



REGIONAL NOTEBOOK 4

*Working and Living Conditions in Mexico's Export
Agriculture. Guanajuato's Bajío , 2020 – 2022*

*Agustín Escobar Latapí / Diana Haidé López López /
Elisa Alejandra Martínez Rubio / Michelle Judd de la Luz.*



JORNALEROS EN
LA AGRICULTURA
DE EXPORTACIÓN

Farmworkers in Mexico's Export Agriculture

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Regional notebook 4

Working and Living Conditions in Mexico’s Export Agriculture
Guanajuato’s Bajío, 2020 – 2022

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Our regional studies series analyzes interactions between agricultural development and social dynamics in specific Mexican regions.

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Abbreviations

- ACS:** Association for Canadian Studies.
- AFORE:** Administradoras de Fondos para el Retiro. Pension Fund.
- AHIFORES:** Alianza Hortifrutícola Internacional para el Fomento de la Responsabilidad Social. International Horticultural Alliance for the Promotion of Social Responsibility
- B.C.:** Baja California.
- CABC:** Consejo Agrícola de Baja California. Agricultural Council of Baja California.
- CAI:** Centro de Atención Infantil. Child Care Center.
- CAIC:** Centros de Atención Infantil Comunitarios. Community Child Care Centers.
- CAISES:** Centros de Atención Integral en Servicios Esenciales de Salud. Comprehensive Care Centers for Essential Health Services.
- CDIL:** Centro de Desarrollo Indígena Loyola. Loyola Indigenous Development Center.
- CEAG:** Consejo Estatal Agroalimentario de Guanajuato A.C. Guanajuato State Agri-Food Council A.C.
- CESSA:** Centros de Salud con Servicios Ampliados. Health Centers with Expanded Services.
- CIESAS:** Centro de Investigación y Estudios Superiores en Antropología Social. Center for Research and Higher Studies in Social Anthropology.
- CIHR:** Instituto Canadiense de Investigación en Humanidades. Canadian Institute for Humanities Research.
- CNA:** Consejo Nacional Agropecuario. National Agricultural Council.
- COFOCE:** Coordinadora de Fomento al Comercio Exterior del Estado de Guanajuato. Foreign Trade Promotion Coordinator of the State of Guanajuato.
- COLEF:** El Colegio de la Frontera Norte. North Border College.
- CONAPO:** Consejo Nacional de Población. National Council of Population and Housing.
- CONEVAL:** Consejo Nacional de Evaluación de la Política del Desarrollo Social. National Council for the Evaluation of Social Development Policy.
- COVID-19:** Coronavirus
- CURP:** Clave Única de Registro de Población. Unique Population Registration Code.
- DEALTI:** Distintivo Empresa Agrícola Libre de Trabajo Infantil. Agricultural Company Free of Child Labor Distinction
- DIF:** Sistema Nacional para el Desarrollo Integral de las Familias. System for the Comprehensive Development of Families.
- DOT:** Denominación de Origen Tequila. Tequila Designation of Origin.
- ENJOREX:** Encuesta Nacional de Jornaleros de la agricultura de Exportación. National Survey of Farm Workers in Export Agriculture.
- ENOE:** Encuesta Nacional de Ocupación y Empleo. National Occupation and Employment Survey.
- E.U.:** Estados Unidos de América. United States of America.
- FES:** Facultad de Estudios Superiores. Faculty of Higher Studies.
- IMSS:** Instituto Mexicano del Seguro Social. Mexican Social Security Institute.
- INE:** Instituto Nacional Electoral. Voter Identity Card.
- INEGI:** Instituto Nacional de Estadística y Geografía. National Institute of Statistics and Geography.
- Infonavit:** Instituto del Fondo Nacional de la Vivienda para los Trabajadores. Institute of Workers' National Housing Fund.
- INPC:** Índice Nacional de Precios al Consumidor. National Consumer Price Index.
- INSABI:** Instituto de Salud para el Bienestar. Institute of Health for Well-being.
- ISSSTE:** Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado. Social Security Institutes for State and Civil Service Workers.
- JORNAMEX:** Jornaleros en la Agricultura de Exportación. Farmworkers in Mexico's Export Agriculture.
- LFT:** Ley Federal del Trabajo. Federal Labor Law.
- Na'Vali:** Espacios de niñas y niños. Space for girls and boys.
- OIT:** Organización Internacional del Trabajo. International Labor Organization.
- PAJA:** Programa de Atención a la Población Jornalera. Farm Worker Care Program.
- PEA:** Población Económicamente Activa. Economically Active Population.
- PIB:** Producto Interno Bruto. Gross Domestic Product.

PUED: Programa Universitario de Estudios del Desarrollo. University Development Studies Program.
Sedesol: Secretaría de Desarrollo Social. Ministry of Social Development.
SEG: Secretaría de Educación de Guanajuato. Ministry of Education of Guanajuato.
SENASICA: Servicio Nacional de Sanidad, Inocuidad y Calidad Agroalimentaria. National Agrifood Health, Safety and Quality Service.
SINACEM: Sistema Nacional de Control Escolar de Población Migrante. National Control System for the Schooling of the Migrant Population.
SIVIL: Sistema de Información de Violaciones Laborales. Labor Violations Information System.
STPS: Secretaría del Trabajo y Previsión Social. Ministry of Labor and Social Welfare.
SIAP: Servicio de Información Agroalimentaria y Pesquera. Agri-food and Fisheries Information Service.
UMAPS: Unidades Médicas de Atención Primaria a la Salud. Primary Health Care Medical Units.
UNAM: Universidad Nacional Autónoma de México. National Autonomous University of Mexico.
USMCA: United States-Mexico-Canada Agreement.

Executive Summary

JORNAMEX is a project that rigorously defines the working conditions found in Mexican export agriculture. As of 2021, it had conducted 4 surveys¹: 1) a random and stratified survey carried out in the five main export states, 2) a survey on informal agricultural workers, 3) a survey on avocado workers, and 4) a random and stratified survey on agricultural workers in Baja California.² It has also carried out regional studies in Jalisco, Sinaloa, and Baja California.

Here we present the fourth regional study carried out in 2022, carried out in Guanajuato's Bajío, one of Mexico's most productive agricultural regions since the XVI Century.

Guanajuato ranks as Mexico's 7th state in terms of agricultural production, and 4th for agricultural exports. Its production has grown spectacularly, from 22,000 million pesos (at constant prices) in 2010 to 33,000 in 2020, or 50%. It ranks as the 5th state for number of salaried farm workers, with 116,200.

Its labor conditions are as follows:

- According to the 2020 INEGI population and housing census, agricultural salaries in Guanajuato rank 12th in Mexico, after the states of Baja California, Sonora, Jalisco, Baja California Sur, Colima, Chihuahua, Nayarit, Michoacán, Nuevo León, Sinaloa, and Coahuila. Its average monthly salary in 2020 was \$4,996 pesos.
- In our survey of workers in formal agricultural companies in 2022, we find higher salaries: women earn an average of 6,757 pesos per month, and men earn 6,820 (in all our regional studies, the salaries in our survey are higher than those in the census).³ This is equivalent to 1.29 minimum wages. The Guanajuato gender pay gap is the smallest in the export states.
- The 2020 population census reports that the proportion of workers receiving benefits as established by the *Ley Federal del Trabajo* [Federal Labor Law] is below that of 10 other states with large agricultural production. Only 15% of farm workers receive end-of-year bonuses, while 5% receive profit sharing and disability payments.

1 The surveys are called ENJOREX (*Encuesta sobre Jornaleros en Agricultura de Exportación* [Survey of Farm Workers in Export Agriculture]).

2 The states are Guanajuato, Michoacán, Jalisco, Sinaloa, and Baja California. The crops are berries (blackberry, raspberry, strawberry, and blueberry), tomatoes, cucumbers, and peppers.

3 There are at least three reasons why the salaries reported in the ENJOREX survey are higher than those in the census. One is that the survey was applied two years after the census. Secondly, the survey only takes into account export companies, which have better working conditions. Finally, the census information on salaries is obtained from the testimony of any person aged 15 or over in the household, while ENJOREX is based on the personal report of the workers themselves.

- However, our survey of agricultural export companies shows high levels of compliance in terms of providing benefits as stipulated by law: 92 percent of women and 94 percent of men report being affiliated with IMSS. This is 3% lower than the average for other export states but much higher than what was reported by the census. In one of the two companies in the survey, almost 100% compliance is reported, while in the other it is below 85%.
- As in other states, the level of affiliation and contributions to IMSS is not reflected in effective access to the services. In our survey, only 68% of workers in these companies reports having real access to IMSS medical services.
- Of the 7 labor benefits set out by law that are registered in the population and housing census, the average farm worker in the state receives 0.51; in other words, lacks 6.49, which places this population of agricultural workers among the most unprotected in the country. In Romita, the municipality with the highest total production value, the average of benefits paid is 0.07 or, put another way, it fails to comply with 6.93 out of 7.
- Underage workers account for 6% of the total workforce, which is more than in other export states, and more than the national average.⁴

To sum up, salaries and labor conditions in Guanajuato’s agricultural sector are below the average among the states with the most exports, and closer to the average when compared to the states that are mostly focused on the national agricultural market, where compliance with labor rights is lower.

Nevertheless, there is important evidence that modern export agriculture produces significant social benefits. The table shows changes in poverty levels in Guanajuato’s municipalities where export agriculture has grown substantially from 2010 to 2020.

Table 1. Change in the main poverty indicators in municipalities with the highest agricultural growth, 2010-2020 (difference in percentage points)

	Abasolo	Irapuato	Pénjamo	Romita	Valle de Santiago	Dolores Hidalgo
Total poverty	-18.9	-6.8	-16.3	-7.2	-12.6	-7.3
Extreme poverty	-7.8	-3.2	-13.1	-6.9	-3.8	-5.5

Source: Figures 10-15 of the study.

⁴ Congress approved a reform of the *Ley Federal del Trabajo* [Federal Labor Law] that reduces the minimum working age in agriculture from 18 to 16 years old. However, the regulation of this change – in this case handled as a NOM or Official Mexican Standard – has not been published, so the reform cannot be applied yet.

In short, in all of the six municipalities with the highest agricultural growth between 2010 and 2020, total poverty and extreme poverty decreased considerably. In three municipalities, the decrease in extreme poverty is more than 50%.

On the other hand, our survey finds good quality of housing for workers, and very low levels of chronic diseases and incidences of COVID.

The field work reinforced the above data: in the formal market, workers receive benefits and adequate transport, and housing has all the basic needs. In the informal market, the opposite is true. In Romita, the main municipality in terms of production, the informal labor market predominates while in municipalities such as Dolores, Hidalgo, the infrastructure and social services to support farm workers are highly visible and adequate.

In summary, although there is evidence of an improvement in working and living conditions as shown by the reduction of poverty and extreme poverty, which places agriculture in Guanajuato as a positive force for the well-being of agricultural municipalities, in Guanajuato it is a priority that growers, both labor secretariats, IMSS and other relevant actors agree and carry out coordinated actions so that the conditions of agricultural work comply with the law, and thus that workers have access to their rights. A suspension of exports from Guanajuato would substantially worsen the levels of poverty and extreme poverty. The solution is to improve working conditions.

Presentation

Over the past century, Mexico has become an agricultural powerhouse providing a wide range of fresh fruits and vegetables to consumers in Mexico, North America and beyond. As the sector has grown, so too have concerns regarding the treatment of the workers who plant and harvest these products. Some Mexicans of working age, with little formal education and limited employment prospects, migrate from southern Mexico to communities in the central and northern parts of Mexico where the agricultural boom has led to labor shortages and thus opportunities for low-skilled workers. While many earn a respectable living, others are subject to exploitation. The working conditions of Mexico's agricultural sector have long been a concern of activists and policy analysts in Mexico and the United States. In fact, the increased focus on labor conditions was an important driver for the inclusion of labor in the formal text of the United States-Mexico-Canada Agreement (USMCA) that entered into force on July 1, 2020. Further, Mexico undertook major reforms of its labor laws, regulations and practices, which are strongly supported by the López Obrador administration. Trade agreements and domestic reforms are critical aspects of efforts to improve labor conditions but are truly only effective if they are implemented on the ground. This requires an assessment of wages and benefits including access to livable accommodations. Such analyses are often conducted at a national or state level and may miss pockets of abuse or mistreatment and overlook distinctions between, for example, conditions on farms producing for export and farms whose products are consumed in Mexico.

To provide a more granular picture of the history of Mexican agriculture and assess the current labor conditions among those working on farms for export and domestic production, the Wilson Center, TPT, and Centro de Investigaciones y Estudios Superiores en Antropología Social, CIESAS [Center for Research and Higher Studies in Social Anthropology] have carried out a regional study of the Bajío Guanajuatense. We are pleased to publish *Working and Living Conditions in Mexico's Agriculture. Guanajuato's Bajío, 2020 – 2022*, a study that describes the development of one of Mexico's most productive agricultural regions and assesses the conditions of the current agricultural workforce. Through demographic and economic analysis, a clear understanding of the relevant provisions of Mexican law, a specially developed survey, interviews and visits to the homes and workplaces of current workers, the authors provide a comprehensive analysis of the labor conditions for agricultural workers in this region. In doing so, they hope to have contributed to enhanced understanding of the nuances and complexities of Mexico's agricultural sector, including significant differences between formal and informal workers.

TPT, CIESAS and the Mexico Institute are grateful for the financial support of the WalMart Foundation, without which this report could not have been completed, and to everyone, in the research team and in Guanajuato, who contributed with their work or their life experiences.

Andrew I. Rudman
Director, Mexico Institute
Woodrow Wilson Center
December, 2022

Introduction

This study is part of the project titled “Farm workers in Mexican export agriculture”, which aims to carry out the most rigorous diagnoses of the working conditions encountered by farm workers in Mexican export agriculture. To date, it has carried out a random and stratified survey of workers in the five main agricultural exporting states and in the main export crops, in addition to regional studies of export agriculture and its workers in Jalisco, Sinaloa and Baja California. Here, we present the results of the regional study for the state of Guanajuato.

The importance of agricultural activity in the state of Guanajuato dates back several centuries. Since colonial times, the availability of resources allowed for the development of economic activities that were essential for the viceregal society; New Spain transferred wealth to Spain in the form of precious metals; Guanajuato’s agriculture was essential for mine workers (Gómez-García, 2018). Since then, such activity has been fundamental for the area, although it has gone through various stages and transformations. Guanajuato’s climatic and environmental conditions are ideal for planting all kinds of different crops. As Gómez-García mentions, its rural areas “are distributed in wide valleys of alluvial origin” (2018, p. 66). Its rivers have also been an immensely important resource for agricultural development since colonial times; a case in point being the Lerma River (see Map 1).

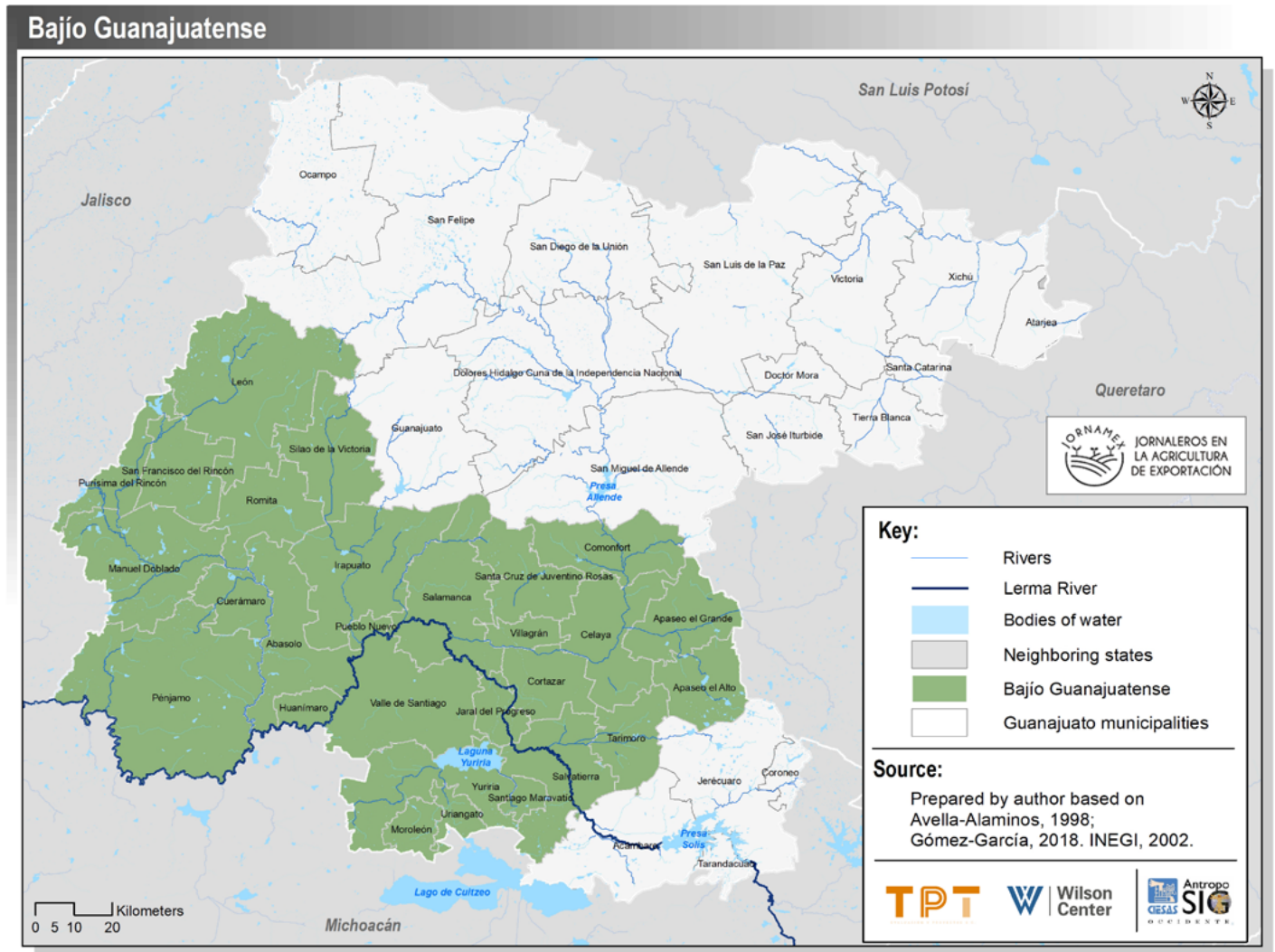
In addition, this state has a privileged geographical position that allows it to connect with various parts of the country (Estrada-Iguíniz and Labazée, 2007). This has been one of the advantages that has long since led to the growth of agriculture. The products that were grown in the state began to be marketed beyond regional borders, until they became an important part of the food market at the national level (Gómez-García, 2018). Furthermore, over the last 20 years, its role in the international market has been key.

The agricultural sector continues to be of great importance for the state’s economy, although industry and commerce have also grown significantly in recent decades. Currently, the state of Guanajuato is characterized precisely by its diversity and economic dynamism. It is an state where the three productive sectors hold great weight for the regional and national economy. However, the economic activities of these three sectors have been concentrated in a specific geographical area known as El Bajío [the lower lands]. One characteristic of the state of Guanajuato is the sociocultural and economic relationships it has had historically with the surrounding territories. Due to the relationships between these territories, it has been possible to define El Bajío as an extensive geographical area that includes the municipalities of Jalisco, Michoacán, Querétaro and Guanajuato. This vast geographic area is subdivided into regions that fall within the administrative boundaries of each state. A large portion of El Bajío territory is located in the state of Guanajuato. This specific area is called the [E] Bajío Guanajuatense.

This region encompasses the center and south of the state. In the upper limit, from west to east, a fringe of municipalities includes León, Silao, Irapuato, Salamanca, Santa Cruz de Juventino Rosas and Comonfort. To the south, the entire state is included, except for the southeast where the

municipalities of Acámbaro, Jerécuaro, Coroneo and Tarandacuao¹ are located (Avella-Alaminos, 1998; Gómez-García, 2018) (see Map 1).

Map 1. Bajío Guanajuatense



¹ The region is defined by geographical, historical, economic, and social characteristics. The authors who have studied it have identified its boundaries with some minor differences. For example, according to Avella-Alaminos (1998), Bajío Guanajuatense includes Acámbaro and a part of Jerécuaro. Meanwhile, Gómez-García (2018) follows the regionalization identified by Martha Chávez (2012) which, in addition to excluding Acámbaro, Jerécuaro, Coroneo and Tarandacuao, does not consider the municipalities of Yuriria, Uriangato and Moroleón in the south either. For this study, we have used the regionalization outlined by these two authors, as well as the sub-regionalization identified by the *Instituto de Planeación Estadística y Geografía del Estado de Guanajuato* [Institute of Statistical Planning and Geography of the State of Guanajuato], which divides the state into four regions: northeast, north, center, and south, which are further divided into subregions. We consider that Bajío Guanajuatense is made up of the entire central region and the southern region, with the exception of the subregion of the Sierra de los Agustinos that includes the municipalities of Acámbaro, Jerécuaro, Coroneo and Tarandacuao.

Most of the population and economic activities are concentrated in this area of the state. In terms of the state's population, 80.40% of its people live there. Of the total economically active population in the state, 81.37% live in this area with a specific rate of 62.30% for economic participation.² The high concentration of population and economic participation is largely due to the León-Celaya industrial corridor, a labor niche in the region where there is a concentration of urban centers (Estrada-Iguíniz and Labazée, 2007, p. 47). Along this corridor there is León, which exceeds one million inhabitants, as well as the medium-sized cities of Irapuato, Celaya, Salamanca and Silao, which range between 80 thousand and half a million people.

Table 2. Distribution of the population in the state and in Bajío Guanajuatense 2020

Geographical area	Total population	%	Rural population (1-2,499 inhab)		Urban population (+ 2,500 inhab)	
				%		%
Bajío Guanajuatense	4,958,004	80.40	1,075,818	21.70	3,882,226	78.30
Guanajuato (State)	6,166,934	100	1,721,976	27.92	4,444,958	72.08

Source: Prepared by author based on data from the population and housing census, 2020 by the *Instituto Nacional de Estadística y Geografía* [National Institute of Statistics and Geography].

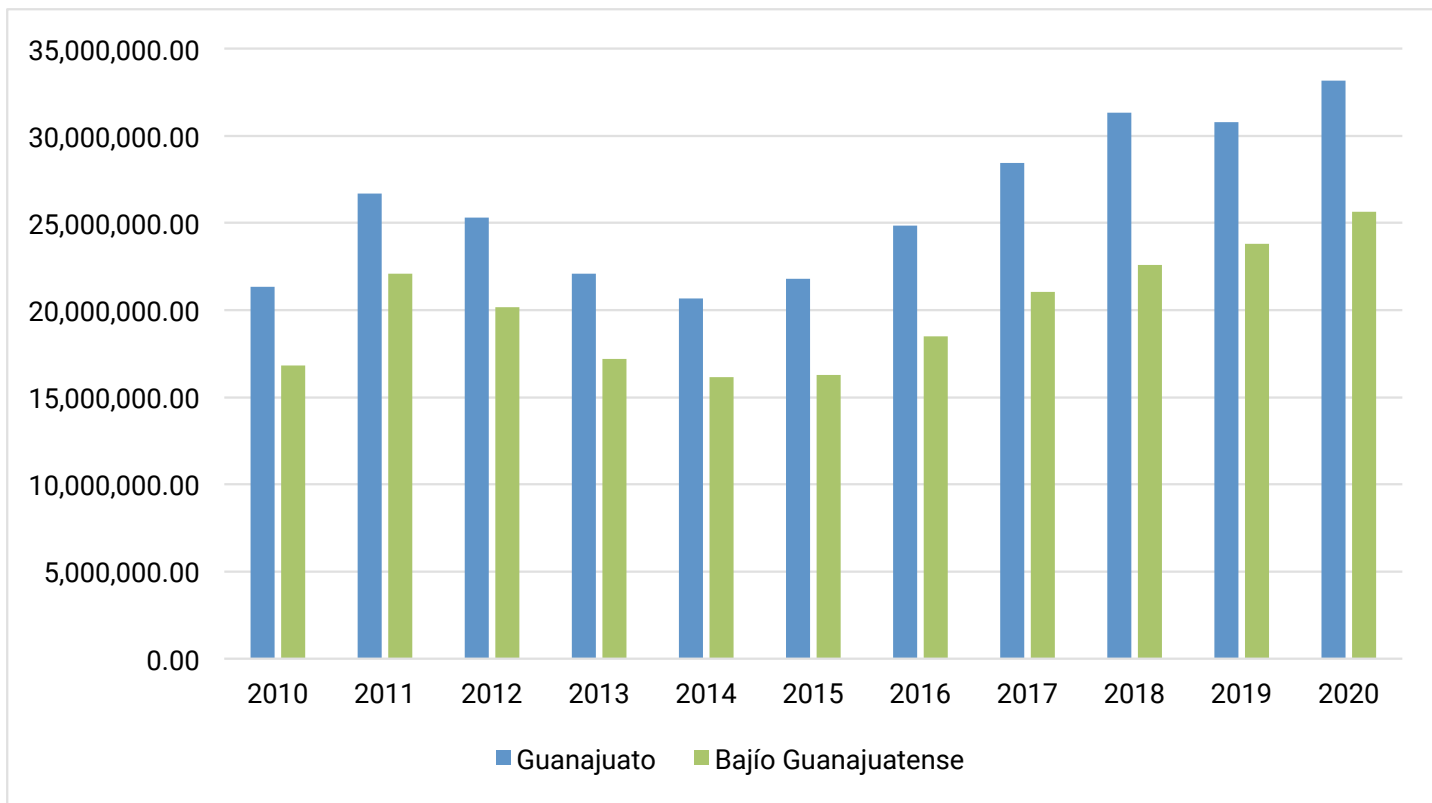
Surrounding the urban centers are the rural areas where 28% of the state's population lives; 22% of the rural population is concentrated in Bajío Guanajuatense. The rural area has been essential to supply labor for the agricultural and industrial sector. It is a complex panorama where the borders between the urban and the rural have been blurred. A large number of people in rural settlements have non-rural occupations, including industrial and service jobs. It is an area where diverse activities intertwine and extend over the vast territory (Arias, 2007; Estrada-Iguíniz and Labazée, 2007). Among these activities, agricultural production has not only retained its importance, but over the years it has become even more relevant. In recent years, the value of agricultural production, both at the state and regional levels, has shown a significant increase. Between 2015 and 2020 the value increased by 52% in the state and 57% in Bajío Guanajuatense.

The increase in the value of agricultural production is largely due to the importance that Guanajuato has as a national and international producer. According to data from the *Coordinadora de Fomento al Comercio Exterior* [Foreign Trade Promotion Coordinator] (COFOCE), in 2019, Guanajuato was the main national producer of cauliflower, lettuce and broccoli; the second of asparagus; and the

² It refers to the percentage represented by the economically active population, with respect to the population aged 12 and over. The specific rate of economic participation in the entity is 61.84%.

third of onion, strawberry and chickpea (2020). In addition, it was the food industry's fourth national exporter and the fifth world exporter of asparagus.

Figure 1. Value of agricultural production* in the state of Guanajuato and in Bajío Guanajuatense 2010-2020



* The values shown are in real values in thousands of pesos using the INPC 2018 base year for calculation.

Source: Prepared by author with data from the Agri-food and Fisheries Information Service, 2020.

Table 3. Bajío Guanajuatense's agricultural participation in the state by planted area and production value, 2020

Geographical area	Planted area (Ha)	%	Production value (real values in thousands of pesos*)	
			(real values in thousands of pesos*)	%
Bajío Guanajuatense	640,561.72	68.96	25,623.21	77.21
Guanajuato (State)	928,862.39	100	33,185.67	100

* The values shown are in real values in thousands of pesos using the INPC 2018 base year for calculation.

Source: Prepared by author with data from the Agri-food and Fisheries Information Service, 2020.

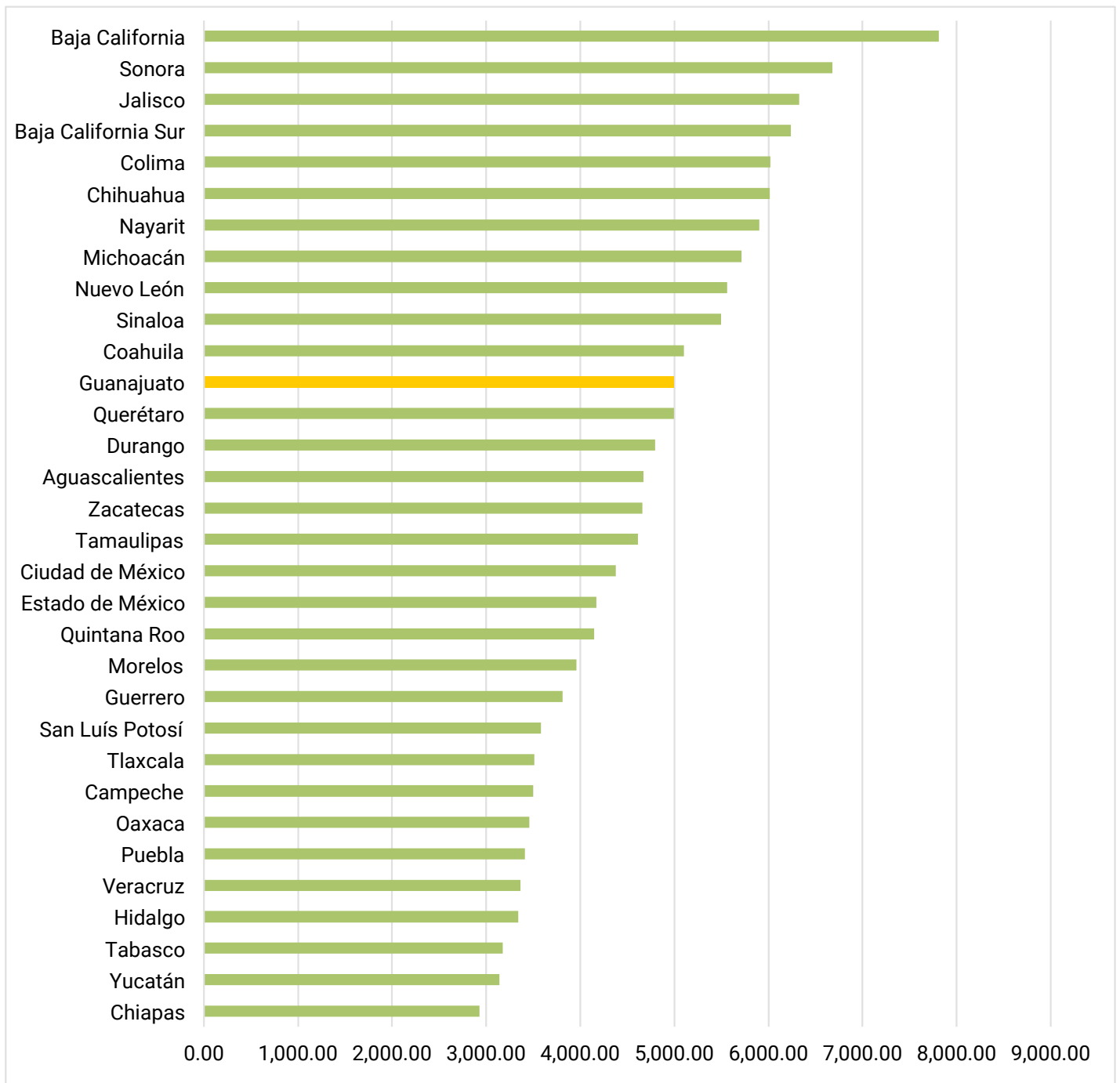
Agricultural production is concentrated in the municipalities that make up the Bajío Guanajuatense, although in recent years some municipalities in the north of the state have gained relevance, such as Dolores Hidalgo, San Felipe, Doctor Mora and San Miguel de Allende (COFOCE, 2020). According to data on production value from the Servicio de Información Agroalimentaria y Pesquera [Agri-food and Fisheries Information Service] (SIAP), the state's main producing municipalities are Romita, Pénjamo, Irapuato, Valle de Santiago and Abasolo. The municipality of Romita has the greatest participation in 2020 with 2,376 million pesos, which represents 7.16% of the state's production value. Its position as the municipality with the highest participation with only 7.16% shows how widespread agricultural activity is in the region. The municipalities with the least participation in the state are Atarjea, Santa Catarina and Tierra Blanca, which are located in the northeast of the state outside the Bajío region.

In general terms, the state of Guanajuato is one of the states with the highest national agricultural participation in 2020 according to production value. This state is in seventh place with 5.64%, after Michoacán, Jalisco, Sinaloa, Sonora, Veracruz and Chihuahua. It is also one of the states with the most agricultural workers. According to data from the 2020 Population and Housing Census by the *Instituto Nacional de Estadística y Geografía* [National Institute of Statistics and Geography (INEGI)], there are 116,223 farm workers in this state, ranking below Veracruz, Michoacán, Puebla and Chiapas. This figure is higher than those presented for other agro-exporting states such as Sinaloa, Baja California, and Sonora. Of the five main exporting states, Guanajuato is the one that employs the most farm workers. This reason alone is enough to signal the importance of agricultural labor conditions in this state.

Despite the importance agriculture has for the state and the increase in production value in recent years, in terms of working conditions, Guanajuato remains at a disadvantage compared to other agro-exporting states. Analysis of the data from the INEGI 2020 Population and Housing Census allows us to identify Guanajuato's position regarding the wages and conditions of agricultural farm workers. In terms of salaries, Guanajuato is in twelfth place with an average monthly income of 4,995.76 pesos. This income is less than that received in the agro-exporting states of Baja California, Sonora, Jalisco, Baja California Sur, Colima, Chihuahua, Nayarit, Michoacán, Nuevo León, Sinaloa and Coahuila. (See Figure 2).

Regarding other labor rights such as end-of-year bonuses, disability and profit sharing, the situation does not differ much. Unlike states such as Baja California, Baja California Sur, and Jalisco, where these labor rights are mostly upheld, the state of Guanajuato ranks below tenth place. Only 15% of agricultural workers receive end-of-year bonuses. The situation is even worse when it comes to profit sharing and disability payments, with only 5% of agricultural workers covered. Compliance for the right to vacations and the right to health care is also lacking with only 7% and 9% respectively. The situation is even more worrisome when analyzing the percentage of child labor. According to census figures, 6% of the farm worker population are minors. In this category, Guanajuato is positioned within the top 10 for the most child labor, ranking ninth.

