

## Does Export Agriculture Reduce Poverty? An Exploration of the Sayula Valley Subregion

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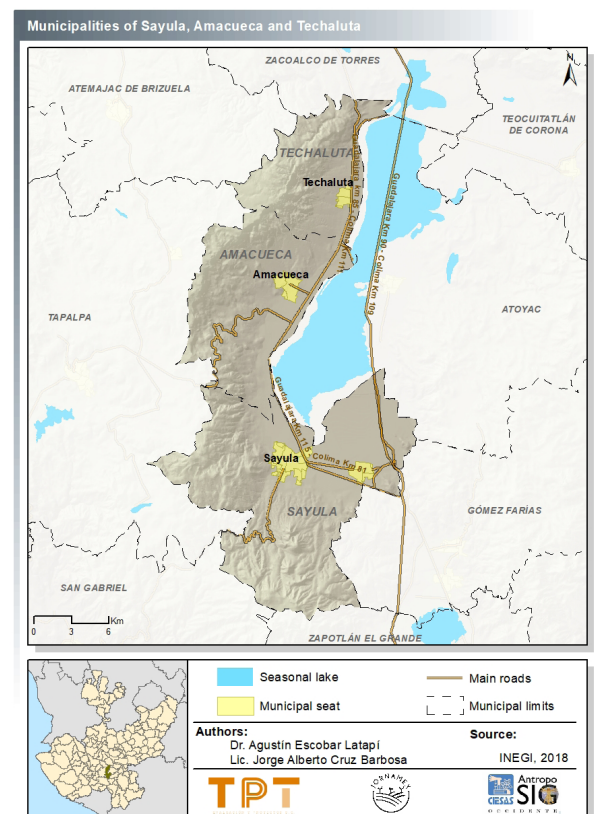
including harvesters or packers), and are less connected to the increase in labor demand than raspberries.

The southern part of the state of Jalisco includes various subregions, one of the most important of which, the Sayula Valley, consists of three municipalities: Sayula, Amacueca, and Techaluta de Montenegro. Until the early 1990s, this subregion focused on the cultivation of fruits, vegetables, and feed crops, especially pitaya (dragon fruit) and alfalfa. These municipalities have one of the highest production rates in Jalisco, the state with the highest production nationally.

The Valley's agricultural activity has undergone a number of changes over the years. As Castillo-Girón<sup>1</sup> notes, there are various reasons why alfalfa is no longer an important crop, beginning with a crisis in the livestock sector, the elimination of subsidized electricity, and the competition with animal feed companies from Guanajuato. This led to the rise of other crops, such as broccoli, hybrid seed corn, potatoes, and tomatoes. However, Castillo-Girón<sup>2</sup> obtained information concerning tomato producers. Both a civil society organization and members of a local community complained about the damage to health and the environment caused by the use of pesticides. In addition to the increased competition from the Bajío region, these complaints led to a declining importance of the tomato crop. Companies that were not from the region decided to leave Sayula, tomato producers began to change to other crops, and tomatoes have been displaced by grain corn, avocados, and raspberries. These latter crops have increased greatly in importance since 2009 because of their high profitability, a phenomenon linked to the increase in agricultural labor in the subregion. Avocados, however, require little labor (approximately one worker for every five hectares, not

Given this background, we ask whether it is possible that the rapid growth in export agriculture has reduced poverty in the Sayula Valley subregion. This article is a starting point in investigating this question. We first analyze agricultural wages in the subregion and describe its economic activity, with emphasis on agriculture and its development. We also analyze the occupational structure, the labor force, and the value of agricultural

Map 1.



1 Víctor Manuel Castillo Girón, "La horticultura de exportación: disyuntivas sobre sus efectos en el desarrollo de la cuenca de Sayula, Jalisco," *Economía y Sociedad*, no. 9 (March-August, 2001) 115-123.

2 Víctor Manuel Castillo Girón, "Jitomate, actores y controversias en Sayula, Jalisco," *Carta económica regional*, no. 76 (year 13, 2001).

production. Finally, we examine multidimensional poverty to see if poverty has been reduced.

