However, data sources present their limitations regarding the analysis of the migrant population in the labor force. Current sampling techniques do not allow for disaggregated data by subsectors (at the 4- or 5-digit level of the occupation classification), which limits the information available for migration and labor policy. Also, there are no specific instruments specifically the migrant population, which is surprising considering that Costa Rica is one of Latin America's most important destination countries, in relative terms. In that regard, considering the creation of specific instruments designed to capture information on the wellbeing, labor insertion and other characteristics of migrants is recommendable.
- There is ample evidence in the literature that the integration of migrants, especially form Nicaragua, is polemic in Costa Rica (Voorend, 2019; Sandoval, 2020; Fouratt, 2014 etc.),

with accounts of discrimination, xenophobia, fears of displacement of nationals in the labor market, and a general perception that migrants are to blame for the financial hardship faced by the health system. However, the available data on migrants' substantial contributions to the Costa Rican economy should be made more visible in the public debate. This is crucial to be able to justify the regularized and orderly process of migrant labor recruitment in sectors that depend to a large extent on migrant labor.

- More political and institutional efforts should be made to actively integrate (especially low-skilled) migrants in skills development, anticipation and matching for migrant workers, but especially in formal employment, and access to the country's social security and pension systems. This is especially pressing in the current Covid-19 pandemic and its effects, in which not only migrants are among the most vulnerable populations in need of social protection, but at the same time represent an opportunity to strengthen social protection systems in a country with an aging population and relatively low birth rates.

- To that end, it is necessary to engage in social dialogue with companies, government, employers´ and workers´ organizations and other stakeholders to lay the foundations for a clear structuring of the recruitment of migrant labor. With the common objective of facilitating the effective recruitment of this population, current mechanisms can be improved through articulated efforts in function of the business sector while ensuring the protection of migrant workers' rights and dignity. In that objective, it is important to engage representatives of migrants´ organizations, so they can work as potential public policy formulators, listening to their experiences and testimonies.

- Likewise, for the design, implementation, and monitoring of migration policy, it is advisable to incorporate spaces for social dialogue, including representatives of migrant workers directly. Social dialogue could foster strategic lines of attention for future actions that are more sustainable and effective.

- The current process and mechanisms for the business sector to obtain work permits for migrant workers is bureaucratic, time-consuming and does not meet the flexible and fluctuating demands of two of the three sectors that most demand migrant labor: agriculture and construction. Therefore, the process of regularization of migratory status for migrant workers should be made more agile, less expensive, and less bureaucratic, allowing for relatively quick and inexpensive hiring fees of migrants. In other words, work should be done to reduce the costs of regularization by the State (through the allocation of internal funds or international cooperation), as this would be crucial to foment formal recruitment. The current situation does the opposite, implying long and costly regularization processes (both for the employer and the migrant), leaving large parts of the migrant working population in vulnerable working conditions. In this regard, in interviews stakeholders expressed their concern about the current process. Some initial conversations have taken place between international organizations such as IOM and ILO with government authorities to work on streamlining bureaucratic processes and limiting red tape, and other stakeholders (trade unions, for example) have shown interest in being part of these discussions.

- This should be complemented with a strict control policy ensuring companies that hire migrants comply with the (simplified) processes of hiring regularized and formal migrant labor. Currently, the lack of control makes informal and irregular hiring practices relatively commonplace.

- The mechanisms to identify and recognize formal education and informal skills acquired abroad are currently unclear, too time-consuming, and bureaucratic. Again, such processes

do not meet the requirements of sectors that have fluctuating migrant labor demand, and therefore, are playing into the hands of informality and irregular hiring practices. Therefore, it is recommended to develop more expeditious mechanisms and cut red tape in institutional processes. Also, the option of provisional permits should be considered, to expedite the formal incorporation of workers in jobs that require their incorporation in the short term. Similarly, quicker, and less costly processes of education and skill recognition should be developed, which should be done in consultation with the business sector and trade unions.

- In the same line, to facilitate the recognition of acquired specialized skills in low skilled occupations (e.g. masonry or carpentry in the construction sector), there should be more streamlined and less time-consuming processes in place. For this, state institutions should work directly with the business sector to ensure quality processes in line with the business' sector demands, while respecting the rights of migrant workers. This should be beneficial to both business and the migrant worker.

