



Living Wage Report

Non-Metropolitan Brazil

State of São Paulo

With focus on orange production in the citrus belt

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A worker in an orange farm close to Bebedouro in the state of São Paulo. Credit: Alexandre de Freitas Barbosa

Under the Aegis of Fairtrade International, Rainforest Alliance, Social Accountability International, in partnership with ISEAL Alliance and Richard Anker and Martha Anker.



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It is important to stress that this version incorporates some of the comments and issues raised during 4 online sessions with stakeholders when we presented the Anker methodology and the main findings of this report: the first with different organizations mostly from Europe and the other 3 with stakeholders in Brazil, especially union representatives and small farmers cooperatives. These meetings were held in the second half of July 2020 and the beginning of August 2020.

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SECTION I. INTRODUCTION

1. BACKGROUND

This report estimates a living wage for non-metropolitan areas of the State of São Paulo, Brazil, for February 2020. It applies the methodology developed by Richard and Martha Anker (Anker and Anker 2017) and used in more than 30 countries to estimate living wages. Fieldwork was conducted in the citrus belt region in some of its core cities of Araraquara, Bebedouro and Bauru and surrounding areas. Information was gathered in visits to supermarkets and houses and through interviews with workers' families and several stakeholders¹, complemented by secondary data from government and researchers, were the main empirical basis for the report.

The Anker Living Wage methodology is endorsed by the Global Living Wage Coalition (GLWC), which sees the calculation and release of Living Wage benchmarks as the first step in a process to raise wages of workers in the global supply chain. Living wage studies and living wage benchmark estimates such as the present report are not intended to, nor should they supplant collective bargaining rights, but rather should serve as a replicable tool to support social dialogue between workers and employers. For many producers in developing countries, wages make up an important part of the costs of production. As such, it is important to introduce wage requirements in the standards systems of companies and certifying organizations such as is done by GLWC members on the basis of dialogue with and engagement of stakeholders at every level of the global supply chain.

It is important to stress that this report refers only to the estimation of the living wage for the nonmetropolitan areas of São Paulo State (i.e. excluding São Paulo and Campinas metropolitan regions). In order to allow for comparison, prevailing wages for different types of workers and other wage indicators

¹ The main persons and organizations interviewed are the following: a rural producers union in the city of Bebedouro; workers unions based in Araraquara, Bebedouro and Lucianópolis; FERAESP (Federation of rural wage workers of the state of São Paulo), based in Bauru; a labor lawyer linked to one of the unions; cooperatives of small farms; a Public Prosecutor of a Regional Labor Court; a CEREST (Reference Centers in Worker's Health) officer in Bauru; an employee of a consortium of employers in the orange sector (in charge of hiring the labor force for the harvest season). There were also visits to public health units in the larger cities. We tried to reach out to representatives of the big companies in orange processing - Cutrale, Citrosuco and Louis Dreyfus. In the case of Citrosuco and Louis Dreyfus, we managed to talk to their sustainability managers, but due to tight schedules they were unfortunately unable to set up meetings with the research team.

are also used. This report does not address compliance of farms with social, labor and environmental standards.

2. LIVING WAGE ESTIMATE

Our estimate of a gross living wage for non-metropolitan areas of the State of São Paulo is R\$ 2,551 (USD 567)² per month, therefore R\$ 98 (USD 22) per workday. This value refers to the wage a worker needs to receive each month over the year in order to have a basic but decent living. Table 13, at the end of the report, presents a summary of the process for calculating all the values that add up to the gross living wage. In Table 14, we list the basic assumptions used during the process.

It is important to note that the bulk of the workers in orange production – and also for agriculture in the state of São Paulo in general - live in urban areas. As we will see below, this is a very urbanized region of Brazil, so this living wage refers to workers living in non-metropolitan urban areas of the state of São Paulo.

In the case of prevailing wages, which is a basis of comparison with our living wage estimate, we use secondary data available for elementary agricultural workers (mostly orange pickers and general service employees) and those operating machinery in the field. However, prevailing wages of industrial workers in the juice industry, or truckers carrying the juice to Brazilian ports – not estimated here – can be also used to compare with our living wage. This is also case of any other worker in the area covered by this report.

In the research we found out that gross living wage for the region is 24% to 84% higher than prevailing wages in the production of oranges. This variance depends on the type of agricultural worker we consider. In the case of orange pickers - representing the bulk of the workers in the sector –, if they are registered workers, the gap reaches the higher picture of 85%. However, the gap is reduced to 47% in case we assume they receive the government wage bonus (“abono salarial”) and are entitled to 3 months of the unemployment insurance benefit from the government. In sum, federal government social policies assure a fall of 37 percentage points in the gap between the gross living wage of the region and the prevailing wage of the sector.

Even though the focus of the study was in the citrus belt area, our living wage is representative of a larger region, the urban areas of the State of São Paulo with the exception of metropolitan regions of São Paulo and Campinas. Thus, our living wage is applicable to a population of 20 million inhabitants, of whom 5 million are formal workers. Section 3.1 below provides evidence to support this conclusion.

3. CONTEXT

Brazil had a population close to 210 million people in 2018 and ranked as the 7th largest economy in the world, according to the power purchasing parity GDP measured by the World Bank. In terms of per capita GDP, Brazil ranks 82nd in the world, while keeping a 79th position in the UNDP ranking for the Human Development Index (HDI), which takes into account per capita income, education and life expectancy.

² The Brazilian currency was sharply devaluated after the research was conducted due to the coronavirus crisis. We used the exchange rate (R\$ 4.50 to USD 1) of late February. By late April the dollar value reached R\$ 5.4 and kept moving upwards. Even though it is difficult to make any projections now, it seems that the actual rate will probably go down until the end of the year.

However, if HDI is adjusted for inequality, the country loses 16 positions in the ranking due to its high Gini coefficient (conventional measure of income inequality). Using the World Bank US\$ 5.50 a day poverty line for upper-middle income countries such as Brazil, 19.9% of Brazilian population was considered poor in 2018. There was a worsening after the economic crisis that hit hard the country after 2015.

Table 1: Economic and Social Indicators for Brazil (2018)

Population	209,5 million	6 th largest population
GDP per capita	USD 16,096 (PPP)	82 th in the world ranking
Human Development Index	0.761 (high human development)	79 th in the world ranking
Population below poverty line	41,7 million	19.9% of total population
Population below extreme poverty line	9,2 million	4.4% of total population
Inequality (Gini Coefficient)	0.533	

Source: UNDP; World Bank.

The State of São Paulo is the richest area of the country, as it concentrates 33% of the country's GDP, having 22% of the total population. It has the second highest GDP per capita and HDI, losing only to the federal district where the capital is located³. It should be mentioned also that the urbanization rate of the state was 96.4% in 2018, according to Fundação Seade⁴, the equivalent to IBGE (Brazil Statistical Office) for the state of São Paulo.

Table 2 below presents data on three of the most important mesoregions⁵ of the citrus belt, its core cities and the surrounding cities in which some of the orange workers live. Araraquara, Bebedouro and Bauru have "very high" HDI if compared to the rest of the country. Their GDP per capita, however, are lower than the average values found for the state, which is due to the high values of metropolitan areas of São Paulo and Campinas. The small cities visited during the fieldwork have much lower GDP per capita values than the larger three cities mentioned above, where the economic activity is concentrated. The HDI is still "high" in these small cities if compared to the Brazilian average, showing that this is a rich area in terms of socio-economic indicators.

However, both GDP per capita and HDI are average values which do not tell much about the situation of those located at the bottom of the income distribution in a very unequal country like Brazil.

³ PNUD, *Atlas do Desenvolvimento Humano*, 2013.

⁴ <http://www.bibliotecavirtual.sp.gov.br/temas/São-paulo/São-paulo-populacao-do-estado.php>.

⁵ According to IBGE, mesoregions are territorial extensions with similar characteristics (physical, human and socioeconomic). In the State of São Paulo, there are 15 mesoregions.