## Agricultural Workers' Wages

Agricultural wages in Mexico are very low, and workers have little access to employment benefits, as reported in the National Survey on Occupations and Employment (Encuesta Nacional de Ocupación y Empleo, ENOE).<sup>3</sup> This survey found that in the second quarter of 2019, the average wage for all workers nationally was 6401 pesos monthly (5871 for women and 6729 for men), while for agricultural workers it was only 3765 pesos (3875 for women and 3752 for men). That

is, agricultural workers earned 60 percent of the national average. While 55 percent of wage workers in Mexico had a formal contract (58% of women and 53% of men), only six percent of agricultural workers did (14 percent of women and five percent of men). The key point, however, is that while 55 percent of wage workers received health care benefits through social security (though IMSS, ISSSTE, and other agencies), only seven percent of agricultural workers did.<sup>4</sup>

As part of the project “Farm Workers in Mexico’s Export Agriculture,” a

<sup>4</sup> Escobar, Martin, and Stabridis (2019) explain that agricultural export companies must comply with certifications regarding production, health and safety, and worker welfare that require them to offer more competitive wages and working conditions than traditional agricultural producers, whose markets are local.

statistically representative survey of workers in export crops (berries, tomatoes, cucumbers, and bell peppers) was carried out in five states, including 796 in Jalisco working in berries. Sayula was one of the sampled municipalities, with 596 workers surveyed. These included 100 women and 496 men, consistent with national data indicating that the majority of agricultural wage workers are men. The survey showed that 400 of the 596 were temporary migrants, supporting the finding from our ethnographic work that the agricultural labor force includes a significant number of such migrants. In contrast with data from the ENOE, our survey found that 93 percent of the workers had a formal contract (88 percent of the women and 94 percent of the men) and that

<sup>3</sup> This survey is carried out every quarter.

**Photo 1.**



Blueberry field in Sayula, January 2019. Photo: Cecilia Salgado.

81 percent had access to social security (100 percent of the women and 79 percent of the men), more than the average for agricultural wage workers and even more than non-agricultural wage workers nationally. It found an average wage of 6600 pesos per month, 75 percent higher than the national average for a farm worker and 27 percent higher than the average wage in Jalisco, as seen in Table 1.

Consistent with findings from our ethnographic work, although migrants were an important part of the labor force, it increasingly included local workers, given that the wages were higher than those offered by the manufacturing and service sectors. One of our informants told us about the problems caused for these other sectors in southern Jalisco, where industrial agriculture “has all the city’s workers.” According to this person, “if they paid you 1700 in construction and 2000 in the avocado grove, in construction they’re going to have to raise wages to 2100, a hundred pesos more, to try to attract more people” (Interview with G.J., 18 May 2020). This could have two kinds of repercussions on the level of multidimensional poverty for part of the population: through higher wages and also through a reduction in a gap such as access to health services. Although the survey was not carried out in Techaluta or Amacueca, the rapid growth of raspberry cultivation in both municipalities leads us to believe that they could show similar behavior as Sayula.

## Economic Activity in the Sayula Valley

Since there are no representative surveys at the municipal level, the 2010 Census and the 2015 Intercensal Survey were used as the major sources. The same is true for the measurements of municipal poverty, which is calculated from 2010 and every five years. Sayula had 36,778 residents, of whom 98 percent lived in urban areas (2500 residents or more). Amacueca had 5385 residents, and 55 percent lived in urban areas; Techaluta had only 3703 residents, all of whom lived in rural areas. There was an important increase in women’s

labor force participation in all three municipalities, while that of men remained constant or fell slightly (Table 2). This change could be related to the importance of other economic sectors over time, so the next step is to explore the economic activities in the Sayula Valley.