- Costa Rica's migration policy should ensure respect for migrants' labor rights in all sectors. It is therefore imperative that regularization procedures for migrant workers are sped up (currently, they may take up to 2 years), the costs of the process are reduced (in time and money, both for business but especially for the migrant worker) and employers are more strictly monitored.

- The creation of bilateral and multilateral agreements, as well as the reactivation of the already existing agreements with countries of origin, especially Nicaragua, would allow for better cooperation to formalize and regulate migrant labor in the country. Current bilateral mechanisms with Nicaragua, country of origin to the majority of migrants in Costa Rica, are not considered effective making the usefulness in practice limited. Therefore, to ensure safe, regular and formal recruitment of migrant labor in Costa Rica, it is important to work articulately with Nicaraguan authorities, and in the light of the signed Convention, so that there is greater coordination in this regard.

- As demonstrated in the projections made for this study, at the political level it is required to rethink the consequences of the Covid-19 pandemic on the recruitment of migrant labor, including the recruitment cost. The uncertainty generated by this juncture not only affects the migrant population disproportionately as they are among the most vulnerable (in terms of their health, and the economic effects of lockdown measures), but also shows the country's dependence on migrant labor in specific, more traditional, labor intensive and low-skilled sectors. Without effective policy measures to ensure formal and regular employment, the higher migrant vulnerability combined with the structural (albeit slightly reduced) demand for migrant labor will foment informal and irregular hiring practices.

*Suggestions for future prospective studies in this field*

- The replicability for other countries of the methodological approach used in this paper require the presence of a strong statistical base, with available data on employment, economic sector trends, occupational structure, migration, etc. The longer the time series, the more robust the projections will be.

- It is important to keep in mind the comparability of the data in the series, since methodological changes in measurement or collection could introduce errors in the estimates.

- To replicate a similar model as applied in Costa Rica, at least four requirements should be met:

- First, it is necessary to have employment statistics that allow the identification of the employed according to place of birth, so that projections can be made for the two groups (migrants and non-migrants). There are other ways of measuring migrant status, but this is the one most used.
- Second, at least 10 years of continuous employment statistics are required to obtain the evolution of employment in the country for the two groups, by branch of activity and educational level.
- Third, it is important to have observed data on total population and gross domestic product for the same period as the employment data to make adjustments to the smoothing parameters of the series.
- Finally, as far as possible, recent population and GDP projections, should incorporate the COVID-19 output effect, allowing for a better fit of the model.
- For the Costa Rican case, this basic information was available through the National Institute of Statistics and Census (INEC). The available data in Costa Rica is relatively strong, although it does present limitations such as the sub registry of the migrant population. This was partially resolved by cross-checking information with other complementary statistical collection instruments, which in this case were available.
- In this study, however, the greatest challenge was that the country lacks prospective studies on the demand for migrant labor. Prospective studies would provide important input for the projections, if not only to triangulate information.
- In the absence of prospective studies, in other countries it is advisable to perform an exhaustive literature review to analyze migration policies, previous research work and identify possible approaches to future demand behavior. Also, primary information sources should be consulted, through interviews with key informants.
- This allows for a triangulation of the statistical projections, the literature review and primary data from interviews to confirm or question the results from projection models of future demand of migrant labor.

# REFERENCES

Acuña, Guillermo; Morales, Abelardo (2004) "Poblaciones migrantes y poblaciones móviles y su impacto en la salud en los países de América Central y República Dominicana". San José, FLACSO-Costa Rica, Guatemala y República Dominicana, OPS-OMS, Ministry of Health of Costa Rica.

Acuña, Guillermo (2005) "Los casos de la producción piñera en las regiones Atlántica y Pacífico Sur: características, organización y condiciones laborales". ASEPROLA.

Adamson-Badilla et al, M. (2014) "Revisando los orígenes de competitividad de Costa Rica: ¿exportación de sudor-recursos naturales o de neuronas?" San José: BCCR.

Aravena, Javiera; Carazo, Eva (2016) "Condiciones de producción, impactos humanos y ambientales en el sector piña en Costa Rica." OXFAM, Germany.