Figure 2. Average monthly income of agricultural farm workers in Mexico by entity, 2020



Source: Prepared by Omar Stabridis from the Microdata of the Expanded Questionnaire of Population and Housing Census 2020 by INEGI.

The proportion of workers who exercise their labor rights allows for an estimate of the labor violations that occur in the state and in each of the municipalities. Seven categories are taken into consideration when estimating labor violations: end-of-year bonus payment, vacations, health care entitlement, profit share payments, disability payment, AFORE (pension fund), and housing credit. According to the proportion of workers who receive these labor rights, the state has an average of 6.49 labor violations out of 7. This means that compliance with the labor rights of agricultural farm workers in the state is very low.

At the municipal level, the same analysis shows that the municipality of Romita, which presented the highest agricultural participation in 2020 according to production value, is one of the worst in terms of compliance with labor rights. This municipality accumulates an average of 6.93 labor violations out of 7, which is below the state average. In other words, in Romita workers exercise almost zero labor rights. Likewise, according to census data in this municipality, 9% is comprised of underage labor. The situation is similar for the municipality of Valle de Santiago, which has the most agricultural workers in the state. This municipality is also below the state average when it comes to the payment of bonuses, profit sharing and disability, as well as its compliance with vacation and health care rights. This municipality accumulates an average of 6.90 labor violations out of 7 with 6% child labor. Of the 10 municipalities with the most agricultural workers in the state, only Pénjamo and Salamanca are above the state average for complying with labor rights, while the municipality of Santa Cruz Juventino Rosas joins them when it comes to profit sharing. The five municipalities that present better compliance according to the average number of labor violations are Villagrán, San Francisco del Rincón, León, Silao de la Victoria and Cortázar. All of them have an average of less than 6, ranging between 5.26 and 5.84.

The panorama presented thus far justifies an analysis of the conditions faced by agricultural workers in the state of Guanajuato. The importance of Guanajuato as a national and international producer contrasts with its ranking in terms of compliance with labor rights, which raises significant questions. As one of the entities with the highest production value in the country, of which a large part is destined for export, the expectation would be to see an improvement in its compliance with labor rights and working conditions in recent years. On the contrary, this state ranks below other agro-exporting states where there has been a turning point in terms of labor standards and a focus on social responsibility. The question this study tries to answer is: What elements are fostering low compliance with labor rights in the state of Guanajuato?

In the investigations we carried out in other agro-exporting states, we found an improvement in compliance with the rights and working conditions of farm workers. Although in states such as Baja California and Sinaloa we have identified the existence of an informal labor market where precarious conditions remain, most workers enjoy legal benefits, albeit formally (Escobar-Latapí et al., 2021; Escobar-Latapí & Martínez Rubio, 2021). These studies enable us to affirm that the informality of labor markets is the main factor affecting the precariousness of work. Where the agricultural labor market has been formalized, workers receive their legal benefits in a greater proportion, such as end-of-year bonus payments, social security affiliation, the right to vacations, disability pay, and profit sharing. This makes a significant difference in the living conditions of farm workers.

This document is a diagnosis of the working conditions that prevail in Bajío Guanajuatense. Presented here are the results of the research carried out during 2022 in different agricultural municipalities of the state. The research is based on an exhaustive bibliographical review and the analysis of databases generated by the Instituto Nacional de Estadística y Geografía [National Institute of Statistics and Geography] (INEGI), the *Servicio de Información Agroalimentaria y Pesquera* [Agri-food and Fisheries Information Service] (SIAP) and the Consejo Nacional de Evaluación de la Política del Desarrollo Social [National Council for the Evaluation of Social Development Policy], as well as from ethnographical field work carried out during March, April and May in the municipalities of León, Romita, Irapuato, San Francisco del Rincón, Valle de Santiago and Dolores Hidalgo. During the field work, formal and informal interviews were conducted with different actors in the agricultural sector. These interviews were conducted by the authors of this document and are referred to throughout the text with pseudonyms to maintain the confidentiality and privacy of individuals. Finally, a survey was carried out on employers and workers of export companies.

The diagnosis is divided into seven segments that address the working and living conditions of agricultural farm workers in the region. The first describes in detail our methodology and field work in Bajío Guanajuatense. The second recounts the agricultural history of the Bajío Guanajuatense region referring to bibliographic sources and data collected in the field, while using data from the Agri-Food and Fisheries Information Service (SIAP) to describe the current agricultural structure presented by the state. Since the agricultural structure has a direct impact on the configuration of labor markets, this aspect is analyzed in the next section.

The third segment is dedicated to the findings related to working conditions. The first section of this segment includes analysis of the INEGI Population and Housing Census 2020 combined with analysis of the SIAP databases, which allows us to describe the quality of working conditions in each of the state's municipalities according to their main crops. The analysis includes both the general farm worker population and the indigenous farm worker population and was carried out by Jornamex for the entire country, although in this document we only delve into the main agricultural municipalities of Guanajuato.³ Next in this segment comes the section that analyzes the results of the ENJOREX 2022 survey that was carried out by our team in Bajío Guanajuatense for this study. ENJOREX refers to a set of surveys that we have applied to agricultural workers in Mexican export agriculture since 2019. With the data collected during the field work, the third and fourth sections of this segment characterize the types of agricultural labor market, firstly the formal labor market followed by the informal labor market. In these two sections, the working conditions are identified according to the labor market; that is, if it is formal or informal.

The ethnography showed that in Guanajuato, in addition to the segmentation that labor markets present according to whether they are formal or not, there is an important differentiation of workers based on their origin and migratory status. For this reason, the fourth segment focuses on the issue of migrant workers and their working and living conditions. The following segment deals with the issue

³ Maps for the rest of the country can be found here: <https://jornamex.com/mapas.html> and here: <https://www.wilsoncenter.org/collection/municipal-maps-compliance-and-non-compliance-labor-conditions-mexico>

of child labor, which we identify as a very significant problem in the region. It stems from a variety of elements such as the type of labor market, state regulations, the responsibility of employers and effective access to educational institutions. We address all these factors in order to provide a broad overview of this situation. The sixth segment focuses on the dynamics of agricultural production and poverty in the main agricultural (and exporting) municipalities of Guanajuato. Lastly, given the relevance of social security affiliation as a labor right and the effect it has on people's lives, the final analytical section is devoted to the issue of health care and social programs. The aim is to describe the situation endured by workers in the state to serve as input for decision makers to improve the conditions faced by farm workers. We present our conclusions in the closing segment.

I. Methodology

JORNAMEX is a project that was launched in 2017 and is dedicated to rigorous research into the working conditions experienced by farm workers in Mexico's export agriculture. The research JORNAMEX has carried out is performed using a combination of methodologies which make it possible to address all the different agricultural panoramas at various levels as well as the different conditions faced by field workers in the main agro-exporting regions of the country. Due to their scope, surveys and ethnography have been used as research methods. Surveys have made it possible to generate reliable data and descriptive statistics that show the current situation in terms of working conditions in each region. For its part, the ethnographic method has made it possible to identify the elements, dynamics and processes that intertwine with day labor and the impact they have on people's lives. As such, the research describes working and living conditions, as well as the heterogeneities according to the characteristics of the workers. That is, the different working conditions and the differentiated access to housing and public, educational and health care services according to type of labor market, sex, age, origin, migratory status, and ethnicity.

The particularities of each region have been fundamental in shaping the design and development of the research. For this reason, a literature review has been carried out for each of the regions. Likewise, different databases have been analyzed, including INEGI's Population and Housing Census and the National Occupation and Employment Survey; the open data provided by the Agri-Food and Fisheries Information Service (SIAP), the multidimensional measurement of poverty by the *Consejo Nacional de Evaluación de la Política de Desarrollo Social* [National Council for the Evaluation of Development Policy Social] (CONEVAL) and the databases detailing affiliation to the *Instituto Mexicano del Seguro Social* [Mexican Social Security Institute] (IMSS). The bibliographic review and the analysis of these databases allowed adequate planning according to the context of each region. Likewise, it was possible to establish contact with key actors to conduct the survey and carry out the ethnography.

The Bajío Guanajuatense survey was carried out with the support of the Consejo Estatal Agroalimentario de Guanajuato A.C. [State Agri-food Council for the State of Guanajuato], the Facultad de Estudios Superiores [Faculty of Higher Studies] (FES) at the Universidad Nacional Autónoma de México [National Autonomous University of Mexico] (UNAM) in León, and own contacts. The survey was designed as an application using the Android operating system and was self-contained on a tablet to avoid the need for Internet to connect to a cloud system. The design was created by the Colegio de la Frontera Norte [North Border College] (COLEF). The questionnaire was updated in 2022, thanks to the suggestions and comments of the team itself and commentators from PUED-UNAM. The update was carried out by Omar Stabridis, who was in charge of coordinating, capturing, and centralizing the data, and then coding, cleaning, and analyzing it.

The relationship with FES León began when contact was made during a lecture given by Agustín Escobar on the evolution of poverty in the various municipalities of the state. It was at this point that a relationship was established with young graduates on the Desarrollo Territorial [Territorial

Development] degree course, who then went on to carefully apply the survey. In the case of the State Agricultural Council, our team held two meetings with the members of this council, and as result two businesspersons agreed to participate in the survey. From these two companies, we obtained 314 worker cases, which only represent the employment conditions in these two companies; thus, in 2022 the survey only represents those companies, and not the state.

One of these companies is a large vegetable exporter that employs 3,575 workers, mainly producing plumb tomatoes, bunch tomatoes, cherry tomatoes, and grape tomatoes in high-tech greenhouses. Use of high technology also allows it to maintain a very stable workforce throughout the year because production tends to be almost uniform yearlong, without any specific harvest season. This company exports 95% of all its production, mainly to the United States and Canada. The second company employs a total of 78 workers and produces mainly tomatoes, peppers, lettuce, and broccoli. Its labor force is more variable because its technology is essentially traditional production, which is why it has marked planting and harvest seasons. The survey was carried out right at the time of the harvest.

The survey enabled us to carry out a profound analysis of working conditions, wages and salary variations, background of workers, household composition, quality of housing, recruitment processes, COVID, and other central themes of the study. The survey was carried out between August 1 and 12, 2022. It was necessary to postpone the work for a few days due to violent outbreaks in important cities in the state, which were orchestrated by organized crime cartels.

For each of the companies, the survey followed a simple random sampling design. To ensure a random selection, the researchers visited the farms and selected workers who were available from the different crop fields. The interviews with each worker were carried out without the presence of any other member from the company to ensure the worker was not under any pressure when answering the questionnaire. The survey results can be expanded to a total of 3,653 workers.

The ethnography was carried out during the months of March, April and May in the municipalities of León, Romita, Irapuato, San Francisco del Rincón, Valle de Santiago and Dolores Hidalgo. These municipalities were selected on the basis of the literature review and the databases that position them as relevant in terms of agricultural production and the number of field workers. Contact was established with key institutional actors and civil society organizations that work directly with day laborers in the region. Firstly, we contacted the Secretaría del Migrante y Enlace Internacional del estado de Guanajuato [Secretariat for Migrants and International Liaison for the State of Guanajuato], and the Na'Vali⁴ project carried out by the Centro de Desarrollo Indígena Loyola [Loyola Indigenous Development Center] to care for migrant day laborer children. Through formal and informal interviews, both actors provided us with first-hand information that contributed to the delimitation of the study area. These actors were contacted during the first, or exploratory, period of field work.

Following this, we also set the dates for the field work according to the high season of some of the crops in the region, including chili, which is a labor niche for which Ñuu Savi⁵ migrant laborers from

4 Na'Vali means space for girls and boys in tu'un savi, which is the language of the Ñuu Savi Mixtec people.

5 Mixteco people.

Guerrero are hired. This group is of interest because according to the bibliography and the information collected during the exploratory field work, they are the ones facing a situation of greater precariousness and inequality. The main period of field work was carried out during the month of April and the first two weeks of May. Given the difficulties in identifying and contacting agricultural workers, as a strategy, we resorted to contacting the Secretariat for Migrants and International Liaison of the State of Guanajuato, with whom we went on the tours they carry out to locate migrant day laborers, and joined them during their deliveries of personal hygiene items to farm workers and their families. During these tours, we accessed the migrant farm worker shelter in San Francisco del Rincón managed by municipal agencies, three agro-export company shelters located in the municipality of Dolores Hidalgo, and a broccoli field in the municipality of Romita.

These tours allowed us to identify the main locations where migrant day laborers settle. After identifying the localities, we went to the delegates of the localities to introduce ourselves and make them aware of our presence. This was particularly important given the context of violence that is taking place in Mexico. Later, we went directly to the farm workers to ask for their contribution to the research. During the field work, formal and informal interviews were conducted with public officials, producers, contractors, and workers from the region, both local and migrants. This provided a broad panorama from different perspectives on the situation facing agriculture in the Bajío area. Likewise, repeated visits to the localities and to the families of agricultural workers allowed us to see the conditions where they reside. The following sections present the results obtained from the survey and the ethnography.

II. Agro-industrial configuration of Bajío farmland

Since colonial times, Bajío Guanajuatense has been a prosperous agricultural region (Avella-Alaminos, 1997; Ramírez-Velázquez and Tapia-Blanco, 2000). During the colonial period, agriculture was essential to supply food to mine workers (Avella-Alaminos, 1997; Ramírez-Velázquez and Tapia-Blanco, 2000; Gómez-García, 2018). Over time, food production surpassed the need to feed the area's inhabitants and products were planted to be marketed both within the region as well as beyond its limits (Avella-Alaminos, 1997; Ramírez-Velázquez and Tapia-Blanco, 2000; Gómez-García, 2018). Since then, Bajío Guanajuatense has been fundamental to feed the rest of the country and an important producer for the international market.

In the 19th century, the cultivation of basic grains such as beans, corn, and wheat was one of the most representative activities in the region, which earned this area the nickname "*el granero de México*" [Mexico's breadbasket] (Briseño-Roa, 2008). However, despite its importance, it was not until the middle of the 20th century when agro-industrial development began that agriculture in the region assumed another role (Aguilar-Sánchez, 1989).

According to Avella-Alaminos (1997), from this moment on, two phases of agricultural development in the region can be identified. The first of these occurred in 1940 with the adoption of the import substitution model of development. The second began in 1960 with the establishment of the Green Revolution paradigm. A third phase can be added to the two stages that Avella-Alaminos (1997) identifies, which is just as essential for understanding the current configuration of agricultural activity in Bajío Guanajuatense. This stage began in the 1980s with the advent of market liberalization policies. Each of these stages is part of a transformation process that has structured the agriculture of Bajío Guanajuatense.

This segment presents the main characteristics of these phases in order to provide an overview of the current configuration of the agricultural structure in this area. To this end, we analyze data from the Agri-Food and Fisheries Information Service (SIAP) and the data collected during the field work in March, April and May 2022. It is important to emphasize that the way in which agricultural activity is configured and structured is fundamental to understanding the conditions that farm workers face.

2. 1. From farm to freezer in Mexico

The import substitution policy of 1940, which provided support for development within the industry, led to the growth of the agri-food industry throughout the Bajío region. Based on this economic model, industrial capital was injected into the food sector in the region. For example, in 1946 "the company Carnation de México was established in the city of Querétaro and a year later Anderson & Clayton began vegetable processing activities in León" (Avella-Alaminos, 1997, p. 58). The arrival of the food processing industry caused the region's farmlands to begin a transformation aimed at modernization and specialization.

Traditionally, Bajío Guanajuatense was dedicated to planting basic grains and some vegetables (Avella-Alaminos, 1997; Marañón-Pimentel, 2002). However, grain production was affected in the 1950s by widespread development of infrastructure and subsidies for basic grain producers in the northwest of the country, which had negative consequences for farmers in Bajío (Avella-Alaminos, 1997). In short, at the beginning of the 1960s, the guaranteed prices of basic grains fell, forcing producers to look for alternatives (Avella-Alaminos, 1997). The growth of the agri-food industry, trends towards modernization of farmland and the disadvantages associated with continuing to plant grains were the main factors that led to the introduction of other types of crops. As a result, extensive commercial crops such as sorghum, barley, wheat, and alfalfa gained ground, as well as some fruit and vegetable crops that had not been grown traditionally in the region (Avella-Alaminos, 1997; Marañón-Pimentel, 2002; Martínez-Borrego, 2015).

A clear example of the relationship between modernization and crop changes that took place in this stage is the case of Don José, a 92-year-old *ejidatario*⁶ from the municipality of Valle de Santiago, who says that more than 50 years ago his family planted wheat and rainfed chickpea. The introduction of irrigation systems that used water from the Lerma River allowed them to switch to higher value crops. It was then that Don José's family began to grow tomato, peanut, sweet potato, and alfalfa. He mentions that this change brought about an improvement in their lives. The modernization of farmland and the change in cultivation patterns mark the beginning of the second phase of agricultural development, a time that is characterized by the consolidation of Bajío Guanajuatense as an agro-industrial complex (Avella-Alaminos, 1997). For some time, its geographical location and its communication routes had made Bajío Guanajuatense ideal territory for the production and commercialization of different products. Furthermore, the transformations in agricultural activity that occurred during the previous stage – among which, the arrival of some industrial companies, the construction of agricultural infrastructure and the change in crop patterns stand out – laid the foundations for the strengthening of the agro-industry in this period.

During this phase, the specific conditions of the territory were accompanied by a combination of political, economic, and social factors at the national and international level. Among them, the deficit presented by US horticultural production, the end of the Bracero Program⁷, the end of the trade agreement between Cuba and the United States and the agri-food crisis in Mexico (Avella-Alaminos, 1998; Marañón-Pimentel, 2002). Together, all these factors motivated large foreign and national companies to consider the Bajío as ideal territory for agricultural production. The main consequence of this change was the increase in private owners and the participation of foreign and transnational capital (Avella-Alaminos, 1997). At this time, agro-industrial companies such as International Minerals

6 In the aftermath of Mexico's Revolution, the government carried out large-scale land reform that re-created a social form of ownership called *ejido*. *Ejidatarios* is the name of small landowners within this social property system.

7 From 1942 and until 1964, over 3.5 million work permits were granted to Mexican farmers to migrate to work temporarily in the U.S. Collectively, this is called the Bracero Program.

and Chemicals, Campbell Soup, Del Monte, Heinz, Gerber, Marbran⁸ and Bird's Eye⁹ were established (Avella-Alaminos, 1997; Echánove-Huacuja, 2000), which were focused on freezing and processing fruit and vegetables.

The arrival of these companies caused rising demand for certain crops such as peas, carrots, sweet corn, asparagus, green beans, strawberries, broccoli, cauliflower, and okra (Avella-Alaminos, 1997; Echánove -Huacuja, 2000). The consequence was that the downward trend in basic grains and the increase in this type of vegetables continued. However, Avella-Alaminos (1997) points out that this change was gradual and one of its characteristics was that as some varieties were no longer planted, as other crops began to increase production. According to the data analyzed by Avella-Alaminos (1997) from 1960 to 1970, there was an increase in the variety of fruit and vegetable crops and in the municipalities dedicated to planting them.

In summary, all these elements contributed to the consolidation of Bajío Guanajuatense as an agro-industrial complex made up of four types of production: "agro-industrial plants for the preservation of fruits and vegetables through dehydration; preparation, freezing and canning processes; processes involved in making pastes and jellies; and those for making sauces, soups and strained foods" (Avella-Alaminos, 1997, pp. 73-74). The consolidation of this complex implied that multinational companies acquired control of production and marketing (Aguilar-Sánchez, 1989).

However, even with the growth of horticulture, cereals such as sorghum and wheat retained their importance in the region, as observed in the fourth segment of this study, which is mainly devoted to the relationship that these types of crops have with livestock activity and the agri-food industry. As Avella-Alaminos (1997) mentions, in Bajío Guanajuatense, agricultural and agro-industrial growth have mutually reinforced each other: "in the beginning, agricultural growth attracted agro-industry because it had the potential capacity to ensure the supply of the raw materials that it required, but then the agro-industry promoted the growth of agricultural production by demanding greater amounts of raw material" (p. 60).

In addition, raw materials were used in the production of animal feed and for the preparation of alcohols, starches, and flours (Aguilar-Sánchez, 1989). The wheat and milling industries were directly related to the production of bread, especially the sale of flour for the Bimbo company and for regional bakeries in Guadalajara and central Mexico (Aguilar-Sánchez, 1989). At that time, the state of Guanajuato was the second largest producer of sorghum in the country (Aguilar-Sánchez, 1989).

This phase of Guanajuato's agricultural development lasted until the 1980s, at which time market liberalization policies marked a turning point in the country's economic dynamics. Among the effects of these policies, subsidies, price guarantees and support for farmland were withdrawn. The consequence of this was the impoverishment of the *ejidatarios* and small producers. On the contrary, large companies

8 According to Avella-Alaminos (1997), the Marbran company was established in the region in 1963, focused on freezing strawberries. Marañón-Pimentel (2002) points out that in 1980 this company changed its focus to vegetable processing thanks to previously established contracts with the Bird's Eye company that allowed it to capitalize on this activity. The same situation happened in 1978 with Covemex, a company formed from national capital. (Marañón-Pimentel, 2002).

9 Echánove-Huacuja (2000) points out that this company was the first vegetable freezer in Mexico. It was after their arrival that broccoli, cauliflower, and okra began to be planted.

and export-focused production benefited. These modifications brought about a restructuring of the agricultural supply, betting to a greater extent on non-traditional fruit and vegetable agro-exports. Marañón-Pimentel (2002) refers to this stage as “outward” modernization, with the emergence of non-traditional agricultural exports.

According to Martínez-Borrego (2015), this paradigm once again generated a change in the crop pattern. The author points out that there was a shift from “modern intensive agriculture” fostered by the Green Revolution, where extensive crops were the main product, to a “non-traditional agro-export model” whereby horticultural products acquire even greater relevance. It is important to remember that Bajío was already an important producer of fruits and vegetables in the previous stage, both for freezing and processing as well as for selling fresh. However, trade opening policies and increased demand from the United States benefited fresh and frozen fruit and vegetable products, to the detriment of grains and fodder (Echánove-Huacuja, 2000; Marañón-Pimentel, 2002). As the agro-export industry took off, new companies arrived in the region at the same time that existing companies expanded and strengthened (Echánove-Huacuja, 2000). In the 1980s, the companies Green Giant, Expohort, Congelados Vegetales de Irapuato and Export San Antonio were established in the region (Marañón-Pimentel, 2002).

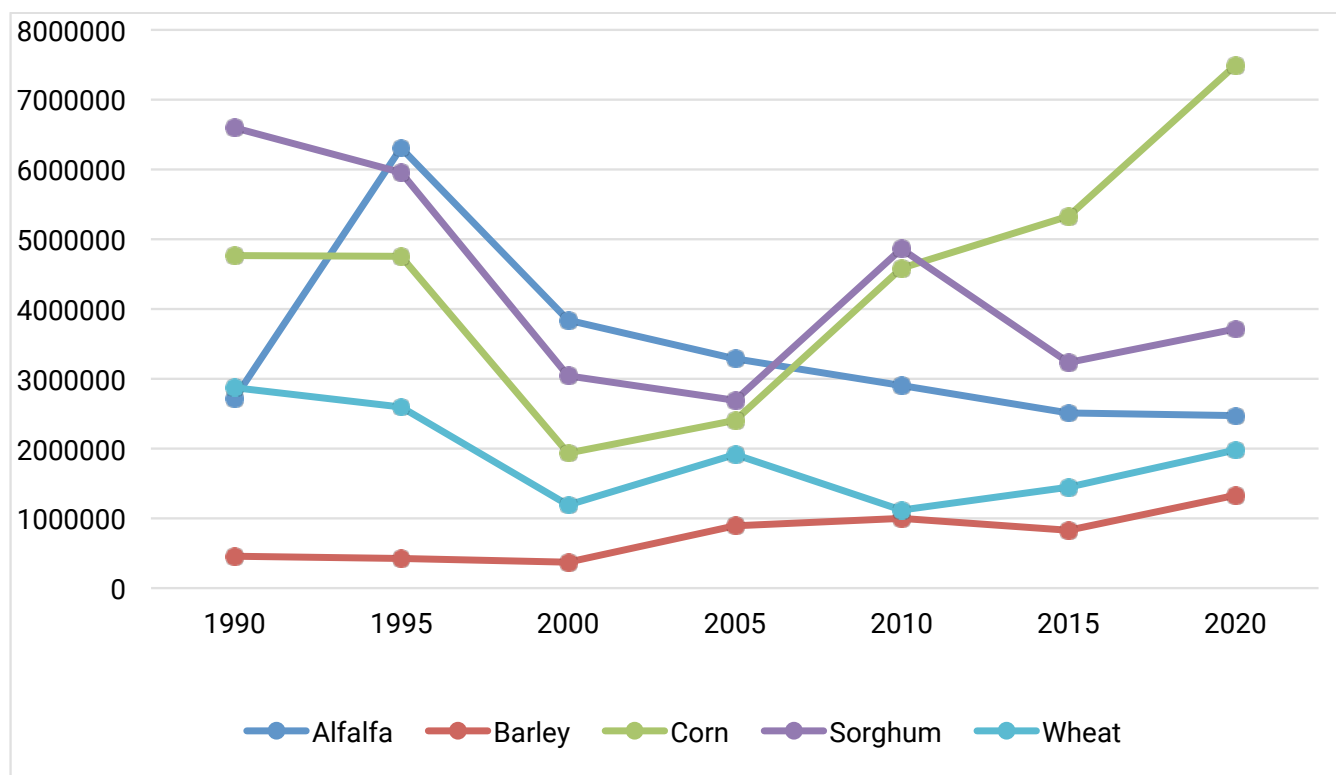
Furthermore, Marañón-Pimentel (2002) points out that in the 1980s there was a canned products crisis. Therefore, some producers decided to opt for fresh products, as was the case with asparagus. This change is clearly shown when analyzing the production value data from 1990 to 2020. From 1995 there is a decrease in the value of grain and forage production in the state. The most affected crop during this period is corn, which decreased by 59%. As can be seen in figure 3, during this five-year period, the production value decreased for the five main grain and fodder crops. After the year 2000, wheat, corn, and barley began to recover, although in 2020, of these three crops, only corn exceeds the production value it had in 1990.

Sorghum and corn are the crops with the fastest growth in the five-year period from 2005 to 2010. Sorghum grew by 81% and corn by 91%. For its part, wheat remains relatively stable. Barley is the one with the lowest production value, but from the year 2000 to date it has been growing constantly. The crop that has lost the most is alfalfa, since it is the only one that continues to decline. However, it is important to emphasize that despite decreases in production value, all these crops continue to be grown in the region; the decrease in their value reflects the fall in prices and the change in crop patterns. The difficulties involved in continuing to plant these types of crops and the lower profitability compared to fruit and vegetables is expressed by the same producers in the region. They claim that the cost of technological packages is increasing faster than the price of crops.

For example, Pedro, a producer who grows wheat, barley, chickpea, and husk tomato in the fall-winter cycle and corn and sorghum in the spring-summer cycle, broke down the current costs of the wheat technology package with a calculator in hand. Costs are around 44,000 pesos per hectare. To break even, he must produce around 6 tons per hectare, each with a value of 8,000 pesos. If he does this, he can recover the cost of the package and make a profit of about 4,000 pesos per hectare during the season. Corn has higher yields than wheat, although the technological package costs around 56,000 pesos per hectare. Ten tons per hectare can be produced, generating a profit of 10,000 pesos per

hectare. The increased costs of technological packages, particularly fertilizers, is what leads many of the producers to look for alternatives. For example, Pedro states that he produces maize and sorghum in the spring-summer cycle to maintain wheat production in autumn-winter. In addition, he created his own fertilizer business for extra income. Farmers opt for crop diversification, including the introduction of fruits and vegetables, as well as diversification of economic activities.

Figure 3. Production value* of grains and fodder in the state of Guanajuato 1990-2020



* The values shown are in real values in thousands of pesos using the INPC 2018 base year for calculation.

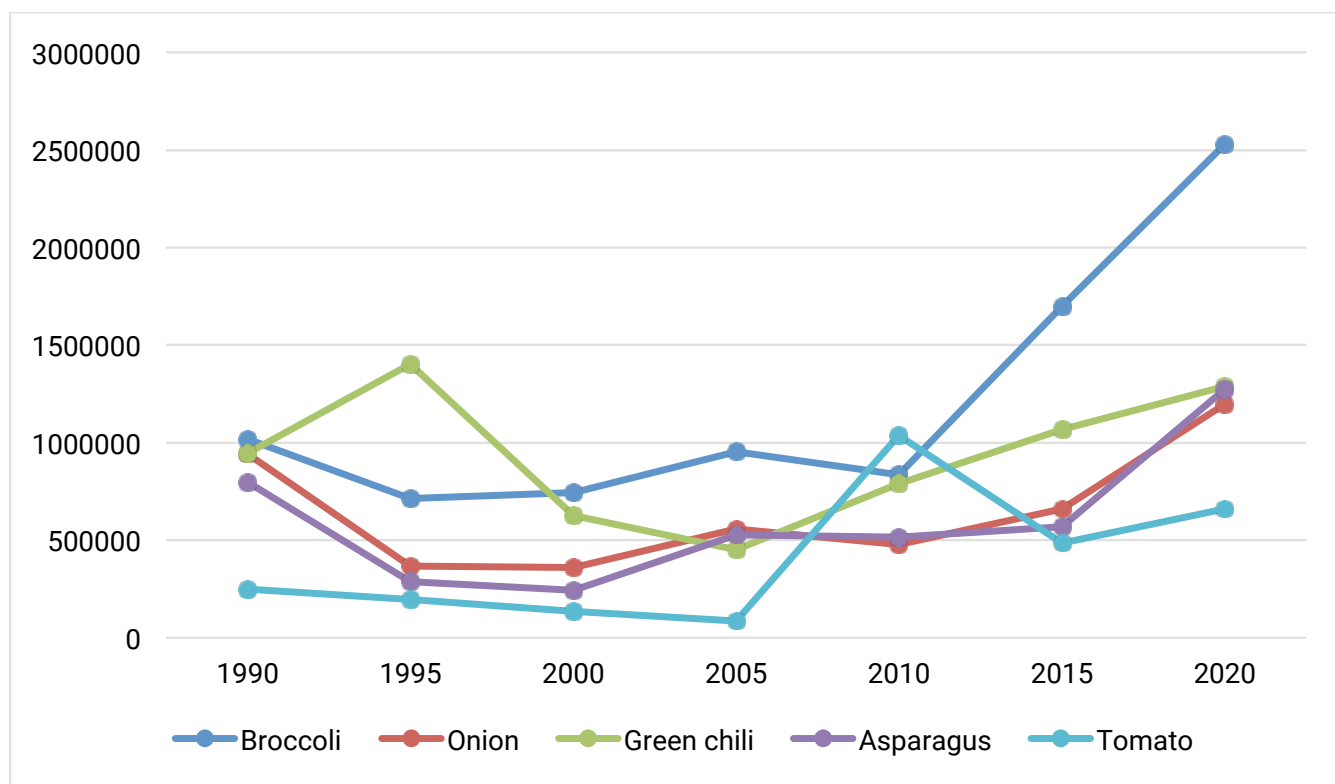
Source: Prepared by author with data from the Agri-food and Fisheries Information Service, 2020.

On the other hand, if we analyze the case of vegetables, the trend for products such as broccoli, onion, green chili, asparagus, and tomato is upward. The growth of onion, asparagus and broccoli began in 2000. From 2000 to 2005, the value of asparagus production increased by 116% and since then it has continued to grow. In that same period, the total value of onions grew by 55% and that of broccoli by 29%. Of all these crops, broccoli is the one that has had the greatest growth in production value. According to Echánove-Huacuja, in 1998, “70% of the national area harvested for broccoli and half for cauliflower was in the state of Guanajuato” (2000, p. 107). Green chili has also grown steadily since 2005. Unlike grains and fodder that decreased their production value, vegetables have increased, which reaffirms the change in crop patterns and their profitability.

This change has been largely driven by new technology, which has made it possible to improve yields and make production more efficient. Greenhouses, drip irrigation and the introduction of new chemicals and hybrid varieties are some of the technologies that were incorporated during this period

(Marañón-Pimentel, 2002). Despite changes in crop patterns, the planted area has not changed much. According to SIAP data, in the last 30 years, the area has decreased by 16%. Such a small decrease in the planted area reflects the prevalence of agricultural activity as well as the permanence of extensive field crops, which sits in contrast to other regions where the area has decreased drastically. For example, this is the case of the Valle de Zapotlán region in Jalisco, traditionally a corn-growing region, which in the last decade has focused on the cultivation of berries and avocado (Martínez-Rubio & Judd-de la Luz, 2021). In this region, the planted area has decreased from 2005 to 2020 by 24%.

Figure 4. Production value* of fruit and vegetables in the state of Guanajuato 1990-2020



* The values shown are in real values in thousands of pesos using the INPC 2018 base year for calculation.

Source: Prepared by author with data from the Agri-food and Fisheries Information Service, 2020.

Despite urbanization and industrial growth, in the state of Guanajuato the decrease in planted area is low, though farmers note that the planted area has decreased due to the growth of urban sprawl and industry. For example, Don Pedro mentions that where the Mazda Motor Corporation's maquiladora is now located, years ago it was land where grains and fodder were grown. However, if we compare the acreage with the value of production, we see that while the former is decreasing, the latter is increasing. This is largely the result of new agricultural technologies that have led to better yields, as well as an increase in production of high-value crops that require less planting area and generate higher income. In recent years, there has been a significant rise in fruit and vegetable production for export in various

forms: fresh, frozen, and processed. According to COFOCE data, from January to May 2020, the export of fresh products represented 50% of agri-food exports, 29% were frozen, and 17% were processed¹⁰ (COFOCE, 2020). The growth of the fruit and vegetable agro-industry has been so relevant that even at the 2020 Global Food Forum, the president of the Consejo Nacional Agropecuario [National Agricultural Council] (CNA) stated that “Guanajuato has ceased to be Mexico’s breadbasket, now it is an export freezer for fruit and vegetables” (Ramos, 2020).

Although the production value of these crops has increased in recent years, the truth is that the agricultural region of Bajío Guanajuatense continues to be an important producer of grains and fodder. Don Pedro agrees. In total disagreement with the CNA’s president’s statement, Don Pedro states that not everyone in the region is planting vegetables as they require access to capital and technology, such as having pump irrigation or access to wells, which is unaffordable for many producers. As such, from his perspective, today there are only a few who can participate in the fruit and vegetable boom. On the contrary, in the past when the region was renowned as the “breadbasket” of the country, the entire agricultural sector could participate to make it possible. In his words: “only a few *Guanajuatenses* are the freezer of the country.”