Table 2: Data for Brazil, State of São Paulo, and most important Mesoregions and Municipalities in citrus belt visited during fieldwork

	Population (2016)	GDP per capita in R\$ (2016)	HDI (2016)
Brazil	206,081,432	30,411	
State of São Paulo	44,749,699	45,542	0.783
Araraquara mesoregion	883,643	36,126	
Araraquara*	228,664	39,066	0.815
Américo Brasiliense*	38,701	21,644	0.751
Bauru mesoregion	1,574,779	34,173	
Bauru*	369,368	35,577	0.801
Piratinga*	13,216	14,611	0.779
Duartina*	12,558	17,142	0.748
Cabrália Paulista*	4,371	18,465	0.694
Lucianópolis*	2,372	22,461	0.733
Ribeirão Preto mesoregion	2,591,206	35,655	
Bebedouro*	77,695	41,444	0.780
Terra Roxa*	9,164	14,064	0.749

Source: Demographic Census, 2010 (IBGE); Human Development Atlas, 2013 (UNDP). PIB dos Municípios 2016 (IBGE).

* Cities visited during fieldwork.

As shown in Table 3 below, formal jobs in the orange sector are concentrated in five mesoregions - Bauru, Ribeirão Preto, Campinas and Araraquara and São José do Rio Preto -, which accounted for 78% of the state of São Paulo formal jobs in the orange production in 2018 (Graph 1)⁶. The three mesoregions selected for the fieldwork – Bauru, Ribeirão Preto and Araraquara – make up for 56% of total formal jobs, which is a high proportion considering that they combined have 11.3% of the State of São Paulo population.

We should bear in mind that some of these jobs can be performed by the same worker as the peak season varies from one mesoregion to another. As a matter of fact, these data on jobs refer to formal contracts signed over the year. For the year 2018, there were around 87,000 formal jobs in the São Paulo State.

It should also be mentioned that this distribution is not totally accurate, as workers are not hired in the specific places where they work, but by “consortia of employers”, which are located in some core areas, distributing workers to farms spread out across the state. We shall come back to this issue later on as it shapes the way the labour force is hired and points to the existence of legal intermediaries between the employers and especially the orange pickers.

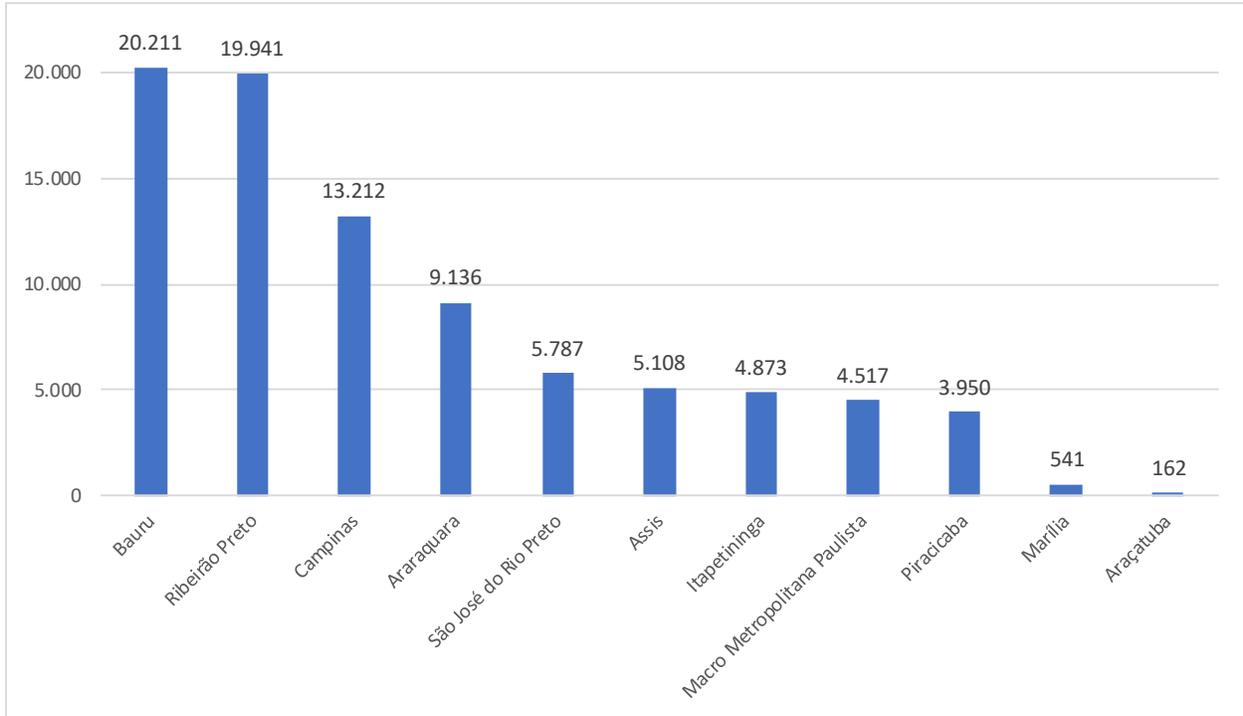
However, in our view, these data are representative enough. Even though not all the wage workers are registered, more than half seem to be⁷. Actually, if we take into account only the elementary occupations

⁶ This data comes from *Relação Anual de Informações Sociais (RAIS)*, a database produced by the Ministry of Labour in Brazil. Even though it has only information on formal jobs in the orange production, it gives a good idea of how they are distributed across the state of São Paulo.

⁷ Wage registered work represents almost 60% of total workers in orange production in the state of São Paulo. See DIEESE. *Pesquisa do custo de vida dos trabalhadores no cultivo da laranja em Ibitinga/Borborema (SP)*, 2019, p. 10.

of agricultural workers in the orange production, 2/3 of these workers are registered wage earners according to PNAD/IBGE microdata for 2018 gathered for the present report.

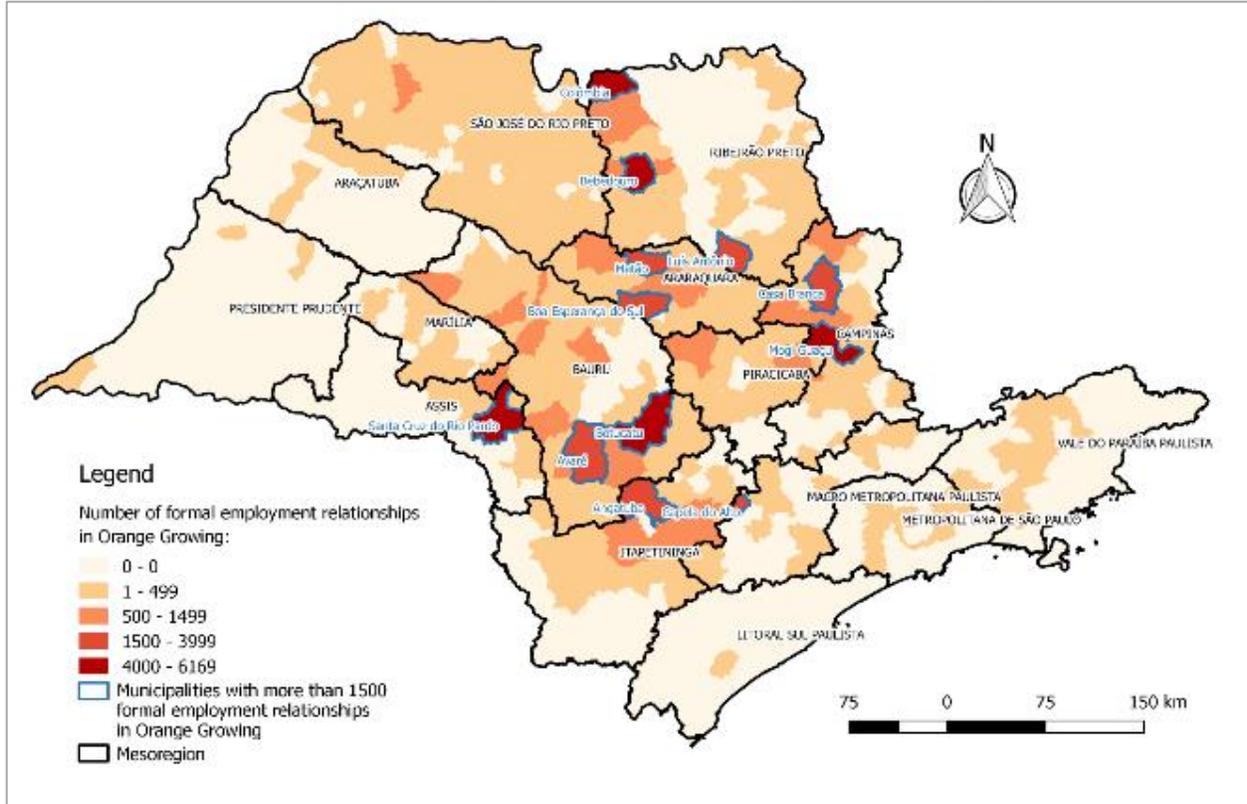
Graph 1: Number of formal jobs in orange production over the year 2018 by mesoregions of the State of São Paulo



Source: RAIS/Ministry of Labour, Brazil.