Asamblea Legislativa de la República de Costa Rica (2009) "Ley No. 8764 Ley General de Migración y Extranjería."

Banco Central de Costa Rica – BCCR (2018) "Aspectos socioeconómicos de las remesas familiares en Costa Rica, 2016". División económica. DGIE-AEE.

Barquero, Marvin (September 27th 2019) "Gobierno crea decreto para regularizar situación de trabajadores agrícolas migrantes en Costa Rica". La Nación. Available at: https://www.nacion.com/economia/agro/gobierno-crea-decreto-para-regularizar-situacion/

Barquero, Marvin (June 23th 2020) "Gobierno establece mecanismo para legalizar mano de obra migrante con arraigo en Costa Rica." La Nación. Available at: https://www.nacion.com/economia/politica-economica/gobierno-establece-mecanismo-para-legalizar-mano/

Baumeister, Eduardo, Guillermo Acuña; Edgar Fernández (2008). "Tendencias del mercado de trabajo rural costarricense y la inserción de los trabajadores nicaragüenses." En: "Sobre las migraciones regionales de nicaragüenses". Ciudad de Guatemala: Editorial de Ciencias Sociales.

Beverinotti, J; J. Chang; L. Corrales and T. Vargas (2014) "Diagnóstico de Crecimiento para Costa Rica." Departamento de Países. Belice, Centroamérica, México, Panamá y la República Dominicana del Banco Interamericano de Desarrollo (BID)

Bonnie, Alexandra (2010) "Trabajadoras domésticas nicaragüenses en Costa Rica: un tortuoso camino hacia el reconocimiento." Encuentro, 87:75-88.

Castro, C. (2008). "Dimensión cuantitativa de la inmigración nicaragüense en Costa Rica: del mito a la realidad". En: Sandoval (2008) El mito roto inmigración y emigración en Costa Rica. EUCR.

Changala R. (2014) "Sistematización y análisis de las políticas y marcos de acuerdo regionales y nacionales adoptados por los países del SICA". FLACSO Costa Rica. San José Costa Rica.

Cortés, A. (2008). "Development and Migration Dynamics between Nicaragua and Costa Rica: A Long Term Perspective" (PhD Thesis). Loughborough University, United Kingdom.

Costa Rican Construction Chamber – CCC (2019; 2020) "Informe Económico del Sector Construcción." Dirección de Investigación y Desarrollo Técnico. Available at: https://www.construccion.co.cr/Post/Lista?catpost=arch

Demoscopía. 2017. Las motivaciones y el impacto de la emigración en los países del Triángulo Norte de Centroamérica hacia los Estados Unidos. Estudio realizado en el marco del proyecto "Entendiendo la migración en la región de México, Centroamérica y la República Dominicana: Nuevas tendencias y realidades del Banco Interamericano de Desarrollo". Washington, D. C.: BID

Executive Secretariat for Agricultural Sector Planning – SEPSA (2016) "State Policy for Costa Rican Territorial Rural Development (PEDRT) 2015 -2030." Available at: 2016-APAR_PEDRT 2015-2030 Resumen.pdf (sepsa.go.cr)

Fairlie, R. W; M. Lofstrom (2015), "Immigration and entrepreneurship", en B. R. Chiswick y P. W. Miller (eds.), Handbook of the Economics of International Migration, vol. 1. Elsevier B. V. Nueva York, pp. 877-911 https://doi.org/10.1016/B978-0-444-53768-3.00017-5.

Fouratt, C. (2014). "Those who come to do harm": The Framings of Immigration Problems in Costa Rican Immigration Law. International Migration Review, 48(1), 144-180.

FUNDEVI/OECD (2017) "Interrelations between Public Policies, Migration and Development in Costa Rica", Caminos de Desarrollo de la OCDE, OECD Publishing, París.

Garza, J (July 7th 2020) "Icafe confía en desempleados para cumplir con recolección de cosecha." La República. Available at: https://www.larepublica.net/noticia/icafe-confia-en-desempleados-para-cumplir-con-recoleccion-de-cosecha

Gatica, G (2005) "Migración y Políticas Públicas para el desarrollo". Trabajo final de graduación para optar por el grado de Magíster en Economía del Desarrollo. Universidad Nacional, facultad de Ciencias Sociales, Escuela de Economía.