The significance of grain production in the state is such that when analyzing the production value of all crops, we find that in 2020, corn is the crop that generated the greatest value, above agave¹¹ and the main vegetables such as broccoli. (Table 4). Thus, production in Guanajuato continues to be quite heterogeneous, unlike what happens in other regions of the country that have focused on a single crop. This is the case in the San Quintín Valley, where strawberries and tomatoes predominate, or in the South of Jalisco, where there is a clear displacement of traditional crops by red fruits and avocado. In 2020, the most relevant crops in Guanajuato in terms of value were grain corn, agave, cucumber, broccoli, alfalfa, and wheat. These are followed by barley, green chili, asparagus, onion, and strawberry. In addition, in 2011 Chinese vegetable varieties such as ebo, changai-bok-choy, pack-choi and yu-choi began to be introduced. In 2017, the production of mushroom varieties cultivated for export purposes also increased.

The fruit and vegetable crops that have increased their production value the most in the last 10 years are cucumber with 749%, strawberry with 584%, and broccoli with 203%. These crops are followed by onion, asparagus, carrot, cauliflower, and lettuce, which have grown between 100% and 150%. Maize and wheat have had a lower growth, the former 63% while the latter 77%. On the contrary, potatoes, tomatoes, sorghum, and alfalfa show a decrease in production value during the period from 2010 to 2020. Regarding export agriculture, according to COFOCE data, during the period From January to May 2020, the main fresh agricultural export products by production value were tomato, pepper, lettuce, broccoli, and cauliflower. Regarding frozen horticultural produce, the main ones were broccoli and strawberries.

10 The remaining 4% corresponds to products made from animals, 3% and products with alcoholic content, 1% (COFOCE, 2020).

11 Agave is the cactus plant from which tequila is distilled. Tequila has undergone a significant boom for 20 years or more.

Table 4. Production value in millions of pesos* of the main crops in the state of Guanajuato and % of change, 2010-2020

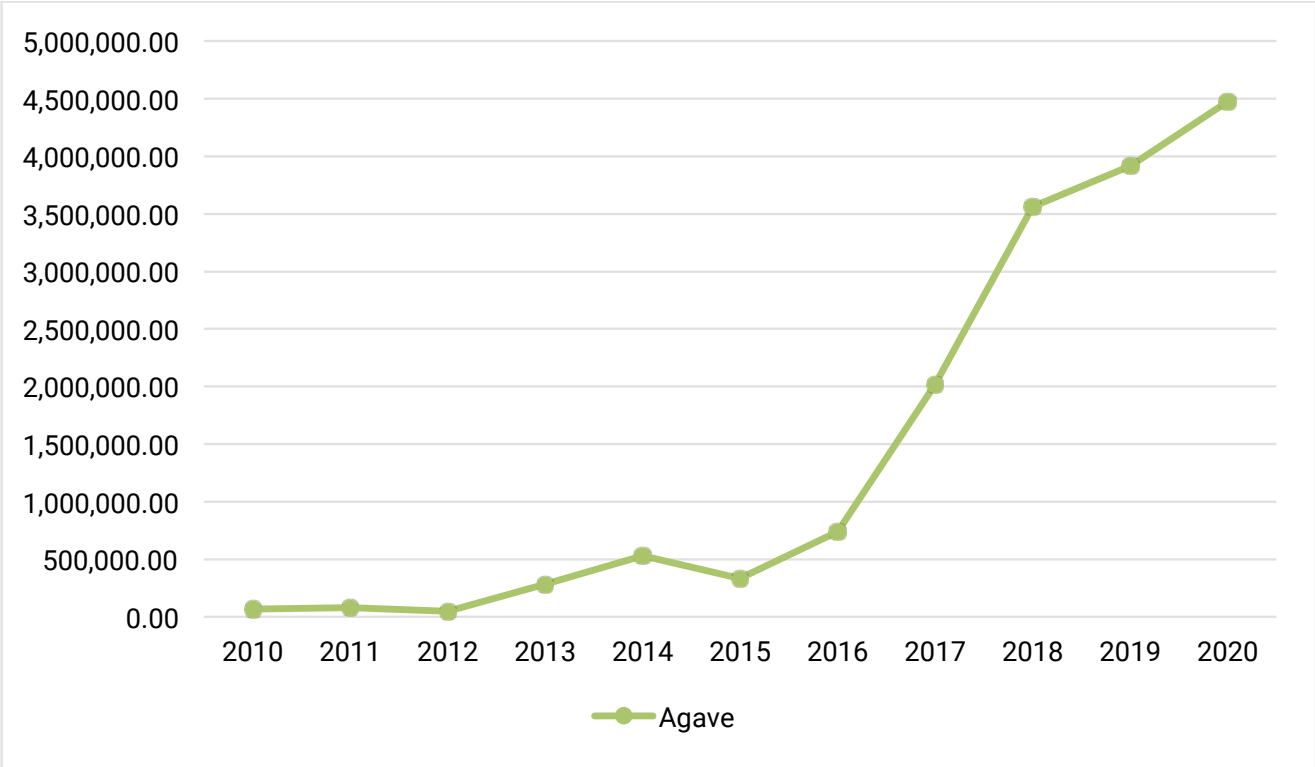
Crop	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	% Change
Agave	67.86	80.81	47.66	279.28	530.38	332.47	736.18	2,012.70	3,563.64	3,917.03	4,473.91	6493%
Garlic	243.20	249.26	127.81	140.09	90.37	155.45	322.09	307.80	261.73	310.97	344.89	42%
Alfalfa	2,902.18	2,875.30	2,871.88	2,781.61	2,578.82	2,503.37	2,464.54	2,373.94	2,443.51	2,448.71	2,470.89	-15%
Broccoli	834.03	1,092.21	1,021.25	1,462.22	1,503.59	1,698.55	1,992.54	2,186.97	2,561.96	2,510.81	2,527.29	203%
Barley grain	1,003.52	1,547.24	2,114.15	453.09	1,399.43	829.40	1,727.78	1,643.39	1,671.39	1,589.85	1,323.29	32%
Onion	476.39	296.64	251.09	423.85	525.45	660.34	532.37	1,210.01	795.41	1,129.06	1,198.44	152%
Green chili	789.55	603.83	542.49	679.43	615.45	1,067.67	1,130.58	1,115.94	1,264.21	1,242.69	1,286.49	63%
Cauliflower	66.96	52.28	36.94	57.36	61.38	57.29	91.54	173.28	151.38	166.88	160.60	140%
Corn	56.48	66.19	107.04	57.40	84.07	48.26	41.74	51.65	85.91	73.77	89.10	58%
Asparagus	514.63	408.42	442.21	477.62	417.52	570.55	846.96	1,127.31	1,204.91	1,153.63	1,271.93	147%
Strawberry	158.04	78.00	162.65	136.15	145.20	222.67	307.95	594.82	681.16	814.51	1,080.23	584%
Bean	506.58	511.98	749.99	681.59	474.57	503.87	573.12	587.95	584.16	576.36	642.86	27%
Lettuce	251.88	254.80	181.07	343.45	342.14	357.90	439.37	557.83	560.87	605.45	535.26	113%
Maize grain	4,583.89	6,501.97	6,218.85	6,065.27	4,710.18	5,324.90	7,480.30	6,055.28	6,679.73	6,102.65	7,487.65	63%
Potato	380.22	304.11	189.84	253.54	235.10	203.08	173.01	146.77	218.63	297.52	124.59	-67%
Cucumber	44.20	41.33	36.24	71.23	109.60	177.94	239.14	292.32	283.48	518.88	375.29	749%
Sorghum grain	4,860.41	7,221.94	6,955.29	5,983.14	3,931.90	3,230.59	1,779.34	3,220.76	3,210.70	2,548.07	3,713.58	-24%
Tomato	1,036.32	375.87	307.81	358.58	395.53	485.29	528.08	813.40	997.08	697.41	661.49	-36%
Wheat grain	1,117.52	2,838.50	1,590.48	324.58	1,280.20	1,442.55	1,268.49	1,419.96	1,610.19	1,484.59	1,979.15	77%
Carrot	122.44	270.55	152.99	210.59	168.70	153.09	174.04	212.64	209.60	259.92	302.50	147%

* The values shown are in real values in thousands of pesos using the INPC 2018 base year for calculation.

Source: Prepared by author with data from the Agri-food and Fisheries Information Service, 2020.

In addition to these products, the rise of blue agave is notable, having acquired a predominant role in the central-western part of the state. As table 3 shows, from 2010 to 2020, the value of agave production grew 6,493% in the state of Guanajuato. From 2012 to 2013, the value skyrockets, increasing 486% from one year to the next. As noted in the landscape, the tequila makers from Jalisco and even some local producers have painted the landscape of the Guanajuato fields with the characteristic blue of the agave. Tequila companies rent land from *ejidatarios* or small landowners in the region. This crop has grown exponentially thanks to its high profitability and lower labor needs. In the state of Guanajuato, there are seven municipalities that have the Tequila Designation of Origin (DOT): Abasolo, Cuerámaro, Huanímaro, Manuel Doblado, Pénjamo, Romita and San Francisco del Rincón. Agave has become a very profitable option for agricultural producers, especially for those who did not have the resources to make their crops more profitable. For example, in the town of San Gonzalo, to the south of the Romita municipality, corn, beans, sorghum and wheat used to be planted, while now it is surrounded by blue agave fields. In the patios of the houses, you can see the agave plants ready for transplant.

Figure 5. Production value* of blue agave in the state of Guanajuato 2010-2020



* The values shown are in real values in thousands of pesos using the INPC 2018 base year for calculation.
Source: Prepared by author with data from the Agri-food and Fisheries Information Service, 2020.

Thus, crop diversity is one of the characteristics of agricultural activity in the state of Guanajuato, particularly in the Bajío region of Guanajuato, where most of the production is concentrated. However, such diversity is not limited to the type of products that are grown, but also occurs in the type of producers, the size of the agricultural units and the technology used. In Bajío Guanajuatense, both small *ejidatarios* and large companies coexist alongside agri-food packaging companies, planting grains, fodder, vegetables, and fruits to market fresh, frozen, or processed. In addition to this heterogeneity, it is important to highlight that the productive units extend throughout the region. Production is such that today it goes beyond the limits of Bajío Guanajuatense; municipalities such as Dolores Hidalgo, San Miguel de Allende, San Felipe, and Doctor Mora are also important producers. Hence why, even though Bajío Guanajuatense is the main area for agricultural production, this study also refers to these municipalities, which have acquired a significant role in terms of agricultural activity and its structure.

2.2. A region of contract farming and middlemen

The diversity of crops and production units is one of the main characteristics of the agricultural structure of the state of Guanajuato. As we mentioned in the previous section, this diversity has been largely a consequence of favorable conditions for the production and commercialization of agricultural products, which has supported the configuration of this area as an agro-industrial complex. The established agri-food companies demanded various fruit and vegetable products, which transformed the crop pattern in the region. However, despite a rise in fruit and vegetable demand, grain and cereal crops continue to be required for the livestock and agri-food industries. For example, yellow corn is planted as animal feed and wheat is destined for companies in the flour industry such as San Blas, Tres Estrellas, and La Moderna. Bajío Guanajuatense continues to be characterized by the production of extensive commercial crops.

The settlement of large agro-industrial companies in the region has not brought about the displacement of small producers either. On the contrary, it is a state where *ejidatarios* and small landowners continue to produce. As such, it is helpful to understand the agricultural structure of the state of Guanajuato as a mosaic in which productive units of different sizes coexist, from *ejidatarios* who work their own plots to large export companies that rent land or buy the product from farmers in the area. This has contributed to a situation where the main forms of production and marketing are through contract farming and the participation of brokers or intermediaries.

In contract farming, large companies sign agreements with local producers who take charge of the planting and harvesting process. The large companies buy the produce, and they are the ones who pack, transform or market the food. In this scheme, the companies are responsible for supplying the seedlings, chemicals, and technical advice to ensure quality control. The costs associated with the company's input are deducted from the farmer at the end of the contract (Echánove-Huacuja, 2000). The producer is responsible for providing "the land, irrigation, machinery, electricity, fuel (gasoline or diesel), equipment maintenance (pumps, tractors, etc.), freight, and labor required for all the agricultural work" (Echánove-Huacuja, 2000, p. 115).

This production scheme has been implemented in various regions focused on export agriculture. In some regions, it has allowed greater control over the products that are planted and the working conditions of the workers. This is the case of San Quintín, Baja California, where companies that sign contracts with local producers carefully oversee the production process (Escobar-Latapí et al., 2021). However, it is also a scheme that can lead to the subordination of farmers to large companies, as has happened in the state of Guanajuato. In his research, Marañón-Pimentel (2002) pointed out that in this state the companies are the ones who: “unilaterally determine the pricing, adjustments to prices according to inflation and devaluation as well as the percentage of produce that is export quality” (p.194). In addition, the author states that farmers are penalized if they deliver less than the amount stipulated in the contract, while in the event of excess production, companies are not obliged to receive it.

This situation was corroborated during our field work by various Bajío Guanajuatense producers. Some of them commented that it is not convenient for them to make contracts with large companies precisely because of the disadvantageous nature of the contracts. This is the case of Don José, *ejidatario* in the Valle de Santiago municipality. Don José recounts that in 1988 the first companies dedicated to buying broccoli and cauliflower from small producers through contract farming arrived in his town. He explains that these companies covered the costs for drip irrigation, seeds, fertilizers, pesticides, and insecticides. When the harvest was delivered, the farmers paid the company back for these costs with a part of the product. A few years ago, one of José’s sons made a contract to plant broccoli. However, when he delivered the product, the company accepted a lower quantity than they had agreed. The amount of broccoli the company accepted was enough to payback the costs covered initially by the company, but it did not leave any profit. It is for this reason that the family now limits itself to planting beans, corn, and alfalfa.

According to the testimonies of Don José and one of his sons, contracts always include clauses that protect the companies while the producers do not have many alternatives for negotiation. In addition, in this area, many of the producers are older *ejidatarios* who find it difficult to understand the specialized language used in the contracts and all that they imply. In the end, if the company does not want to accept the product, it simply doesn’t, and it is the small producers who end up losing out. They point out that, presently, farmers in the municipality are establishing contracts for planting cucumbers with a large export company. The logic remains, large companies cover the costs of initial supplies while the farmers take care of everything involved in planting and harvesting the product.

The situation in contract farming continues to be disadvantageous for the small landowner and *ejidatario*. Rather, it is the medium or large landowners who should sign with these companies. Don José’s son explains that only these types of producers have the resources and economic capacity to endure the consequences when the contract with a company does not go well, since they tend to produce other crops and have alternate marketing channels. That is, if a contract turns out to be disadvantageous, they can recover their losses with the rest of their production. According to Marañón-Pimentel (2002), companies prefer to sign contracts with medium and large producers because small producers tend to lack the resources necessary. The author points out that it is for this reason that

“the participation of *ejidatarios* is very low, less than a quarter of the suppliers in the region” (Marañón-Pimentel, 2002, p. 194).

Along the same lines, Rafael, a producer from the Romita municipality, asserted that in his experience it does not make sense for him to sign contracts with large companies. He has an area of 25 to 30 hectares combined from *ejido* and private land where he grows chili, tomato, and onion. A few years ago, he signed a contract with an export company, but has not done so again because, according to him, “they gave him all kinds of excuses” to not to buy his produce. For example, he said the broccoli companies argue that the vegetables “have worms” but for him it is just an excuse not to buy when the market price of the crop is very low.

The contract farming model in the state of Guanajuato has caused producers in the area to depend on the companies that buy the product for sale in the United States. These companies are the ones that set the standards of the production process. Various authors point out that this model puts small campesino and family production at a disadvantage (Echánove-Huacuja, 2000; Martínez-Borrego, 2015). As such, *ejidatarios* or small producers are affected as they are excluded from this system due to low technological capacity and resources. That is why some *ejidatarios* have chosen to lease their land and migrate to the United States (Aguilar-Sánchez, 1989). This phenomenon has occurred mainly in the northern regions of the state of Guanajuato, where the inhabitants also have limited job options beyond the possibility of planting their own land (Arias, 2007). On the other hand, in the León-Celaya area, it was possible to deal with the impact of agricultural changes due to the diversification of labor niches, which is a product of growing urbanization and industrialization (Arias, 2007).

Small producers, whether *ejidatarios* or private landowners, who continue to work in agriculture, have sought other marketing schemes, for example through brokers or intermediaries. These actors buy the produce to resell it at different scales. That is, they range from local merchants or regional supply centers to self-service stores and agents of the same companies that freeze and package to export the products (Echánove-Huacuja, 2001). An example of how intermediaries work in the region is pointed out by Echánove-Huacuja (2001) in her research on strawberry production in the municipality of Irapuato. The author explains that the commercialization was done through “coyotes”. These were intermediaries in charge of buying the product from small producers and then selling it to wholesalers, mainly from the Mexico City supply center. The coyotes charged a commission per basket of strawberries or set the price for it.

Currently, intermediaries continue to play a key role in the sale of agricultural production. Don Raúl, a farmer in the region who plants melons and watermelons, explains that producers who do not have marketing connections make deals with intermediaries who buy wholesale. These intermediaries have contacts with the warehouses and in some cases, they are the ones in charge of exporting. The diversity of intermediaries in the region is pointed out by Echánove-Huacuja (2000), who mentions that they can be marketers, self-service stores or agents who specifically take on the role of brokers. In this case, it is the intermediaries who control the production and marketing process. They define their own requirements such as the quantity, quality, size, and type of packaging (Echánove-Huacuja, 2000).

Despite there being more companies today that own enough of their own land to cope with the entire production process, in some seasons the demand is so high that they need to complete orders by buying some of the produce from local farmers. Thus, both in contract farming and in the marketing model, the role of small producers is reduced to being labor suppliers as well as the sale and rental of land. There is clearly a lack of state support focused on *ejidatarios* and small landowners to enable them to take part in fruit and vegetable production to a greater degree. According to the testimonies collected during field work, the current agricultural structure only benefits large companies and large and medium-sized producers. The absence of state intervention and the disorganization of producers is evident when faced with “large companies, strong due to their economic capacity and the management of commercial information” (Marañón-Pimentel, 2002, p. 194).

Although there is a state agricultural council, one of the producers we interviewed mentioned that there is no real organization among farmers in the state. For him, this represents a serious issue because lack of organization results in overproduction, which in turn generates a fall in prices. This produces losses for farmers, but also food waste. When prices fall so low that it doesn't make sense for the farmer to sell, everything that was planted is discarded. According to the experience of this producer, if there was good organization among them to agree on how much to plant and what should be produced, they would never have a surplus and prices would remain stable. He considers that this does not happen for generational reasons. In his words, many of the farmers are elderly and prefer to do things in the traditional way, “as their parents taught them” and do not welcome support or advice from outsiders, including deals or agreements with other producers. In this way, small producers are at the mercy of the market and large companies, as well as competition from other small farmers.

In addition to the subordination that this implies for farmers, this scheme causes the formation of long supply chains in which the responsibilities of social actors disappear. Added to which, in some cases the products go through intermediaries or marketers outside the state. For example, in the case of watermelon and melon, according to the testimony of a local person from the municipality of Romita, these fruits are usually sent first to Mazatlán and from there they are exported to the United States. In her research, Echánove-Huacuja (2000) also identified that there are vegetables exported in bulk to be mixed with other products already in the United States. Thus, the agricultural structure of the region is characterized by long supply chains and the diversity of actors. From small farmers who occasionally produce for large companies and packaging firms, to large producers and export companies that take care of the entire process. One of the main problems with this structure is that at the point of final sale, responsibilities become blurred. As food passes through so many different hands, what happens is that many of the large companies exonerate themselves from taking responsibility for the workers in the fields at the very beginning of the chain. Therefore, the structure presented by the state of Guanajuato encourages an informal agricultural labor market to the detriment of the rights and working conditions of day laborers.

III. Labor markets and employment conditions

The labor market in Guanajuato is shaped by social diversity, as well as the diversity of the actors involved in agricultural production chains, and the transformations that have occurred in the sale of food. Agricultural work in the region is configured according to the type of crops, the size of the productive units and the transformation process of each product. For example, grains and fodder do not require large amounts of labor, as intensive fruit and vegetable crops do. Even though horticulture is distinguished by its high demand for workers, this labor niche presents itself in a great variety of ways. The fruit and vegetable industry ranges from working in the furrows with small owners and *ejidatarios*, to employment in large packaging and freezer companies. Added to this heterogeneity is the participation of different actors within the supply chains. The fruits and vegetables harvested in the fields of Guanajuato pass through different hands before reaching their final destination. Besides the impact this has on the farm owner, this model has direct consequences on the conditions of farm workers. This section analyzes the ways in which the fruit and vegetable labor market in the region is structured and its impact on the conditions of farm workers.

Unlike what happens in other agricultural regions of the country, where companies are in charge of the entire production process, or labor standards in contract farming are carefully monitored throughout the supply chain (Escobar-Latapí et al., 2021; Martínez-Rubio & Judd-de la Luz, 2021), in Bajío Guanajuatense there is a lack of monitoring when it comes to the conditions of food production. As Hoogesteger and Massink (2021) point out, when the production and marketing processes incorporate different actors, the traceability of the products becomes more complex, which can cause the responsibility of each actor to fade.

In the last decade, market pressures and worker mobilization have led export agriculture to adopt an approach aimed at complying with labor standards and social responsibility. The objective is to reduce the human and labor rights violations that farm workers have historically suffered. Mainly large companies and transnational brands have adopted this approach, keeping a careful eye on the labor standards of their suppliers (Hoogesteger & Massink, 2021). However, when supply chains become more complex, involving the participation of diverse actors of different scales, which in many cases do not have the resources of a large company, compliance with labor standards becomes difficult. For example, such is the case of many small producers who do not have the necessary resources to carry out said regulations (Hoogesteger & Massink, 2021). However, it is not only the small producers who are non-compliant. Sudden fluctuations in labor demand and the shortage of local workers have led many actors to resort to recruiters or contractors who supply labor by the day. Typically, this workforce lacks benefits and rights, and includes child labor.

Such is the situation in Guanajuato, where small producers are spread throughout the state. Given the lack of resources for marketing, farmers seek alternatives that allow them to put their crops on the market. That is why contract farming, which ensures the sale of the harvest, and commercial relations with intermediaries have become the predominant schemes within the state. However, the

result is that companies and intermediaries buy the products without any type of label or traceability to guarantee their provenance. For example, in the municipality of Valle de Santiago, we observed numerous cucumber fields where the product was collected in sacks without any type of logo or packaging. This same situation occurs in the municipality of Romita, where small producers and fruit and vegetable production is characteristic. Some government agencies dedicated to working with the day laborer population specifically mention that one of the problems they have is how to identify the brands or owners of the agricultural ranches. The problem with this is that you don't know who is producing or for whom. Which shows a clear absence of control over the products grown in the state.

Besides traceability to guarantee safe, quality, and chemical-free products, this has consequences for farmworkers. When companies buy the product from a supplier without any type of supervision over the production process, it is not possible to guarantee compliance with labor rights in the fields. While it is possible to prove the chemical safety of products –which is the work of Servicio Nacional de Sanidad, Inocuidad y Calidad Agroalimentaria [National Agrifood Health, Safety and Quality Service] (SENASICA)—, it is not possible to prove working conditions. On the contrary, it becomes an ideal scheme for informality, which is characterized by flexibility and the lack of labor rights. We find two types of labor markets in the state: informal and formal. The first of them is quite widespread within the state; most of the small producers have a verbal contracting scheme without any type of labor benefit. Formal work is concentrated in large agricultural companies and in companies in charge of food packaging and processing. Some of the companies usually put out announcements in the communities where they indicate the documents that workers need to provide as well as the hours, salary, and benefits. Alternatively, the same personnel go looking for people in the communities. For hiring, personal documents such as birth certificate, CURP (Unique Population Registry Code), proof of address, social security number and INE (voter identity card) are requested. Workers sign a contract and receive legal benefits, including social security.

However, although large companies have formalized agricultural work, the truth is that there are informal sector producers who supply these same companies. This is pointed out by Hoogesteger and Massink (2021) in their research in the municipality of Dolores Hidalgo, who state that the vigilance of purchasing companies when it comes to the labor standards of their suppliers is limited to checking for child labor. Therefore, other aspects that are essential for compliance with labor rights are missed. The latter reaffirms how widespread the informal agricultural labor market is in the region, which, without a doubt, has an important impact on the conditions of the farm worker population.

3.1. Characteristics of agricultural workers in the main producing municipalities in Guanajuato

Knowledge about the working conditions in Mexican agriculture is essential for generating public policy proposals aimed at complying with and improving those conditions. Therefore, a diagnosis is necessary to understand these conditions at the national level. However, the task is complex due to the diversity of agricultural activity in Mexico, which can be described as a heterogeneous mosaic where

different types of production and crops coexist. Characteristics such as the size of the productive unit, access to agricultural technologies, the products that are grown and the type of market to which they are directed all affect the type of labor market and working conditions encountered.

Based on the 2020 Population and Housing Census of INEGI and SIAP, Guanajuato ranks seventh in the country as agricultural producer, with 5.64% of the agricultural GDP, and fifth in terms of number of workers, with 116,223 farm workers, below only Veracruz, Michoacán, Puebla, and Chiapas. In other words, the state ranks fifth in Mexico for the number of farm workers, and third among export states (Michoacán and Jalisco surpass it).

The census allows us to rank the state in terms of some labor conditions: for 2020, Guanajuato is in twelfth place for its monthly agricultural wage of 4,996 pesos, which is the lowest of the export states. Compliance with other benefits, such as health care rights, is also quite low: 9% according to the census (our findings presented in section 3.3 relate to a much higher level of affiliation). Finally, it is worth mentioning that, of the export states, it is the one that shows the highest prevalence of underage workers: 6%.

JORNAMEX – this research project - developed the Sistema de Información de Violaciones Laborales [Labor Violations Information System] (SIVIL) as a means of diagnosing the different conditions that occur within the country's agricultural settings. This system makes it possible to identify three indicators of labor violations at the municipal level: the proportion of workers with wages that are equal to or less than minimum wage, the proportion of workers without access to IMSS medical services and the proportion of underage workers. These indicators are particularly important since they identify the violations of labor rights. This system was built with data from the INEGI 2020 Population and Housing Census and 2019 information from the Agri-Food and Fisheries Information Service (SIAP).

By analyzing this data, it is possible to generate maps that show which municipalities present labor violations to a greater or lesser extent. The municipalities were divided into quartiles according to the proportion of agricultural workers who were underage, without access to IMSS medical services and whose wages were less than or equal to minimum wage. The 25% of municipalities with the lowest proportion of workers with these conditions are in green while the 25% with the highest proportion are shown in red. The maps also show the main crops by municipality, which makes it possible to associate these conditions with the type of crop, although some of the working conditions could be associated with a second crop in the municipality.

Analysis was carried out on the data from the farm worker population in general, but a more detailed analysis focused only on the indigenous farm worker population was also prepared. The maps of the whole country can be consulted on our website.¹² This document only includes the maps for the state of Guanajuato.

In the state of Guanajuato, the proportions vary for each of the indicators. The indicator for workers who receive a wage less than or equal to the minimum wage has one of the lowest proportions for the entire country; this means that, in general, there is compliance with minimum wage within the

12 See: <https://jornamex.com/mapas.html>

agricultural sector, although average wages are low. The municipalities that have the lowest proportion of workers experiencing this labor violation are those in the north, west, and some in the center. The rest of them show a medium level, except for Acámbaro that presents a high level. Although compliance is high and there are no municipalities in red, it is necessary to remember that Guanajuato ranks twelfth in the country for average monthly income of farm workers.

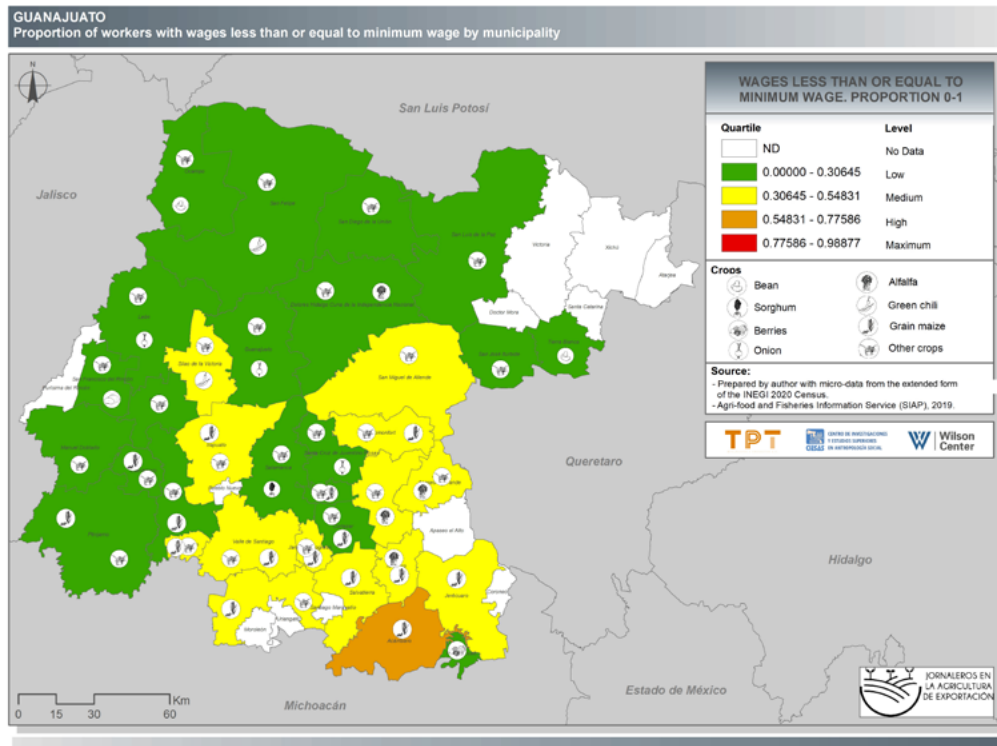
In contrast to the indicator on wages, the proportion of underage workers is worrisome. Several municipalities in the state are in red, some of which are also low in terms of wages. The municipalities that have a higher proportion of underage workers are concentrated in the north and west of the state. There are only five municipalities in the state that are in the quartile with the lowest proportion of underage workers. When it comes to accessing IMSS medical services, the percentage of municipalities in Mexico's lowest quartile tends to be low.

Abasolo, Pénjamo and Romita are among the municipalities that have a low proportion for the indicator of wages less than or equal to the minimum wage and they are also among the five agricultural municipalities with the highest production value. On the other hand, Irapuato and Valle de Santiago, which are also among the municipalities with the highest production value, show medium compliance, ranking in yellow. In the case of Dolores Hidalgo and San Miguel de Allende, which are municipalities that have shown significant growth in agricultural production in recent years, particularly in the export market, compliance with this indicator is high. (See map 2).

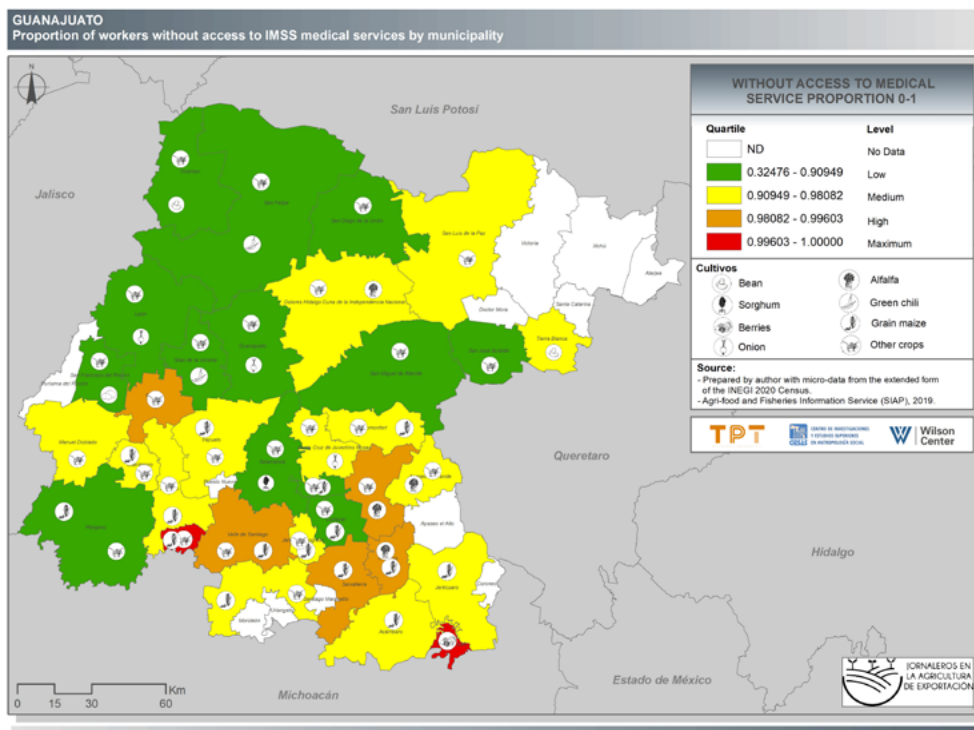
Regarding the lack of IMSS medical services, the state's compliance is lower (see map 3). It can be noted that the number of municipalities violating this labor right to a medium and high degree is fairly high. Of the five municipalities with the highest production value –namely Abasolo, Irapuato, Pénjamo, Romita and Valle de Santiago–, only Pénjamo is in the quartile with the lowest proportion of workers experiencing this labor violation. Irapuato and Abasolo show a medium level, while Romita and Valle de Santiago show a high level. Dolores Hidalgo presents a medium level and San Miguel de Allende is at a low level. This is relevant because it would be assumed that an increase in export agriculture in Mexico brings about greater formalization of labor markets. However, it is evident that this is one of the conditions that needs to be worked on in the state.

The situation worsens when analyzing the proportion of underage workers employed in agriculture in the state (see map 4). In this case, only six municipalities have a low proportion, none of which stand out for their agricultural production. On the contrary, Dolores Hidalgo, which is one of the main export producers, is in the quartile with the highest proportion, while San Miguel de Allende has a high level. Of the five municipalities with the highest production value in the state, Irapuato and Pénjamo show a medium level, Abasolo and Valle de Santiago a high level, and Romita is in the quartile with the highest proportion. Child labor in agriculture is a problem that persists in the state, especially in the case of indigenous migrant farm workers, an aspect that will be addressed in the fifth section of this study.