Map 1 below, using the same RAIS data, provides a view of all the mesoregions, but now with different colors (scales) indicating the number of formal jobs in the orange sector for the municipalities distributed across the mesoregions. We can notice that four mesoregions – Bauru, Ribeirão Preto, Campinas and Araraquara – account for the bulk of municipalities having more than one thousand formal jobs in the orange sector over the year 2018.

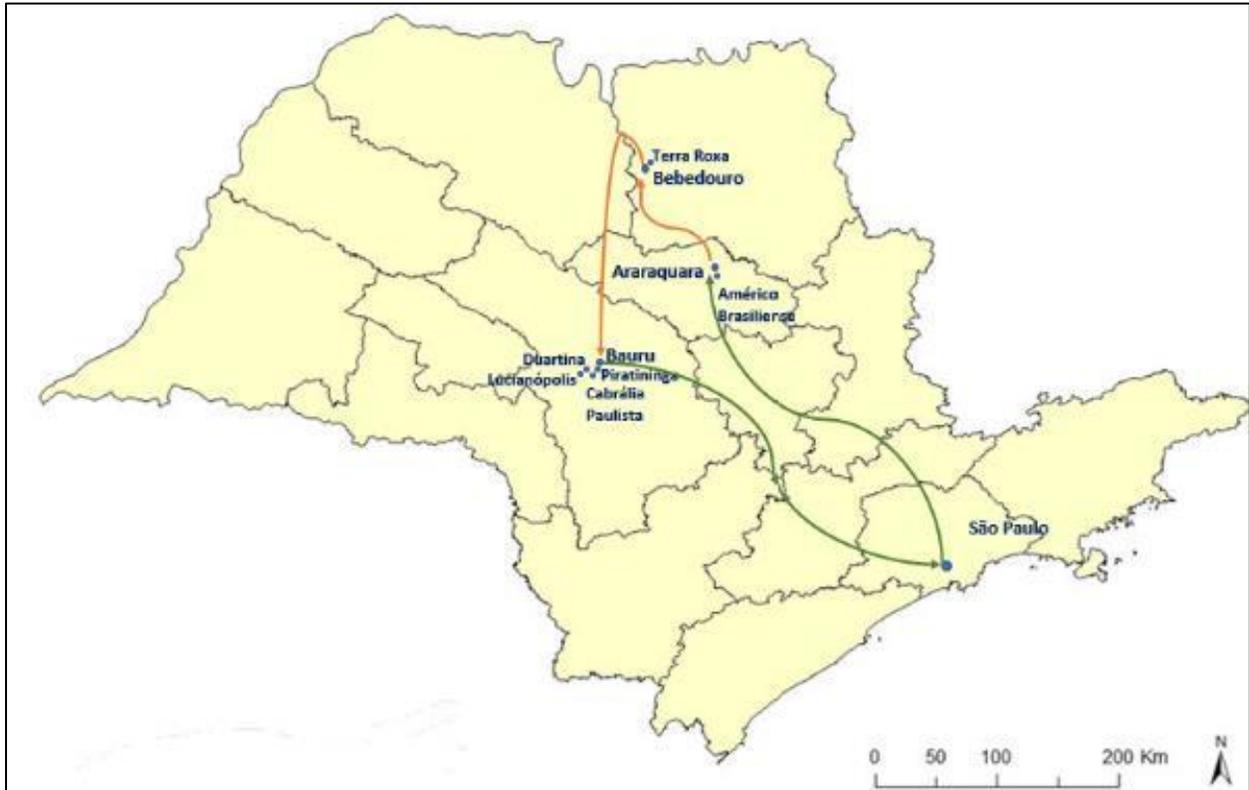
Map 1: Number of formal employment contracts over 2018 by mesoregions and municipalities in the state of São Paulo according to the concentration of jobs in the orange sector



Source: RAIS/Ministry of Labour, Brazil.

On Map 2, we present the itinerary followed during the fieldwork when our team visited the core areas of three mesoregions and surrounding cities, which can be considered as “dormitory cities” for agricultural workers.

Map 2: Cities visited in the fieldwork covering three mesoregions of the citrus belt



Source: the authors. The orange line shows the itinerary of the fieldwork, whereas the green line shows the round trip having São Paulo as the city of departure.

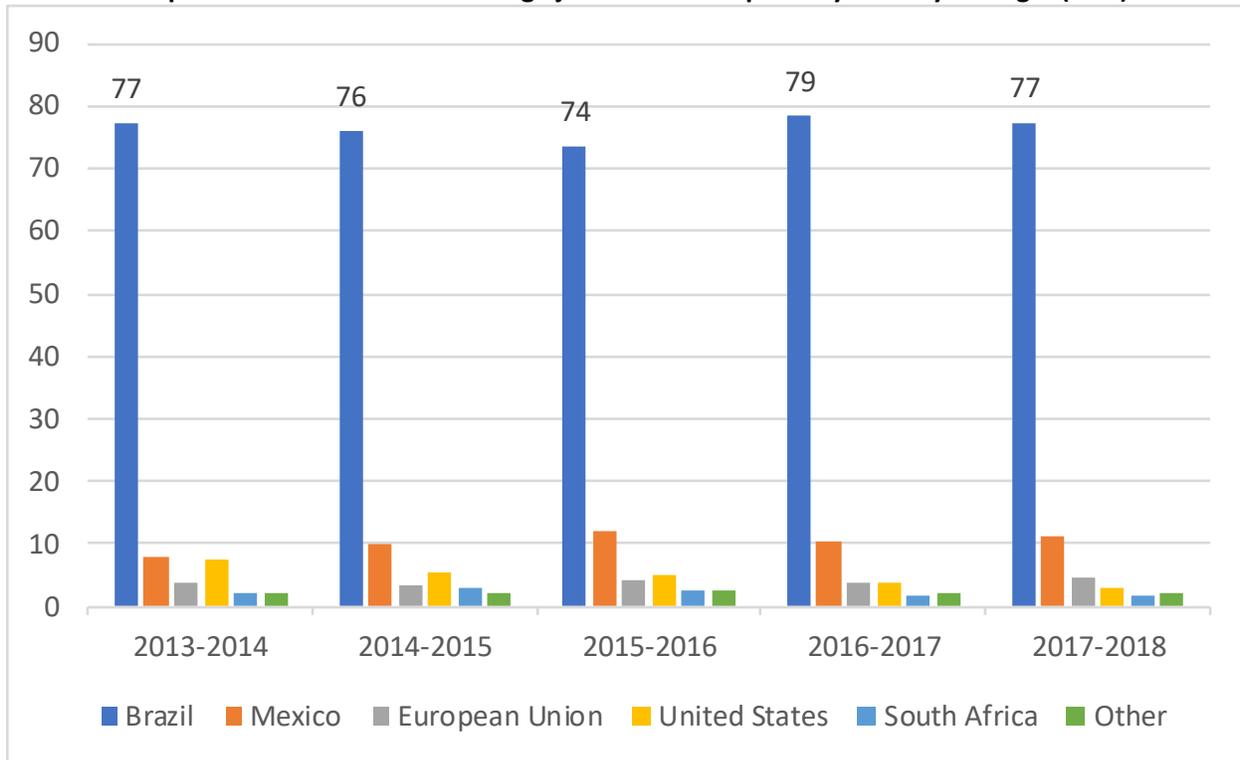
Finally, we should mention some unusual characteristics of orange juice production in Brazil. According to IBGE data, the state of São Paulo was responsible for 75% of orange production of the country in 2018. Also, a great deal of Brazilian production is exported: 70% of the national orange production is transformed into orange juice, 98% of which goes abroad⁸.