Gatica, G (2017) "Aportes de las personas migrantes y refugiadas a la creación de riqueza en Costa Rica." Rev. Rupturas 8(1), Costa Rica, Ene-Jun 2018. ISSN 2215-2466. pp 71-100.

Gatica, G. (2018) "Aportes de las personas migrantes y refugiadas a la creación de riqueza en Costa Rica". Revista Rupturas, 1(8), 71-100.

Goldade, K. (2011) Babies and Belonging: Reproduction, Citizenship, and Undocumented Nicaraguan Labor Migrant Women in Costa Rica. Medical Anthropology 30 (5): 545-568.

Goldsmith, M. (2007) "Disputando fronteras: la movilización de las trabajadoras del hogar en América Latina". Femmes latino-américaines et migrations. Amérique Latine Histoire et Mémoire. Les Cahiers ALHIM. N°14.

González, Heydi and Hobarty, Gabriela (s.f.) "Nicaragua y Costa Rica: migrantes enfrentan percepciones y políticas migratorias". Source: https://ccp.ucr.ac.cr/noticias/migraif/pdf/horbaty.pdf

Gudiño, R (October 26th, 2020) "Se permitirá ingreso controlado de nicaragüenses para cumplir recolección de café." La República. Available at: Se permitirá ingreso controlado de nicaragüenses para cumplir recolección de café (larepublica.net)

International Labour Organization - ILO (2010) "Trabajo decente para trabajadores del servicio doméstico: hacia unas nuevas normas internacionales del trabajo". Revista Trabajo.

International Labour Organization - ILO (2014a) "El rol de los sindicatos en el ámbito de la migración laboral." Organización Internacional del Trabajo, Proyecto Políticas de Migración Laboral Sensibles al Género en los Corredores de Nicaragua-Costa Rica-Panamá y Haití-República Dominicana. San José-

International Labour Organization - ILO (2014b) "Estudio de casos sobre reconocimiento de título y aprovechamiento de las destrezas de las personas trabajadoras migrantes. Casos: Costa Rica, Panamá y República Dominicana." In: Perspectiva Laboral. Migración laboral: Logros y retos.

International Labour Organization - ILO (2014c) "Estudio de Necesidades de Mano de Obra Migrante en Panamá". Proyecto Políticas de Migración Laboral Sensibles al Género en los Corredores de Nicaragua-Costa Rica-Panamá y Haití-República Dominicana. San José.

International Labor Organization - ILO (2015) "ILO global estimates on migrant workers: Results and methodology." Geneva. Available at: https://www.ilo.org/global/topics/labour-migration/publications/WCMS_436343/lang--en/index.htm.

International Labour Organization - ILO (2016) "La migración laboral en América Latina y el Caribe. Diagnóstico, estrategia y líneas de trabajo de la OIT en la Región." Lima: OIT, Oficina Regional para América Latina y el Caribe, 2016. 140 p.

International Labour Organization - ILO (2018) "ILO global estimates on migrant workers: Results and methodology." Second edition (reference year 2017).

International Organization for Migration - IOM, et al. (2009). "Demanda laboral del sector construcción en Costa Rica y su comportamiento migratorio." Proyecto Codesarrollo Costa Rica-Nicaragua de la Agencia Española de Cooperación Internacional para el Desarrollo AECID. Costa Rica.

Kahn, S., G. La Mattina y M. J. MacGarvie (2017), "'Misfits', 'stars', and immigrant entrepreneurship", Small Business Economics, Vol. 49, No. 3, pp. 533-557, https://doi. org/10.1007/s11187-017-9848-8.

Kron, S. (2011). "Gestión migratoria en Norte y Centroamérica: Manifestaciones y contestaciones". Anuario de Estudios Centroamericanos, (37), 53-85.

Lassmann, A., y C. Busch (2015), "Revisiting native and immigrant entrepreneurial activity", Small Business Economics, vol. 45, núm. 4, pp. 841-873, https://doi.org/10.1007/s11187-015-9665-x

Lerussi, Carla (2007) "Trabajadoras domésticas nicaragüenses en Costa Rica. Memorias de Investigación." San José: CEFEMINA.