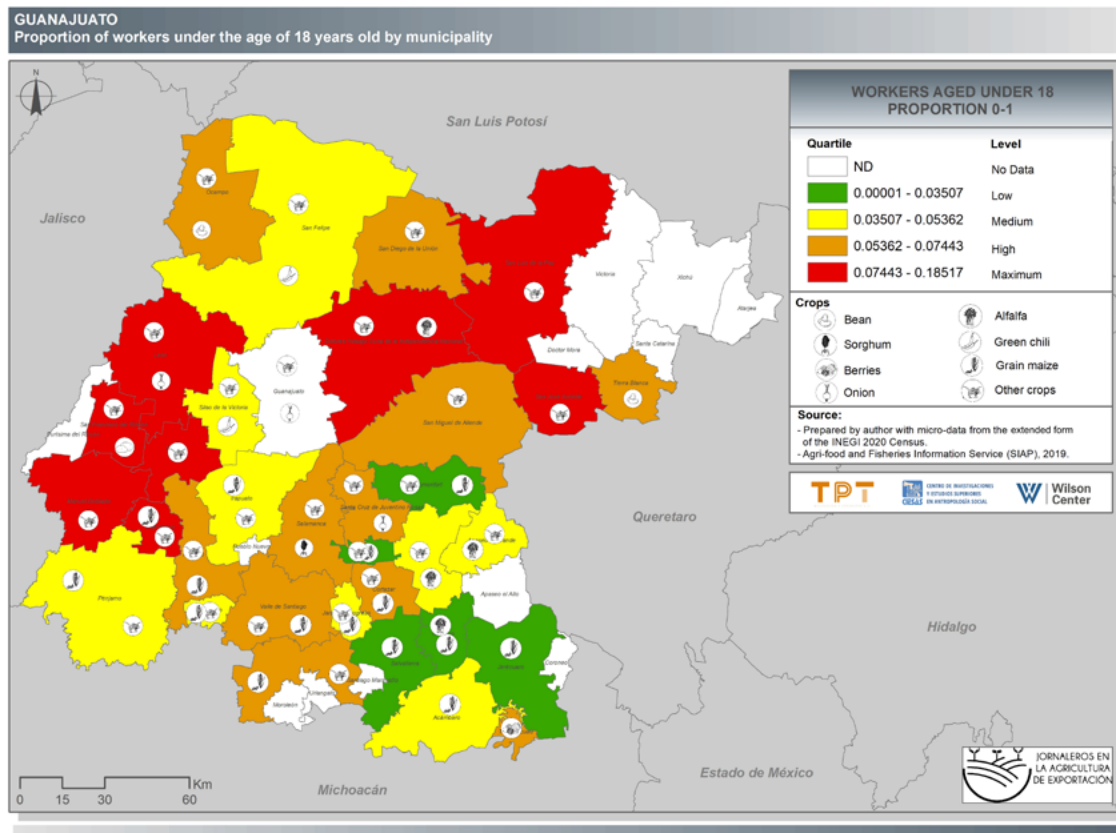
Map 2. Proportion of workers with wages less than or equal to the minimum wage in the state of Guanajuato, 2020



Map 3. Proportion of workers without access to IMSS medical services in the state of Guanajuato by municipality, 2020



Map 4. Proportion of workers under the age of 18 in the state of Guanajuato by municipality, 2020



Within the indigenous population, the violation of these labor rights follows a similar pattern. In terms of wages, the municipalities where there is sufficient data —namely, San Luis de la Paz, Tierra Blanca, Salamanca, Valle de Santiago, Cortázar and Celaya— show a low proportion of workers with wages equal to or less than the minimum, except for Celaya, which indicates a medium level. This is striking because Celaya is an important municipality for export agriculture. In terms of access to IMSS health care services, the situation is one of concern, only Salamanca and Cortázar have a low level. The municipalities of Valle de Santiago and Tierra Blanca indicate a medium level. San Luis de la Paz presents a high level and in Celaya the level reaches the maximum level, ranking in the quartile with the highest proportion of workers without access to this service. Regarding underage indigenous workers, there is only sufficient data for the municipalities of San Luis de la Paz, Tierra Blanca, Valle de Santiago and Cortázar. All of them exhibit the maximum level of violation, except for Cortázar which has a high level.

The Labor Violations Information System allows us to make a general diagnosis of the working conditions in the agricultural sector. In order to deepen our understanding and clarify the employment situation in the state, the following sections show the results of the ENJOREX 2022 survey, and the fieldwork carried out in the municipalities of Dolores Hidalgo, Irapuato, León, Romita, San Francisco del Rincón and Valle from Santiago. This allows us to make a more in-depth analysis of the working and living conditions of farm workers in the state.

3.2. The ENJOREX 2022 survey: wages and working conditions in export companies

The ENJOREX survey forms a central component of our study. The acronym stands for the equivalent in English: National Survey of Farm Workers in Export Agriculture. As of 2021, this survey, which already includes five different samples, included the following:

1. A stratified, random survey of 2,800 workers in export agriculture, in companies affiliated with AHIFORES (Alianza Hortofrutícola Internacional para el Fomento de la Responsabilidad Social [International Horticultural Alliance for the Promotion of Social Responsibility]). This survey was applied in Michoacán, Guanajuato, Jalisco, Sinaloa, and Baja California in 2019, and represents workers in four of the main export crops. This survey was and continues to be the only source of rigorous representative information on working conditions in export agriculture companies. The general results of the survey were presented in the book *Farm Labor and Mexico's Export Produce Industry*¹³ and detailed analyses of labor conditions in Jalisco and Sinaloa were made from the same data. The regional reports based on these analyses appear on the pages mentioned in the previous note. Being representative and random, it is possible to expand it to population. It represents the workers of companies that employ more than 83,000 workers, but we also believe that it is representative of workers in export companies affiliated with AHIFORES.
2. A sample carried out simultaneously to the aforementioned survey, applied to 575 temporary or informal agricultural workers in San Luis Potosí, Michoacán, Jalisco and Sinaloa. This survey was not random but obtained via snowball sampling from contacts made by its coordinator.
3. A sample of 300 avocado workers, collected in Jalisco and Guanajuato. It includes “ranchero” workers – those in charge of the ranch, who are usually permanent - pickers and packers. Project interviewers selected the workers themselves, but the firms were not chosen at random. They were well-known companies referred by personal contacts. The survey was applied between May and August of the year 2020. Its application complies with the protocols recommended during the COVID pandemic.
4. A sample of 917 workers in 12 export agricultural companies in San Quintín and Maneadero, Baja California, obtained in 2021. This survey is representative since it was random and stratified. The results were published in the regional report prior to this one. It represents 19,000 workers in the abovementioned companies, and the workers in export companies in Baja California.

This section addresses the results of the fifth survey, ENJOREX 2022, involving workers of companies affiliated with the Consejo Estatal Agroalimentario de Guanajuato A.C. [State Agri-food Council of

13 Available in full at <https://jornamex.com/publicaciones.html> y en <http://wilsoncenter.org/publication/farm-labor-and-mexicos-export-produce-industry>

Guanajuato] (CEAG). The president of the council, Eng. Francisco López Tostado, and its general director, Ulises Esquivel Hernández, organized a meeting with representatives of export agriculture companies at the request of this team. In attendance at this meeting also were Héctor Uraga, general director of the Consejo Agrícola de Baja California [Baja California Agricultural Council], who spoke about his experience supporting this project's survey in 2021, and Marion Avril, vice president of social and environmental impact at Driscoll's, who advocated the importance of having rigorous and truthful information on the labor conditions of agricultural workers. Representatives of more than 30 Guanajuato export companies attended. However, of these attendees, only one agreed to collaborate with the survey. We obtained the consent of another export company thanks to personal contacts. The total sample of workers for Guanajuato is 314, which does not strictly represent the entire working population in export companies, not only due to the number but also due to the sampling method. However, the survey makes it possible to delve into characteristics of the workers that do not appear in the population census. For its part, the Encuesta Nacional de Ocupación y Empleo [National Occupation and Employment Survey] (ENOE), which is the official source for monitoring Mexican workers and their jobs, does not offer specialized samples like the one presented here.

Hence, the need for this survey, which includes sociodemographic information, general employment data, origin, a section for permanent immigrant workers, a section for temporary migrants, one for jobs in the US, information on households, information on workers' chronic diseases, housing characteristics, details about workers' plots if they have one, wages and working conditions, recruitment conditions, debts, and finally COVID.

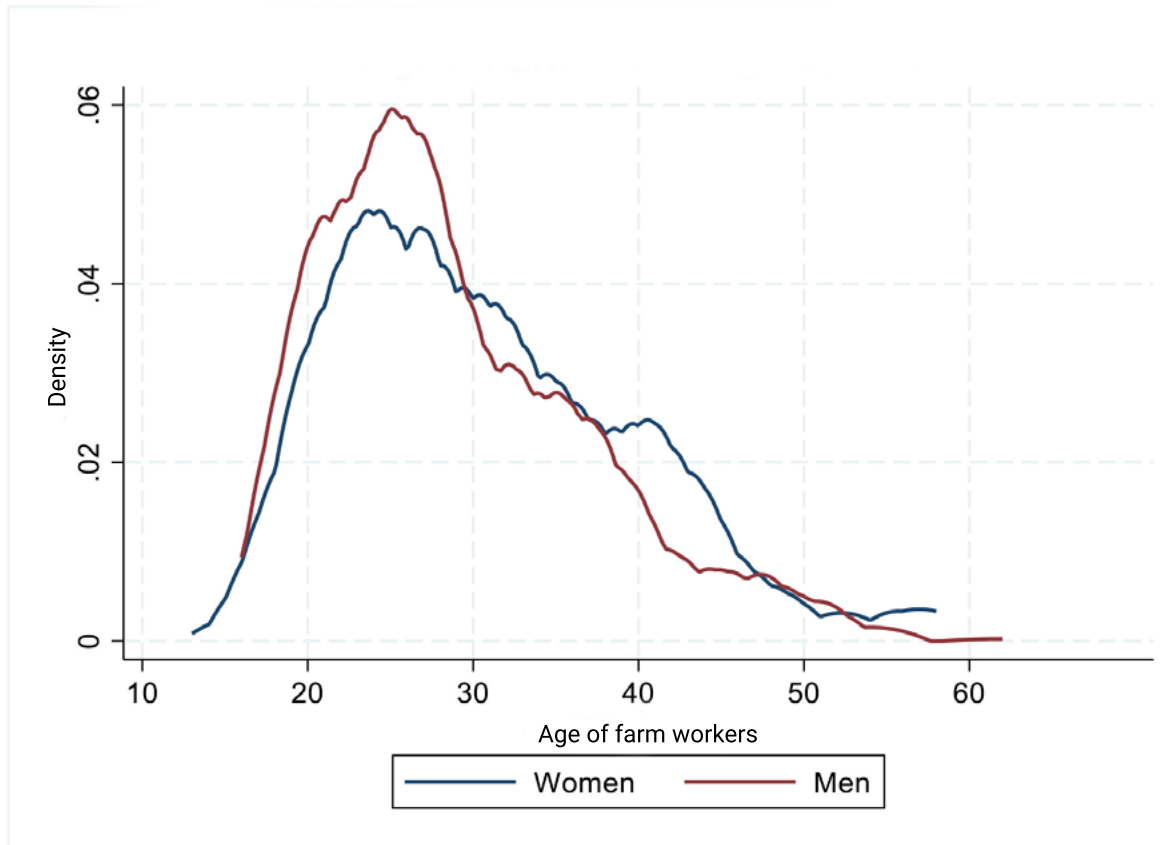
The two companies that agreed to participate are very different, which allows us to explore how these differences impact working conditions. One of them employs more than 3,500 workers. Its facilities consist mainly of greenhouses. Work at this company varies little throughout the year, and wage differentials are minimal between workers and between seasons. The second company is smaller. It employs around 70 workers. Its technology is closer to the average, with macro-tunnels and open fields. In it there are seasonal variations in employment and wages.

General characteristics

The workforce interviewed in 2022 consists of 52% women and 48% men. The personnel managers and the owner of one of the companies indicated that they preferred women. This contrasts with the rest of the export states, where the balance leans slightly towards men (54% vs 46%). It is worth remembering that in the rest of the country, in agriculture more than 80% of all farm workers are men.

The vast majority are aged between 18 and 50 years old: 1% are under 18 and 2% are over 50. Women are, on average, slightly older, at 30.8 years old, while men average at 29 years old. In our 2019 survey of five export states, the median age turned out to be 32, a bit older. The following graph illustrates the age distribution in Guanajuato:

Figure 6. Age of farm workers by sex



Source: ENJOREX Guanajuato, 2022.

The age distribution for men shows a very pronounced mode (or peak) at 28 years of age. The women's mode is less noticeable, and there is a secondary peak among women 37-42 years of age. In general terms, this indicates that young men take these jobs, but as they get older, they move to other sectors. Although the same thing happens with women in general terms, it is noteworthy that they return to agricultural employment after having children and taking care of them in early childhood. We had already found women's return to employment in Sinaloa, where we believe that the abundance of nurseries facilitates the employment of women who are mothers. In Guanajuato, this infrastructure is almost nonexistent, partly because the presence of temporary migrant workers is new. However, it is urgent to create such facilities because it benefits all parents not only migrants. Regarding marital status, the largest group is single, as can be expected due to their relative youth: 45% are single, 44% are cohabiting or married, 8.5% separated or divorced, and 2.5% widowed.

Traditionally, agriculture has employed the population with the lowest education levels in the country. In Guanajuato, 6.5% have no schooling, 66% claim to have up to 9 years of schooling,¹⁴ and 26.5% attended some high school or other. Women average 8.3 years, men 9. In other words, illiterate farm workers are still present, but in Guanajuato they represent a small minority, and length of schooling

14 Years counted from the 1st grade in primary school.

is almost two years longer than the national average for agricultural export workers. Natives have the highest education level. However, some temporary migrants also have a baccalaureate. In 2021, our survey in Baja California showed an average of 6.5 years of schooling for women, and 7.1 years for men. In other words, due to their origin, their education, and the scarce presence of indigenous people, there is diverse evidence that points to lower social vulnerability among agricultural workers in Guanajuato.

Composition of the labor force according to origin in Bajío Guanajuatense

The state of Guanajuato stands out from other exporting states because its workforce is mostly native. In Guanajuato in 2022, 87% of the agricultural workers interviewed by us are originally from the state and 7.5% are permanent immigrants, while only 5.5% are seasonal or temporary migrants. In other states, this composition is closer to a third for each category, while in Baja California, only 20.9% are native to the state, while 79.1% are permanent or temporary immigrants. However, the figures we found in Guanajuato in 2022 represent an increase in the population born outside of the state: in 2019, we only found 3% of the workforce was not native to Guanajuato. The growing demand for labor is changing this profile.

The population of temporary migrants is the youngest of all: its mode stands at 24 years of age, although it picks up slightly after 30.

The increase in temporary or permanent migration from the southern states has consequences both for Guanajuato as well as the southern states, where a labor shortage has also been generated (see salary section). Either way, it is still a small group: only 3.2% of the workers we interviewed in 2022 speak an indigenous language. There are likely two reasons that explain this: firstly, the high-tech greenhouse does not need migrant labor, since its relatively constant need for workers is met by the local labor force. Secondly, in the medium-sized company, whose labor demand does fluctuate, the interviews were carried out when the high season had practically come to an end.

Before the spectacular growth of Guanajuato agriculture in 2010-2020, Bajío companies had based their recruitment in rural communities in the south of the state. There are municipalities with more than 200 rural communities. Moreover, unlike Oaxaca for example, the roads between these communities are reasonably good and the orography is favorable, so it is not difficult to transport workers from their communities on a daily basis, or simply ask them to arrive themselves by public transport.

This factor —abundance of local labor— was reinforced by another phenomenon. As is well known, Guanajuato is one of the states with the longest migratory tradition to the United States. The population that emigrates more intensely is that of rural origin. A drastic fall in immigration to the United States occurred in 2008 as a result of the financial crisis. As emigration fell, there was an increase in the labor supply, which fueled agricultural growth, and fostered a drop in wages in agriculture throughout the country in 2008-2012.

For all of the above, Guanajuato differs substantially from other exporting states where between 40% and 70% of the workforce migrates, whether temporary or permanently, from the southeastern

states of Puebla, Veracruz, Guerrero, Oaxaca, and Chiapas. In Baja California, as said, 80% of the workers are not natives of the state.

However, this “labor self-sufficiency” is decreasing. Starting around 2015, labor shortages caused by the growth of agricultural and manufacturing employment have forced the recruitment of workers from other states. Today, these workers are an important part of the Guanajuato labor market, not so much because of their number, but because they are crucial during periods of intense workload, mainly the harvest. For this reason, in Irapuato, Romita and other municipalities, you see workers from other states transported in unacceptable conditions in haulage and pick-up trucks or housed in warehouses and other places not built for that purpose as well as some who are transported in appropriate transport such as school buses, and who stay in purpose-built shelters. The contribution of these workers is mostly temporary, sometimes for just one week. The presence of these workers is relatively new.

The development of high-tech agriculture, especially in greenhouses, could bring new changes. If the development of highly technical greenhouse-type agriculture is imposed, even if the demand for workers increases, this will tend to stabilize the new population.

Nevertheless, the currently situation is that all kinds of crops are attended to by migrant workers who are not being treated as they should be because they are hired by recruiters, who sometimes are the contractors. Although, as will be seen, we did find decent shelters, in Romita we saw accommodation in very poor conditions: with barely one toilet for all the workers, no running water, no privacy, and no adequate cooking facilities.

Wages

To place agricultural wages in Guanajuato within the national panorama, it is useful to describe the major trends of real wages in Mexico. From 2014 to 2021, the Encuesta Nacional de Ocupación y Empleo [National Occupation and Employment Survey] (ENOE) reports that the real monthly salary¹⁵ in non-agricultural jobs in Mexico went from 6,824.33 pesos to 7,321.21 pesos, for a real increase of 7.3%. In that same period, the monthly agricultural salary in the non-export states went from 3,061.67 to 3,608.03 pesos, for an increase of 17.8%. And the monthly agricultural salaries in the five states with the most export fruits and vegetables, including Guanajuato, went from 4,204.34 to 5,166.78, which is equivalent to an increase of 22.9%. Meanwhile, in 2014, the agricultural wages of the states with the least exports were equivalent to only 44.8% of the national non-agricultural wage, by 2021 they already amounted to 49.3%. The wages in the export states rose from 61.6% for non-agricultural wages in 2014, and to 70.5% in 2021.

In short, three trends can be observed: countrywide, official sources indicate that agricultural wages in general, even those of states with fewer exports, are increasing in real terms faster (at 3 times the annual rate) than non-agricultural wages. Consequently, the gap between agricultural and

¹⁵ Real salaries calculated based on first quarter of 2020. The salaries mentioned here are the average salaries of the four quarters of the year.

non-agricultural income narrows significantly. Finally, the increase in agricultural wages in the export states is faster than in the other states.

These are the monthly salaries reported by workers in Guanajuato:

Table 5. Net monthly wages of agricultural workers in Bajío Guanajuatense according to various characteristics

	Sex	
	High Season	Low Season
Women	6757	6653
Men	6820	6768
	Indigenous Language	
Does not speak	6804	6722
Speaks	6280	6280
Woman, does not speak	6770	6664
Man, does not speak	6842	6788
Woman, speaks	6143	6143
Man, speaks	6349	6349
	Schooling	
No schooling	7318	6929
1 – 9 years	6761	6687
10+ years	6722	6707
	Migratory Status	
Native	6782	6732
Permanent migrant	7064	6595
Temporary migrant	6485	6485
Temporary migrant - women	4991	4991
Temporary migrant - men	6747	6747
	Civil Status	
Single	6616	6535
Divorced, separated	6773	6627
Widow	6667	6627
Married	7098	6997
Cohabiting	6766	6751
	Totals	
General Average	6787	6708
In minimum wages 2022	1.29	1.27

Source: ENJOREX Guanajuato, 2022.

It should be noted that the salaries obtained by our survey are always higher than those of the National Occupation and Employment Survey, or those registered in the Census. Those from these two official sources are reported by any person in the household over 15 years of age who claims to know the income of all household members. Those in our survey are reported by the workers themselves.

Wages reported by farmworkers in Guanajuato are below those found in Baja California –where, in 2021, women reported 10,280 pesos per month and men 11,000–, which are the highest in the country, and are similar to those of Jalisco in 2019, although it cannot be said that these levels are comparable, due to the difference of three years.

Reported wages were obtained for high season (when the data was collected) and low season. In other states and years, the differential between one and the other had been more than 30% in case studies. It is striking that the differential in Guanajuato is small or null, partly due to the weight of the advanced technology company in the sample, which has practically no differences in management or pay depending on the seasons. On the other hand, many workers simply responded that their low-season salary “is the same” as their high-season salary, which makes the differential zero.

In 2019, our team observed that Guanajuato was the only state with a wage gap in favor of women. In the 2022 survey, there is a gap in favor of men, but the smallest of all the states we studied: 1%. In other words, in general, the gender wage gap is not relevant in Guanajuato, although in certain categories it is. Indigenous language speakers earn 8% less, and in the case of women this gap is 10%.

Contrary to what might be supposed, there is a wage gap in favor of workers without schooling. Although this can be studied in more depth, it seems to be related to the fact that these workers work more frequently on a piece rate basis. On the other hand, in the 2019 survey as a whole, the conclusion is that income is directly proportional to schooling.

There are important differences in income according to immigration status, and even more so by immigration status and sex. The category of worker with the lowest salary in the survey is that of temporary migrant women, who show a relevant gap with respect to the other categories: they earn 36% less than the general average. This is surely related to the fact that they do not work full weeks but are hired in various fields for just a few days. It is noted, however, that this figure was obtained from a very small sample and should not be generalized. Marital status makes practically no difference in income, although married people earn 7% more than singles. In general, however, both from a seasonal point of view and in terms of the gaps between various categories, Guanajuato shows the lowest internal wage differentials observed in our survey.

We asked workers if their income is higher than the previous year, and to compare the amount of work they had in 2021 and –up to the time of the interview– in 2022. Firstly, 34% of women and 41% of men report earning more this year than last; 43% of all groups report the same income, and 4% of women and 7% of men report earning less in the current year.¹⁶ To control whether the above was due to more or less demand for workers, the next question refers to the amount of work. All but 4 workers out of 321 stated that they have more or the same amount of work in the current year than the previous year. We asked them to estimate whether 2022 salaries are higher, the same or lower than those of 2021. One third affirmed that they have gone up, two thirds that they remained the same, and only 2% that they had gone down.

16 The missing percentage is from an unanswered question.

Among scholars of the subject, there is a discussion about effort or labor intensity. Given the shortage of workers and the growing need for labor, the question is whether the increased productivity per worker comes about because the pay structure drives workers to work more. The vast majority affirm that their effort is the same in 2022 as in 2021. Only 3% of women and 6% of men report having increased their effort. We did not ask for previous years because it is likely that the answer is inaccurate –this was shown by our pilot with the team members themselves and with a few interviewed workers–.

One last notable fact is that 3 years ago, the wages we observed were equivalent to 2.3 times the minimum wage. Those reported in Guanajuato in 2022 are only equivalent to 1.29 times the general minimum, due to the substantial increases to the minimum wage. And if this is estimated with respect to the minimum professional wage for farm workers, the differential is lower, although it is still higher than the minimum wage on average. Only from 2021 to 2022, for example, the minimum wage increase was 22%.

Formal benefits

Workers are asked if they know if their job entitles them to a series of benefits required by law. This is later contrasted with another question, that of actual or effective access to these benefits. The table 6 breaks down what was reported by workers regarding each right, or formal access, to these benefits.

Employer compliance with providing end of year bonuses and paid days off, or “economic” days, which are 6 a year for new workers,¹⁷ is extremely high in Guanajuato and the highest in the country, up till now. However, there are important differences between the groups: the average drops substantially among indigenous workers. This may be related to their short tenure or years of service in their jobs. In the case of these two benefits, it should be noted that we have observed that workers provide the same response when asked about effective access to the benefit, which is why we no longer ask about effective access to these two.

Employer compliance with providing workers with formal access to legal benefits is quite good in Guanajuato, though lower than the other export states, where the average formal access to IMSS health care, for example, is 96%. Compliance in terms of end of year bonuses is generally good, but there are important gaps for speakers of indigenous languages, who have 16 percentage points less, and for permanent migrants, who have 8 points less. The differential regarding schooling is small.

As in other export states, workers reporting access to INFONAVIT is very low. This is the product of two phenomena: the lack of effective mechanisms for accessing INFONAVIT in the case of agricultural workers, and short periods of time employed in formal jobs, which means that they do not qualify for financing. In 2021, the INFONAVIT delegate in Ensenada, Baja California, stated that they were testing a pilot for farm workers to have access to INFONAVIT funds. Apparently, this pilot has not been expanded. Given that INFONAVIT is paid together with social security contributions, we can estimate that INFONAVIT has been paid for 80% or more of agricultural workers in the survey,

¹⁷ One chamber of the Mexican congress has already legislated that these days be extended to 12 per year, and it is likely that the other chamber will agree. At the time of writing, the law only mandates 6 days.

but they do not consider that they are entitled to it. This situation must be resolved so that some of the poorest workers in Mexico can exercise this right. However, in no way should they be inflation or minimum-salary-indexed loans, which all but guarantees that these workers default, and their homes are foreclosed.

Table 6. Formal access to benefits by agricultural workers from Guanajuato employed by export companies (%)

	Sex					
	End of year bonus	Paid days off	IMSS Healthcare	INFONAVIT	IMSS daycare	Other public daycare
Women	92	91	92	14	1	1
Men	95	94	94	13	3	0
	Indigenous Language					
Does not Speak	94	93	93	14	2	0.4
Speaks	78	78	78	11	0	0
	Schooling					
No schooling	93	87	93	16	0	0
1 – 9 years	94	93	93	12	2	0
10+ years	94	94	94	19	3	1
	Migratory Status					
Native	94	93	94	14	2	0.4
Permanent migrant	86	86	86	14	5	0
Temporary migrant	92	91	91	6	0	0
	Totals					
General average	94	93	93	14	2	0.4

Source: ENJOREX Guanajuato, 2022.

Finally, formal compliance in terms of access to daycare is almost zero. Like INFONAVIT, daycare insurance is paid at the same time as the IMSS contributions. For this reason, we can assert that more than 90% of the agricultural workers in these export companies are paying for a service they do not receive yet need. IMSS offers employers a scheme whereby employers build and operate a daycare center in compliance with IMSS standards. Meanwhile, IMSS reimburses them \$4,200 pesos per month per shift per child to operate the daycare center. This scheme has been rejected by most of the employers with several arguments: 1) if the fees have already been paid, IMSS should be the one to

build the center and provide daycare. Asking the employer to build the daycare without contributions from the IMSS itself, is not correct. 2) the employer is required to provide access to any child of an IMSS affiliate, not only the children of their own workers, in which case the benefit for the company and its workers is diluted. And 3) due to legal measures taken by the current government, businessmen are wary in the sense that the nursery could be expropriated.

Effective access to benefits

The following table is based on how workers report the real or effective access to the aforementioned benefits.

Table 7. Effective access to benefits by agricultural workers from Guanajuato employed by export companies (%)

	Sex			
	IMSS Healthcare	INFONAVIT	IMSS Daycare	Other public Daycare
Women	68	29	0	0
Men	68	11	0	0
	Indigenous language			
Does not speak	69	21	0	0
Speaks	57	0	0	0
	Schooling			
No schooling	88	67	0	0
1 – 9 years	68	14	0	0
10+ years	64	21	0	0
	Migratory Status			
Native	70	14	0	0
Permanent migrant	78	67	0	0
Temporary migrant	29	100*	0	0
	Totals			
General average	68	20	0	0

* A single case.

Source: ENJOREX Guanajuato, 2022.

As already mentioned, employer compliance with the end of year bonus and paid days off is the same as shown in the table on formal access.

Effective access to IMSS healthcare is 24 percentage points below formal access or the right to the service. This gap is larger in Guanajuato than in the rest of the export states. The magnitude of this is surely related to the distances from clinics, saturation of the service, or lack of medicines, which leads them to forgo seeking out this service. When talking to workers at one of the companies, they also mentioned that their local health clinic provides them with the most basic care necessary. In other states –Jalisco– farm workers reported resorting to private pharmacies, where a doctor prescribes what they need. It was already pointed out in the Jalisco study that this has a negative effect on both the pocketbooks and health of workers. These pharmacy doctors over-medicate the workers because the pharmacies offer them incentives to sell more. On the other hand, they do not provide corrective and preventive recommendations, as the public health service should do. Despite temporary migrants frequently reporting entitlement to IMSS healthcare (91%), it turns out that the vast majority lack effective access to the service (only 29%). The second most excluded group is that of indigenous language speakers, among whom only 57% report effective access. It is imperative that workers whose contributions have been covered receive real access to this service.

Access to INFONAVIT is hard to believe because the same categories of workers who reported very low formal access –or entitlement– to INFONAVIT report high effective access to the service. These are permanent and temporary migrants, and workers without schooling. If these categories of workers have very low levels of right to access, it is impossible or very difficult for them to have a high level of effective access. It is possible that they did not understand the question, or that they are confused, but it is also possible that they do have access to the service of home loans. This needs to be further investigated.

In Guanajuato, the effective access of workers, men and women, and their children to public daycare centers, whether provided by IMSS or from any other source is zero. Although in other states effective access is low, this is the lowest found in the five states with large agricultural exports. It is extremely important that IMSS complies with this legal and moral obligation, or that employers and IMSS reach a satisfactory agreement to provide the service.

In Baja California, it was reported that a significant percentage of workers had work experience in the United States. In Guanajuato the same thing happens, though to a slightly lower extent. Men with work experience in the United States add up to 7.5%, with 2.7% for women. The most frequent employment among men is that of agricultural worker (42%), while among women, it is non-agricultural salaried worker (50%). In the United States, these jobs are more masculinized than in these Mexican companies.

In Baja California, a notable phenomenon is that of internal remittances: 30.9% of men, and 17.3% of women, regularly send remittances to Mexico's southern states. This is consistent with the high proportion of migrant workers, whether temporary or permanent. In Guanajuato, where the total migrant labor force only accounts for 13%, only 14% of men and 1.4% of women send remittances to other states. However, saving is frequent: 42% of women and 54% of men say they are saving.

Housing and household composition

Consistent with the high proportion of native workers and the fact that Guanajuato was not, until recently, a state that received many migrant workers, the quality of worker housing in Guanajuato is high. Housing quality tends to be lower in states with large migrant population growth, because recently arrived migrants tend to build their houses gradually, and can spend years in small, underserved housing. The vast majority of women (81%) report living at “home” and, though the percentage is lower among men (75%) it is the majority dwelling type. The second type of housing in order of importance is the “ranch” –18 and 16% for women and men, respectively– which is consistent with what has already been said about the rural population that accesses these jobs. And the third is “shelter” or company lodgings, which is reported by 0.7% of women and 7% of men.

Table 8. Characteristics and services of the dwellings of workers employed by Bajío Guanajuatense’s export agriculture companies (%)

	Piped water	Cement floor	Electricity	Drainage	Gas stove	Refrigerator
Women	93	93	99	87	93	96
Men	97	96	99	95	92	95

Source: ENJOREX Guanajuato, 2022.

The services and quality of the housing of the farmworkers interviewed are considerably better than what was found in other states. This fact must be recognized. Even among the small sample of migrant workers, very good housing conditions were observed. It can be noted from the anthropological fieldwork that we found a lot of variation in temporary worker shelters, from adequate to unacceptable conditions.

In Baja California, we noted that the household size was extremely small and that this was probably because workers traveled mostly alone or with only their spouses. In Guanajuato, the households of farm workers are very small: 3.4 members among natives, 3 members among permanent migrants, and 3.1 among temporary migrants. In the homes of permanent migrant workers, the masculinity index is low (.38), which indicates that the men in these homes either do not exist or work in other states. As expected, just over two members in these households are adults of working age, while between 0.5 and 0.75 members are younger than 11 years old, and between 0 and 0.18 people are adults aged 65 or older. In short, these households are very small, and their dependents are almost exclusively young children. The commonly held notion that rural households are larger than urban ones should be dispelled.

In these households, between 1.5 and 1.9 workers perform some kind of paid work, and of these, the majority do the same job as the worker who was interviewed: between 1.1 and 1.4 are agricultural workers. In other words, there tends to be more than one paid worker, despite the small size of the

household. Between 6% and 14%¹⁸ of the paid workers in these households are minors, though not necessarily working in agriculture. It should be emphasized that the main income of these households is from wages, not from the sale of any self-grown produce.

Recruitment, transportation and debts

Only 5.85% of the workers were actively recruited by the employer or contractor. As is the case for the urban job markets, 52% were recommended by family, friends, and colleagues; between a quarter and a fifth sought employment on their own; and one sixth followed information that reached their community through various channels. In other words, from the point of view of recruitment, there is a very low probability of forced labor.

Another indicator of potential abuse relates to when employers offer transportation for workers, later charging them for the journey or deducting the cost from their paycheck. Only 1 of 321 workers reported that the employer transported them and then charged them for the journey. All the others made the journey by their own means, were transferred free of charge by the employer, or they report that the national employment system transported them (remember that in this sample, there are workers who have been with the company for many years and this transfer may have occurred a long time ago).

Debt is also a potential indicator of forced labor. No woman in the sample claimed to have debts with her employer. Only 1.5% of men reported a debt, which were men with a high level of schooling. In other words, they most likely acquired this debt fully aware of what they were doing.

Therefore, taking these three indicators into consideration together, the probability of forced labor in these two companies is extremely low.

Illnesses

Our survey includes sections on chronic illness and COVID. The population of workers interviewed in Guanajuato is very healthy in terms of its low prevalence of chronic diseases. Only hypertension reaches 13% among permanent immigrants, and temporary migrants report a very low prevalence of chronic diseases. Diabetes mellitus is reported between 2% and 4%, according to migratory category. Although it is likely that the workers have not been tested, in other states we have verified the general good health of this population, which is probably due to their youth, their level of activity, and the rural diet, which is healthier than the urban diet. However, good health is lower among both permanent immigrants and natives. This phenomenon coincides with the “Latino Health Paradox”, which shows better levels of health among Latino immigrants recently arrived in the United States than among native whites, second-generation immigrants, and immigrants who have been in the country for longer.