By far, Brazil is the largest world exporter of frozen orange juice concentrate. As shown in Graph 2 below, in the last years, Brazil has been responsible for around $\frac{3}{4}$ of global exports. This makes the state of São Paulo a special case of a commodity – frozen concentrate orange juice (FCOJ) – largely exported and having its production concentrated in one area of a single country. Around 60% of the world exports of orange juice come from the state of São Paulo. The principal markets are European Union (66%), USA (27%) and Japan and China with less than 5%⁹.

⁸ FAVA NEVES, M. et. al. *Orange juice chain: Past, Present & Future*. Quickfox Publishing, Western Cape, South Africa, 2009, p. 18, 45, 62.

⁹ MINISTRY OF AGRICULTURE OF BRAZIL, *Sumário executivo – laranja*, April 2020.

Graph 2: Distribution of the orange juice volume exports by country of origin (in %)



Source: <http://www.fruitjuicefocus.com/category/trade-data/>

The value chain of orange juice is very verticalized. Brazil produces orange juice through bulk processors, big companies like Citrosuco, Cutrale and Louis Dreyfus, even though small processors do exist producing not only for the internal market. Arriving in Europe, the USA and Japan, the frozen concentrate orange juice is turned into juice by market processors who sell packaged juice under their brand names. As we shall see later, this verticalization of the value chain also affects the concentration of orange production in big farms in the state of São Paulo, some of them owned by the bulk processors. In the year 2010, they already were responsible for 50% of the groves producing the oranges to be processed¹⁰.

3.1 Representativeness of study results for other nonmetropolitan areas of state of São Paulo

One last point should be made. How similar are the citrus belt mesoregions and the rest of the State of São Paulo? Is the living wage estimated in this report for the citrus belt representative of the living wage in other parts of the state of São Paulo?

By comparing data for mesoregions (such as on GDP per capita, percentage value added and percentage of formal jobs by economic sector, and average wages of formal workers), we can observe that Araraquara, Ribeirão Preto and Bauru mesoregions differ from the metropolitan regions of São Paulo and Campinas. But if we take the latter out (since they concentrate the bulk of more sophisticated activities and also are characterized by more diversified production and so by better jobs and higher wages and living costs) – the remainder of the state is quite similar to the citrus belt areas, as shown in table 3.

¹⁰ TETRAPAK INTERNACIONAL, *The orange book*, 2017, chapter 3. <https://orangebook.tetrapak.com/>

Table 3: Socioeconomic indicators of three citrus belt mesoregions, metropolitan areas of Campinas and São Paulo, and the State of São Paulo

Variable	Ribeirão Preto mesoregion	Bauru mesoregion	Araraquara mesoregion	Campinas Metropolitan region	São Paulo Metropolitan region	State of São Paulo	State of São Paulo less metropolitan regions
Population (No. of inhabitants)	2,591,206	1,574,779	883,643	3,131,528	21,242,939	44,749,699	20,375,232
GDP (in 1,000 R\$ of 2016)	92,389,126	53,814,918	31,922,228	178,316,590	1,107,867,636	2,038,004,931	751,820,706
GDP per capita (R\$ 2016)	35,655	34,173	36,126	56,942	52,152	45,542	36,899
% VA Agricultural	6.5	6.4	5.0	1.2	0.2	2.1	4.9
% VA Industry	24.3	30.7	29.0	32.7	14.7	21.4	28.2
% VA Services	57.4	51.2	54.2	57.6	76.9	66.8	55.0
% VA - Public and Social Services	11.8	11.8	11.8	8.5	8.2	9.7	11.9
% Formal jobs in Industry	23.0	21.7	26.7	26.3	13.2	18.4	24.3
% Formal jobs in Construction	4.3	5.1	3.3	3.5	4.1	3.9	3.6
% Formal jobs in Commerce	23.1	21.2	19.8	20.6	18.8	20.1	21.7
% Formal Jobs in Services	33.1	31.9	31.5	48.1	63.7	55.1	44.6
% Formal jobs in Agriculture	6.9	8.5	8.7	1.4	0.2	2.4	5.8
Average wage formal jobs	2,561	2,433	2,724	3,433	3,676	3,256	2,636
Avare wage formal jobs Industry	2,839	2,529	3,119	4,156	3,985	3,630	3,253
Avare wage formal jobs Construction	2,117	2,565	2,227	2,564	2,592	2,442	2,178
Avare wage formal jobs Commerce	2,095	1,924	1,937	2,627	2,923	2,526	2,028
Avare wage formal jobs Services	2,523	2,573	3,006	3,486	3,910	3,513	2,728
Avare wage formal jobs Agriculture	1,994	1,908	1,767	2,060	2,057	1,921	1,907

Source: RAIS/Ministry of Labour (2018) and PIB dos Municípios 2016 (IBGE).

Not only is GDP per capita and average wages of the three citrus belt mesoregions visited in this study very close to the aggregate value for “State of São Paulo without metropolitan regions of São Paulo and Campinas”, but the share of agriculture in the value added is also similar at around 5% for all of these.¹¹

So, we can assume with a high level of confidence that the living costs – and so the living wage - do not vary substantially in the mesoregions located out of these two metropolitan areas. Our conclusion, then, is that the living wage estimated in this report is applicable to and relevant for all of São Paulo State outside of the two major cities São Paulo and Campinas.

4. CONCEPT AND DEFINITION OF A LIVING WAGE

The definition of a living wage used in this report is a commonly used definition, agreed upon by the members of the Global Living Wage Coalition:

“Remuneration received for a standard work week by a worker in a particular place sufficient to afford a decent standard of living for the worker and her or his family. Elements of a decent standard of living include food, water, housing, education, health care, transport, clothing, and other essential needs including provision for unexpected events.” (Anker& Anker, 2017)

This report uses the Anker methodology to estimate a living wage. This is an internationally recognized methodology that has been used in many studies throughout the world, and provides a reliable way of estimating a living wage. A key idea behind the Anker methodology is that it assumes that living costs may vary considerably within the same country. So, it avoids any attempt to come up with a single estimate, especially for a country as complex as Brazil. The living wage is calculated on the basis of what is necessary for a basic and decent living in a specific setting. Therefore, living wage presented in this benchmark has been estimated for workers located in non-metropolitan areas of the State of São Paulo.

Key assumptions should be place and time specific; and should both meet the needs of a basic and decent standard of living and ensure that the disposable income, earned during regular working hours, can meet a family’s costs of living.

This report provides an estimate of the living wage, and gaps to a living wage. It does not address how to close the gap to living wage except to indicate that closing the gap will require changes across the entire value chain.

5. HOW A LIVING WAGE IS ESTIMATED

The methodology used in this report is based on the following principles: transparency in the process of calculating costs; normative basis for diet and housing standards (both international and national); mix of fieldwork and secondary data in order to make it more practical; and estimates of all relevant forms of worker pay.

¹¹ It is worth noting that the percentage of formal jobs in industry and services is less than 60% in the mesoregions of Araraquara, Bauru and Ribeirão Preto compared to 75% to 80% in the metropolitan regions. Formal jobs in these metropolitan regions are also much better paid, thanks to the higher productivity of the industry and services sectors (Table 4).

Several steps – presented in the upcoming parts of this report – are required in order to come up with an accurate and reliable living wage estimate. The basic costs to be estimated include the cost of a nutritious low-cost diet, basic acceptable housing, and other expenses, here labeled as non-food/non-housing costs (NFNH). It is important to stress that we are not speaking of individual workers but of families, which are the basic unit in this study. Thus, a typical family size needs to be determined, and for that we will rely on secondary household data. The same applies to the number of full-time equivalent adult workers expected to provide support for the family, as more often than not there is more than one person in the household providing for the livelihood of the family. Furthermore, a margin for sustainability and unforeseen events should be taken into account. Lastly, statutory payroll deductions and taxes need to be added to the net living wage in order to reach a gross living wage. These steps are shown in figures 1, 2, and 3 below.