The major economic activities are agriculture, trade, and services, with agriculture as the leader in all three municipalities. In 2015, 27 percent of the workers in Sayula (which had the most diversified economic activity) were employed in agriculture, and 40 percent in the other two municipalities. These changes in economic sectors could

**Table 1. Real Wages of Agricultural Workers in 2019Q2, by Sex**

Sex	Statistic	Real Monthly Wage (ENJOREX)	Real National Wage (ENOE)	Real Wage Jalisco (ENOE)
Women	Average	5,847.32	3,874.62	5,535.23
	Standard deviation	1,106.68	2,198.28	1,838.59
Men	Average	6,746.06	3,751.64	5,122.07
	Standard deviation	1,434.82	2,210.19	1,540.31
<b>Total</b>	<b>Average</b>	<b>6,600.32</b>	<b>3,765.14</b>	<b>5,194.16</b>
	<b>Standard deviation</b>	<b>1,425.16</b>	<b>2,209.22</b>	<b>1,604.05</b>

Source: Authors’ calculations based on the Encuesta a Jornaleros Agrícolas de Exportación and data from the ENOE, 2019Q2.

**Table 2. Labor Force Participation Rate by Sex, Sayula Valley, 1990-2015**

Women		
Municipality	1990	2015
Amacueca	9.9	26.3
Sayula	15.2	32.4
Techaluta	5.5	22.5
Men		
Amacueca	70.4	62.4
Sayula	68.2	69.9
Techaluta	64.5	64.2

Source: Authors’ calculations with microdata information from the 1990, 2000, and 2010 Censuses and the 2015 Intercensal Survey.

explain the increase in women's participation, not only because of the importance of the service sector at the local level, but also because the rapid growth of industrial agriculture allows for specialization. Women, for example, are considered better harvesters of berries and tomatoes than men, as described by Sara Lara in various studies.<sup>5 6</sup>

5 Sara Lara, "Criterios de calidad y empleo en la agricultura latinoamericana: un debate con el postfordismo". In *Empresas, reestructuración productiva y empleo en la agricultura mexicana*, coord. Hubert Grammont (Mexico City: UNAM/Plaza y Valdés Editores, 1999).

6 Sara Lara, "Análisis del mercado de trabajo rural en México en un contexto de

## Agricultural Production

This analysis used data from the Agricultural and Fishery Information Service (Servicio de Información Agrícola y Pesquera, SIAP) of the Secretariat of Agriculture and Rural Development (Secretaría de Agricultura y Desarrollo Rural, SADER) at the municipal level. The importance of tomato cultivation decreased, and since 2009 has been displaced by hybrid corn, avocados, and raspberries, mainly

flexibilización". In *¿Una nueva ruralidad en América Latina?*, comp. Norma Guiarracca (Argentina: CLACSO, 2001).

because of their high profitability. Avocados, however, require little labor (approximately one worker for every five hectares, not including harvesters or packers), and are less connected to the increase in labor demand than raspberries, even if they do generate a smaller number of jobs. The land in southern Jalisco, with its volcanic soil and favorable climate, is especially fertile for this type of crop. With the introduction of Michoacán avocados to the U.S. market, those from Jalisco became an alternative for the domestic

**Table 3. Area Planted and Value of Production in the Sayula Valley**

All Crops					
Year	Area Planted (hectares)	Production (metric tons)	Value of Production (thousands of current pesos)	Real Value of Production (thousands of 2018 pesos)	Percent Change in Real Value
2010	11,926.0	206,833.7	472,106.8	644,787.6	-
2015	11,343.3	258,476.1	554,117.2	626,508.3	-2.8
2018	12,663.4	249,071.7	879,251.9	879,251.9	40.3
Avocados*					
Year	Area Planted (hectares)	Production (metric tons)	Value of Production (thousands of current pesos)	Real Value of Production (thousands of 2018 pesos)	Percent Change in Real Value
2010	17.0	172.5	1,651.4	2,255.4	-
2015	941.8	6,576.0	85,090.3	97,322.6	4215.0
2018	1,168.6	11,411.6	166,362.7	166,362.7	70.9
Raspberries**					
Year	Area Planted (hectares)	Production (metric tons)	Value of Production (thousands of current pesos)	Real Value of Production (thousands of 2018 pesos)	Percent Change in Real Value
2010	110.0	1,770.0	37,266.0	50,896.7	-
2015	168.0	2,866.8	48,082.5	54,994.6	8.1
2018	292.6	4,396.8	100,960.1	100,960.1	83.6

Source: Authors' calculations with data from SIAP

\* Includes the three municipalities.