Lizano, E (1999) "Ajuste y Crecimiento en la Economía de Costa Rica 1982-1994." Estudios 13. Academia de Centroamérica. San José, Costa Rica.

López, M. (2012). "The Incorporation of Nicaraguan Temporary Migrants into Costa Rica's Healthcare System: An Opportunity for Social Equity" (PhD Thesis). University of Windsor, Windsor.

Martínez Franzoni, Juliana., Mora, Sindy. y Voorend, Koen. (2009). "El trabajo doméstico remunerado en Costa Rica: entre ocupación y pilar de los cuidados". PNUD/INAMU.

Ministry of Agriculture and Livestock - MAG (2011) "State Policy for the Agri-food Sector and Rural Development in Costa Rica 2010-2021". Available at: 2011_Politica_SectorAgro_2010-2021.pdf (sepsa.go.cr)

Ministry of Labor and Social Security – MTSS, Labor Market Observatory – LMO y Organización Internacional para las Migraciones – OIM (2013). "La población extranjera en Costa Rica: Principales actividades económicas y ocupaciones." Gozaka, S.A. Costa Rica.

Ministry of Labor and Social Security - MTSS (2018a). "Recomendación de ocupaciones no recomendadas para las categorías de trabajador de ocupación específica y residencia temporal". Department of Labor Migrations. National Directorate of Employment. September 20th, 2019 DNE-DML-OF-372-2018.

Ministry of Labor and Social Security - MTSS (2018b). "Recomendación técnica procedimiento de autorización migratoria laboral Trabajador (a) de Ocupación Específica. Actividad ocupacional de servicio doméstico". Department of Labor Migrations. National Directorate of Employment. October 8th, 2018 DNE-DML-OF-388-2018.

Ministry of Labor and Social Security - MTSS (2019a). "Anuario Estadístico 2018". Costa Rica. San José, Costa Rica: MTSS.

Ministry of Labor and Social Security - MTSS (2019b). "Ocupaciones no recomendadas para las categorías migratorio-laborales de "residencia temporal" y "trabajador de ocupación específica." Department of Labor Migrations. National Directorate of Employment. October 7th, 2019 DNE-DML-OF-237-2019.

Mora, Alberto y Marisol Guzmán (2018) "Aspectos de la migración nicaragüense hacia Costa Rica e impacto en el mercado laboral." Estado de la Región. Banco Interamericano de Desarrollo.

Morales Gamboa, Abelardo (2004): "Dinámica actual y contexto de las migraciones en América Central". En: Migraciones y Derechos Humanos. San José: Instituto Interamericano de Derechos Humanos (IIDH). Pág. 1 – 60.

Morales, Abelardo; Castro, Carlos (2006) "Migración, empleo y pobreza". San José, FLACSO-Costa Rica.

Morales, Abelardo; Kandel, Susan; Ortíz, Xenia; Díaz, Óscar y Acuña, Guillermo (2011). "Trabajadores migrantes y megaproyectos en América Central". San Salvador, El Salvador. PNUD.

Morales, Abelardo (2008) "Inmigración en Costa Rica: características sociales y laborales, integración y políticas públicas." Serie Población y Desarrollo, núm. 85, Centro Latinoamericano y Caribeño de Demografía (CELADE) – División de Población de la CEPAL, Santiago de Chile.

Morales Ramos, Roxanna (2018). "Inmigración y empleo en Costa Rica: un análisis con perspectiva de género a partir de la encuesta continua de empleo". Economía Y Sociedad, 23(54), 50-73. https://doi.org/10.15359/eys.23-54.5

Morales, A., Lobo, D. and Jiménez, J., (2014). La travesía laboral de la población Ngäbe y Buglé de Costa Rica a Panamá: características y Desafíos. FLACSO Costa Rica y Organización Internacional de las Migraciones, San José.

National Institute of Apprenticeship (INA) "Registro y servicios estudiantiles. Requisitos." Available at: https://www.ina.ac.cr/Estudiantes/Registro/SitePages/Inicio.aspx

National Institute of Statistics and Censuses INEC (1986) "Costa Rica National Census 1986."