18 These are the averages among the three types of households defined by the immigration status of the worker. Obviously, there are many households where minors do not work, where this proportion is zero.

Table 9. Reports of COVID cases among agricultural workers in Guanajuato until August 2022 (%)

	Family member sick	Work colleague sick	Interviewee sick
Women	21	38	12
Men	23	37	14
Total	22	38	13

Source: ENJOREX Guanajuato, 2022.

The prevalence of known COVID patients among the workers of these companies is also low, and lower than that found at the national level in a survey where the disease is self-reported (CIHR 2022).¹⁹ This incidence is 35.6% as of March 2022 according to this other survey. Of course, there may be a bias in that poorer people were tested less.

In short, we can say that in these companies, wages are in fourth place among export entities, their compliance with the law is average, and they are higher than those of non-export states; benefits coverage is generally very good, although in some cases the low level of access reported by indigenous people and temporary migrant women is worrying; potential indicators of forced labor are extremely rare; housing conditions are relatively very good, and the homes are small; and the incidence of chronic diseases and COVID is or has been lower than among the general population.

3.3. Characteristics of the formal labor market

The formal job market, as its name indicates, is characterized by hiring under a legal scheme mediated by written contracts. The extension of this model is fundamental in the agricultural sector since it is a very important step to ensure the fulfillment of farm workers' labor rights. Due to the way the agricultural structure is configured in the state, this market coexists closely with the informal labor market. As Hoogesteger and Massink (2021) pointed out in their research, even formal companies, in some cases, rely on informal labor markets for certain processes in their supply chain.

The formal labor market occurs mainly in large and medium-sized agricultural companies, as well as in packaging firms or factories dedicated to food processing. In this type of contract, in addition to having a contract that covers workers, companies are obliged to provide the legal benefits such as social security that provides access to health care, retirement savings, daycare centers and housing credit. Other benefits such as end of year bonuses, payment for seventh day of the week and vacations are also of great importance.

Besides written contracts and benefits, there are other conditions that indicate formality such as transportation, services provided by companies, and housing. Housing is a particularly relevant aspect for migrant workers. The large companies in the region meet labor standards and the provision of

¹⁹ The 4th round of the survey on COVID funded by the Canadian Institute for Humanities Research (CIHR) and applied by the ACS (Association for Canadian Studies), in the United States, Canada and Mexico.

formal employment. This is the case of some of the farms we identified in the municipality of Dolores Hidalgo, one of the main export municipalities in the state. One characteristic that immediately stands out among the companies in Dolores Hidalgo is how they control and establish the boundaries of their fields. This contrasts with the open-air fields that are scattered throughout Bajío Guanajuatense which are not identified or demarcated with signage or entrances.

The requirements of the export market shape workers conditions as well as the companies' facilities and the services they offer. Signs with logos and regulations, a rarity in the open broccoli and chili fields in municipalities like Romita, have become the rule rather than the exception in Dolores Hidalgo. Dedicated spaces for the shelters, first aid care and educational centers are part of the landscape in Dolores Hidalgo's greenhouses and fields.

Another aspect that distinguishes the formal and informal markets is the type of transport used to transfer workers. School buses were seen in the fields of Dolores Hidalgo, while in Romita the van transporting workers was identified as a vegetable freezer. As will be analyzed in the next section, informal companies transport people in pick-up trucks and open-top delivery trucks, with all the risks that entails.

The differences between one market and another are particularly important for migrant workers, who are at a greater disadvantage than locals due to their situation. Workers who come from other states depend on the housing, health care and education services offered in the place of arrival. In many cases, the fields are far away from the cities or towns with services; therefore, there is a responsibility on the part of employers to provide such access.

Dolores Hidalgo's agro-export companies have shelters, educational centers, and a health center within the boundaries of their fields. Although the way in which these services are provided varies from one company to another, in general, they are concrete constructions with tin roofs where basic services are available. In the housing areas, there are medical clinics, spaces for classes taught by the Ministry of Education and general stores to purchase basic necessities. This does not mean that conditions in agro-export companies are ideal, but rather that formalization is necessary to improve the conditions of workers.

Another aspect that is very significant depending on the type of market is the impact of intermediaries. Although there are companies that do the hiring directly, others use contractors. Intermediation is a problematic issue because it allows companies to distance themselves from the responsibilities that the hiring process entails and favors the precariousness and informalization of employment. However, even when using intermediaries, formal companies have to comply with legal benefits and adequate conditions for their workers. Thus, even with the presence of intermediaries, there is some compliance by the companies, though it should be noted that compliance is not complete. There are underage workers who work because their parents provide other people's IDs, something that was verified by us and corroborated in the testimonies of the workers themselves.

This is the case of an export company dedicated to planting blueberries in the municipality of León. This company uses a contractor to bring in migrant labor from the state of Oaxaca. The company's workers have social security and are provided with free housing, transportation, and food. However, the

responsibility of covering these needs falls directly on the intermediary who, in many cases, does not have the capacity to provide these services or an adequate space to live.

The intermediary was in charge of transporting the workers from their community of origin to the workplace in a van. Transportation costs were covered by the company. He also had to find housing for the workers, which was a shelter with three rooms fitted with bunk beds shared by 32 workers. The building has laundry rooms, a kitchen, and showers. The toilets are portable. The shelter is located on a hill in one of the towns in the municipality. Due to drought in the area and the location of the shelter, they do not have drinking water. The contractor claims that a pipe will supply water so that people can bathe and wash their clothes.

The recruiter negotiated with the employer that he would cover the costs of food and the salary of two kitchen workers who are paid 1,800 pesos a week. With this, the workers have their food covered as well as not having to arrive and cook after an exhausting day of work. This reflects the bargaining power that intermediaries have when it comes to formal companies, which contrasts with informal work, as will be explained later. However, it also shows how the responsibility of companies is diluted by incorporating intermediaries into their contracting practices.

Packaging companies and factories dedicated to food processing are also a formal niche in agricultural work in the region. They employ mainly local people. For example, Juana from Romita started working in the fields weeding and planting when she was 12 years old. She has worked in greenhouses for export companies that send their products to China and the United States. Five years ago, she started working for a vegetable freezing company. She prefers working in the packing house to working in the fields because the schedule allows her to spend more time at home.

Juana currently works alternating the morning and evening shifts; the morning shift is from 7:00am. to 3:00pm. and the evening shift is from 3:00pm. to 10:20pm. One of the characteristics of packaging companies is the constant rotation of shifts. Vegetable freezing companies alternate their workers each week between morning and evening shifts. It is important to mention that the constant rotation of shifts can become a challenge for the organization of daily life and housework. In addition, in the harvest seasons, the “daytime” hours extend until nightfall.

Even when companies can be considered formal, the logic of the packaging companies and farms is marked by labor flexibility. Flexibility not only in terms of shift rotation, but also in terms of piece rate payments and irregular employment. This is illustrated by Alfonso’s story, a migrant farm worker who is working in the aforementioned blueberry company. He commented that during Easter week when they only worked three days, as imposed by the employer, despite having a signed contract, the reduction in the number of days worked affected the wages they received that week, since the company only paid for the days worked. This type of situation is worse in the informal labor markets, which has a significant impact on wages, employment conditions, and living conditions, as will be analyzed below.

3.4. Characteristics of the informal labor market

Unlike the formal labor market where there is a written contract and legal benefits are provided, informal hiring is characterized by the absence of these elements. Not having a contract and labor rights places workers in a clearly disadvantaged and vulnerable situation. In addition, the absence of these elements brings about other types of scenarios such as abuse of power, human rights violations, workplace harassment or even human trafficking. It is therefore urgent to review the conditions faced by workers in the informal labor market in Bajío Guanajuatense and its logic. One of the aspects that stands out is the significance of the recruiter or contractor role. This is the person in charge of hiring workers, both locals and migrants. This person also usually works as a foreperson or manager of the crews that they themselves recruit. Hiring is done with verbal agreements between the contractor and the workers. The recruiters are known within the communities; therefore, the agreements tend to have overtones of camaraderie. People who need work only need to approach one of them, or the same contractors reach out to the workers they have already identified when they need more labor.

The dynamic between locals and the recruiters is clearly shown in the case of Rebeca, a young 20-year-old worker from a community in the municipality of Irapuato. Rebeca began working in the fields at the age of 18. She obtained the contact of her contractor and manager through her best friend, who also works in the fields. The day before they work, the contractor tells them what crop they will do and what tools they will need, for example a knife or a sack. She then buys everything she needs at Romita's flea market with her own money. The contractor typically rotates crop workers each week. With this contractor, Rebeca has harvested potatoes, onions, beans, chili peppers, and broccoli. Rebeca works upon demand, and says that she had not gone to the fields for a while, but a few days ago the contractor called her because he needed people.

The work of the contractor is not limited to hiring, he is also in charge of transporting people, which usually happens in a pick-up or in open-top delivery trucks, where people have to stand up without any protection. You can even see people sitting on the edges of the trucks. In other agricultural regions, the situation is different and reconditioned school buses are used for this purpose, something that companies in the region that contract workers formally also do. The workers usually meet the managers at previously agreed meeting points, these can be on the highway, at intersections of streets or avenues, in the center of towns, or at the houses of the managers themselves. In a small town in the municipality of Romita, we identified that the contractors drop people off on the road right by the town's park.

At the end of the day or week, it is the same contractors who are in charge of paying the workers according to the days they worked. In the absence of a clear and written contract, there is a risk of conflict or abuse of power between contractors and workers. Such was the experience of Margarita, a young worker from the municipality of Romita, who complained that each week she was paid less than what she was due for the days she had worked. She was working weeding the furrows and paid by the day.

During the day, she had to weed a certain number of furrows. However, due to lack of practice, because she had not worked in the fields for a long time, she fell behind. Some workers began to help her finish the furrows that she had to complete for the day. Her surprise was that the help was not free since they took half of her pay at the end of the week. Instead of paying her the 1,440 pesos she should have got for working all week, the contractor only paid her between 700 and 800 pesos.

For this reason, every payday Margarita's mother waits for the young woman where the contractor leaves the workers. Her mother checks that her daughter has been paid her full wage. The lady explains that the young woman has difficulties reading and doing numbers, so she checks with the contractor that the amount they give her matches the days she worked. This case shows how informality, the lack of regulations and contractors having an excess of control can lead to the abuse of power over workers.

Informality also fosters the problem of labor flexibility, which is characterized as being temporary and unstable. Agricultural work depends on the seasons of each type of crop. During some periods of the year more labor is required, while crops are constantly changing. When workers are hired seasonally and temporarily, it translates into job and wage instability. The work is usually "safe" during the weeks or months that the season lasts. However, in low seasons or depending on the demand for labor of each employer, farm workers are not guaranteed to find work every day.

For example, Cristina, a local informal worker, describes that she used to work on a farm where there was only work two or three days a week. At that time, she saw the van pass by of the manager with whom she now works daily. When she realized that he had work to offer every day, she chose to ask him for a job instead. This contractor always took them to the same employer: a man who has a lot of plots where he grows different vegetables, which allows him to supply work all year round. When we met her, she had finished cutting broccoli and was about to start the first chili harvest. After working on chili, they would go to plant onions for three months. Potatoes and tomatoes also work with this pattern. These kinds of situations are more commonly found in the informal labor market due to instability and the absence of an employment relationship, though, as we pointed out in the previous section, they can also be found in formal employment.

Depending on the season and the crop, the hours and payment modality also change. Currently, between 200 and 270 pesos per day are paid for a day in the field. Payment per day is decided by each employer, but it also depends to a large extent on the crop being worked. The broccoli workers we had the opportunity to interview reported earning 240 pesos a day. Instead, a worker who had gone to "throw tape to plant cornfields²⁰" was paid only 200 pesos for the day. This same worker said that for chili she earns between 200 and 220 pesos a day. Another worker stated that she is paid 220 pesos a day to harvest jicama. Agave is the crop that pays the best; a jimador earns 400 pesos. Just as the wages are variable depending on the crop in question, the hours also change according to the crops and the season. This is not limited to the informal labor market; as mentioned above, it also occurs in the formal labor market.

For some crops, harvest is paid as piecework, which means they get paid depending on how much they harvest each day. Such is the case of chili in the informal labor market. This produce is cut

20 Throwing tape refers to placing the irrigation hoses in the furrows.

and collected in burlap sacks that fit around three 20-liter buckets. Each worker's payment depends on the number of sacks he or she fills. The price per sack varies by a few pesos between farms. Currently, a sack of jalapeño pepper that weighs between 32kg and 34 kg pays between 16 and 17 pesos. A sack of serrano chili weighing between 28kg to 38 kg has a higher value; these pay between 25 and 28 pesos. Alma, a migrant worker who lives in the municipality of Romita, stated that she usually fills around 37 sacks of jalapeño or 17 sacks of serrano chili per day, which is equivalent to 592 or 459 pesos a day, respectively. Arturo, a migrant worker who lives in the municipality of San Francisco del Rincón, commented that in one day he fills and loads up to 45 sacks of jalapeño, which earns him 17 pesos each or 32 sacks of serrano chili for 25 pesos each. This totals between 765 and 800 pesos a day for a shift where he carries up to 1,500 kg from dawn to dusk.

Labor flexibility, which translates into employment instability, variable schedules and different payment modalities is not the informal market's only problem. Oral contracts and recruitment through intermediaries exempt employers from granting benefits they are required to provide by law, which include the payment of the end-of-year bonus, disability allowances and profit sharing, as well as the right to vacations and affiliation to social security. Labor flexibility and lack of benefits affect both local and migrant workers. However, there is a differentiated impact between the two. This difference is related to the degree of vulnerability in which migrant workers find themselves, but it is also the product of segmentation by origin and ethnicity in the agricultural labor market.

3.5. Segmentation of labor by origin and ethnicity

Given the lack of benefits and labor flexibility in agricultural employment, informal workers are at a disadvantage. However, the impact of not having employment benefits and labor flexibility is different depending on the origin and migratory status of the workers. This is largely due to difficulties in accessing public services and the lack of support networks in the workplace, issues that will be addressed in the following sections.

Furthermore, labor flexibility manifests in different ways according to the origin of the workers. When the harvest season arrives and the work is intensive, migrant workers are hired and paid per piece, unlike the locals who are usually paid by the day. This is because employers consider that migrant and indigenous day laborers are more skilled to carry out this intensive work, but they are also the ones who accept exhausting hours in extremely precarious conditions.

This situation is described by Cristina, a local worker from the municipality of Irapuato. Cristina belongs to a crew of local workers who are paid by the day. She explains that when her crew goes to the chili field, they are the ones in charge of planting and weeding: "those who come from outside are the ones who have to cut. They are the ones that get paid for the number of burlap sacks they fill, not the local people".

Cristina explains that if the crew requests it, they can also be put on cutting, but local people prefer to get paid by the day. Cristina says that she likes doing piecework because she can earn a little more; however, in general, local workers do not like it because in this modality they do not even earn

what they would when paid by the day. In other words, to reach a wage equal to or greater than what is earned when paid by the day, they must fill a large number of sacks or buckets with the product being harvested.

While piecework can mean greater earnings during the harvest season, it requires greater demands and physical exhaustion as the days are long and intensive, with the aim of cutting the most product in the shortest possible time. In general, the workers indicated that when paid by the day, the workday is less exhausting because they can go more slowly or at their own pace.

The preference to employ migrant labor for piecework is related to a highly segmented labor market in which an unequal structure persists that responds to categories such as ethnicity, class, and gender (Holmes, 2016). Despite the knowledge and skill that this type of work requires, they are usually considered unskilled tasks. It is for this reason that women, children, indigenous and migrant labor is usually preferred for these tasks.

Don Rafael, a producer of *chile güero* [blonde chili] from the municipality of Romita, mentioned that migrant day laborers are the ones who usually perform piecework because they work as a family, which allows them to pick and earn more during the workday. This same producer says that he prefers to hire only local people and pay by the day. It is more expensive for him to bring in people from out of state because he has to pay for a place for them to stay. In addition, he points out that as they come as a family, this can cause problems with the authorities if they identify that there are minors working in the fields.

Since Don Rafael only hires local people, even during the harvest, he prefers to pay them by the day. He explains that many workers use “tricks” to fill the bags faster and make more profit. That is, they cut fruits that are not yet ready or that do not meet the necessary quality standards. For example, people cut chili peppers before they are ready, while they are still tender. Or, to fill the sacks, they grab fists full of chili peppers of all sizes, which damages the bushes. The problem is that buyers do not want the product because too much of it is not ripe. He pays the people he hires 250 pesos a day from 7:00 am to 2:00 pm to pick the fruit.

The division between locals and migrants in the labor market is justified by arguments such as migrants working within a family unit or their greater abilities for cutting. However, such discourse is argued under the concept of culture as if both aspects were inherent to their place of origin; or as if they had some natural born ability related to where they came from. According to a member of a civil association that works with migrant day laborers, employers tend to uphold the idea that indigenous workers are faster and “endure more,” and that “nobody works it [chili] like the people of Guerrero.”

Other producers have mentioned to him that it would also be better for them to hire local people, but from their perspective, it is hard to get local people to accept the conditions chili cutters work under. For piecework, families work from seven in the morning to seven at night. The work is extended because the producers usually stipulate a certain number of cargo trucks that they have to fill in order to finish their day. Although a worker earns more than he would earn per day with piece-rate pay, the time spent in the furrows exceeds one standard working day. Sometimes this wage is earned from the work of several family members. The truth is that with this method of payment, producers make sure

they get the job done in less time. In addition, they relinquish themselves from the responsibility of paying overtime or premiums related to working Sundays or national holidays.

The discourse regarding the ease that migrant and indigenous workers have for this kind of work is perpetuated without question, not considering it as a skill acquired as a result of the job options to which they have access and in which they are socialized from an early age. The perception that it is a skill related to their origin and not a job qualification acquired through training causes this hyper-specialized task to be reviled and considered as unskilled work. This has been pointed out by various authors for decades, including Rebolledo (1993) and Lara-Flores (1995) in the case of women agricultural workers and packers. The same happens with the work of minors, which is taken for granted as a cultural attribute without reflecting on the limited opportunities that boys and girls have to carry out other activities.

Even though labor segmentation is a characteristic of the informal labor market, some formal companies hire migrant workers on a piece-rate basis for the harvest. Such is the case of a blueberry company that pays eight to nine pesos for each bucket. With this modality, workers can earn from 2,800 to 4,000 pesos a week. However, there are workers who claim that despite all their best efforts they are unable to achieve the amount necessary to earn the equivalent of a day's wage. This is the situation in which Alfonso, originally from Oaxaca, finds himself, who barely manages to earn between 150 and 180 pesos a day. His experience differs from the one he had working in a formal berry company in Jalisco, where he earned around 1,500 or 2,000 pesos a week. Alfonso explains that people work differently there because they have to fill boxes with fruit, attributing the difference in his wages to this.

Although the formal market in Guanajuato is not exempt from the problems caused by labor flexibility and segmentation, the truth is that there is better compliance with labor rights. Nevertheless, it is necessary to highlight that in Guanajuato, in addition to a labor market divided between formal and informal, there is a clear segmentation that differentiates local workers from migrant workers. This division must be analyzed in order to generate greater equality within the agricultural labor markets.

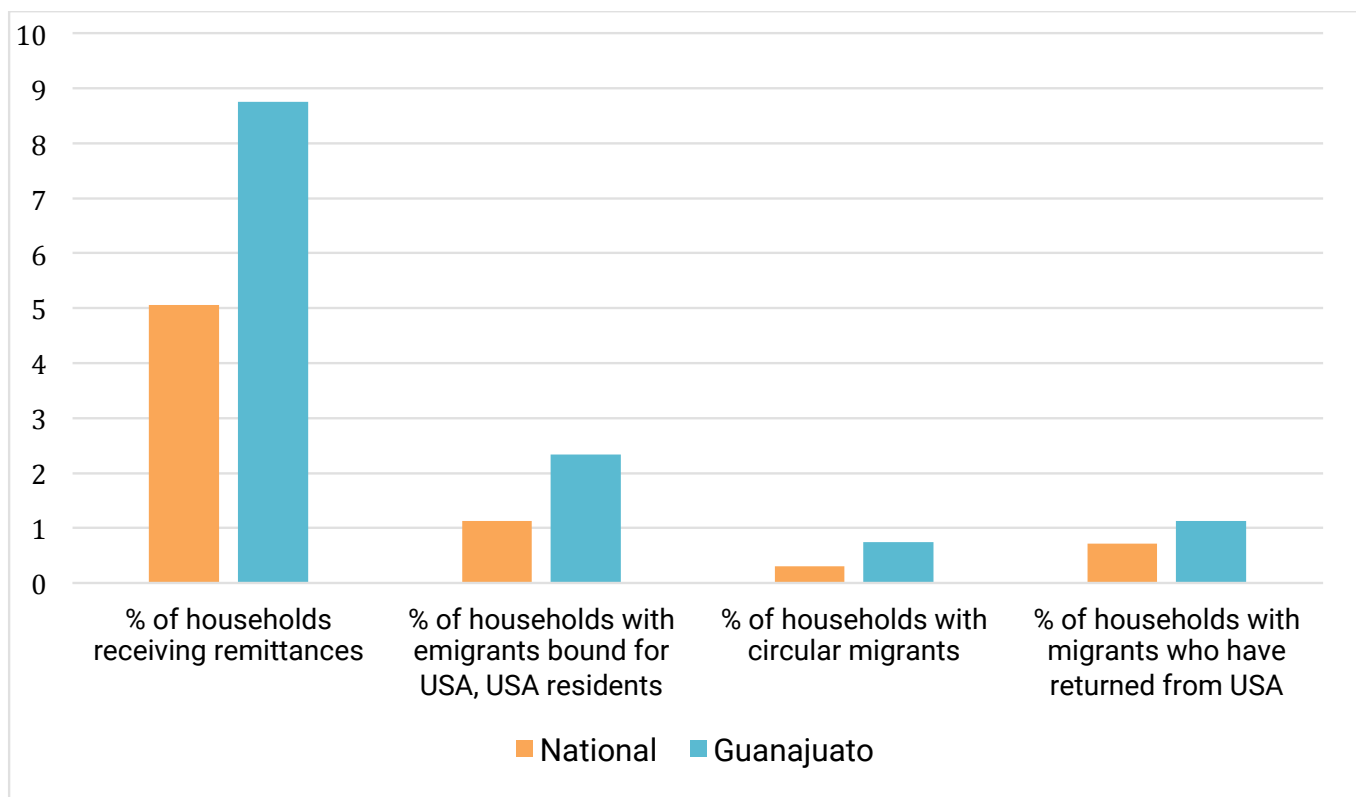
3.6. Population, migration, and agricultural work

One of the elements that fostered the growth of agribusiness in Bajío Guanajuatense was the possibility of having cheap labor from the state's rural areas (Echánove, 2000). In recent years, the Mexican countryside has suffered from a crisis due to lack of land, the high costs of supplies needed for planting, and low wages, which has forced many rural families to seek employment options outside the agricultural sector or in other latitudes (Arias, 2009). Even though in the state of Guanajuato most farm workers are natives, it is no exception (Arias, 2009). Facing this crisis, families have deployed two main strategies: migration to the United States and diversification of employment within the same state (Arias, 2009). Recently, however, this has changed significantly. Currently there is a shortage of labor in Mexico's agriculture.

In Guanajuato, there is a long-standing migratory tradition. At the beginning of the 20th century, 60% of migration nationwide could be attributed to the state, and it continues to play an important role

in the country's migration history today (Durand et al., 2019). According to the 2020 Migration Intensity Index²¹ by the Consejo Nacional de Población [National Population Council] (CONAPO), Guanajuato is among the states with the highest migration to the United States. The index shows a very high degree of migratory intensity, ranking as the fourth state with the most migration to the neighboring country. The importance of migration for the state is reflected in the percentage of homes that receive remittances, which reaches 8.75%. Households with emigrants residing in the United States add up to 2.33%. The lowest percentages relate to households with migrants who have returned with 1.13% of homes and circular migration with 0.75% of the homes.

Figure 7. Migration intensity index for Mexico-United States, comparing Guanajuato and national data 2020



Source: Prepared by author with data from the Mexico-United States migratory intensity index, 2020 by the Consejo Nacional de Población y Vivienda [National Council of Population and Housing] (CONAPO).

The municipalities with the highest degree of migratory intensity to the United States are Manuel Doblado, Cuerámara, Ocampo, San Diego de la Unión, San Luis de la Paz, Santiago Maravatío, Xichú and Yuriria, with the exception that Manuel Doblado, Cuerámara and Santiago Maravatío fall outside the Bajío Guanajuatense region. The municipalities with the greatest agricultural relevance present an index of migratory intensity between low and very high, as shown in the following table:

²¹ CONAPO's migratory intensity index is a measure that analyzes three forms of relationship between Mexican households and migrants to the United States at the national, state, and municipal levels. The estimates are made based on data from the INEGI's 2020 Population and Housing Census.

Table 10. Mexico-United States migration intensity index 2020 for Guanajuato's main agricultural municipalities

Municipality	% Households receiving remittances	% Households with emigrants bound for USA, USA residents	% Households with circular migrants	% Households with migrants who have returned from USA	Degree of Migration intensity index
Abasolo	16.49	2.82	0.89	2.47	High
Dolores Hidalgo					
Cuna de la Independencia	21.86	9.40	3.76	4.08	Very High
Nacional					
Irapuato	4.62	1.03	0.26	0.41	Low
Pénjamo	16.54	6.27	1.02	3.38	High
Romita	8.68	1.59	1.15	1.50	Medium
Valle de Santiago	13.44	2.53	0.92	1.16	Medium

Source: Prepared by author with data from the Mexico-United States migratory intensity index, 2020 by the Consejo Nacional de Población y Vivienda [National Council of Population and Housing] (CONAPO).

The state's population has been marked by its history of migration to the United States. Nowadays, it is common for families to be binational or for entire generations to have grown up in the neighboring country. One of the impacts that migration has had is a decline in the numbers of the agricultural labor force. A grain producer from a small town in the municipality of Salamanca explains that most of the people who live in the rural areas are already elderly, as their descendants migrated to the United States or went to work in some other trade. With no workforce to sow the fields, the land has to be rented or sold to large producers.

The migration of labor to the United States decreased markedly after 2008, both from Guanajuato and from the rest of the country. However, the decrease in migration occurs following a decline in the rural population of reproductive age, which had already declined sharply due to the same migration history. Therefore, the supply of local workers grew, but only modestly. In Guanajuato, this labor force had access to the entire range of economic activities in the state, which includes a strong export manufacturing industry and various services. For this reason, no labor surplus was generated for the agro-industry; on the contrary, by around 2012, a shortage began to manifest, which has only worsened since (Escobar and Masferrer, 2022).

Over the last two decades, the primary sector has seen a decrease in the number of workers. In contrast, the number of workers employed in the commercial and service sector has increased. The decrease in the primary sector workforce is also a consequence of the diversification of the rural population's activities. The economic diversity of the state allows the local population to have access to other employment options with greater stability and better wages. Although a shortage of agricultural workers is a general trend in the country, the situation is getting worse in this state, since agriculture competes directly with the industrial, commercial, and service sectors. Since the early 2000s, Marañón-Pimentel has pointed out that agricultural packing firms were in direct competition with the maquiladoras that monopolized a large proportion of the female workforce at the time (2002, p. 199).

Table 11. Employed population by economic sector from 2000 to 2020 in the state of Guanajuato

	2000	2010	2020
Primary sector	13.23	12.72	9.08
Secondary sector	36.43	32.01	35.69
Trade	17.82	20.67	19.03
Services	29.47	33.86	34.26
Nor specified	3.05	0.75	1.94

Source: Prepared by author with data from the Population and Housing Census 2000, 2010 and 2020 (INEGI).

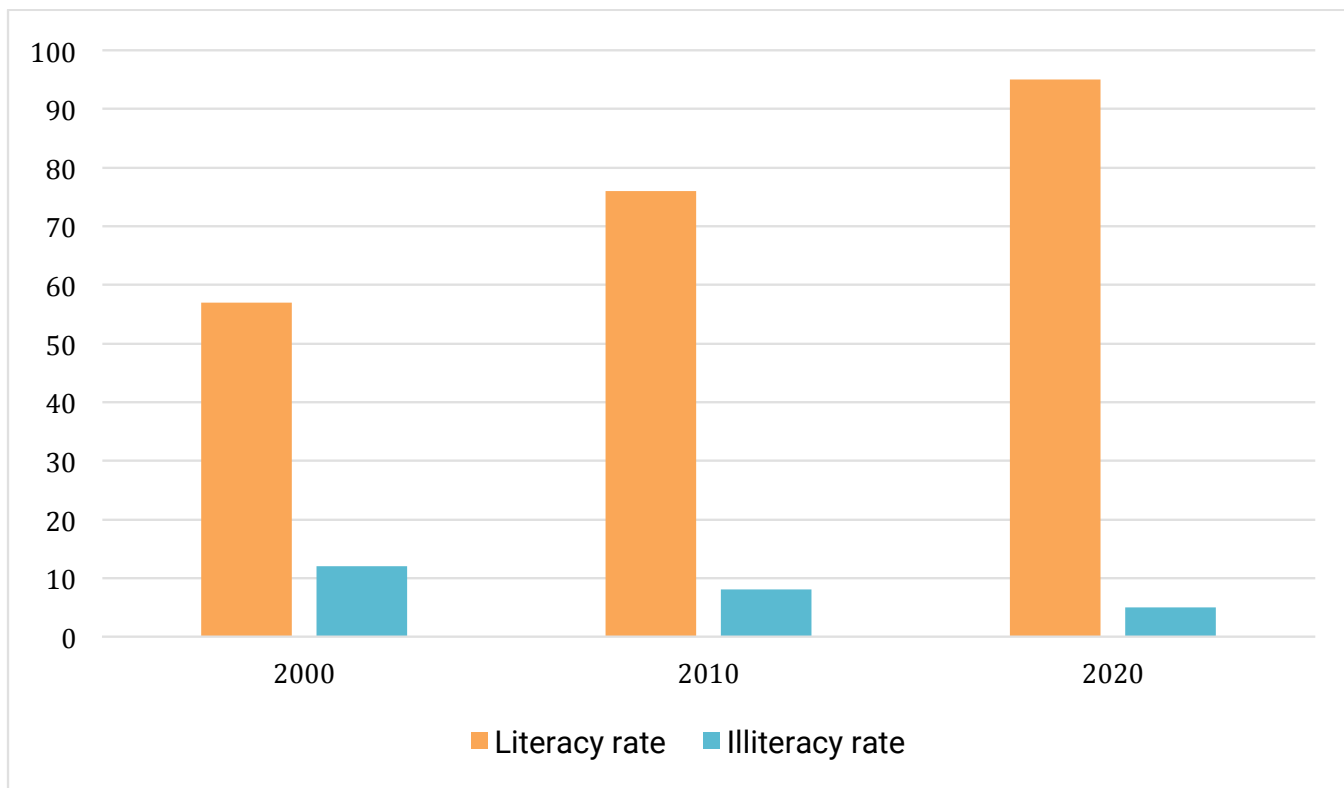
The problem of labor shortages in the agricultural sector was pointed out by the producers that we interviewed during the field work. One of them was Don Pedro who, although he does not need a large number of workers because he plants grain, also has a fertilizer business for which he requires labor. He explains that while he prefers to hire workers from the same town, given the shortage of labor he is forced to bring people in from other municipalities. For example, he usually brings people from Rincón de Parangueo in the municipality of Valle de Santiago.

Difficulty in finding workers has been the reality for the past twenty years. Initially, because people left for the U.S. Now, because they have other local options. Pedro acknowledges that this problem has worsened with the growth of the industrial and service sectors, which have the capacity to offer better working conditions. Although the wages are sometimes lower than on the farms, in manufacturing plants workers have social security and overtime pay. For example, he says at the Mazda car assembly plant, workers earn only 800 pesos as a basic wage per week, but they “have benefits.”

Moreover, at the car assembly plant, they work in shifts, so in the end, with overtime, a worker earns around 1,800 pesos per week, while, according to Don Pedro, on the farms they earn around 1,500 pesos per week working six days a week –our survey shows higher salaries, as noted in subsection 3.2–. Another producer mentioned that for him local agriculture is going through a difficult period because almost all the labor works in factories or in the agave fields, which has become a very profitable activity.

Another factor contributing to the shortage of agricultural labor is an increase in schooling levels. In the last two decades, the illiteracy rate has decreased significantly in the state, with an increase in the population attending school and in the educational levels achieved. This in turn favors two phenomena: people can enter other labor sectors where more schooling is required, and adolescents are not working in the fields because they attend school.

Figure 8. Literacy and illiteracy rates in the state of Guanajuato 2000-2020



Source: Prepared by author with data from the Population and Housing Census 2000, 2010 and 2020 (INEGI).

To meet their labor needs, large producers have chosen to hire workers from other states in Mexico. While local workers labor throughout the year weeding and performing other tasks, for which they are paid around 250 pesos a day, migrant workers arrive in Guanajuato to work on the harvests of various crops. As explained in the previous section, migrant workers are paid piecework, according to the amount of product they harvest per day. Despite their great skill, speed, and efficiency, they are considered unskilled. Their migratory status also places them in a situation of greater vulnerability and precariousness.

IV. Leaving the homeland: living conditions of migrant farm workers

The migration of agricultural workers to the state of Guanajuato is a relatively recent phenomenon. Traditionally, Guanajuato has been a state where men and women leave to seek job options in the United States. In recent decades, the rise of industry has brought about new internal migration to the state, mainly from neighboring states heading to urban environments. For a decade, the growth of agribusiness and more recently the shortage of labor in the countryside, has also led to the migration of farm workers who come from other states of the country. The migrant workers come mainly from the most impoverished areas of southern Mexico. The people who come to work in the fields are mostly from Oaxaca and the mountains of Guerrero. A large number of them are Zapotec, Nahuatl, Nuu Savi and Me'phaa indigenous people who join the fruit and vegetable labor market in the municipalities of Romita, Silao, León, Dolores Hidalgo, Manuel Doblado, Purísima del Rincón, Valle de Santiago, Guanajuato, and San Francisco del Rincón.