\*\* Excludes Techaluta, which does not produce raspberries



market, as Macías has noted.<sup>7</sup> Table 3 shows the total area planted and the real value of agricultural production, as well as that for avocados and raspberries. There was a slight decrease, 2.8 percent, in the real total value of production from 2010 to 2015, which can be explained by the transition to avocados, berries, and, in the case of Sayula, agave. However, from 2015 to 2018, there was an increase of 40.3 percent, which can be attributed to the growth of 4215 percent in the value of the avocado

<sup>7</sup> Alejandro Macías, "Empresarios, estrategias y territorio en la producción hortícola en México (El caso de Sayula, Jalisco)," (Doctoral dissertation, Centro de Investigaciones y Estudios Superiores en Antropología Social, 2006).

crop, that is, a 42-fold increase. The importance of avocados and raspberries can be seen in the fact that their combined value amounts to 30 percent of the total value of agricultural crops.

Avocadoes and raspberries are the most important crops in the subregion. The latter is labor intensive, and is generating an important number of jobs, especially in Sayula, with an increase of 119.3 percent in the last five years (Table 4). In Amacueca, however, there has been a slight decrease in the number of jobs.

Table 5 shows real wages by

municipality<sup>8</sup> for agricultural workers in all crops from 1990 to 2015, by sex. In Amacueca and Techaluta there were no women workers, but in Sayula, there was an increase in wages, a substantial increase for women. Wages also showed a slight increase over 2010 (not shown). Overall, the wages of agricultural workers have increased over these 25 years.

## Multidimensional Poverty

Mexico's official poverty measurement method, implemented by the National Council for Evaluation of Social Development Policy (Consejo Nacional de Evaluación de la Política de Desarrollo Social, CONEVAL)<sup>9</sup> considers two main axes. The first evaluates income below the poverty line (línea de bienestar económico, LBE), the income necessary to acquire a basket of food and non-food goods and services. The second defines poverty as the lack of at least one of six specified social rights. A person is defined as experiencing multidimensional poverty if they are below the poverty line and lack at least one social right. Those who lack at least three social rights and whose income is below the cost of the basic food basket goods and services (also referred

**Table 4. Number of Agricultural Wage Workers by Municipality**

Municipality	2010	2015
Sayula	1659	3639
Amacueca	972	802
Techaluta de Montenegro	490	540

Source: Authors' calculations based on the 2010 Census and the 2015 Intercensal Survey.

**Table 5. Real Wages of Agricultural Workers by Sex, 1990-2015 (2018 pesos)**

Sex	Statistic	Amacueca		Sayula		Techaluta	
		1990	2015	1990	2015	1990	2015
Female	Observations	0	71	70	672	0	50
	Average	0.00	4,656.67	2,797.92	4,511.91	0.00	4,088.15
	Standard Deviation	-	1,674.70	493.07	1,194.63	-	1,260.82
Male	Observations	270	352	780	1,852	70	248
	Average	3,726.86	4,922.98	3,555.28	4,829.45	3,897.11	4,636.66
	Standard Deviation	1,552.85	1,741.40	1,611.88	1,415.92	1,161.34	3,405.57
Total	Observations	270	423	850	2,524	70	298
	Average	3,726.86	4,878.28	3,492.91	4,744.91	3,897.11	4,544.63
	Standard Deviation	1,552.85	1,731.31	1,564.32	1,367.52	1,161.34	3,154.34

Source: Authors' calculations with microdata information from the 1990, 2000, and 2010 Censuses and the 2015 Intercensal Survey.