National Institute of Statistics and Censuses INEC (2000) "Costa Rica National Census 2000."

National Institute of Statistics and Censuses INEC (2011) "Costa Rica National Census 2011."

National Institute of Statistics and Censuses INEC (2016) "Encuesta Nacional de Hogares – ENAHO 2015."

National Institute of Statistics and Censuses INEC (2020) "Encuesta Nacional de Hogares -ENAHO 2019."

Padra, Ely (2018) "Canadá y Costa Rica firmarán convenio para fortalecer procedimientos para refugiados". Available at: https://elperiodicocr.com/canada-y-costa-rica-firmaran-convenio-para-fortalecer-procedimientos-para-refugiados/

Programa del Estado de la Nación - PEN (2020) "Informe Estado de la Nación 2019." 25 ed. – San José.

Organisation for Economic Co-operation and Development – OECD (2018) "Estudios Económicos de la OCDE: Costa Rica 2018."

Organisation for Economic Co-operation and Development – OECD - and International Labor Organization - ILO. (2018). Cómo los inmigrantes contribuyen a la economía de Costa Rica. París: Organización de Cooperación y Desarrollo Económicos.

Labor Market Observatory - LMO (2011). "Flujos migratorios laborales intrarregionales: Situación actual, retos y oportunidades en Centroamérica y República Dominicana". Informe de Costa Rica, OIM, OIT, MTSS, CECC SICA, San José, Costa Rica.

Ramírez, L. and Acuña, J. (2014) Participación de los migrantes en la producción de riqueza de Costa Rica. Unpublished manuscript, Technical report. San José, Costa Rica.

Rosa, Herman. (2008) "Perfiles y trayectorias del cambio económico en Centroamérica. Una mirada desde las fuentes generadoras de divisas". San Salvador: PRISMA.

Renzi, María Rosa et al (2004): "Perfil de género de la economía del istmo centroamericano (1990 – 2002)". Managua (Nicaragua): PNUD (Fondo de Naciones Unidas para el Desarrollo). 300 pág.

Robinson, Scott (2003) "Las E-remesas: Hacia una política integral de remesas para Centroamérica", en http://www.icamericas.net, julio, ICA.

Sandoval, Carlos (2008). "El mito roto: inmigración y emigración en Costa Rica". EUCR.

Segovia, Alexander (2004) "Centroamérica después del café: el fin del modelo agroexportador tradicional y el surgimiento de un nuevo modelo". Revista Centroamericana de Ciencias Sociales 2 (1).

Sistema Costarricense de Información Jurídica (1962) "Convenio Ejercicio Profesiones Reconocimiento Estudios Universitarios." Available at: Sistema Costarricense de Información Jurídica (pgrweb.go.cr)

SG-SICA (n.d.) "Academy". Available at: Academia - Portal del SICA

Tapia, Roberto (2019) "Banco Central proyecta bajo crecimiento de la economía y caída de los índices de construcción." Revista Construcción, Septiembre 2019. P. 50-51.

Umaña, P (August 15th 2020) "6 mil personas se han inscrito a recolección de café, pero se necesitan unos 70 mil." El Observador. Available at: https://observador.cr/noticia/solo-16-mil-personas-se-han-inscrito-a-la-recoleccion-de-cafe-aunque-se-necesitan-alrededor-de-70-mil/

Umaña, P (October 23th, 2020) "Costa Rica haría apertura "excepcional y controlada" de la frontera Norte para recolectar café." El Observador. Available at: Costa Rica haría apertura "excepcional y controlada" de la frontera Norte para recolectar café - El Observador CR

United Nations - UN (2009). "Migration Wallchart". Department of Economic and Social Affairs. Available at: https://www.un.org/en/development/desa/population/migration/publications/

United Nations - UN (2017). "Migration Wallchart". Department of Economic and Social Affairs Available at: https://www.un.org/en/development/desa/population/migration/publications/

University of Costa Rica - UCR, National University of Costa Rica – UNA - and Distance State University - UNED (2019) "Propuesta de metodología para establecer la cantidad de permisos de trabajo a otorgar a personas trabajadoras migrantes en Costa Rica Presentada al Ministerio de Trabajo y Seguridad Social (MTSS) y a la Dirección General de Migración y Extranjería (DGME)".