The main reasons they decide to migrate are because of a lack of job options and low salaries in their places of origin. For example, in the mountain region of Guerrero,²² CONEVAL data indicates that by 2020, 87.8% of the population lived below the income poverty line and 61.9% below the extreme income poverty line. In Oaxaca, 66.3% of the population lived below the income poverty line and 36.6% below the extreme income poverty line. In many of the communities of origin, the main source of income is subsistence agriculture. Employment options are limited to working the land with crops for self-consumption or as a waged laborer in construction or in commerce, activities that tend to pay poorly.

Alfonso, a worker from San Juan Lachigalla in the district of Ejutla, Oaxaca, is a clear example of this. In his town, Alfonso plants corn and beans on two hectares of hillside that he bought with what he earned as a farm worker in other regions of the country. He says that in his community there is no work because the only employment options they have are in road construction or in a greenhouse producing red tomato. In the greenhouse, they pay him 150 to 200 pesos a day. However, when the season is over, there is no work and they only hire a few men to make the furrows. In road construction, the pay is 200 pesos a day. Alfonso usually goes to the tomato greenhouse two or three days a week to earn an income that allows him to buy supplies; in his words: "so he has enough for soap". Alfonso and his family's option to earn a wage is to migrate to other states of the country as farm workers.

Besides a lack of employment opportunities and low wages, another of the problems faced by the communities of these two states are conflicts and violence. The degree of violence is such that the inhabitants have been forced to move to other parts of the country (RNJJA, 2019). Regarding this, a government official explained to us that the families arriving in the state come with lots of babies and young children while the number of adolescents is much lower because they go to work in the United

²² For this, we refer to the boundaries identified by Martínez-Rescalvo (2004), which considers 19 municipalities: Acatepec, Alcozauca, Alpoyeca, Atlamajalcingo del Monte, Atlixac, Cochoapa el Grande, Copanatoyac, Cualac, Huamuxtitlán, Iliatenco, Malinaltepec, Metlatónoc, Olinalá, Tlacoapa, Tlalixtaquilla, Tlapa, Xalpatláhuac, Xochihuehuetlán and Zapotitlán Tablas.

States or are recruited by the self-defense groups in their places of origin. Self-defense groups can replace the police and the army to ensure peace in communities, but some also have chosen to work with criminal organizations.

Added to these problems is the lack of basic health care and educational services in these communities. According to the 2020 data from CONEVAL, in the mountain region of Guerrero the percentage of the population lacking access to basic services in the home rose to 80.7%; 15.9% do not have access to health care services and 34.7% have an educational deprivation. The same is pointed out by Arturo, a Mixtec worker from the Joya Real community in the municipality of Cochoapa el Grande, who explains that in addition to the lack of work in his town, people migrate because “they don’t have a house, they don’t have water and there is no drainage” —Cochoapa el Grande is one of the five poorest municipalities in the country, along with Metlatónoc, its immediate neighbor—.

According to CONEVAL 2020 data, the percentage of the population in this municipality without basic services in the home rose to 97.1%. Moreover, there is a lack of health care services and schools in this municipality. What people earn or sow is for the subsistence of family members. For these reasons, despite the precariousness they find when they arrive at their destinations for work, families have no choice but to migrate.

The profile of the informal migrant workers who come to work in the Guanajuato farmlands is mostly indigenous, especially Mixtecs from the state of Guerrero who come to work in chili harvests in the fields of León and neighboring municipalities (Durand et al., 2019), though they also work on other crops such as tomatoes or broccoli during their stay. The chili season in Guanajuato begins in May, when the arrival of temporary migrant workers is most evident. Usually, the migrant farm laborers who arrive in Guanajuato are “swallows” that migrate throughout the year following the harvest seasons that continue in different agricultural regions of the country, including the fields of Jalisco, Sinaloa, and Baja California.

These migrants are hired from their communities of origin by an intermediary that is commonly known as a recruiter, contractor, or foreman. The contractors are usually people from the same town who advertise on billboards, through loudspeakers or on the radio. These workers, who join the informal labor markets, usually arrive with their families, and are transported in pick-ups or open-top delivery trucks identifiable by their Guerrero license plates. Although in both the formal and informal labor markets, the figure of the recruiter is essential, there are important differences that are mediated precisely by the formality of the job.

The contractors in charge of looking for people for the formal market have a greater capacity to negotiate with companies and employers. This is the case of Néstor, a 27-year-old Zapotec foreman who, together with his father, brings people from Oaxaca to work in Guanajuato. Nestor and his father hire people to work in the fields planting Chinese vegetables and blueberry. Recruitment is announced on a loudspeaker in the communities. This year they advertised on the radio and recruited people from Santa Cruz Xitla, Coatecas Altas, Miahuatlán, Santa Lucía and Loxicha. This season, they brought between 90 and 100 people on three separate trips. Néstor explains that not everyone stays to finish the season because often the job doesn’t work out for them, which is why in these cases he returns to

Oaxaca to find more people. The young man is emphatic in saying that he cannot stop anyone from leaving; if people want to return, they can do so without problem –but they have to pay for their trip back–.

When Néstor's father first began to recruit people, the company provided him with transportation to bring the workers. These were passenger buses conditioned for this purpose. However, because the company brought people after the harvest cutting had already begun, by the time the people arrived there were not as many vegetables to cut, so they earned less. Nestor's father then proposed to the employer that he would bring the people as long as the company continued to take care of the expenses. Since then, the workers arrive in time to start the harvest season. Nestor's father uses passenger bus and a van to transport workers. According to the testimony of one of the workers, they left Oaxaca in the manager's van on September 4 and arrived in Guanajuato at dawn on September 6. The transfer time was longer than usual because the vehicle broke down. The farm owner covered the cost of food for them during the journey.

This situation, although not ideal, contrasts radically with the experience endured by informal workers who are transported in the back of pick-ups or open-top delivery trucks from their place of origin. To get to Guanajuato, workers usually travel up to 14 hours, many times standing and in overcrowded conditions. According to the testimony of officials interviewed, due to the characteristics of the trip, there have been cases of small children who have died of suffocation on the journey. During our field work, we had the opportunity to talk with Miguel, a foreman from Guerrero. He transported four families, eight adults and eight children in total, from his community of origin to Guanajuato. The journey of more than 14 hours was done in an open-top delivery truck, without any type of safety precautions. That day they arrived at exactly 3:00am to start work a day later.²³ Miguel was in charge of finding out which employer they could work with. In his words, they would take "whatever there was", whether it was chili or tomato.

Besides being responsible for transporting people, the intermediaries are the ones who find places for the migrants to work and who have the capacity to negotiate with landowners. The formality in which Néstor and his father find themselves affords them the ability to negotiate with the companies that hire them. They decide to go with whoever suits them best according to the wages and the conditions offered. For example, in addition to requesting that travel expenses be covered, Néstor and his father pay for housing, basic services and food costs, including the payment of two cooks to prepare the meals. One of those cooks is Rocío, who has a contract and benefits; her salary is 1,890 pesos a week for working Monday through Sunday. Her tasks, along with another lady who is also in the kitchen, are to prepare breakfast and lunch for all the workers staying in the shelter. At that time, there were 19 people, including the cooks, 14 men and 5 women.

Before the season begins, Néstor's father visits the company and the house they are offered, to verify that the conditions are as promised. He does this so that he is not deceived, because he is the one who has to answer to people. In contrast, even though contractors in the informal labor market know in advance which employer they will work with, not only do they lack any bargaining power in

23 That is, 27 hours after their arrival.

the absence of a written contract, but employers can distance themselves from all responsibility. It is the contractors who are responsible for getting the accommodation and the workers, as well as for covering their needs, which places them in a position of clear disadvantage and precariousness.

Hiring through an intermediary allows the landowner to evade all responsibilities, since the employers distance themselves from any labor relationship, leaving the contractors responsible. This is clearly pointed out by Néstor, stating that although the employer is responsible for some of the expenses that arise, in the end he is responsible for resolving any issues. For example, when they have run out of water, it is he who must go out and find where to buy it. If people arrive very hungry and there aren't enough tortillas, then he has to go out and get more. When a worker gets sick, even if they have the right to use the Mexican Institute of Social Security (IMSS) or, even if the employer reimburses the expenses, it is he who has to resolve the situation.

This problem impacts both migrant farm workers working in formal market as well as those in the informal market. However, despite the conflicts that may arise between employers and intermediaries in the formal market, the truth is that formality allows for a certain level of negotiation when it comes to worker conditions, while informal workers find themselves in an extremely precarious situation. These differences are clearly illustrated by the housing conditions.

4.1. Living precariously: housing conditions

During the high season, farm workers from other Mexican states arrive in Guanajuato to work the lands. The families that arrive need a place to stay during the weeks or months they will be residing in the state. In the formal labor market, as part of the agreement, companies or employers offer workers a place to live. Some of the companies have shelters on site. This is the case of the export companies in the municipality of Dolores Hidalgo, where brick-and-mortar rooms have been built on site in the fields so that the families arriving to work in the state have somewhere to live. Other companies do not have their own accommodations but negotiate options with the contractor before the contingents of workers leave their place of origin.

A clear example of this is the case of Néstor, who negotiated accommodation with the employer in the absence of a shelter or housing complex provided by the company. Initially, the company had set up a space on site in the blueberry fields. However, during a visit from the company who buys the product for export, they noticed people living in the fields and immediately asked them to be removed because safety standards were being put at risk.

Currently, Néstor's crew is living in a brick-and-mortar building with a dirt patio where they have bedrooms, a kitchen, portable bathrooms, and a laundry room. The rooms have bunk beds and are shared by several workers. The place is located up a hill on the edge of the town, surrounded by vacant lots. There is no water supply. They must buy water from a water truck to bath and wash clothes. The agreement is that the employer covers half of this expense.

One of the problems they have faced is not having a refrigerator. When they arrived at the accommodation, Néstor asked the employer for a refrigerator to store food. After a month of waiting,

one arrived but it immediately broke down. It has not been replaced since, so it is difficult to store food, meaning they have to buy groceries each day in the little store, which increases the cost of food. Néstor explains that these types of necessities are managed through the human resources department, however their requests take time.

Thus, although formal workers have some bargaining power, the truth is that the lack of a direct employment relationship with the company means they continue to suffer from certain deficiencies such as access to water or the material conditions of the space. Even so, despite conditions being far from ideal, it is clear that the formality of their employment puts them in a very different situation than that endured by informal migrant workers.

Informal migrant workers arrive to the spaces the contractor has found in the towns surrounding the fields where they will work, for example, in the communities of La Sandía and Barretos in the municipality of León or Corrales Ayala and El Jagüey in the municipality of Romita. The cost of these places is covered by the informal workers themselves. The spaces provided are warehouses that were not intended to be lived in or houses whose construction has not been completed, where whole families are accommodated. According to some testimonies collected during our field work, people who have immigrated to the United States rent their half-finished homes to migrant workers.

These spaces not only lack basic services such as water supply but also do not have rooms, beds or a kitchen. Families share the spaces, either in fully open warehouses or in houses with one or two rooms. This translates into a clearly overcrowded situation where lack of privacy is a constant. It is common to see people sleeping on the floor on blankets. In some houses, the workers have a gas grill for cooking, but in other cases they cook with firewood, improvising a stove with drums or even directly on the ground.

Furthermore, workers' safety is at risk from the fact that these places do not have windows, doors or the appropriate finishes. According to some testimonies collected in León, the looting of homes is very common in the towns where migrant farm workers live. When the workers return from their shift, they find that all their savings from the season have gone, as people enter and steal everything. The strategy of some workers has been for a family member to stay at home as a precaution, usually women or children.

Given this situation, housing has become one of the main problems faced by this population group. Based on this need, the state government has set up the possibility of building shelters in the main host municipalities. Currently, there is one government-run shelter in the area. It is a shelter that was built with resources from the Secretaría de Desarrollo Social [Ministry of Social Development] (SEDESOL). This secretariat stopped funding these works since 2019. It is currently administered by the Desarrollo Social [Social Development] and Desarrollo Rural [Rural Development] dependencies in the municipality of San Francisco del Rincón. Workers from Guerrero employed for the chili harvest arrive to stay at this shelter every season.

Even though conditions are better than in the spaces that the workers rent on their own, the shelter has some important shortcomings. One of the main problems is that this place does not have any stoves, so the occupants have adapted metal drums for cooking with firewood. In the evenings,

despite cooking in an open space, the smoke permeates the entire shelter. As soon as the women begin to cook, the sound of dry coughing starts as throats close in reaction to the smoke, especially among the youngest occupants.

The facilities of the place are in good shape; the bathrooms are spacious and are divided by gender. However, it does not have hot water and there are electrical faults in the rooms. Although the occupants have already reported this problem, the last time they went to fix it, they complained because their work “was interrupted” when the farm workers came home from work. Therefore, they decided that they would go and fix the problem “after the workers have left;” that is, when the season is over, and it is no longer a pressing necessity as it is now.

Although the “swallow” worker profile is the most characteristic in the region, the reality is that there are some migrant workers who have settled in the localities. Magnolia is an example of this. She arrived in Guanajuato for the first time 13 years ago, from Terrero Venado, Guerrero. Her family continued migrating for a few more years to the fields of Melaque and Sinaloa; but six years ago, they returned to Guanajuato and settled permanently. In the state of Guanajuato, they have work throughout the year due to the variety of crops it offers, so it is no longer necessary to migrate constantly following the harvest seasons.

Settled migrant workers have found permanent places to live, but even so, these places are characterized by a lack of basic services and inadequate living conditions. For about a thousand pesos a month, they can find an unfurnished or sparsely furnished space, where they continue to sleep on the floor. Water supply tends to be inconsistent, so they tend to hoard it in drums to use on days when water is scarce. In addition, garbage collection service is extremely scarce, so they need to burn their waste to avoid accumulation.

Justifications given for the housing conditions experienced by migrant workers come from different angles. On the one hand, employers are oblivious to this situation, since they do not take responsibility for the living conditions of their workers under the argument that workers are itinerant and that their deal is with the contractor. On the other hand, the normalized discourse among the rest of the population is to acknowledge the precariousness of the situation these workers find themselves in but justify it by saying “they are like that” and “they are used to” these types of conditions.

For example, statements such as: “why do you want water if you don’t bathe your children anyway?” or “why do you want hot water if it’s hot right now?” reproduce the discrimination that migrant and indigenous workers face. The effect of such discourses is that, even among governing bodies, the precariousness and vulnerability in which they find themselves is minimized. The lack of criticism and questioning about the circumstances these workers find themselves in limits the possibilities of demanding changes from those who are responsible for these situations.

V. Child laborers: education, care, and child labor

The incorporation of labor standards and a focus on social responsibility in agriculture have been essential for reducing instances of child labor. In Mexico, agriculture is one of the labor activities that presents the greatest participation of children and adolescents. This is largely because this activity used to be carried out as part of the peasant economy or as work within the family unit. However, the growth and boom of commercial agriculture has changed the logic in which this activity is carried out. This is now intensive, physically strenuous work that puts the health of children and adolescents at risk. It is a space where occupational risks may arise due to exposure to the sun, the use of chemicals and heavy machinery.

In recent years, Mexico has adopted an approach to eliminate child labor. In 2015, Convention 138 of the Organización Internacional del Trabajo [International Labor Organization] (ILO) was ratified, which establishes the minimum age to work as 15 years old and 18 years old for activities that are considered dangerous. That same year, the Ley Federal del Trabajo [Federal Labor Law] (LFT) was reformed, whereby all agricultural activities were classified as dangerous, and therefore 18 years old was established as the minimum age for working in agriculture.

Among the policies to support the elimination of child labor in the agricultural sector, Distintivo de Empresa Agrícola Libre de Trabajo Infantil [Agricultural Company Free of Child Labor Distinction] (DEALTI) was introduced. Although in recent years the presence of children in the fields has decreased, the reality is that the problem persists and has become worse in certain areas. This is the case of Guanajuato, where the presence of boys and girls in the fields is common. To a large extent, this is a consequence of the informality and lack of regulation that prevails in the agricultural sector of the state. Although the presence of child laborers occurs among both locals and migrants, it is among the latter where more cases occur. In addition, the conditions that migrant children work under are precarious and clearly violate their rights.

In the case of local children, many of them work in the fields during school holidays. This is the case of Fabiola, a 13-year-old girl from the municipality of Romita. This was the first year that Fabiola worked in the fields, motivated because the sister of a friend of hers invited her to work during the Easter holidays. During this time, Fabiola worked weeding onion, chili, and broccoli crops. For each day she worked, they paid her 240 pesos, the same as the adults who work with her. Fabiola's cousin, 11-year-old Ana, also worked weeding the chili crop. Ana decided to work in the field at the invitation of Fabiola. At first, her mother did not want to let her go, but Ana convinced her by telling her eloquently that they [her parents] "will not always be there to support her." Ana's nephew, who is younger than her, proudly shared with us that he also works in the lettuce field and in the grocery store during the holidays.

Even though child labor occurs both among local and migrant children, without minimizing the risks that this can have for a child, the implications for the two groups are different. While for many of

the local children, work is presented as an alternative way to spend their vacation time and earn their own money, for migrant children, it becomes the only option given the lack of economic resources and lack of educational and daycare services. The children of farm workers usually start participating in agricultural work at an early age. From a very young age, boys and girls are socialized into agricultural work as a family.

Due to the lack of employment opportunities in their communities of origin, families are forced to migrate in search of an income. In some cases, the children stay in the communities of origin under the care of a relative. However, this is not always a viable option, so farm worker families often choose to migrate as a complete family unit to the places where they find work. Economic necessity, the lack of educational options in the workplace and the absence of regulations in the fields are determining factors that lead to the incorporation of children into the workforce.

The case of Flor, a 12-year-old Mixtec girl is a clear example. She began working at the age of eight in the fields of Chihuahua and Sinaloa. She would go to work during the season along with her father and her sister Tere, two years her junior. At barely twelve years old, Flor has work experience picking chili, broccoli, and red tomato, as well as in weeding and setting irrigation hoses.

Currently, Flor and Tere continue working in the fields of Guanajuato. Three months ago, Flor's father migrated to the United States, where he is working in a restaurant. However, all of the man's salary is used to pay the debt he owes to the *coyote* who helped him cross the border. Flor's mother, Carmen, also tried to cross, but she was stopped at Piedras Negras border control. The family of Carmen's husband works in Guanajuato, which is why she decided to return to this state. In addition to Flor and Tere, Carmen has two girls, eight and three years old, and an eight-month-old baby. The family's current work strategies are defined by the care required by the two youngest children as well as the absence of the father's income.

During the low season, Flor and Tere go to work in the fields, while Carmen stays at home taking care of the children. During the high season, Carmen sells food in the fields to the workers, while Flor stays at home taking care of her younger siblings. Flor's case shows that lack of daycare services is another problem that affects the presence of child labor in the fields. Given the lack of daycare institutions, farm worker families choose to leave their eldest children to take care of their youngest or send them to work in the fields.

Unlike other regions such as Sinaloa, where companies have daycare and educational centers, in Guanajuato only a few formal companies have such spaces. The option of going to a Centro de Atención Infantil [Child Care Center] (CAI) is limited, since they belong to the Mexican Social Security Institute and are not an option for informal workers. In addition, even if they were insured, the CAIs are only located in the cities of León, Irapuato, Guanajuato and Celaya. Therefore, distance becomes another impediment for effective access to this service. Another option would be the Centros de Atención Infantil Comunitarios [Community Child Care Centers] (CAIC) of the DIF (Desarrollo Integral de la Familia or Comprehensive Family Development offices),²⁴ but the opening hours are an impediment. For example, in the municipality of Romita, the CAIC offers services from 9:00a.m. to 4:00p.m., which

24 Desarrollo Integral de la Familia is the name of the municipal offices responsible for the care of vulnerable groups.

makes it incompatible with the farm workers' daily routines, especially during the harvest season when the duration of the workday is variable and can last until nightfall.

Due to the type of migration, which is circular and familial, where all members of the domestic group seek to work, there are not always support networks they can use to solve the daycare problem. The need for income and the payment modality are variables that also come into play. Families prefer that all household members work in order to generate sufficient income. This situation is very different from that of other regions such as in the south of Jalisco, where migration occurs under other types of conditions and the prohibition of children in the fields has forced families to seek a solution to this problem, though this should be the responsibility of the companies, employers, and the government.

Given the lack of daycare services, taking children to the fields seems to be the only solution, otherwise they would have to leave them alone at home. Carla, a Mixtec migrant worker who has 6 children, the eldest being 15 and the youngest 5 years old, explains that although only her three eldest children work, she takes all of them with her to the fields because it is dangerous to leave them on their own.

This same situation is experienced by Bertha, a 38-year-old Mixtec farm worker who is responsible for five children and two grandchildren, all of whom are minors. Her two eldest daughters, aged 14 and 12, accompany her in the fields to work, while she takes the other five children as well even though they do not work. She takes them because there is no one who can stay at home to supervise them. When she cannot take the younger ones to the fields, one of the older daughters stays to take care of them. However, losing a worker during the day means losing income for the family.

The lack of daycare services where families can leave their youngest children has led to accidents in the fields. An official from the municipality of Romita whose job it is to attend to this population, shared that on one occasion they had to admit a baby with first-degree burns after being exposed to the sun all day while out in the field. In the absence of options, the mother took the baby to the field with her and left him asleep on the edge of the furrows.

As the testimonies show, the presence of children out on the fields is not only to accompany their parents due to a lack of daycare institutions or services. This is also a problem that involves older children and adolescents who start working at a young age. Their incorporation into paid work is a response to different factors. One of them is the problem they encounter to access education and the continuation of their studies, despite an interest in continuing school or learning being evident in many cases.

The first barrier that this population group encounters is the lack of documentation to prove identity, which is why many of the children cannot attend school in the regions where they migrate to. For example, Bertha states that she wants to send her youngest children to school, but she cannot do so because none of them have a birth certificate. She wants to do the corresponding paperwork, but she plans to wait until they return to Guerrero "because there is a lot". It is evident that Bertha does not know where to go or who to turn to in order to carry out this procedure. The difficulty she has in understanding and speaking Spanish may be one of the reasons that discourage her from processing the birth certificates in Guanajuato.

For the population that constantly migrates following the harvest, access to education becomes a challenge. It is not only about the lack of educational institutions in the communities of origin, but about the constant movement that makes it difficult for them to continue their studies. This situation remains despite the Sistema Nacional de Control Escolar de Población Migrante [National Control System for the Schooling of the Migrant Population] (SINACEM), whereby children are registered and the periods they attend classes are validated. The reality is that the constant coming and going, the change of teachers and the uneven quality of the classes they receive in different places discourages many from continuing their studies.

An example would be Alma, a 19-year-old migrant worker who began working at the age of 11 in the chili fields of the municipality of Romita. She says that at first her plan was to miss school only during the five months that she was going to work, but when she returned to her town, she no longer wanted to continue her studies. According to Alma's story, before she had a teacher who knew how to teach them very well, but when she returned from Romita, that teacher was no longer teaching. She was replaced by a teacher who, according to Alma, did not teach them anything. Although Alma was a very good student, the change in teacher discouraged her and she decided not to go to school anymore but work instead. The young woman reached the fourth grade of primary school and admits that she liked to study but for her, continuing her education is no longer an option.

Between the journeys families make and the difficulties involved in following up on studies, it is evident that children are beginning to suffer from an educational gap that they themselves identify. In some of the workplaces, as is the case of Sinaloa, they have access to education offered by the companies. Despite this, the challenges implied by providing education for child laborers, which needs to serve children of different ages, origins, and educational levels, means that far from there being a study plan, it is rather a matter of supervising the children while they are at the workplace.

For example, when Flor went to Sinaloa, she studied in the on-site schools. However, she says that they were not taught anything, "they were only made to draw" and "they don't even learn literature." Flor studied until fourth grade and since then she has been working in the fields or taking care of her siblings. She wants to resume her studies when her family returns to Guerrero. However, her family is already settled in Guanajuato, and they only return to Guerrero once a year for vacations.

In Guanajuato, the Ministry of Education has a program focused on this population. Previously, it formed part of the Programa Federal de Inclusión Educativa [Federal Educational Inclusion Program] for children with disabilities, indigenous peoples, and migrants. However, given the cuts in federal programs under the current government administration, the Guanajuato Ministry of Education has chosen to manage this program with state resources. The program is administered and controlled from the central offices, but each delegation is in charge of its operation.

The state Ministry of Education is divided into seven regional delegations. Each region has a coordinator and its own teachers. The way in which education is provided to migrant child laborers is the decision of each region and is implemented by each municipality. According to the information provided by the Ministry of Education, the strategy for teaching classes depends on the needs detected

in the municipalities receiving farm workers. To do this, a census is carried out where the number of boys and girls and their ages are identified.

In general, the strategy is to bring teachers to the communities where the farm worker families reside. Each municipality manages a space where classes can be taught. In some of the municipalities, classes are given in the afternoons because, as already mentioned, families cannot leave their children alone at home and choose to take them all to the fields. One of the main objectives of this program is the reduction of child labor. However, teachers have realized that boys and girls work in the morning, so one of the strategies that they have implemented in some municipalities is to give classes directly in the fields. Although in some cases this option has been viable, in others they have met with reluctance from the employers. The reality is that effective access to education is made more difficult by the lack of interest on the part of the employers, the limitations of government institutions and the workers' individual situations.

A clear example of this is what happens in the municipality of San Francisco del Rincón. This municipality has a shelter managed by the municipal government where working families arrive every season. The unit that manages the shelter works in coordination with educational and health institutions so that they provide care to the population. The agreement for this season was that visits from the institutions would take place on Wednesday afternoons. The visits were scheduled to take place at six in the evening. However, during the harvest season, the days extend until nightfall. For this reason, those in charge of health and education decided not to go, since the shelter would be empty at the time when they had scheduled the visit.

The option of going directly to the fields is unfeasible in this municipality since those in charge of providing the service do not know where the fields are and do not have any information on the company or employer for whom the farm workers work. This situation results in a lack of access to educational and health services for the children of farm workers. Although the Ministry of Education shows its good intentions with the work it does, when it comes to the operation of these plans, great gaps arise. Being that it is a program focused on migrant agricultural workers, the workers' schedules should be taken into consideration as it is one of the main elements that characterize its dynamics.

This problem is also faced by other social organization initiatives. The clearest example is that of Centro de Desarrollo Indígena Loyola [Loyola Indigenous Development Center] (CDIL), an organization that runs the Na'Vali project, among its various programs, which is focused on supporting farm workers' children. Its activities are carried out mainly in the chili harvest season in the municipality of León from May to July. With the support of volunteers and social service people, the project takes breakfast to the fields and manages recreational activities directly in the furrows.

The work of CDIL is recognized by the laborers themselves, although the difference between these actors and the government is not always clear to them. In some cases, they think that they are state or federal authorities, or even that they are a service provided by SEDESOL, a secretariat that no longer exists. In various testimonies, they told us that CDIL usually come to the fields with tents to teach the children. Although the work of the CDIL is very valuable and represents a great strategy given

the lack of educational and care options, the truth is that for the situation to change, the involvement of companies and producers is needed.

The informality that prevails in the fields blurs the responsibilities of companies and employers. Although there are efforts by civil groups and government institutions, the involvement of the agricultural sector is also required. In the municipality of Dolores Hidalgo, it is clear how much difference it can make when producers take responsibility. In this municipality, the Ministry of Education works hand in hand with formal companies, whereby the prohibition of child labor has allowed educational options to be provided for the children of migrant farm workers.

Companies have built or adapted spaces so that children can be cared for and study while their parents go to work. The Ministry of Education is responsible for training the caregivers hired by the companies. In terms of basic education, the classes are taught by teachers from the Ministry of Education. The case of Dolores Hidalgo shows the differences that can be made to improve the living conditions of child laborers when employers take responsibility for their obligations.

The lack of regulations in the fields and the prevalence of child labor places boys and girls at constant risk, ranging from exposure to chemicals or small accidents to harassment and violence. For example, during our interviews, Tere, a 10-year-old worker, showed us a scar between her fingers when recounting one of the accidents she had in the fields. Her sister was cutting a broccoli plant and didn't notice that Tere had her hand in the bushes. As the sister passed the knife, it wounded Tere's finger. The field engineer washed the wound and put a bandage on it. Tere says that when there are more serious accidents, the field managers take them to the doctor. For example, a 13-year-old neighbor of hers also works in the fields. She had a more serious accident when a knife took off her nail and they had to sew her finger together.

The risks involved in child labor are not limited to accidents. Although children are often accompanied by their parents or other relatives, they remain highly vulnerable. A clear case of this is that of Margarita, who at the age of 12 went to work in the fields with her father. During a workday, one of her colleagues, a forty-year-old man, sexually abused her. Although the family sued, the abuser was the employer's right-hand man; he threatened the family with firing the father if he did not drop the lawsuit. This is a low-income family originally from Guanajuato that totally depend on income from the fields. Given their precarious situation and the limited labor options, the family was forced to withdraw the lawsuit.

Accidents at work and abuse while out on the fields are a reality for many of the children who arrive with their families each season. However, instead of presenting solutions that seek the eradication of child labor by providing options to farm worker families, one of the responses has been to criminalize it. What can be observed in the region is that employers do not take responsibility for the people they bring in, this should include offering decent housing and educational and daycare spaces. Although there are laudable efforts by some government agencies to address the problem, their limitations, and the complexity of farm work means that these efforts are not enough. These types of institutions are in charge of carrying out humanitarian work or campaigns to eradicate child labor, since the direct regulation of child labor is outside their jurisdiction.

For its part, the state Secretaría del Trabajo [Secretariat of Labor], which should be able to make a direct impact on child labor, considers that this is not a generalized problem. They report that occasionally they receive complaints but that when they go to inspect the fields, they turn out to be “false alarms”. However, during our visits to broccoli and chili fields in the municipality of Romita, we were able to observe minors working in the furrows. According to one of the officials interviewed at another government agency, there are children working in the fields, but when they see the authorities arrive, they start to play on the ground. As soon as the officials leave, they return to work in the furrows. The big problem is that rather than there being any proposals that have a real and substantive impact on the eradication of child labor, both the government as well as companies and employers resort to a discourse that centers around criminalization, where it is the children who will be most affected.

Although child labor can be found mainly in the informal sector, some minors have found a way to work in the formal sector, presenting documents from people they know or of adult relatives. An example is that of Brenda, who, although she is already 17 years old, is currently working formally for a blueberry company despite not having the correct paperwork. Her cousin lent Brenda her papers so they could hire her, and she could support her household’s expenses.

Another blueberry field worker mentioned that next year her 13-year-old granddaughter Estefanía will also come to work. Estefanía’s father left and now it is her mother and her grandparents who take care of the household expenses. However, they cannot cover all their expenses, so starting next year, Estefanía and her mother will go to Guanajuato to work in the fields, like her grandparents. They are just waiting for Estefanía to finish primary school and in September they will all return together. In her town, studying represents a great expense because to get to school it is necessary to take a taxi every day. Children are charged 40 pesos round trip. In addition, the cost of uniforms, supplies and special events such as Estefanía’s graduation all add up, which is a great concern for her grandmother. While Estefanía works, her younger siblings will continue studying in her place of origin. This is a clear example of how the lack of educational options and the absence of regulations diminish the possibilities available to the children of farm workers.

VI. Dynamics of agricultural production and poverty in Bajío Guanajuatense

In Mexico, poverty measurement is a construction of the State and does not depend on any political party, which contributes to its legitimacy and autonomy (Escobar, 2022). This multidimensional measurement consists of two large spaces or axes: well-being (income) and substantive deprivations (basic needs). On the well-being axis, there are two lines of income: 1) the one that registers the cost of the basic food basket, or line of minimum well-being²⁵ and 2) the upper line that is based on the food and non-food basket, which includes expenses for housing, transportation, fuel, schooling, healthcare, and household articles.

According to the National Council for the Evaluation of Social Development Policy (Coneval), in 2020, the state of Guanajuato ranked in 12th position for the lowest incidence of poverty at the national level. Poverty decreased moderately in the state by 4% between 2010 and 2020, from 48.5% to 44.5% while extreme poverty decreased more significantly from 8.4% to 5.5% (Figure 9). Traditionally, farm workers have lived in extreme poverty. Is the decline in extreme poverty related to the performance of capitalized agriculture?

Escobar (2022) posits that agriculture is essential for understanding poverty in Guanajuato as, traditionally, it is the population living in extreme poverty that is hired to work in the fields. Here we analyze the five municipalities with the highest agricultural production (Abasolo, Irapuato, Pénjamo, Romita, Valle de Santiago) in addition to the municipality of Dolores Hidalgo Cuna de la Independencia Nacional, where extreme poverty has decreased significantly. The progress of export production in these municipalities allows us to assume that the changes towards formalization associated with export production may have impacted the conditions of the poorest population in this region. Likewise, our previous regional studies showed that as formal agriculture grows, deficiencies in housing, healthcare services and social security decrease. This section contributes to our assessment of changing labor conditions within agriculture by examining the changes that can be seen in the levels and dimensions of poverty.

As illustrated in figure 9, from 2010 to 2020, the proportion of the population in Guanajuato without social security decreased, as did the proportion of the population with educational deprivations, inadequate quality of housing and basic housing services and, finally, the proportion of the population with three or more social deprivations also decreased. This change may be related to an improvement in employment, even though income hardly changes.