<sup>8</sup> Census data should be taken with a certain amount of caution. The best source of wage information is the ENOE, but unfortunately it is representative at the state level, not the municipal level.

<sup>9</sup> CONEVAL, C. (2009). Metodología para la medición multidimensional de la pobreza en México. Consejo Nacional de Evaluación de la Política de Desarrollo Social.

to as the minimum well-being line or the income food poverty line) are defined as experiencing extreme multidimensional poverty. Social rights include access to the following resources: education, health services, access to social security, housing of sufficient quality and size, basic housing services, and access to food.

In this system of measurement, there are persons who are not poor, but who are vulnerable. They are income vulnerable if they have all six social resources, but their income is below the LBE; they are resource vulnerable if their income is above the LBE, but they lack at least one right. Persons who are not vulnerable have income above the LBE and lack no resources.

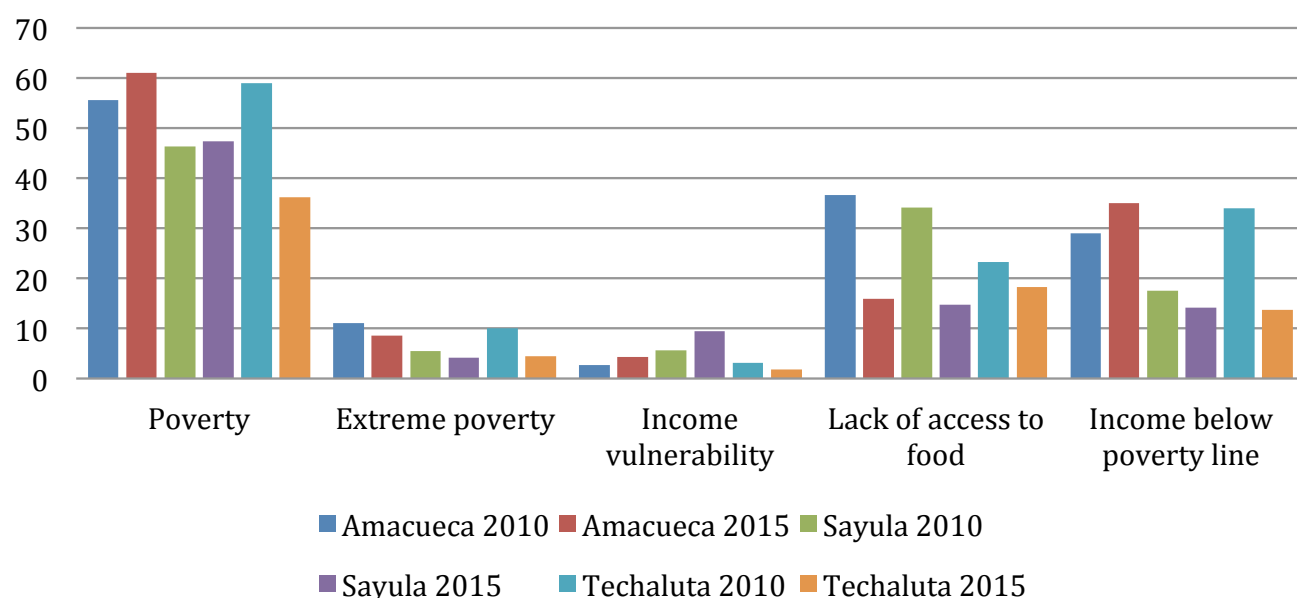
In Amacueca, 55.6 percent of the population experienced

multidimensional poverty in 2010, increasing to 61.1 percent in 2015, but with a reduction in extreme poverty from 11 to 8 percent. However, there was an increase in income vulnerability, which could also be linked to the immigration of people who joined the economically active population of the municipality. In Sayula, there was a slight increase in multidimensional poverty, from 46.4 percent in 2010 to 47.3 percent in 2015. However, extreme poverty fell from 5.5 percent in 2010 to 4.1 percent in 2015. One indicator that fell considerably was lack of access to food: from 34.2 percent in 2010 to 14.8 percent in 2015, which may have contributed to the reduction in extreme poverty. Sayula shows more economic dynamism than the rest of the municipalities in the subregion, but further analysis would be needed to attribute the