Vargas Cullell, J; Durán, E. (2016) "La institucionalidad en los estados en Centroamérica". En: Prat y Beverinott (eds).

Voorend, Koen (2019). ¿Un imán de bienestar en el Sur? Migración y política social en Costa Rica. San José, Costa Rica: Universidad de Costa Rica.

Voorend, Koen; Francisco Robles Rivera (2011). "Migrando en la crisis. La fuerza de trabajo inmigrante en la economía costarricense: construcción, agricultura y transporte público". San José, Costa Rica. OIM-MTSS.

Voorend, Koen; Francisco Robles-Rivera and Karla Venegas (2013). "Nicaragüenses en el Norte: Condiciones laborales y prácticas de contratación de hombres y mujeres migrantes en la Región Huetar Norte". San José: ILO.

Voorend, Koen; Richard Anker and Martha Anker (2017) "Living Wage Report Rural Costa Rica. Limón Province (Guápiles, Guácimo, Siquirres, and Matina regions) and Heredia Province (Puerto Viejo de Sarapiquí región)." Series 1, Report 19. Prepared for: The Global Living Wage Coalition.

Weissberg, Jeremy (2016) "Smoothing, Filtering and Prediction: Estimating the Past, Present and Future." Scitus Academics LLC.

World Bank (2020) "Databank." Available at: https://databank.worldbank.org/home.aspx

Zhang, Sheldon; Michael Spiller; Brian Finch and Yang Quin (2014) "Estimating Labor Trafficking among Unauthorized Migrant Workers in San Diego." ANNALS, AAPSS, 653.

# APPENDIXES

Appendix 1. List of institutions or organizations interviewed through representatives for the study.

- ✓ Association of Domestic Workers – Astradomes.
- ✓ Confederation of Workers Rerum Novarum (labor union)
- ✓ Costa Rican Union of Chambers and Associations of the Private Business Sector – UCCAEP.
- ✓ Department of Labor Migration of MTSS.
- ✓ International Labor Organization, in Costa Rica – ILO.
- ✓ International Organization of Migrations, National Office in Costa Rica - IOM.
- ✓ National Chamber of Agriculture and Agroindustry.
- ✓ National Chamber of Coffee Growers.
- ✓ National Chamber of Construction.
- ✓ Regional Inter-Union Committee for the Defense of the Rights of Migrant Workers.

Section 4 of this paper presents projections of migrant labor demand for the 2020-2030 period. For this, autoregressive–moving-average (ARIMA) models were used. ARIMA models are used for forecasting, and are different from structural models, such as regression models, which depend on a lot of assumptions and do not work very well for projections. ARIMA models calculate differences and lags of the dependent variable and uses the same lagged variable as explanatory variable as well as exogenous variable, for which it considers lagged values as well. As such, the ARIMA model establishes an intercept and defines which are the parameters that will give the best result, measures by the Akaike Information Criteria (AIC), which is a widely used measure of the goodness of fit, and the simplicity/parsimony of the model. Put simply, the lower the value, the better the forecast. This same process was done for each time series separately. That is, in this case, a separate model was estimated for employed nationals and migrants by each educational level, and each branch of activity.

The general equation used for the ARIMA models is the following:

$$(1) \quad \Delta^d y_t = \phi_1 \Delta^d y_{t-1} + \ldots + \phi_p \Delta^d y_{t-p} + e_t + \theta_1 e_{t-1} + \ldots + \theta_q e_{t-q}$$

where $\Delta^d y_t$ expresses that $d$ differences have been applied to the original series $y_t$.

The data used as input for these models came from the quarterly data of the Continuous Employment Survey (ECE), specifically the data for the last quarter of each year between 2010 and 2019. These were complemented with annual data by INEC on the total and projected population for the period 2010-2030. This was included as an exogenous variable in the regression models. Also, observable Gross Domestic Product data for the 2010-2019 time-period was used, as well as available projections by the Costa Rican Central bank for 2020 and 2021. For the period of 2021 until 2030, a projection model was used considering the general trend and seasonality of the GDP data. Through adjustments in the smoothing parameters[18] of the series, GDP behavior and general trend was adjusted to make long-term projections.