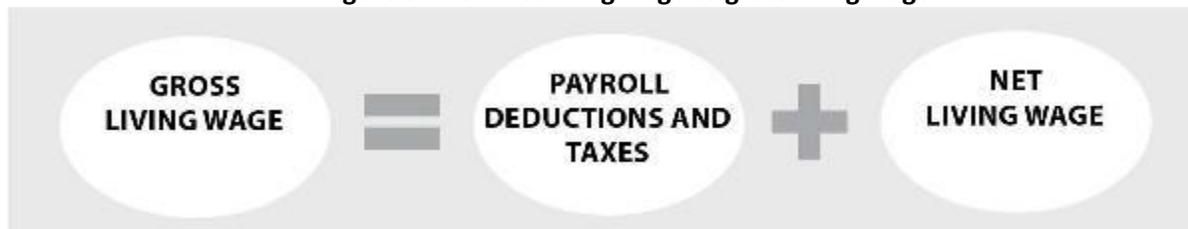
Figure 1: Components of a basic but decent life for a family



Figure 2: From cost of basic but decent life to net living wage



Figure 3: From net living wage to gross living wage



Source: Anker & Anker (2017).

Moreover, the estimates used in this report include not only foods costs, but also housing costs – both calculated on the basis of data collected during field research – and other important costs, drawing from government household surveys such as PNAD (National Household Sample Survey) and POF (Household Expenditure Survey). The latest PNAD survey available is for the year 2018, while the latest POF survey released relates to the years 2017/2018. Both surveys are conducted by the Brazilian Institute of

Geography and Statistics (IBGE). We also made use of RAIS/Ministry of Economy data for 2018 for gathering data on the prevailing wages in the orange sector.

Calculations of the share of non-food non-housing costs relied on secondary data. However, education and health expenditures were subject to “post checks” – using data collected during the field research – to assure the meaningfulness of the secondary data. Statutory payroll deductions were added in order to arrive at a gross living wage estimate (Anker and Anker, 2017).

It is worth noting that the gross living wage and the prevailing wage, that is, the value actually earned by workers, are estimates, which should be looked at in context. The process of assuring a living wage is paid to orange plantation workers living in the State of São Paulo, mostly in urban non-metropolitan areas, is not an immediate one. An understanding of how the value chain is organized and how value added is distributed along the chain, not only to workers and farmers but also to intermediaries and all the way up to the final retailers, seems the best way to ensure its application.

SECTION II. COST OF A BASIC BUT DECENT LIFE FOR A WORKER AND THEIR FAMILY

6. FOOD COSTS

6.1 General principles of model diet

The present section is aimed at estimating cost of a low-cost nutritious diet in our region. Concerning food costs, some principles work as guidelines. The diet should be nutritious, as set by national and international standards, and follow local food habits. Low-cost food items and brands that are widely available and of acceptable quality are chosen, as the main idea is a healthy but basic diet that is affordable and acceptable. Total food costs, therefore, set a sort of threshold level for these expenditures, below which a wage cannot be considered a living wage.

6.2 Model diet

In order to estimate food costs, the several steps taken were based on the Anker & Anker (2017) methodology. First, to obtain a model diet, we started with the food guide for a healthy diet produced by the Brazilian Ministry of Health (MINISTÉRIO DA SAÚDE, 2008)¹², which follows FAO and WHO recommendations.

The second step was to choose the items for each food group that make up the basic diet of the population of the citrus belt of the state of São Paulo. In this respect, we benefited from the interviews with the workers' families.

The number of calories for each person followed the calorie requirements recommended by WHO based on Schofield equations (see Anker & Anker 2017). To determine the required number of calories per person in our reference family, we used: (1) the average height of adults as reported in the household POF survey – 1.73 meters for men and 1.62 meters for women, on average, for urban areas, (2) the reference family size, here assumed as 4 people, two adults and two children, as explained further in section 11, and (3) the physical activity level of the members of our reference family: 1 vigorous member (adult), a hard worker on an orange farm, for instance, and 3 members with moderate physical activity (1 adult and 2 children). Sedentary, moderate and vigorous lifestyles depend on the kind of “work” and help determine the amount of energy expended and so number of calories requires during a day. This led to an average number of calories for each person of 2411 calories. The number of calories per 100 edible grams of the food items in our basic model diet was taken from an USDA (United States Department of Agriculture) database.

It is important to mention that Table 4 below indicates edible grams per day for each person in the family used to estimate our living wage. This means that skins, seeds, bones, and shells were excluded from total grams. The edible percentage of each food item was based on data from the USDA (United States Department of Agriculture, 2014). Inedible parts were, of course, included when we collected local food prices through a survey of local markets.

¹² *Guia Alimentar para a população brasileira*, MINISTÉRIO DA SAÚDE, 2008. We also used the more recent version of the Brazilian population food guide, updated in 2014.

Our model diet for each person includes in edible grams per day:

- 187 g of rice per day (around 1 cup)
- 25 g of maize per day
- 25 g of wheat flour per day
- 70 g of beans per day
- 50 g of bread per day (1 Brazilian “French bread”)
- 30 g of noodles per day
- 80 g of cassava per day
- 45 g of potato per day
- 109 g of meat per day (9 meat meals per week)
- 54 g of eggs per day (1 egg per day)
- 184 g of vegetables per day
- 92 g of fruit per day
- 240 g of milk per day (around to 2 glasses for every child daily)
- 24 g of sugar per day (4 teaspoons)
- 30 g of cooking oil per day (4 tablespoons)
- 2 cups of coffee per day for adults

Our model diet is consistent with local food preferences.

We chose the least expensive items and brands for each group of food items that were of acceptable quality and widely available. Rice and beans is a typical combination in Brazilian cuisine and both are plentiful in our model diet. For meat, we included the least expensive varieties, i.e., fresh whole chicken, fresh pork shoulder (very typical in the region), and also the cheapest variety of beef.

As for vegetables, cabbage and spinach were the least expensive green leafy vegetables, especially when compared to lettuce, for instance. Cassava was included in the model diet because it is a relatively inexpensive root and widely consumed in the region. Potato is also included, as it is heavily consumed in the region, yet its quantity was reduced as it is more expensive than cassava. Oranges and papaya are both included in the model diet because they have the lowest cost in the fruit group.

For fats, soybean oil was chosen because it is used for cooking most meals in Brazil and is an inexpensive oil. The quantity of sugar follows the recommendations of the Brazilian Ministry of Health. For milk, children aged 1 to 14 years should have at least 2 glasses a day according to the Ministry of Health. Drinking milk is not a habit for adults in Brazil. In a family of four, as is our case, this would result in two glasses for every child below age 14.

Table 4 below, presents the food cost per day per person for our model diet. 20% is added to this cost for additional miscellaneous food costs. These costs cover spices, salt, and condiments; wasted and/or spoiled food; and ensuring a minimum variety of food items. We used the following assumptions: 2% for spices, salt and condiments as indicated in total food expenditure according to POF; 4% for wastage and spoilage; and 14% for additional variety of food, here again following the recommendations in Anker & Anker (2017) for middle-income countries.