reduction in extreme poverty to the presence of export agriculture. In Techaluta, there was a considerable reduction in the overall poverty indicator, which fell from 59 to 36 percent. The population in extreme poverty remained at approximately five percent. Another indicator that improved was the proportion of persons below the poverty line, which fell from 34 percent in 2010 to just 14 percent in 2015. Table 6 shows the measurement of multidimensional poverty we calculated from data for the municipalities of Amacueca, Sayula, and Techaluta.

The population of this region was a little over 47,500. There was a slight reduction in extreme poverty in this period, from 6.7 to 4.6 percent, and a reduction in the number of persons lacking three or more social resources, which fell from 20.6 to 15.6 percent. There

**Figure 1. Poverty in the Sayula Valley, Jalisco, Mexico, 2010-15.  
Selected Indicators (%)**



Source: Authors' elaboration, based on CONEVAL estimations of multidimensional poverty, 2010 and 2015.

were improvements in access to health care and food, but a decline in access to basic housing services, with the number lacking this resource increasing from 9.7 to 11.8 percent. There was a reduction

in the number with income below the extreme poverty line, from 20.6 to 16.6 percent, which could be related to higher wages. However, given the structure of households in Amacueca and Techaluta, where

female labor force participation continues to be low, this effect of higher wages is lessened by the number of economic dependents in the household.

**Table 6. Multidimensional Poverty in the Sayula Valley, 2010-15**

Indicator	2010		2015	
	Percent	No. of Persons	Percent	No. of Persons
<b>Total Population</b>		43,715		47,562
<b>Multidimensional poverty</b>				
Population in poverty	48.8%	21,322	48.0%	22,844
Population in moderate poverty	42.1%	18,405	43.4%	20,639
Population in extreme poverty	6.7%	2,916	4.6%	2,205
Population with right vulnerability	31.5%	13,790	28.1%	13,385
Population with income vulnerability	4.9%	2,158	8.2%	3,920
Non-poor, non-vulnerable population	14.7%	6,445	15.6%	7,413
<b>Lack of access to social rights</b>				
Population lacking access to one or more social rights	80.3%	35,110	76.2%	36,228
Population lacking access to three or more social rights	20.6%	9,004	15.1%	7,197
<b>Social resource lacking<sup>1</sup></b>				
Education	21.6%	9,453	20.5%	9,765
Access to health care	25.3%	11,062	11.8%	5,603
Access to social security	67.3%	29,411	64.0%	30,451
Quality and size of housing	9.7%	4,227	11.8%	5,608
Access to basic housing services	4.4%	1,916	12.2%	5,813
Access to food	33.7%	14,721	15.2%	7,206
<b>Well-Being</b>				
Population with income below the poverty line	53.7%	23,480	56.3%	26,764
Population with income below the extreme poverty line	20.6%	9,015	16.6%	7,890

Source: CONEVAL, estimations of multidimensional poverty.

<sup>1</sup> Proportion of the population lacking each social resource.

Includes the municipalities of Amacueca, Sayula, and Techaluta de Montenegro.

With the addition of information from the three municipalities, some figures may increase or decrease. The idea behind the analysis is to consider heterogeneity among the municipalities and describe them in the best possible way. Given these data, we can address the question posed at the beginning by saying that the rapid growth of export agriculture, and especially that of berries, may be influencing the reduction in poverty, but in a gradual way, and that its effects will probably be more visible in 2020. Access to some resources, like health care, showed an important increase, which could be the result of an increase in the quality of jobs. Workers for agricultural export companies receive health and other benefits that improve the quality of their employment over that of workers without benefits or employment contracts. We await data from the 2020 Census and more recent surveys for information on poverty at the municipal level in that year that better reflects the relationship between agriculture and poverty, in order to update our analysis.

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