For GDP projections, the Holt – Winter method was used, which consists in an iterative algorythm that makes a projection for each time period used (be in monthly, weekly or daily) using weighted values of the observed data in the time series. It adjusts three parameters in the series, the mean, the tendency and seasonality, in such a way that minimize the squared error term, based on a comparison of the real series and the projected series.

ARIMA models were constructed for each branch of activity/sector. In those sectors where the 2010-2020 data shows stable proportions of migrant and national labor force, the model estimates rates of average growth using constant labor force participation rates. However, in those sectors in which there was a clear tendency (either upward or downward) of migrant participation in the labor

---

[18] Smoothing parameters serve to "create an approximating function that attempts to capture important patterns in the data, while leaving out noise or other fine-scale structures/rapid phenomena" (Weissberg, 2016).

force in that sector, the model would detect this tendency and use it to project estimation for the period 2020-2030.

Having found the best fit models for all branches of activity and all educational levels for both the migrant and national populations, these same simulations were replicated under the assumption that the Central Bank's 2020 and 2021 projections of GDP growth of -5 % did not occur. That is, the effects of the Covid-19 pandemic and ensuing economic crisis were ignored, assuming a projected GDP growth-trend of between 2.3% and 2.5%. In layman's terms, we projected a situation assuming Covid-19 never happened, and a situation in which it did.

Technically, the ARIMA models for the models assuming the Covid-19 did not happen use projections of GDP as input, based on the Holt-Winter method, using data from 2010 up until the first trimester of 2020. That is, this data does not yet reflect the effects of the Covid-19 crisis. For the models that include the COvid-19 scenario, in contrast, GDP data for the second trimester of 2020 was incorporated. This data shows the first effects of the Covid-19 crisis. Then, based on this series, projected GDP data (based on the same Holt-Winter method) was used in the ARIMA models to project labor demand. This second scenarios then, includes a short term effect of the Covid-19 crisis on GDP for its projections to the 2030 horizon, to include the effects of the pandemic on labor demand.

This makes it possible to analyze the marginal impact of the reduction in economic activity because of the pandemic. As such, the projections comprise two scenarios (called "pre-Covid19" and "post-Covid19"), for two subgroups in the population (nationals and migrants) for different education levels and different branches of activity.

Table 1 below shows the projections of the total number of migrants for the 2020-2030 period, with 9%% condifende intervals, for the two scenarios used: a baseline "no pandemic" situation, and a situation with the pandemic.

**Table 1. Projections of migrant labor demand, in pre- and post-Covid19 pandemic situations.**

| Year | Projections of total number of migrants, 95% confidence interval | | | | | |
|------|------|------|------|------|------|------|
| | Pre-Covid19 (No pandemic) | | | Post-Covid19 (Pandemic) | | |
| | Min. | Average | Max. | Min. | Average | Max. |
| *2020* | 154,516 | 241,824 | 329,131 | 132,377 | 219,685 | 306,992 |
| *2021* | 157,516 | 244,823 | 332,131 | 133,496 | 220,804 | 308,111 |
| *2022* | 160,431 | 247,738 | 335,045 | 135,754 | 223,061 | 310,368 |
| *2023* | 163,260 | 250,568 | 337,875 | 137,926 | 225,233 | 312,540 |
| *2024* | 166,005 | 253,312 | 340,620 | 140,013 | 227,320 | 314,628 |
| *2025* | 168,666 | 255,973 | 343,281 | 142,017 | 229,324 | 316,631 |
| *2026* | 171,243 | 258,550 | 345,858 | 143,936 | 231,243 | 318,551 |
| *2027* | 173,736 | 261,043 | 348,350 | 145,772 | 233,079 | 320,386 |
| *2028* | 176,147 | 263,454 | 350,761 | 147,525 | 234,832 | 322,139 |
| *2029* | 178,477 | 265,784 | 353,091 | 149,198 | 236,505 | 323,812 |
| *2030* | 180,729 | 268,036 | 355,343 | 150,792 | 238,099 | 325,407 |

*Source. Own elaboration based on data from INEC (2010-2020) and BCCR (2020).*