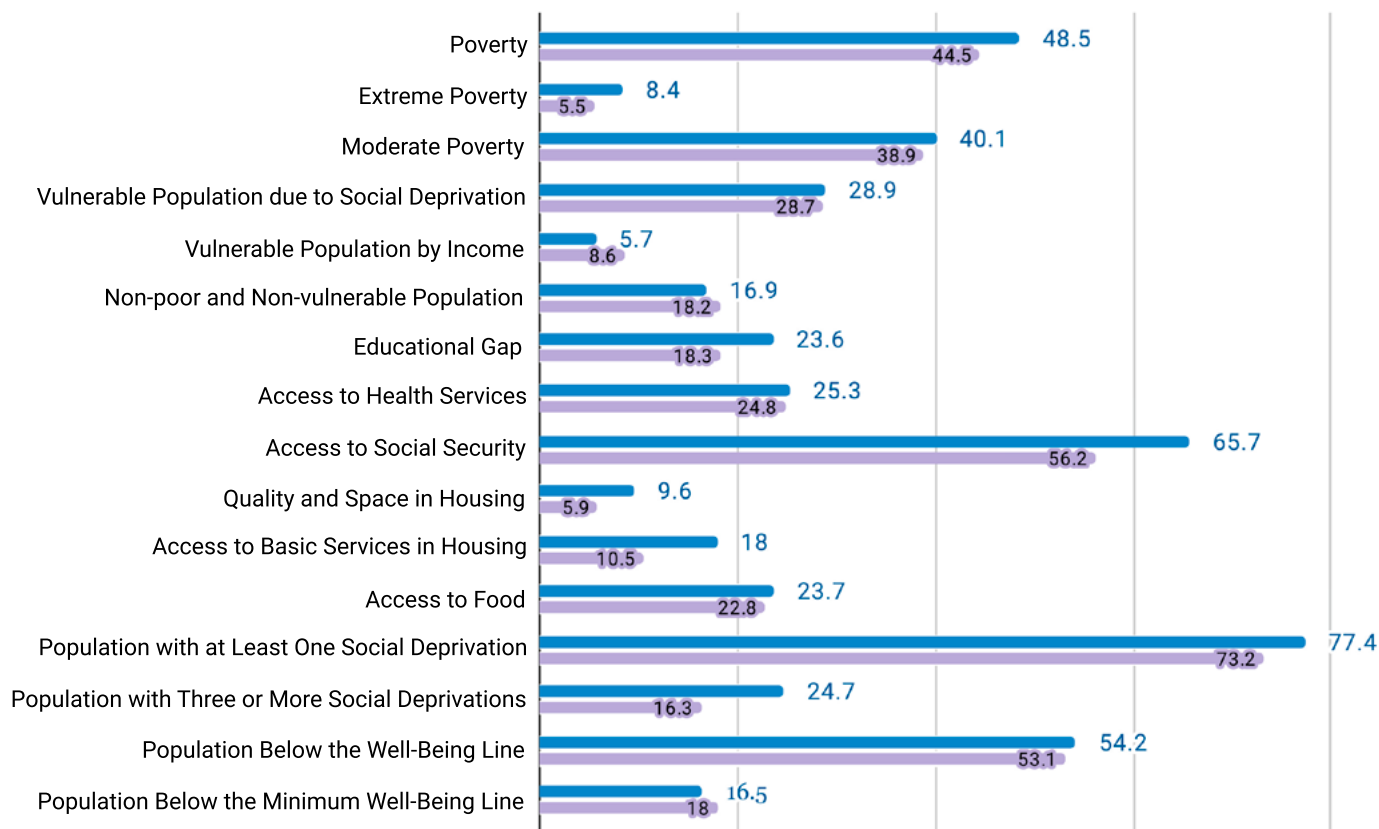
In Guanajuato, we identified three different dynamics of poverty between 2010 and 2020 according to the type of settlement that predominates in a municipality: the main urban municipalities,²⁶ those

25 According to Escobar (2022), in Mexico, the value of the baskets depends on the observed consumption of households. That is, what people are able to buy with the income they have. Unlike other countries, the methodology used by Mexico is not based on the price of a basket that is "regulated" by experts, but, and as mentioned above, it is based on the observation of people's typical daily consumption where the only adjustment is to ensure consumption is healthy and in the amounts that are nutritionally healthy, and that it provides nutritional value.

26 The main urban municipalities in the state of Guanajuato are León, Irapuato and Celaya. In these municipalities, poverty has remained stable, although in the capital there is a significant increase in poverty from 36.8% to 45.9%. This

that are distinguished by their manufacturing employment, and the main agro-export municipalities.²⁷ This section features a more detailed analysis of the municipalities with more agricultural production and exports.

Figure 9. Multidimensional poverty indicators for the State of Guanajuato, 2010-2020 (%)



Source: Prepared by author based on data from the National Council for the Evaluation of Social Development Policy (Coneval) measuring poverty at the municipal level in 2010 and 2020.

increase is due to the rise in the number of people with incomes below the cost of the basic food basket (from 661,760 in 2010 to 1,020,408 in 2020). Improvements can be noted in the categories of social security, housing quality and housing services. However, nutrition worsens because income and access to health care services have decreased. This negative dynamic can be explained by the increase in the population with incomes below the basic basket and below the food basket (Escobar, 2022).

²⁷ As would be expected, there are other types of municipalities that do not fit into this typology.

6.1. Dynamics of municipal agricultural production

According to the Agro-Food and Fisheries Information Service (SIAP), the municipalities with the highest agricultural production in the Bajío Guanajuatense valley are Abasolo, Irapuato, Pénjamo, Romita, Valle de Santiago and Dolores Hidalgo (SIAP, 2022). These municipalities are also important in terms of export agriculture, and they also account for most farm jobs. In this section, we will analyze the changes in the dynamics of poverty in each of these municipalities; however, before doing so, we will present the dynamics of their main crops as well as their participation in agricultural production at the state level (Table 12).

Table 12. Municipalities with the highest agricultural production in Guanajuato by planted area and production value, 2020

Geographic area	Planted	%	Production value (real values in thousands of pesos)	%
Abasolo	42,894.07	5.00	1,420,905.43	6.03
Irapuato	50,502.96	5.88	1,455,004.24	6.17
Pénjamo	74,680.00	8.70	2,146,448.06	9.11
Romita	16,547.00	1.93	759,645.66	3.22
Valle de Santiago	50,470.25	5.88	1,721,838.81	7.31
Dolores Hidalgo	26,617.90	3.10	783,470.89	3.32
Guanajuato (Entity)	858,658.38	100	23,570,459.71	100

* Real values in thousands of pesos for 2020.

Source: Calculations prepared by author with data from Agro-Food and Fisheries Information Service 2020.

According to the data, this group of municipalities represents more than 30% of the agricultural production for the state of Guanajuato. Considering that there are 46 municipalities in the state, the contribution of these municipalities is significant. In Pénjamo, which heads the list of these municipalities, the main crops are white grain corn, tequila agave, barley (grain without classification), red tomato, greenhouse saladette tomato, and soft grain wheat (SIAP, 2022) (table 13). It is notable that sorghum grain disappears from production within the decade.

In the municipality of Abasolo, which in 2020 had a population of 90,117 inhabitants (0.6% more than in 2020), we found similarities between its main crops and those in the municipality of Pénjamo, with tequila agave being its main crop. Other crops include asparagus and greenhouse strawberries, which are crops destined mainly for export (table 14). In Irapuato, on the other hand, broccoli, asparagus, strawberries, white maize grain, sorghum grain and soft grain wheat have the highest agricultural production value. For example, asparagus increased its production by 346.85% in 2020, taking 2010 as a base (table 15).

Table 13. Production value in thousands of pesos* of the main crops in the municipality of Pénjamo, Guanajuato 2010-2020

Crop	2010		2015		2020	
	Planted area (Ha)	Production value (thousands of pesos) real values	Planted area (Ha)	Production value (thousands of pesos) real values	Planted area (Ha)	Production value (thousands of pesos) real values
Tequila agave	1,750.00	32,450.67	1,180.00		1,126.00	191,011.34
Barley grain - not classified	575.00	15,151.13	980.00	23,096.59	4,700.00	125,366.49
White maize grain	21,366.00	448,071.42	19,999.84	445,378.48	35,400.00	965,926.39
Sorghum grain - not classified	34,835.00	792,728.47	36,082.00	529,868.28	-	-
Red saladette tomato - greenhouse	-	-	40.20	35,162.51	75.00	64,906.01
Soft grain wheat	14,770.00	358,616.51	16,832.00	351,930.44	5,850.00	166,854.61
Summary of crops at municipal level	85,134.68	1,702,350.16	78,871.13	1,397,586.14	74,680.00	2,146,448.06
Change in value** (%)	100.00	100.00	-7.36	-17.90	-5.31	53.58

* The values shown are in real values in thousands of pesos using the INPC 2020 base year.

** The change in value is given based on 100% of the year 2010. Therefore, the change in value is given compared with the previous immediate value (for 2015 it is compared with 2010 and for 2020 with 2015).

Source: Prepared by author with data from the Agri-food and Fisheries Information Service, 2022.

Table 14. Production value in thousands of pesos* of the main crops in the municipality of Abasolo, Guanajuato 2010-2020

Crop	2010		2015		2020	
	Planted area (Ha)	Production value (thousands of pesos) real values	Planted area (Ha)	Production value (thousands of pesos) real values	Planted area (Ha)	Production value (thousands of pesos) real values
Tequila agave	290.49	663.76	244.00	2,519.59	640.00	128,582.69
Broccoli - not classified	745.00	49,683.94	1,331.00	80,001.16	1,277.00	108,175.09
Barely grain - not classified	2,436.74	61,678.31	1,570.00	31,245.20	3,550.00	97,817.45
Asparagus - not classified	30.00	5,249.80	46.00	6,285.90	280.00	109,096.59
Greenhouse strawberry	8.00	1,966.71	60.00	24,684.19	150.00	105,050.53
White maize grain	9,196.50	165,617.85	12,910.00	229,295.24	18,850.00	567,715.60
Sorghum grain - not classified	-	-	16,670.00	178,228.89	9,840.00	206,398.65
Summary of crops at municipal level	40,636.87	658,853.95	45,126.53	799,362.93	42,894.07	1,420,905.43
Change in value** (%)	100	100	11.05	21.33	-4.95	77.75

* The values shown are in real values in thousands of pesos using the INPC 2020 base year.

** The change in value is given based on 100% of the year 2010. Therefore, the change in value is given compared with the previous immediate value (for 2015 it is compared with 2010 and for 2020 with 2015).

Source: Prepared by author with data from the Agri-food and Fisheries Information Service, 2022.

Table 15. Production value in thousands of pesos* of the main crops in the municipality of Irapuato, Guanajuato 2010-2020

Crop	2010		2015		2020	
	Planted area (Ha)	Production value (thousands of pesos) real values	Planted area (Ha)	Production value (thousands of pesos) real values	Planted area (Ha)	Production value (thousands of pesos) real values
Green Alfalfa - not classified	1,450.00	107,484.31	1,160.00	78,379.25	1,204.00	68,814.58
Broccoli - not classified	322.00	23,475.38	379.00	28,396.04	944.00	98,175.59
Barely grain - not classified	5,611.25	151,614.22	2,381.00	57,434.17	3,222.00	96,940.21
Asparagus - not classified	519.00	87,895.42	512.00	77,223.31	862.00	304,871.52
Strawberry - macro tunnel	-	-	-	-	512.00	385,489.20
Strawberry - not classified	441.00	70,349.12	405.00	71,913.12	30.00	8,315.68
White maize grain	7,775.00	186,891.99	15,227.71	354,096.72	16,094.00	412,120.76
Sorghum grain - not classified	21,528.00	575,424.83	25,449.00	358,890.53	22,993.00	539,981.38
Crystal wheat grain	580.00	14,484.39	2,321.00	54,473.70	1,870.00	66,593.73
Soft wheat grain	3,575.00	89,278.78	4,800.00	86,468.15	3,590.00	117,331.49
Nantes carrot	184.60	10,736.04	41.10	2,768.16	122.00	10,047.78
Summary of crops at municipal level	46,457.35	820,089.71	55,556.15	862,748.70	50,502.96	1,455,004.24
Change in value** (%)	100.00	100.00	19.59	5.20	-9.10	68.65

* The values shown are in real values in thousands of pesos using the INPC 2020 base year.

** The change in value is given based on 100% of the year 2010. Therefore, the change in value is given compared with the previous immediate value (for 2015 it is compared with 2010 and for 2020 with 2015).

Source: Prepared by author with data from the Agri-food and Fisheries Information Service, 2022.

In the municipality of Romita, tequila agave is also the main crop, with a value of 1,524,520.89 in thousands of pesos –real values based on the year 2020–, but its production value increases by more than 1,000% in just five years. These highly significant increases indicate the importance of this crop for the region and the relevance it has gained for the economy in recent years. Other crops of great significance in the municipality include white onion, green bell peppers –which is usually an export product– and white maize grain. As in Baja California and other export states, in recent years the area planted with the main crops has decreased; however, the value has increased significantly for two reasons: change in crops, and intensification and modernization.

Table 16. Production value in thousands of pesos* of the main crops in the municipality of Romita, Guanajuato 2010-2020

Crop	2010		2015		2020	
	Planted area (Ha)	Production value (thousands of pesos) real values	Planted area (Ha)	Production value (thousands of pesos) real values	Planted area (Ha)	Production value (thousands of pesos) real values
Tequila agave	1,990.00	4,517.28	3,050.00	89,287.87	3,830.00	1,524,520.89
White onion	520.00	63,267.88	570.00	58,407.54	660.00	114,784.88
Green bell pepper - greenhouse	-	-	10.05	16,248.52	110.00	130,603.90
White maize grain	15,252.40	131,823.84	5,830.00	94,592.14	7,260.00	142,032.46
Summary of crops at municipal level	27,415.90	335,356.84	16,842.83	321,354.94	16,547.00	759,645.66
Change in value** (%)	100.00	100.00	1.79	-57.70	-1.76	136.39

* The values shown are in real values in thousands of pesos using the INPC 2020 base year.

** The change in value is given based on 100% of the year 2010. Therefore, the change in value is given compared with the previous immediate value (for 2015 it is compared with 2010 and for 2020 with 2015).

Source: Prepared by author with data from the Agri-food and Fisheries Information Service, 2022.

In Valle de Santiago, the main crops are broccoli, barley grain, maize grain, cucumber, sorghum, and wheat grain. Lettuce, cucumber, tomato, and wheat grain have increased their production value greatly from 2010 to 2020. Other crops such as garlic, beans and sorghum have lost ground in the municipality. However, total production value has increased by more than 230% in a decade, which shows the importance of agriculture for this municipality's economy.

Table 17. Production value in thousands of pesos* of the main crops in the municipality of Santiago, Guanajuato 2010-2020

Crop	2010		2015		2020	
	Planted area (Ha)	Production value (thousands of pesos) real values	Planted area (Ha)	Production value (thousands of pesos) real values	Planted area (Ha)	Production value (thousands of pesos) real values
Garlic	110	12,010.52	-	-	21.00	6,670.87
Celery		0.00	256.00	30,746.94	-	-
Broccoli	780	24,648.92	2,894.37	178,820.15	2,843.0	274,967.95
					0	
Barely grain	7,725.00	140,082.55	1,0487.27	201,883.74	8920	268,786.13
Onion	55.00	4,180.82	58.00	2,727.98	83.00	12,314.45
Green chili	2.38	8,208.59	31.00	14,110.76	22.75	11,455.33
Bean	2,109.00	14,058.00	442.00	5,100.43	175.00	4,874.43
Lettuce	28.00	976.15	226.00	14,666.72	255.00	19,067.76
Maize grain	14,049.00	190,124.93	15,595.66	250,816.50	19,211.	419,904.16
					00	
Cucumber	115.00	4,485.98	790.00	111,372.01	984.50	251,339.80
Sorghum grain	17,334.00	270,529.06	16,312.00	195,321.58	10650	170,608.05
Red tomato	1.14	1,023.71	4.10	2,671.74	8.00	9,959.24
Wheat grain	1,745.00	31,301.19	4603.73	81,535.84	7070	256,399.39
Summary of crops at municipal level	48,387.12	735,648.50	55,741.13	1,210,735.	50,470.	1,721,838.
				82	25	81
Change in value** (%)	100	100.00	15.20	64.58	-9.46	42.21

* The values shown are in real values in thousands of pesos using the INPC 2020 base year.

** The change in value is given based on 100% of the year 2010. Therefore, the change in value is given compared with the previous immediate value (for 2015 it is compared with 2010 and for 2020 with 2015).

Source: Prepared by author with data from the Agri-food and Fisheries Information Service, 2022.

Finally, Dolores Hidalgo shows the greatest increase in the value of agricultural production from 2010 to 2020 of all the municipalities analyzed here with a rise of almost 280%. The main crops found in this municipality are broccoli, green chili, maize grain, tomato, and beans.

Table 18. Production value in thousands of pesos* of the main crops in the municipality of Dolores Hidalgo, Guanajuato 2010-2020

Crop	2010		2015		2020	
	Planted area (Ha)	Production value (thousands of pesos) real values	Planted area (Ha)	Production value (thousands of pesos) real values	Planted area (Ha)	Production value (thousands of pesos) real values
Broccoli	985	33,793.71	1785	159,410.66	3177.5	327,802.85
Onion	30	2,566.35	104	9,338.11	118.5	18,958.65
Green chili	1201.3	51,588.32	1052.5	96,204.78	969.2	138,289.63
Spinach	-	-	177	11,121.18	-	-
Bean	4100	32,102.72	3630	27,485.21	3401	50,204.51
Lettuce	512	23,686.95	415	17,497.13	553.5	33,825.11
Maize grain	16000	62,758.48	18126	71,835.11	16835	83,301.14
Red tomato	70.92	28,710.12	98.30	41,984.83	104.50	83,737.53
Green tomato	154	15,871.81	54.00	1,330.40	70.50	6,697.54
Summary of crops at municipal level	26,131.58	280,682.03	27,551.80	478,410.02	26,617.90	783,470.89
Change in value** (%)	100	100.00	5.43	70.45	-3.39	63.77

* The values shown are in real values in thousands of pesos using the INPC 2020 base year.

** The change in value is given based on 100% of the year 2010. Therefore, the change in value is given compared with the previous immediate value (for 2015 it is compared with 2010 and for 2020 with 2015).

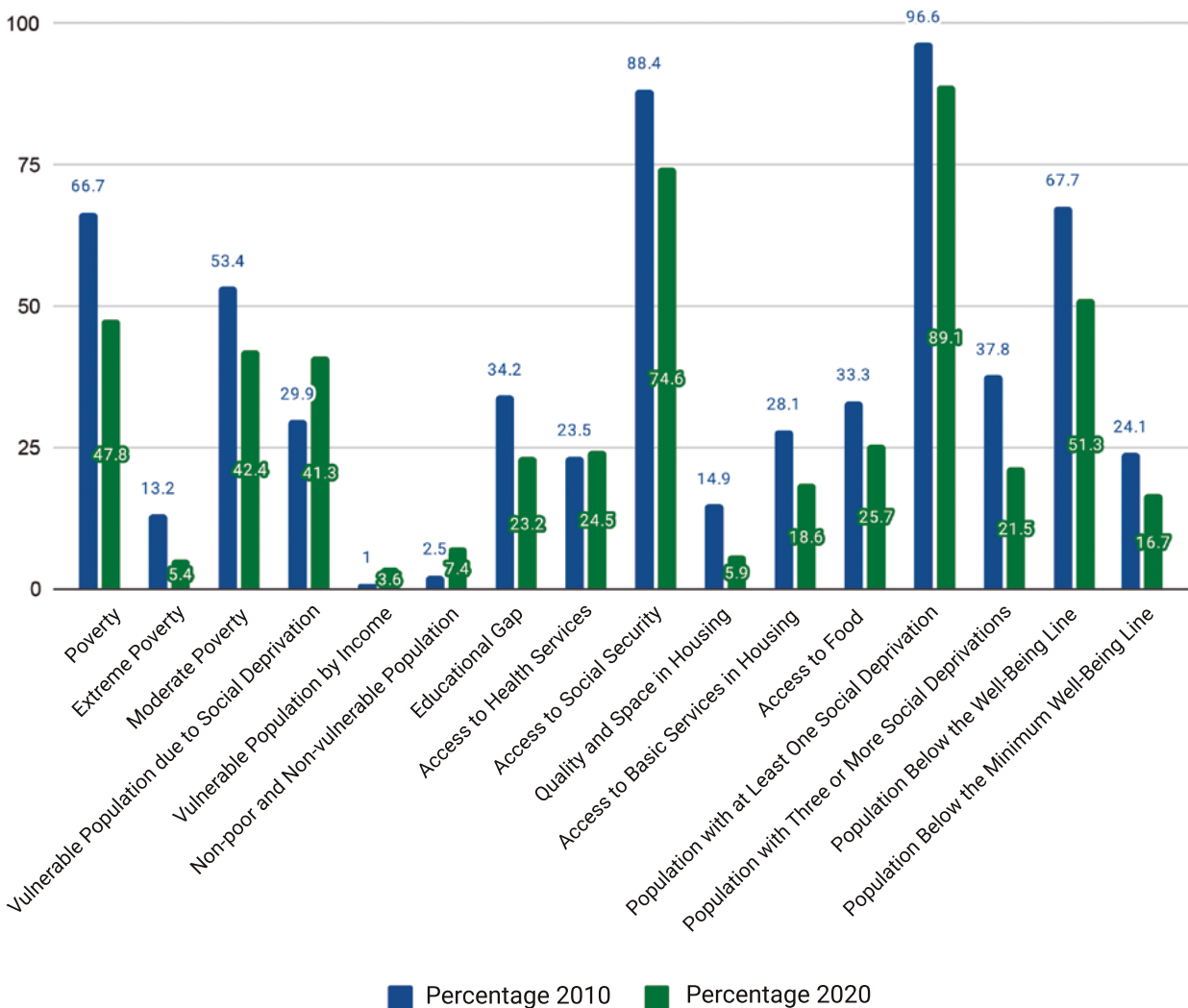
Source: Prepared by author with data from the Agri-food and Fisheries Information Service, 2022.

In summary, from 2010 to 2020, the value of agricultural production in these municipalities has grown from 26% in Pénjamo, 115% in Abasolo, 126% in Romita, 234% in Valle de Santiago and up to 279% in Dolores Hidalgo. However, is the rise in production value reflected in the well-being of the poorest workers in these municipalities?

6.2. Evolution of poverty in the main agricultural municipalities

In relation to the measurement of poverty, improvements in social security and in educational deprivation can be seen in these municipalities. Likewise, there is a decrease in poverty and extreme poverty and the population with incomes below the well-being line and the minimum well-being line decrease. These indicators allow us to deduce that the dynamics of agricultural work in these municipalities has been an important factor in poverty reduction.

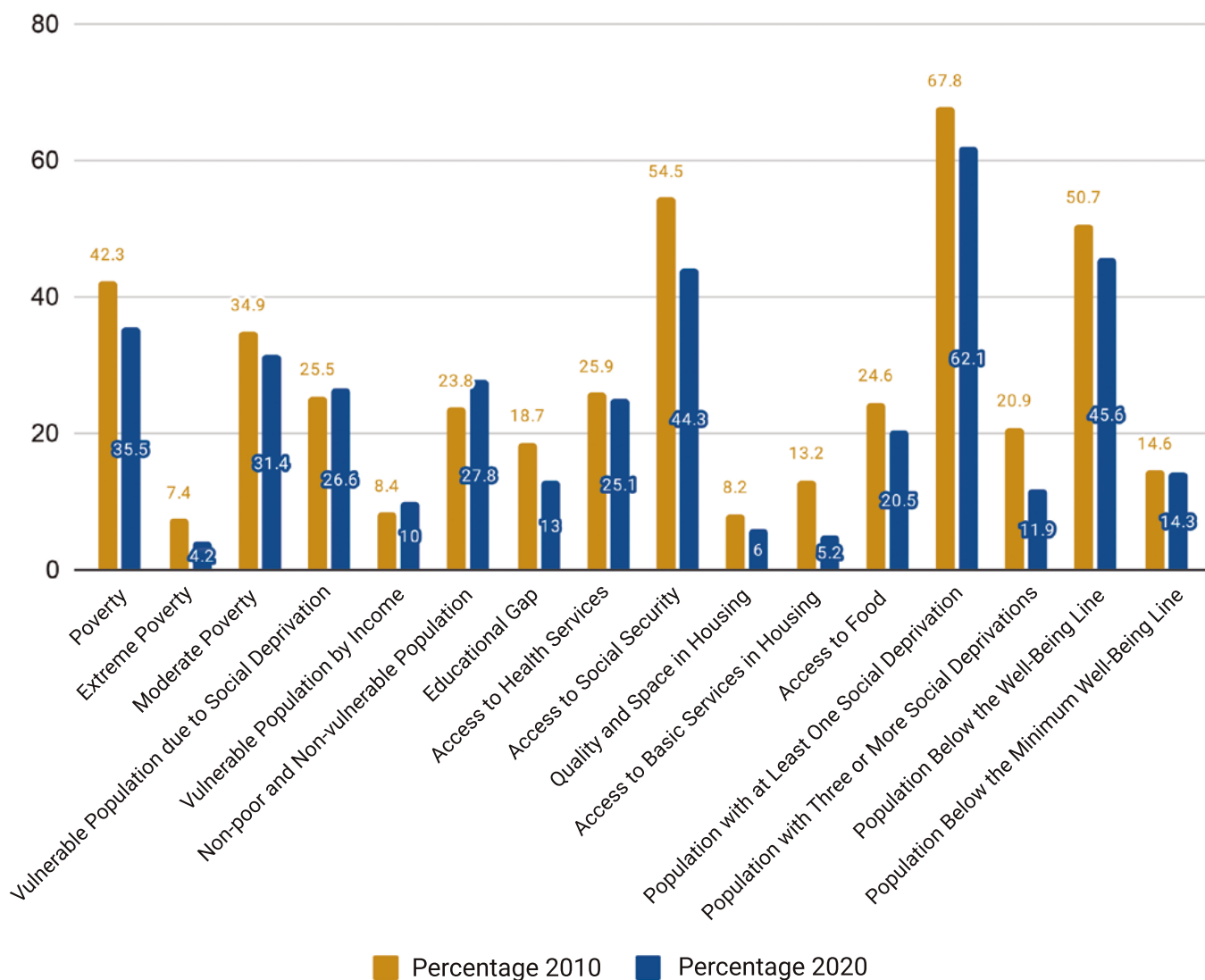
Figure 10. Multidimensional poverty indicators for the municipality of Abasolo, Guanajuato, 2010-2020 (%)



Source: Prepared by author based on data from the National Council for the Evaluation of Social Development Policy (Coneval) measuring poverty at the municipal level in 2010 and 2020.

In Abasolo, we observed a significant decrease in extreme poverty of 7.8 percentage points over a period of ten years. This represents a reduction of around 60% in the population living in extreme poverty. Total poverty –the sum of extreme poverty and moderate poverty– also dropped 18.9 points, which means a very substantial improvement for the municipality. On the other hand, the population that is vulnerable due to social deprivation increased by 11.4 percentage points. This means their income increased but they are still deprived of other needs. The improvements are reflected in education, healthcare services to some extent, social security significantly, the quality of housing, basic housing services, and in food.

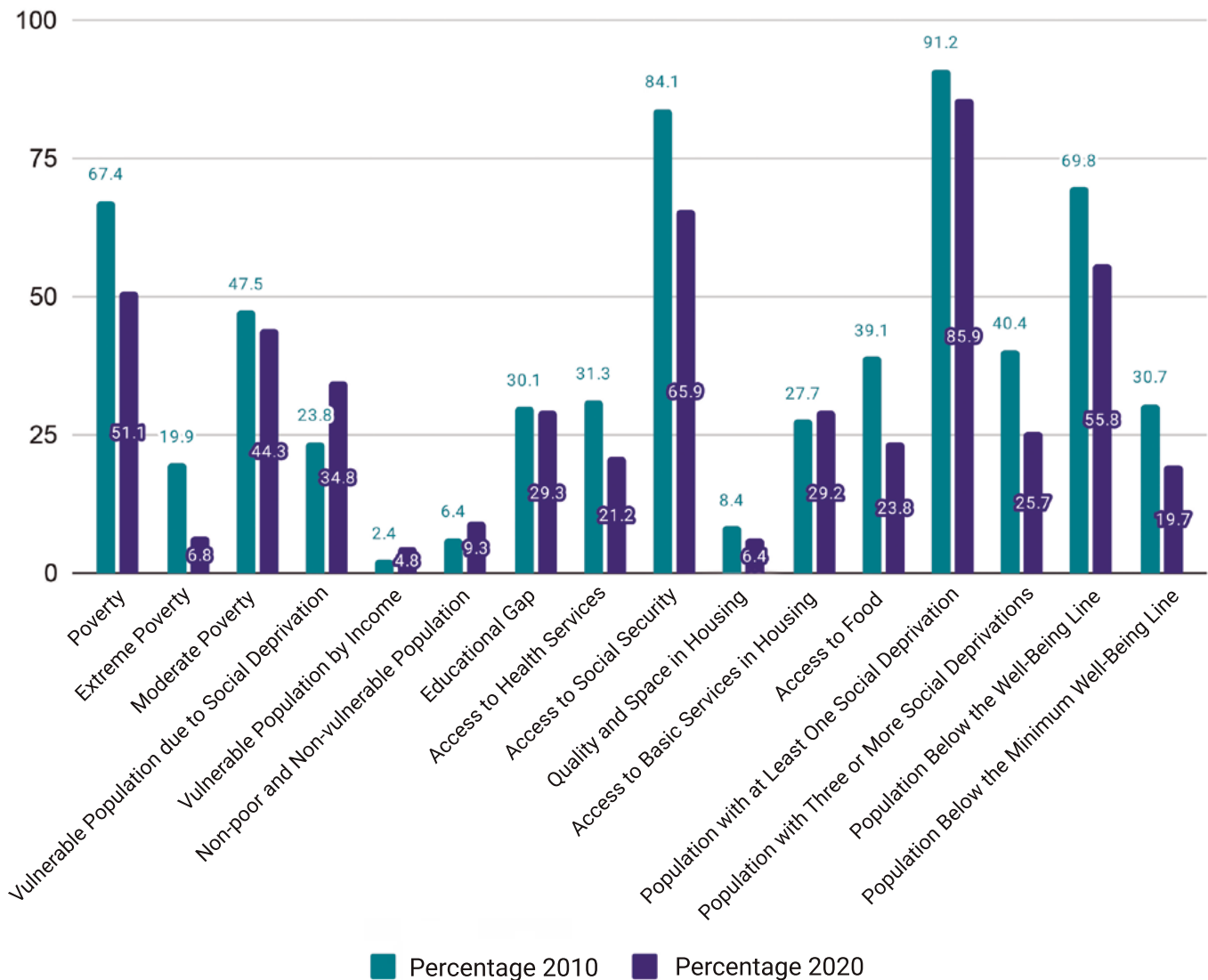
Figure 11. Multidimensional poverty indicators for the municipality of Irapuato, Guanajuato, 2010-2020 (%)



Source: Prepared by author based on data from the National Council for the Evaluation of Social Development Policy (Coneval) measuring poverty at the municipal level in 2010 and 2020.

Despite its relevance for agricultural production, the municipality of Irapuato has a large urban population whose dynamics carry much more weight than agricultural employment in terms of poverty. In this municipality, improvements are modest. Lack of social security has decreased, housing and basic services have improved, and the educational gap has decreased. An improvement in labor formality in the municipality has brought about great improvements for the population over the ten-year period. However, there is hardly any decrease in population with income below the minimum well-being line.

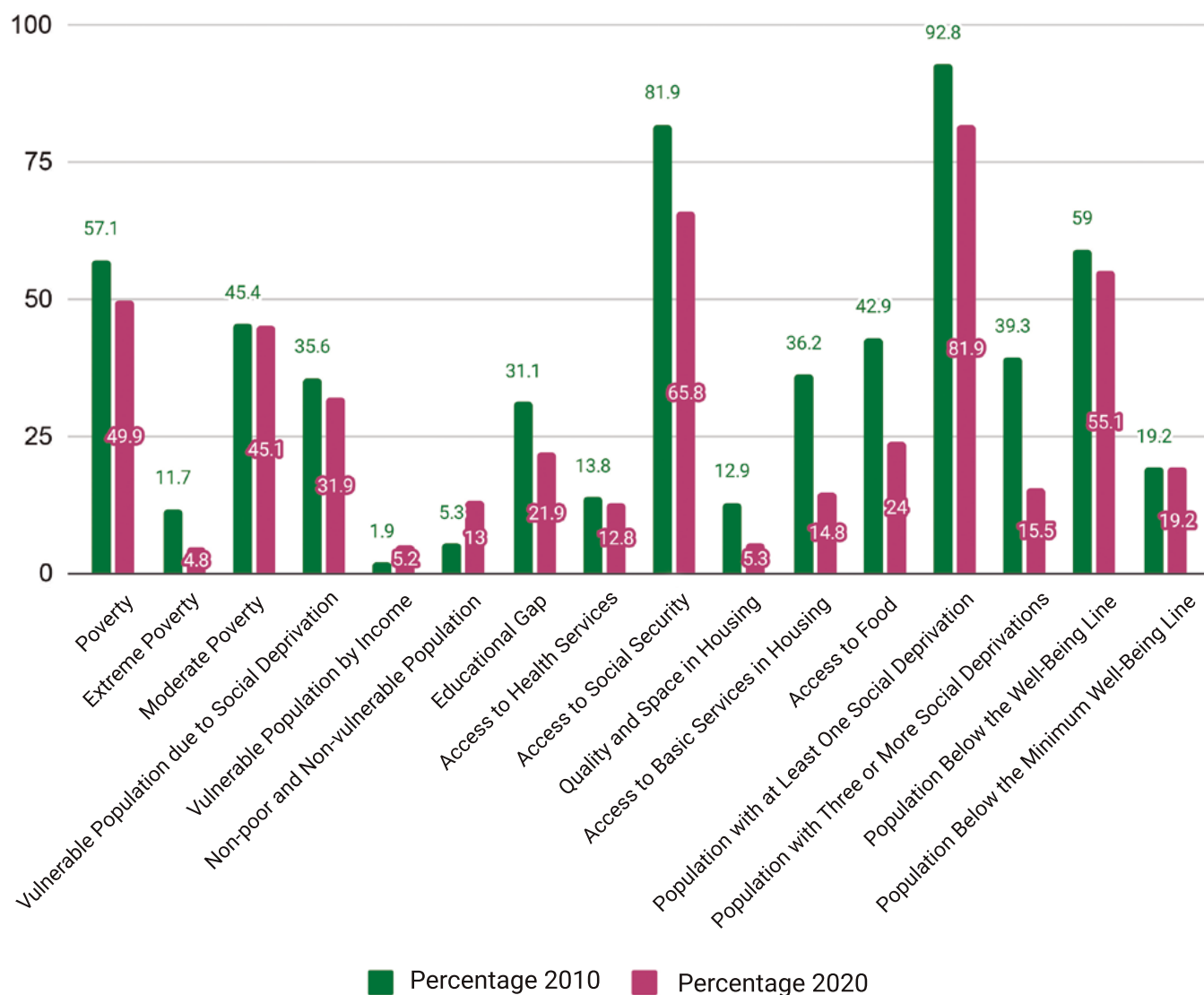
Figure 12. Multidimensional poverty indicators for the municipality of Pénjamo, Guanajuato, 2010-2020 (%)



Source: Prepared by author based on data from the National Council for the Evaluation of Social Development Policy (Coneval) measuring poverty at the municipal level in 2010 and 2020.