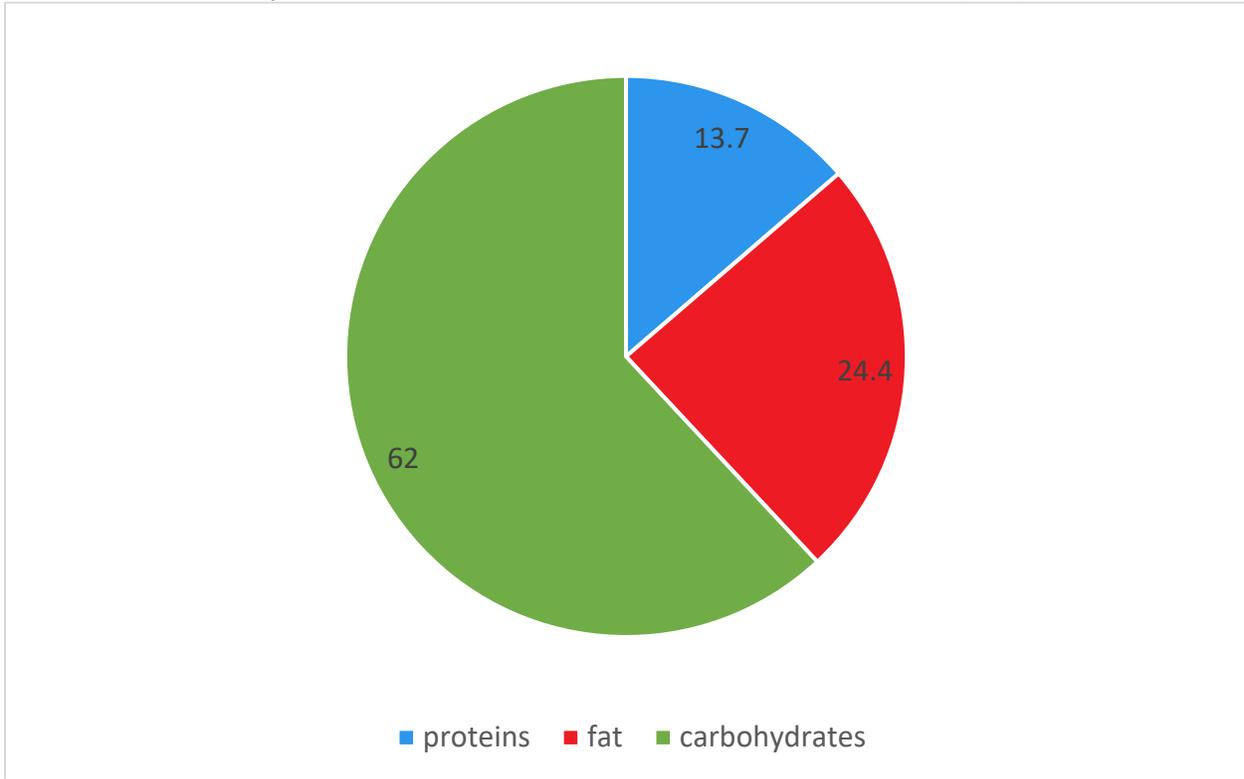
Table 4: Model Diet in Grams and Total Cost in R\$ and USD per day

Food Item	Daily edible grams per person	Daily costs for one person (R\$)	Daily cost for one person (USD)	Distribution of Costs in Model Diet (in %)
Rice	187	0.44	0.10	6.80
Maize	25	0.18	0.04	2.70
Wheat flour	25	0.06	0.01	0.90
Bread	50	0.49	0.11	7.50
Noodles	30	0.15	0.03	2.20
Potato	45	0.18	0.04	2.70
Cassava	80	0.25	0.06	3.90
Beans	70	0.36	0.08	5.50
Milk	240	0.6	0.13	9.30
Eggs	54	0.57	0.13	8.70
Beef	12	0.3	0.07	4.60
Chicken	85	0.83	0.18	12.70
Pork	12	0.2	0.04	3.10
Spinach	46	0.35	0.08	5.30
Cabbage	46	0.14	0.03	2.10
Tomato	46	0.31	0.07	4.80
Okra	46	0.47	0.10	7.20
Papaya	46	0.27	0.06	4.10
Orange	46	0.17	0.04	2.60
Oil	30	0.12	0.03	1.80
Sugar	24	0.04	0.01	0.70
Coffee	3.5	0.05	0.01	0.70
Total		6.52	1.45	100
Including miscellaneous costs (plus 20%)		7.82	1.74	

Source: The authors.

According to the Brazilian Ministry of Health's food guide, a healthy diet is one with the following distribution of macronutrients: 55% to 75% of carbohydrates; 10% to 15% of proteins; and 20% to 30% of fats. These are the same ranges recommended by the World Health Organization. Graph 3 presents the distribution of macronutrients in our model diet, which is within the above-mentioned intervals. Furthermore, for upper middle-income countries, as is the case of Brazil, the recommendation made by Anker & Anker (2017) is that the level of proteins should be around to 13-14%. The level of proteins in our model diet is 13.7%.

Graph 3: Distribution of Main Macronutrients in Model Diet (in %)



Source: The authors.

6.3 Food prices

Food prices were collected at different points of distribution in the citrus belt during the fieldwork, mostly in supermarkets where the workers interviewed said they shopped for their food once a month. Prices were also collected from street markets and fairs which are of less frequent use ¹³.

Of the 16 markets visited for food price collection, they were divided as follows: 2 were wholesale markets, 6 supermarkets, 6 neighborhood markets, 1 street fair, and 1 butchery. We chose the average prices after taking out the outliers.

6.4 Food cost

Cost of our model diet comes to R\$ 7.82 per person per day and R\$ 31.28 for a family of four people.

6.4.1 Value of free lunch in school and its effect on the cost of food prepared at home

We assume that children and teenagers attend public schools where they have free meals for 200 days a year, according to the Brazilian school calendar. These free meals, which are provided by public crèches and schools reduce the number of meals that need to be prepared at home and therefore food costs for families. Assuming lunch amounts to 40% of food needs per day for each child and children eat less than

¹³ The Brazilian consumer price index for food costs – “IPCA alimentação” – does not show an important variance related to seasonality. We can assume then that it does not affect food prices in the study region.

adults, we determined the value of meals prepared at home because of free school lunches and then applied the formula below, as recommended by Anker & Anker (2017):

$$\frac{\text{Number of children in reference family} \times \text{free lunch value} \times \text{number of years children have access to free lunch}}{18 \text{ years of childhood} \times \text{number of school days}} / 365$$

In Brazil, free meals are provided by the public education system from ages 4 to 17¹⁴, totaling 14 years. Using the above formula, our estimate is that each free school meal saves an average¹⁵ of R\$2.8 per day. It should be said that this is not the cost of a meal in schools, but the amount which is saved by the family on account of children eating lunch at school not eating lunch at home during school days. Applying the formula, which takes into consideration that free lunch is provided for 200 out of 365 days per year, and for 14 out of 18 years of childhood, the average value of free school meals per day for the family comes to R\$ 2.39 (R\$ 0.60 per person family per day). We subtract this amount from total food costs of families per day from Table 5. The final step is to calculate monthly food costs for a family of four. The figure of R\$ 879 can be seen below (Table 5).

Table 5: Daily Food Costs, Value of Free Lunch at School and Total Monthly Food Costs in R\$

	Values of Food Costs
Total Food Costs for a Family of Four People per Day If All Meals Were Prepared at Home	31.28
Less Value of “Free Lunch” in School for Two Children for 200 days Prorated to Per Day	2.39
New Total Food Costs per Day to Family of 4	28.89
Adjusted Monthly Food Costs for a Family	879

Source: The authors.

¹⁴ Although not relevant for estimating a living wage because we assume that children attend school through secondary school, it is worth mentioning that rates of school enrollment are above 90% for ages 4-14. For teenagers from 15 to 17, it was still high: 87.4%. Data from PNAD 2018 for the state of São Paulo.

¹⁵ The Anker and Anker methodology (2017) includes an excel file for estimating food cost of a meal that meets the required calories as prepared at home for every single age from 0 to 17. We calculated an arithmetic average for children ages 4-17 in order to determine the free lunch value.

Image Set 1: Examples of Local Markets where workers shop.



Street Market in Bauru



Supermarket in Bebedouro

Source: Authors



Neighborhood market in Araraquara

7. HOUSING COSTS

7.1 Standard for basic acceptable local housing

In order to estimate the cost of local housing, we adopted both international and Brazilian (Secretaria Nacional de Promoção e Defesa dos Direitos Humanos, 2013; IBGE, 2004) minimum standards for healthy/adequate housing. Additionally, we also delved into the more detailed information found in publications specializing in minimum low-income housing standards for the Brazilian population (FOLTZ & MARTUCCI, 2005; BARBO & SHIMBO, 2006). Our standards can be summed up as:

- Housing should provide physical and structural safety and protect from the cold, humidity, rain, wind, and other health threats;
- Number of bedrooms should be enough to require no more than two people in one bedroom.
- For a family of four people, a house should have a living room, two bedrooms, an indoor bathroom, and a separate kitchen. Total living space should be at least between 44.5 and 55 square meters, including outside balcony and veranda¹⁶;
- Walls should be made of brick or plywood, yet stone and adobe walls, if adequately built and maintained, meet the standards for outside walls;
- For roofs, concrete slabs, zinc sheets, coated asbestos, clay tiles, and plywood are adequate;
- Floors should be cemented, tiled or made of plywood;
- Access to electrical energy;
- Access to water supplied by a water utility;
- Access to a sewage system or, if not, to a septic pit;
- Access to garbage disposal; and
- Not in a slum.