Pénjamo is renowned for being the main agricultural producer and the main agro-export municipality. Here, the decrease in poverty and its various components is the greatest of all the agricultural municipalities. As can be seen in figure 12, the levels of poverty and extreme poverty drop very significantly, 16.3 and 13.1 percentage points respectively. Extreme poverty has decreased by two thirds, more than 60%. Total poverty decreases due to multiple factors, but the improvement in the quality of employment is evident, both in terms of income and social security. Healthcare also improves remarkably.

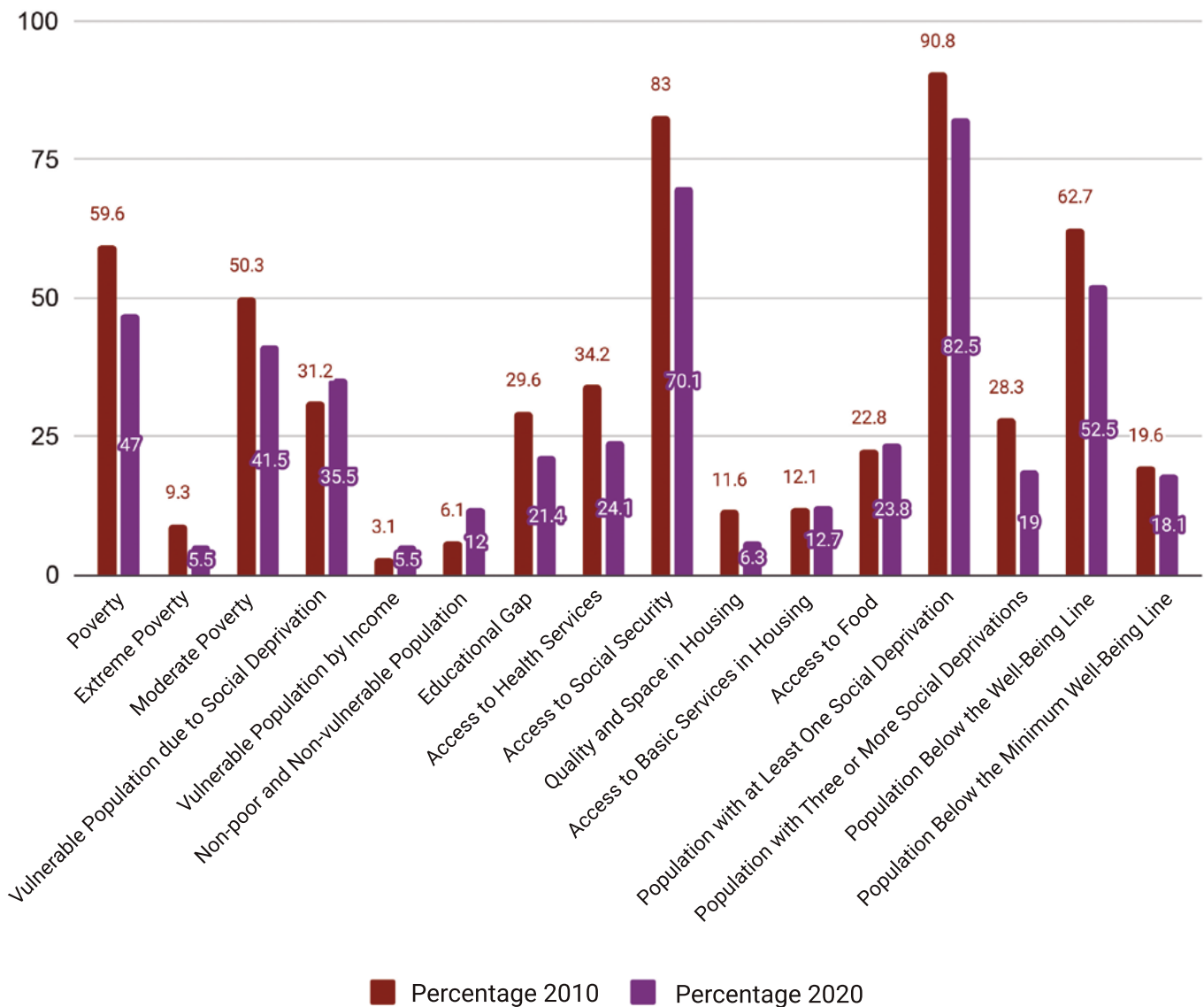
Figure 13. Multidimensional poverty indicators for the municipality of Romita, Guanajuato 2010-2020 (%)



Source: Prepared by author based on data from the National Council for the Evaluation of Social Development Policy (Coneval) measuring poverty at the municipal level in 2010 and 2020.

In the municipality of Romita, agricultural employment plays an even more significant role than in Pénjamo. However, the decrease in the various poverty indicators is smaller, although the drop in the population living in extreme poverty is notable, as is the drop in the population with food shortages. However, the population with income below the minimum well-being line does not fall. From 2010 to 2020 there is an increase of over 20% of workers in the agricultural sector affiliated with IMSS. There seem to be improvements in working conditions, although more modestly than in Pénjamo or Abasolo. In our opinion, the reason that Romita shows less improvement in terms of poverty, extreme poverty, and its components is related to the persistence of a large informal labor market for farm work there and, in particular, to the poor conditions seen in terms of child labor.

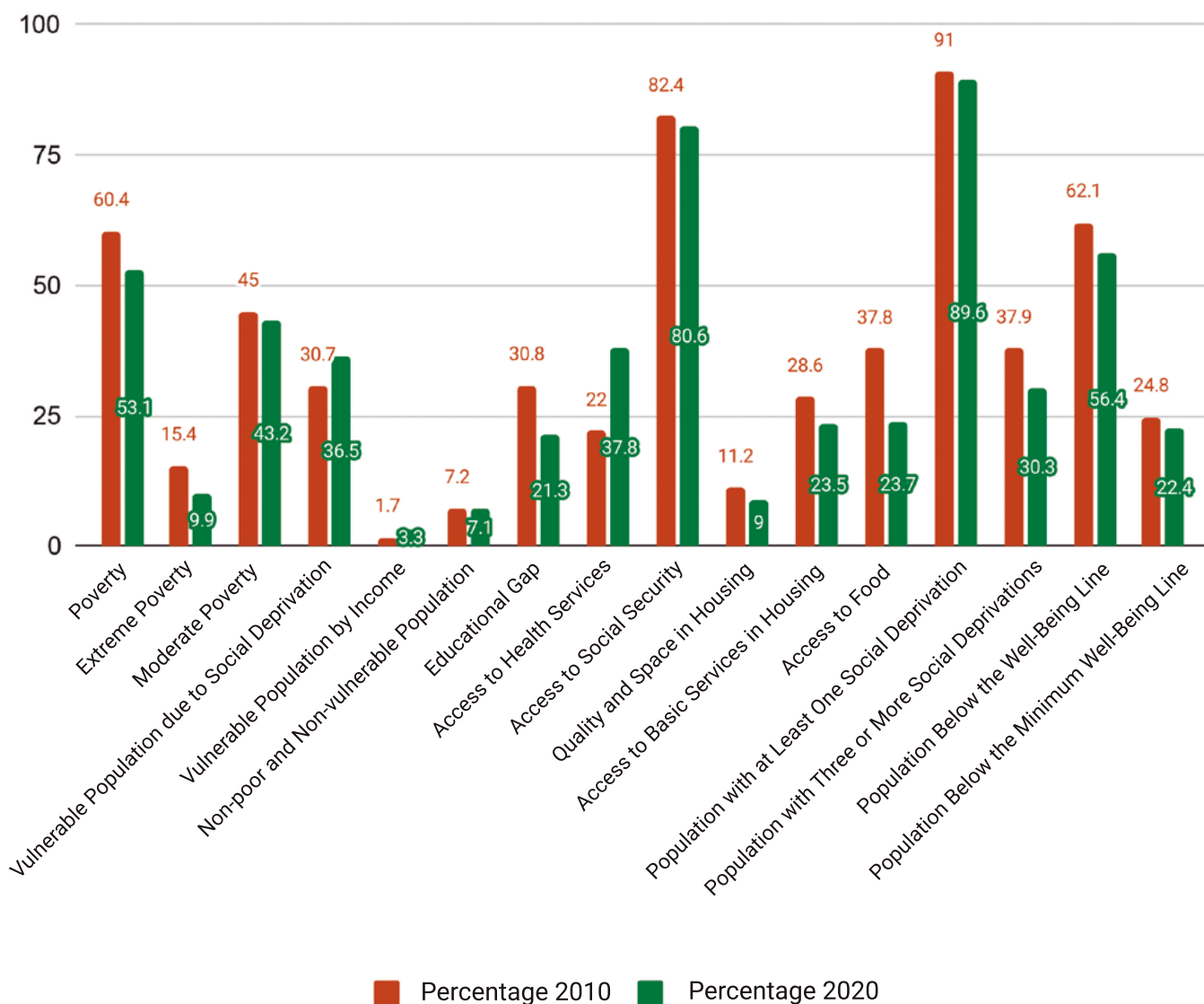
Figure 14. Multidimensional poverty indicators for the municipality of Valle de Santiago, Guanajuato, 2010-2020 (%)



Source: Prepared by author based on data from the National Council for the Evaluation of Social Development Policy (Coneval) measuring poverty at the municipal level in 2010 and 2020.

In the municipality of Valle de Santiago, the same dynamic is observed as in the other municipalities with capitalized agriculture. Poverty and extreme poverty are reduced even more, as well as those living without social security; the quality of housing improves, but not its services, and the population with an income below the well-being line falls, but the population with a lack of food does not fall, nor does the population with an income below the minimum well-being line.

Figure 15. Multidimensional poverty indicators for the municipality of Dolores Hidalgo, Guanajuato, 2010-2020 (%)



Source: Prepared by author based on data from the National Council for the Evaluation of Social Development Policy (Coneval) measuring poverty at the municipal level in 2010 and 2020.

Finally, in Dolores Hidalgo, we see a similar pattern. Poverty and extreme poverty are decreasing, not as significantly as in other municipalities, but even so, a significant decrease. Deficiencies in relation to food, housing and its services drop significantly, as does the educational gap. Let us remember that of all the municipalities analyzed here, Dolores Hidalgo is the municipality where agricultural production grew the most (270%) and the decrease in these indicators may be a consequence of the increase in agricultural production.

The above shows that, in the municipalities with the largest agricultural production and agricultural exports, economic dynamics in 2010 – 2020 have reduced poverty and many of its components to a significant extent. Among those municipalities, those with the largest reductions have export agriculture as their main economic engine, while those with smallest gains are either mostly urban, or mostly informal.

VII. The absence of a welfare state: health services and social programs

In agricultural work, employment regulations and formal contracts provide farm workers with the opportunity to exercise their labor rights and oblige employers to fulfil their responsibilities. One of the obligations that employers have is to provide legal benefits; under Mexican law, these include access to social security. The right to social security in Mexico covers benefits such as pension savings, housing credit, access to childcare centers, disability coverage and the right to medical care.

The most important benefit in the social security package is medical care. Historically, farm workers have been denied this right. However, the formalization that has occurred in agricultural work in recent years has meant that farm workers are now eligible for social security affiliation. In some agro-export states in Mexico, there is a clear upward trend in the right to this labor benefit. For example, in Baja California and Jalisco, the affiliation of agricultural workers has increased significantly (Escobar-Latapí, et al., 2021; Martínez-Rubio and Judd-de la Luz, 2021). Nationally, the growth in social security affiliation among farm workers is 3.7% annually for permanent workers, and 10% annually for temporary workers (Escobar-Latapí et al., 2022). In Guanajuato, while the formalization of agricultural work is also evident, there continues to be a widespread informal labor market that deprives a good number of workers, both local and migrant, of this right.

The options for farm workers are limited to open population health care services or private services. Before the current government administration, the population without access to social security could turn to the Seguro Popular that provided universal medical care. In 2020, this program was replaced by the Instituto de Salud para el Bienestar [Institute of Health for Well-being] (INSABI). The change was marked by a lack of clarity and inadequate implementation. Given the problems involved in the operation of INSABI, the government's commitment then turned to the IMSS-Bienestar program, which emerged in 1973 with the aim of providing medical services in rural areas where there are higher rates of poverty and marginalization.

The position of Guanajuato's state government when faced with the abolishment of Seguro Popular was not to join INSABI but to maintain its own healthcare system. The state government then signed a coordination agreement without joining INSABI. Since then, this state has administered its own healthcare system for the open population where services are provided in community hospitals, general hospitals, specialty hospitals, Centros de Atención Integral en Servicios Esenciales de Salud [Comprehensive Care Centers for Essential Health Services] (CAISES), Centros de Salud con Servicios Ampliados [Health Centers with Expanded Services] (CESSA), Unidades Médicas de Atención Primaria a la Salud [Primary Health Care Medical Units] (UMAPS) and mobile units.

According to data from the 2020 Population and Housing Census, currently 79% of the total state population is entitled to some type of health system. This includes the service provided by the state aimed at the open population. If we only consider the populations that are affiliated to employment-based social security (IMSS, ISSSTE, State ISSSTE and the services provided to employees of PEMEX, Defense and Navy), 42% of the population has coverage. The scope of IMSS social security coverage

relates to the importance that economic sectors such as industry and services have, as they are sectors characterized by formal hiring practices. Affiliation to IMSS is greater than affiliation to open population healthcare services in the municipalities with the most populated cities. On the contrary, affiliation to universal healthcare services is greater in the municipalities with the smallest populations.

Table 19. Welfare rights in the state of Guanajuato and Bajío Guanajuatense, 2020*

	IMSS	ISSSTE ¹	Pemex, Defense or Marines	Instituto de salud para el bienestar ²	IMSS- Bienestar	Private institution	Other institution ³	Total population with rights to welfare programs	No affiliation
Bajío Guanajuatense	2 021 998	223 288	44 331	1 563 258	17 534	78 501	20 001	3,926,573	1,015,617
Guanajuato	2,259,062	296,330	45 080	2 181 882	22 771	93 767	25 720	4 874 661	1,275,190

Source: Prepared by author based on data from the Population and Housing Census, INEGI 2020.

* The sum of affiliates across the different institutions may be greater than the total because of those who can access services through more than one health institution.

1 Considers the affiliates of the ISSSTE and the State ISSSTE

2 Includes the population that declared being affiliated with Seguro Popular. Since the state manages its own health care system for the open population, even though INEGI has cataloged it as INSABI, we consider that it is state health care coverage.

3 Includes public and private health institutions.

The data for welfare entitlement in the municipalities with greatest significance in terms of agriculture in the state –based on production value and number of agricultural workers– clearly exemplifies the assertions above. In the municipalities of Irapuato and Salamanca, which have large urban centers, the number of people affiliated to IMSS is greater than those who access healthcare services for the open population. In these municipalities, there is significant participation in manufacturing, industry, commerce, and service industries. On the contrary, in rural municipalities with a high concentration of agricultural workers, such as Pénjamo and Valle de Santiago, higher numbers of the population are affiliated to universal healthcare services.

This is a clear reflection of the informality that prevails in the agricultural sector. Although the state health services provide care to the non-eligible population that requests it, the truth is that for certain population groups, access to healthcare has greater complications. Such is the experience endured by the state’s rural and farm worker population. Although the healthcare system includes second and third level medical care, this is usually concentrated in the municipal capitals or urban centers.

For example, it is in the municipalities of Silao and Irapuato where second level care is provided and in León where there are specialty services. In the small rural settlements only host primary care clinics, provided by UMAPS. Commuting to large or medium sized cities is part of daily life for Guanajuatenses who need specialized services. Likewise, the same medical units transfer patients if they require a higher level of care. For example, when there are complications during childbirth.

Table 20. Welfare rights in the main agricultural municipalities by production value and number of workers, 2020*

Municipality	IMSS	ISSSTE ¹	Pemex, Defense or Marines	Instituto de salud para el bienestar ²	IMSS-Bienestar	Private institution	Other institution ³	Total population with rights to welfare programs	No affiliation
Abasolo	13 369	3 400	115	57 648	586	360	82	75 258	16 749
Irapuato	283 558	32 360	14 857	142 271	1 530	7 621	3 538	480 249	112 281
Pénjamo	30 274	7 740	172	86 087	1 303	780	452	125 581	29 291
Romita	11 220	2 728	40	42 964	131	259	468	57 516	8 224
Salamanca	109 398	12 116	24 786	79 999	977	2 389	1 302	228 159	45 024
Santa Cruz Juventino Rosas	17 574	3 602	104	41 797	457	431	943	64 494	17 808
Valle de Santiago	27 769	6 751	273	81 285	1 384	663	284	117 911	32 044

Source: Prepared by author based on data from the Population and Housing Census, INEGI 2020.

* The sum of affiliates across the different institutions may be greater than the total because of those who can access services through more than one health institution.

1 Considers the affiliates of the ISSSTE and the State ISSSTE

2 Includes the population that declared being affiliated with Seguro Popular. Since the state manages its own health care system for the open population, even though INEGI has cataloged it as INSABI, we consider that it is state health care coverage.

3 Includes public and private health institutions.

Local farm workers use this healthcare system. They report that to receive healthcare they go first to UMAPS in their localities or neighboring localities. When they require more specialized medical attention, they go to the cities of Romita, Irapuato, Silao or León. Due to the type of activities carried out when performing agricultural work, farm workers are susceptible to certain work-related risks or illnesses, for example, from the use of chemicals, injuries caused by machinery or from intense physical activity. Despite this, there are no health care programs specifically focused on the farm worker population. The only program focused on this population is aimed at temporary migrant workers. This is because they are considered a priority population given the precarious conditions in which they find themselves.

The program offers healthcare services one day per week from April to September. These sessions are held in the towns where the farm workers live or in the fields where they work. When held in the towns, the services are usually provided on weekdays after 6:00pm, after the workers have returned from the field. The days of the week, the hours, and the place where the service is provided are decided by each municipality according to the needs of the population. To provide suitable care, a census is first carried out to identify the priority population, such as pregnant women, the elderly, and adults of reproductive age.

Farm workers are informed that they have the right to receive free medical attention without any type of affiliation on these days. The activities carried out include vaccinations, information on contraceptive methods, dental care, and free medical consultations. In addition, guidance is provided on hygiene measures and how to protect against common infections or conditions such as diarrhea, dengue or Covid. According to staff, psychological care, and counseling on issues such as domestic violence are provided. Although this program aims to cover the entire farm worker population, it is not always possible for them to have effective access to healthcare services.

Despite the efforts made by the institutions or the people who work in them, bureaucracy, lack of resources or personnel, and the dynamics of the workers' lives make the operation of the program difficult. For example, in San Francisco del Rincón, according to comments by officials and the person in charge of the shelter, medical attention is provided weekly in the shelter managed by the municipality. However, during our fieldwork, the healthcare personnel assigned to care for this population did not attend because the farm workers did not return from the fields until later at night. At the time assigned for them to provide the services, they did not find any workers, so they decided to suspend the visits. However, the person in charge of the shelter commented that they would also come to provide healthcare services focused on the child population and for vaccinations, though at that time the service was suspended.

Another problem faced by migrant farm workers is their identity documents. Although program officials stated that they do not request any documentation from this population to provide healthcare, as they are a priority population, in practice, this can be an obstacle when follow-ups or other treatments are required. According to different officials, civil registration campaigns have been carried out focused on this population. However, the information collected during our fieldwork shows that the registration of this population is one of the most pressing needs, not only to receive medical attention, but also to access any educational services other than those provided for farm workers.

The language barrier is another hindrance. Although it is known that most of the indigenous migrant population is Tu'un Savi-speaking Mixtec, there are not enough translators to support medical institutions when providing healthcare and information. The officials who provide medical care usually rely on a family member who speaks Spanish so that they can translate. From our perspective, there is a generally held idea that this population speaks and understands Spanish without any problem. The truth is that many of them are monolingual or speak only a little Spanish, which makes it difficult to understand consultations or informative talks. This situation not only causes the service provided to be ineffective, but also reflects a lack of empathy on the part of government institutions. This situation is not limited to healthcare but extends to other aspects such as education and work.

The most common diseases identified in the migrant farm worker population are diarrheal diseases, skin diseases, conjunctivitis, and eye infections, especially in children. These are often related to their housing conditions. There have also been cases of animal bites and oral diseases. Although they have treated intoxication due to exposure to harmful chemicals, an official from the Romita healthcare services affirms that these are not so frequent.

Despite these efforts to give farm workers some access to medical care, when they need these services, farm workers come up against barriers of time, distance, lack of documentation and language. The case of Magnolia provides a clear example. She is an informal migrant worker who is already settled in a small town in the municipality of Romita

Magnolia usually goes to the UMAPS that is very close to her home. Access to UMAPS is free of charge, but she has to get there at 6:00am to get a ticket to be attended as they only give out three tickets a day. Moreover, she then has to wait a long time to be seen. Therefore, sometimes she prefers to go directly to the Romita health center, which is part of the state health system. The problem is that it is hard to find the time to go because a day at the health center means a workday lost. Magnolia reports that she has been feeling pain in her womb for a while and sometimes feels so tired that she cannot get up, but due to lack of time she has not gone to be checked.

Although in Guanajuato there are also formal agricultural workers affiliated with IMSS Social Security, effective access to healthcare services is not all that different from what informal workers report about the healthcare service for the open population. The IMSS clinics are located in the municipal capitals or in the cities, which means that farm workers have to find transport from the towns where they live. In addition, the opening hours of the clinics are usually incompatible with those of the working day, so it is necessary to ask for the day off work.

For example, Néstor's crew working at the blueberry company all have IMSS coverage. However, Néstor states that access to healthcare services is inadequate because, even though his workers have the right to receive IMSS healthcare, the health center in León closes at 3:00 pm. Therefore, if something happens after that time, they have to go elsewhere. For example, recently a worker began to feel bad outside of IMSS service hours, so Néstor had to take him to a private doctor.

It is true that the healthcare services received by migrant farm workers in the state of Guanajuato are better than those in their communities of origin. However, it is also clear that there are gaps and inadequacies in the healthcare for this population. The most obvious is the need to have workers affiliated with IMSS and to strengthen this healthcare system. This issue is not limited to migrant farm workers but also affects local farm workers.

7.1. Social programs

Access to healthcare services was affected by the change from Seguro Popular to INSABI to the detriment of the people who needed it most. Changes to social programs have been one of the characteristics of the new government. Not only was Seguro Popular transformed into INSABI, but other programs that had a positive impact on families were reconfigured or completely abolished. This is the case of the Prospera program, which was replaced by the Benito Juárez educational scholarships. Although it was a monetary transfer program where the educational component was a priority, it also had an impact on the health and nutrition of families. Prospera provided medical services, nutritional supplements, health care talks, and other services. An official from the Guanajuato healthcare system explains that although it continues to function and serve the population, the elimination of Prospera led to budget

cuts in their own health care services, for example for workshop supplies and medicines. Furthermore, these programs had a captive population in the field of prevention.

Workers' testimonies show the different impacts that the abolishment of the Prospera program has had. For Cristina, a local worker, the end of the Prospera program meant greater difficulties in receiving healthcare services, in addition to a decrease in her bimonthly income. She explained to us that the medical appointments required by the program "were good for the children." The doctors checked that they were healthy and that they were not malnourished and that they, as beneficiaries, were also provided with medical attention. Cristina says that now the program does not exist, it is more difficult to get medical appointments because the health center asks for more things: "more paperwork". For this reason, Cristina prefers to go to private doctors, even though she has to pay. She prefers to cover the expense than spend the whole day at the health center, which also means that she misses a day of work.

The end of the program not only affected her access to healthcare services, but also meant a decrease in the financial support she received for her children's education. When she had Prospera, they used to provide support that ranged between 4,000 and 5,000 pesos for all her children every two months. Now with the Benito Juárez scholarship, with three children in primary school, she receives only 1,680 pesos in total every two months, money that has to support the three of them.

On the other hand, Magnolia, a migrant worker, used to be a beneficiary of the Prospera program in Guerrero. When she migrated to Jalisco to work, her support was taken away from her and since then she has not been able to keep up with the changes that have happened to the program. She says that her children have never had the Benito Juárez scholarship, despite having three children studying in primary school. However, she has not done any of the corresponding procedures to request it, because she does not know what she needs to do. For her, the information about the program is unclear. Magnolia states that she only knows that her support was called Prospera, that it later changed its name and that it was taken from her when she migrated. This is an example of how the social programs are not compatible with the migratory dynamics of farm workers, so there is a need to create operating rules that allow this specific population to be beneficiaries of these programs.

In addition to scholarships, another program is the Bienestar pension for people with disabilities. Margarita, a local worker from the municipality of Romita, recently went to request this support. She has psychiatric problems and needs to buy very expensive medication. Through the support, she will receive 2,500 pesos every two months. The pension is one of the federal government's programs from the Secretaría de Bienestar [Welfare Department]. When Margarita's mother told us about it, she told us that they had gone to "Morena's offices" (Morena is a political party) to request it. In actuality, they went to the welfare offices and the check they were given had no political party information on it anywhere. However, this shows the proselytizing tinge that the social programs of the current government administration have. Furthermore, the relationship between the state administration and the federal administration in Guanajuato seems like a direct confrontation with partisan overtones that ends up having a direct impact on the quality of life of the people of Guanajuato.

Lastly, it is important to emphasize that another of the programs that was abolished was the Programa de Atención a la Población Jornalera [Farm Worker Care Program] (PAJA). This is a great setback in guaranteeing the rights of this population. This program explained the nature of the work contracts to workers at their community of origin; it often paid for their transport, and two days' food; and in addition, it subsidized 50% of the cost of building and operating child care centers, schools, and farm worker housing. Although, it was a program that had room for improvement, the farm worker population is now completely unprotected, without any kind of support. It is urgent that the federal government renew its commitment to the protection of this population group. On the one hand, it needs support from the Secretaría del Trabajo y Previsión Social [Ministry of Labor and Social Welfare] to guarantee that employers comply and provide employees with their rights, while on the other, support from the Secretaría del Bienestar with programs that promote well-being and reduce inequality gaps.

Conclusions

The state of Guanajuato is one of the main agricultural producers in the country. Not only is it a primary producer to supply food for the national and international markets. The geographical, climatic, sociodemographic, and historical characteristics make this entity a propitious space for agro-industrial growth. Such are the favorable conditions that even in recent years as other economic sectors have experienced very significant growth, particularly the industrial and manufacturing sector, agriculture has maintained its relevance.

In recent years, its production value has increased, as have the varieties cultivated there and the production spaces. Given the flourishing export agro-industry that exists in the state, an improvement in workers' lives is to be expected. However, wages and working conditions in Guanajuato are below those of other export states.

Guanajuato's agricultural history has configured a structure where the participation of actors in the supply chain is very diverse. Not only are there many actors involved, but the scope of the supply chain is very diverse. The participation of small producers in Guanajuato's agriculture, both small owners and *ejidatarios*, continues to be strong. This can be an advantage in many ways, for example, it encourages the participation of local producers in agriculture. However, one of the problems that this presents is the lack of supervision and control over small production.

Agricultural production in Mexico is in a period of transformation, where large and medium-sized companies are incorporating labor standards and a socially responsible approach, which, among its objectives, include the improvement of the working and living conditions of farm workers. The lack of resources for small producers means that they cannot comply with the standards that ensure compliance with labor rights and adequate conditions. Although large companies monitor these aspects, the participation of small producers throughout the supply chain means that these standards are somewhat blurred throughout the chain.

As a consequence of this agricultural structure, in the state of Guanajuato we see the predominance of a fairly widespread informal labor market, which is found mainly among small and medium producers who are often the same producers who sell to large companies or intermediaries. The labor informality that prevails in Guanajuato agriculture translates into the absence of formal contracts for farm workers and a lack of labor benefits. This not only places the workers in a more precarious or vulnerable condition, but also has a direct impact on their living conditions.

Informal hiring not only means the absence of benefits such as bonuses or vacations, but also deprives workers of social security coverage. In a country like Mexico where government institutions have serious deficiencies, this translates into less access to healthcare, pensions, and childcare. In addition, the lack of formal contracts can lead to abuses of power, as well as increases in flexibility and segmentation of the market. This means that farm workers are at the mercy of fluctuations in the market or the seasons of the crops.

The flexibility that persists in the agricultural labor market is clearly demonstrated by job instability, piece-rate pay modalities, and alternating work schedules. Labor segmentation in this state can also be noted by origin, ethnicity, and migratory status. The increasing labor shortages in the agricultural sector have forced many employers to hire workers from other states. Likewise, the crisis that the farmlands in Mexico have suffered since the 1980s, mainly small-scale peasant production, has left a large portion of the population in the south of the country without land and without job options, living in poverty. This is why contingents of workers from states such as Guerrero, Oaxaca, Veracruz or Chiapas leave their communities each season to work in the agro-export states of northern or western Mexico.

The state of Guanajuato has long been characterized by its local rural workforce that has traditionally fed the agricultural labor market. However, the growth of other sectors in the state and migration to the United States has made it necessary to hire workers from other places. The lack of regulation and vigilance that prevails on the entity's farms have caused farm workers from other states to find themselves in a more precarious situation than that of local workers, both in terms of labor as well as living conditions.

This clearly shows the persistence of a highly segmented labor market that is divided into formal and informal workers on the one hand and then by those who come from other states on the other. The latter are hired for the most intensive jobs with piece-rate pay, under the premise that they can endure more or that they are more suitable to that job due to abilities attributed to their social and geographical origin. It is important to emphasize that employers who hire workers from other states are responsible for their workplace conditions. Informal employment, which makes use of verbal contracts and recruiters, allows employers to free themselves from all these responsibilities.

The image of migrant and indigenous families arriving without anywhere to stay, looking for a space where they can spend the night sleeping on the ground with blankets and cooking with firewood has become commonplace in the state. This demonstrates the urgency there is for the Guanajuato agricultural sector to work for greater formalization and supervision throughout its supply chain, efforts that need to be carried out hand in hand with the State.

Despite laudable efforts by some state government institutions, the truth is that their efforts are reduced to immediate and humanitarian care. Although these efforts can resolve serious situations that arise, for any real change to happen, deeper transformation is needed to bring about a change in the agricultural structure that guarantees the rights and effective access to health, education and social services.

Epilogue

In closing, the regional study carried out in Guanajuato in 2022 shows remarkable specificities concerning commercial and export agriculture, and its corresponding labor conditions.

These conditions vary along several different dimensions. One that has already been repeatedly mentioned relates to formal and informal jobs. Another one, often combined with the above, is migration. The worst working and living conditions are found among temporary migrant workers. Gender deepens this contrast. Although the gender pay gap is very small in the state in general, among temporary migrant workers it is large, meaning the average income of temporary migrant women is far below average. It is a small population, since most of the farms' labor needs are supplied by in-state workers, but this does not make them less relevant in any way.

In the overall context of the main producing and exporting municipalities, extreme poverty – which has characterized farm workers—, total poverty, and a number of its dimensions, have been substantially reduced during the last decade. This achievement is an outcome of the improvement of the real incomes and working conditions of ample groups of farm workers. It mostly benefits natives, or migrants who have settled in the state. Although improvements are still necessary, their labor and living conditions have improved substantially. The survey shows that workers in two contrasting exporting companies enjoy conditions that comply with the law, and offer significant labor stability.

These improvements are not observed among temporary migrant workers. Not even in the case of Alfonso, a formal worker whom we described in some detail, do labor and living conditions satisfy all legal requirements. On the other hand, in the municipality of Romita, the No. 1 in production in the state, our researchers repeatedly observed child workers, unhealthy living quarters, insecure jobs, and dangerous forms of transport. The responsibility for improving them falls squarely on employers' shoulders. To that end, however, it is necessary to revise the production and sale contracts covering a large share of the state's farm exports. The way these contracts are implemented robs growers of a significant share of their income, and they thus routinely turn to workers to increase their margins, thus affecting the health, security and income of their workers. Other sections delve into the details of these labor conditions in multiple municipalities and crops.

Responsibility for these conditions is not exclusively the employers', nor does it correspond to the supply chain only. There are three factors that fall clearly within the federal government's purview. They are either long-standing omissions, or spring from recent cuts in government services.

Firstly, employers and workers are paying increasing amounts into social security, as well as to the housing fund. These payments, however, are not reflected into access to their promised benefits. If, in the past, the small number and great geographical dispersion, of farm workers made the construction and operation of these services unaffordable, the constant increase in the number of IMSS-affiliated farm workers, and of their fees, demands the effective operation of these services.

Secondly, federal programs aimed specifically at farm workers have stopped operating: the former Programa Nacional de Apoyo a Trabajadores Agrícolas (National Program for the Support of Farm Workers, according to its first name), and the Programa de Atención a Jornaleros Agrícolas (Program for the Attention of Farm Workers, until 2018), provided direct and indirect services to farm workers that translated into better formal and effective access to their rights. These programs operated together with the federal Labor Secretariat's Subprograma para la Movilidad Humana (Subprogram for Human Mobility). Jointly, they ensured labor contracts, long-distance transport, and the living and working conditions at their destinations complied with the law. They also provided workers money for their food during transport.²⁸ These programs were not perfect, but they performed a significant positive function. Their dismantling, at least as far as their operating budget is concerned, means hiring, long-distance transport, debts, and working conditions upon arrival at their destination, are no longer verified by the government, which leads to rising violations. Lastly, these programs operated jointly with others subsidizing the construction and operation of child care centers, schools, housing, and health clinics. Inexplicably, while export agriculture is growing and employs an increasing volume of migrant workers, the funds for these programs have disappeared. This means more workers have no access to them, and that existing infrastructure has to be subsidized and operated by the growers or by local governments, as we saw in Guanajuato. Their disappearance directly affects the working and living conditions of migrant farm workers. It is positive that the state government is funding some of these services. But it is insufficient. Comprehensive federal-level actions are required to provide these services to temporary migrant workers, if only because they are mostly out-of-state workers, entailing the fact that no single state government can operate a program from the workers' hometowns to their work destinations and back.

One more factor responsible for the working conditions we observed pertains to the state's labor secretariat. The reduction in effective inspections, recommendations, and sanctions no doubt also plays a role in the persistence of labor violations. State and federal labor secretariats, as well as state and federal human rights commissions, must play a role in enforcement of the law.

In all, the regional study of Guanajuato's Bajío concludes that working and living conditions in the state's agriculture must be a priority for all stakeholders in the sector, who must come together to agree on specific, effective actions leading to their improvement.

28 Making sure the workers were not charged for hiring, for transport, nor for their food during transport also served to lessen the risk of an "original debt" for the workers, thus reducing the risk of forced labor (CONEVAL 2019).

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