Houses visited during fieldwork were concentrated in the cities of Araraquara, Bebedouro and Bauru and smaller cities nearby. Within the larger cities, we visited the neighborhoods where agricultural workers live. All the neighborhoods visited had adequate infrastructure and could not by any criteria be considered slums. The walls were painted and made out of bricks, having tiled floors and indoor water and toilet. For a family of four, the average size of the houses considered acceptable (with two bedrooms) was of 76 square meters, that is, above the minimum standard.

All the acceptable houses as shown in Table 6 below were in good condition and clean, and had adequate ventilation and space. They were all hooked to electricity, water and sewage systems, and garbage disposal was available. All of them had flush toilets and water. In terms of household appliances, TVs and refrigerators were found in all houses visited. Computers were found less often. Some of the houses had a garage with either a motorcycle or a car.

¹⁶ According to CHDU (State of São Paulo Company of Housing and Urban Development), the minimum size of an adequate house for the state of São Paulo is 48 square meters. It follows the pattern of Caixa Econômica Federal (CEF), the public bank in charge of financing low income housing in Brazil <http://www.cdhu.sp.gov.br/-/exposicao-de-casa-modelo-da-cdhu-e-destaque-da-feicon-batimat-20-1>

Table 6: Characteristics and conditions of the houses visited, rents and acceptability according to our healthy housing standard

Acceptable standard?	Rent in local currency	Size & Rooms	Comments
NO	600	54 sq mts LR 2BR K	Very old house with poor ventilation, uncoated floor, kitchen without ventilation.
NO	600	60 sq mts LR 3BR K	Very old house, with leakages, hole in the walls, poor lighting, bathroom in poor condition.
NO	600	50 sq mts LR 2BR K	House in good condition. Cracked cement walls. Unsafe neighborhood.
NO	550	89 sq mts LR 2BR K	House well located but very old. Poor condition. Masonry not coated in some points. Termites in almost every room, molds lining dropping.
NO	500	75 sq mts LR 2BR K	Uninhabited house. Apartment in fair to good condition, damaged floor, walls in reasonable condition, hole in the laundry plumbing wall. Indoor water and toilet. Flush toilet. Tile floor. Removed place, although with adequate public transport. Wasteland in the neighborhood.
NO	500	60 sq mts 2BR K	Worn house built by CDHU, SP government company. Despite being in good condition, it is not on acceptable standard because it has person per room density above 2.
NO	500	102 sq mts LR 2BR K	House in fair to good condition. Bathroom and kitchen very damaged with broken tiles and damaged doors.
NO	500	50 sq mts LR 2BR K	Poor condition. Bathroom in very poor condition despite indoor water. Poor ventilation. Damaged roof.
NO	425	60 sq mts LR 2BR K	House in poor condition. Stuffy, damp bathroom. Water supply through tank. Kitchen without ventilation.
YES	750	70 sq mts LR 2BR K	New apartment. Very good condition.
YES	750	90 sq mts LR 2BR K	House in fair condition with damaged roof.
YES	700	275 sq mts LR 2BR K	Very good condition. New house, cement base.
YES	700	60 sq mts LR 2BR K	House in fair to good condition. Neighborhood far from the city center.
YES	675	120 sq mts LR 4BR k	Standard house with pool. Asbestos roof.
YES	650	55 sq mts LR 2BR K	Standard house.
YES	650	48 sq mts LR 2BR K	House in good condition. Neighborhood far from the city center.
YES	630	105 sq mts LR 2BR K	House in good condition. Damaged roof.
YES	600	60 sq mts LR 2BR K	House in good condition built by CDHU, SP government company.
YES	580	92 sq mts LR 2BR K	Standard house, asbestos roof.

Acceptable standard?	Rent in local currency	Size & Rooms	Comments
YES	550	60 sq mts LR 2BR K	House in fair to good condition. Neighborhood far from the city center.
YES	500	50 sq mts LR 2BR K	Good house, needs maintenance on walls and roof. Good ventilation, lining in good condition.
YES	500	60 sq mts LR 2BR K	Standard house.
YES	460	51 sq mts LR 2BR K	Good location. Apartment with indoor water and toilet. Flush toilet. Tile floor.
YES	450	50 sq mts LR 2BR K	House within the standards. Outer uncoated walls.
YES	450	50 sq mts LR 2BR K	Standard house although simple.

Source: the authors.

Image Set 2: Examples of Acceptable Housing



House in Bebedouro



House in Araraquara



Kitchen in an acceptable house

Source: The authors.

7.2 Rent for basic acceptable housing

Houses visited which met our basic healthy housing standards, mostly rented by agricultural workers, provided us a range of housing rental prices. When the dwelling was owned, residents were asked to mention the rental price of equivalent housing in the neighborhood. A relatively well-organized housing market made it possible for us to establish rental values, which ranged from R\$ 450 to R\$ 750 for houses meeting all the basic standards. We use the average value for the acceptable houses having two bedrooms (15 out of 25) and at least 48 square meters of living space, that is, R\$ 580 (Table 7).

It is important to point out that 2/3 of the housing visited were located in the larger cities of Araraquara, Bebedouro and Bauru and the other 1/3 in the smaller cities nearby. This distribution represents more or less the proportion each kind of city has in the total population of the state of São Paulo without the metropolitan areas of São Paulo and Campinas.

7.3 Utilities and other housing costs

To obtain an estimate of utility costs, we used POF 2017/2018 data and found that 39.7% of the rental value is spent in utilities like electricity, water and cooking gas. This amounts to R\$ 230 (Table 7). It is important to notice that updating the value of utilities to February 2020 brings up a value very close to the cost of utilities we found from our fieldwork.

As the acceptable houses rented by the workers were in good condition, we did not add any amount for maintenance and repair costs, which is more often than not the responsibility of the landlord.

It is worth noting that the share of house rental and utility costs in total living costs, presented next in Section 10, is 21.7%, below the top limit of 30% which is often used as a limit for affordable housing.

A final point already made in the beginning of the report: rural areas in the state of São Paulo have become increasingly urbanized. As a consequence, most of the agricultural workers live outside of rural areas, with the exception of small producers; and the domestic workers, or the ones performing special tasks in the larger farms.

Table 7: Housing Costs and Main Components in R\$

	Values of Housing Costs
Rent	580
Utility Costs	230
Maintenance and Routine Repair Costs	0
Monthly Housing Costs for a Family	810

Source: The authors.

8. NON-FOOD AND NON-HOUSING COSTS

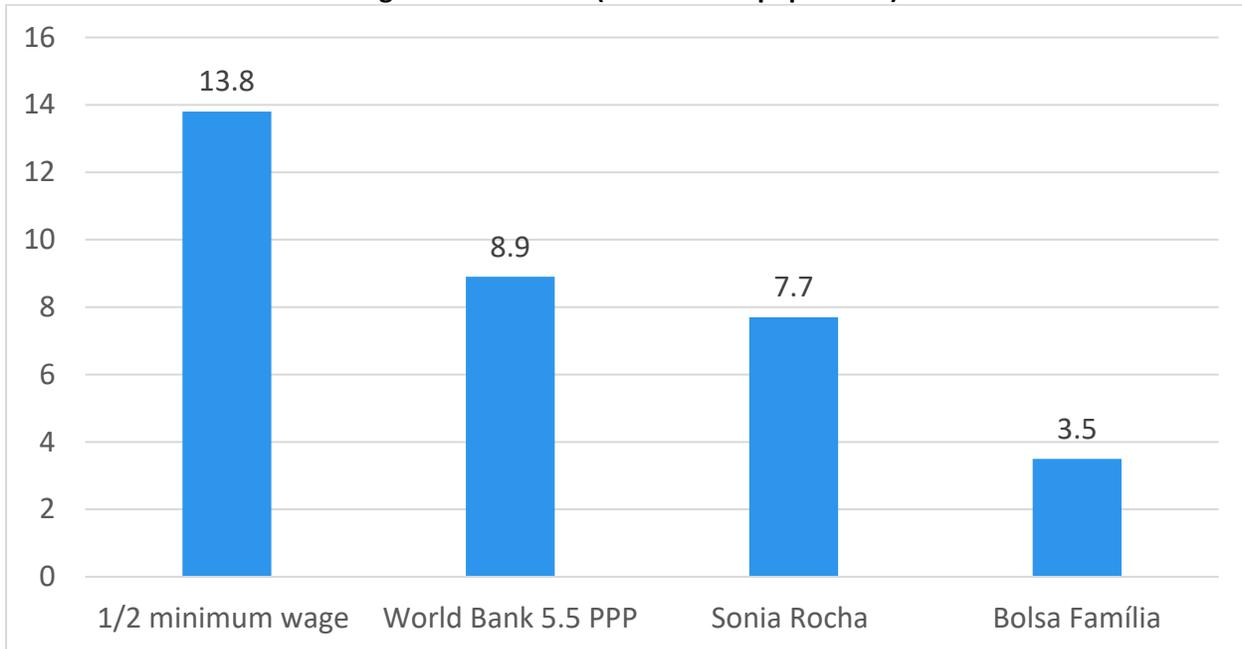
One of the main advantages of the methodology developed by Anker & Anker (2017) is that it investigates not only food and housing costs, but also non-food and non-housing costs. For instance, in most countries, poverty lines are calculated by estimating food costs and then adding a non-food value, the latter accounting for the rest of the basic revenue a family needs in order not to be considered poor.

The approach followed here is different from typical poverty line estimates. The model diet should be nutritious and adequate not only in number of calories, but also in macro nutrients and fruits and

vegetables and housing should meet minimum healthy standards. As we did in the previous sections, these values were calculated on the basis of data collected in the field in a region acknowledged as being relatively rich in terms of per capita income and average wages when compared to urban Brazil.

In order to calculate the non-food and non-housing (NFNH) cost, microdata taken from the POF 2017/2018 household expenditure survey was used as our point of departure.

Graph 4: Population below different poverty lines for the State of São Paulo without the metropolitan region of São Paulo (in % of total population)



Source: the authors.

We used the survey data for the second and third deciles of family expenditures for the State of São Paulo without the metropolitan region of São Paulo. Usually, the Anker methodology recommends to use the third decile or fourth decile for developing countries in order to not reproduce poverty. However, as the State of São Paulo without its metropolitan region has a lower percentage of poor people than the rest of the country, we believe that by considering expenditures from the 10th percentile to the 30th percentile of families is enough to exclude poor families. In fact, poverty rates indicated by both Sonia Rocha poverty lines which are widely used in Brazil and the World Bank poverty line for upper middle-income countries are below 10% for our region. Only 3.5% of the families in the region are entitled to access Bolsa Família, the country's program of cash transfers. Even if the so-called "national" poverty line is used, 13.8% of the families would be labeled as "poor". However, this is just a threshold to include the Brazilian population in the Single Register System (CadÚnico). It is implied they have some sort of social vulnerability, which is a much wider concept than income-based poverty.

The initial figure for NFNH from the household expenditure survey data for second and third deciles was 48% of total household expenditures. We adjusted this in several ways in order to more accurately estimate the living wage. First, tobacco was excluded from NFNH expenditures (0.9%) as being unnecessary, and therefore from total costs. Second, the item "alcoholic beverages" (0.6% of the total) was shifted from food – as it is not in our model diet – to NFNH.

Third, food eaten away from home is available in the POF survey only for Brazil's urban areas and accounts for 3.5% of total household expenditures. In the case of Brazil, food eaten away is not included in the food group when survey statistics are reported, but is included under restaurants. Therefore, it was necessary to increase the food cost percentage as reported in the secondary data to include value of the food in food eaten away from home. However, the amount spent on meals eaten away from home does not refer only to the food itself but also to the profit made and the services provided by the establishment selling the meals. Therefore, we add half of the cost of meals eaten away from home to the cost of food, because we assumed that half of the cost of meals eaten away from home is actually for food itself, while the other half was for services, overheads and profit. This assumption is based on the fact that in Vietnam food is 70% of food eaten away, whereas the same percentage is 50% in Costa Rica and the Dominican Republic, and 30% in the USA (Anker& Anker, 2017), probably because, in the USA, wages, overheads and profits are higher as a share of total sales. Brazil should be close to the Latin American countries mentioned above, so we added 1.75% to food expenditure (half of the 3.5% that is in this category), and left the other half in restaurants, that is in NFNH for services and profits related to food eaten away from home.

Fourth, we subtracted 5.7% of total expenditures from NFNH, related to the acquisition of cars, and fuel, and maintenance, assuming workers only use public transportation, which is available and in good condition in the cities we visited. The total value for purchase, operation and maintenance of private personal transport category now becomes 7%. We excluded 1/2 of this total value spent on passenger cars and motorbikes to take into consideration that public transport costs are lower. So, if workers use public transportation instead of private vehicles, they will spend only 1/2 of what they would otherwise spend on transport.

A last adjustment was made to miscellaneous expenditures, another POF survey subset, cutting its percentage of 6.4% of total expenditures by half. This group is made out of acquisition of pets and maintenance, occasional trips, toys and games, sport material, gambling and lottery, books, musical instruments, religious ceremonies, flower and plants, and so forth. Some of these expenditures are essential, but we need to bear in mind that there is also already a 3.1% of total expenditures for the item "recreation and culture". We also took gambling and lottery out of miscellaneous as being unnecessary for decency. As mentioned before all the percentages relate to the average of the second and third percentile of family expenditures.

Table 8: Share of Food (F) and Non-food Non-Housing (NFNH) in total expenditures for second, third deciles and average of both (in %) after adjustments, and ratio NFNH/Food for the State of São Paulo without the metropolitan region of São Paulo

Major expenditure group	3rd decile	2nd decile	Average 3rd and 2nd deciles
Food	16.72%	17.37%	17.04%
Alcohol	0.74%	0.51%	0.62%
Tobacco	0.00%	0.00%	0.00%
Restaurants and hotel	1.79%	1.71%	1.75%
Clothing and footwear	4.36%	3.87%	4.11%
Household contents and electrical appliances	4.64%	5.15%	4.89%
Health	7.19%	6.41%	6.80%
Education	2.07%	1.92%	1.99%
Transport	7.22%	6.81%	7.02%
Communication	2.70%	2.43%	2.57%
Recreation and culture	3.40%	2.82%	3.11%
Miscellaneous goods and services	3.25%	3.20%	3.22%
Gambling and lottery	0.00%	0.00%	0.00%
TOTAL NFNH	37.35%	34.86%	36.11%
Preliminary NFNH/Food ratio	2.23	2.01	2.12

Source: the authors.

After all of these changes, the results were 36.11% for NFNH and 17.04% for food for our region in the state of São Paulo discounting the metropolitan region of São Paulo, and according to the average of second and third deciles, as presented in Table 8 above.

Thus, the NFNH to Food (F) ratio amounted to 2.12. This ratio is significantly higher compared to other developing countries, where a higher percentage of total expenditures is found for food. The percentage for food found for this area of Brazil is closer to that found in developed countries. However, we should bear in mind that the region we are looking at in terms of Human Development Index (HDI) is closer to Southern Europe than to other Latin American areas. This is also a proof that the average of second and third deciles is a good choice. If we had taken the fourth decile, for instance, the living wage would have been much higher.

NFNH preliminary cost is R\$ 1,863, that is, 2.12 times R\$ 879 for food, according to the formula below:

$$\text{NFNH to F (food) ratio} \times \text{cost of model diet for a family of four}$$

Notice that now we have food, housing and non-food non-housing costs, which means that we are getting close to total living costs, as shown in Section 10, an important step for estimating our living wage.

9. POST CHECKS OF NON-FOOD AND NON-HOUSING COSTS

The next step is to check the secondary household expenditure data on health care and education against the expenditure data collected in the fieldwork to make sure that secondary data amount for these is sufficient. According to the secondary household expenditure data, these expenditures were:

- Health (6.80% of total expenditures, R\$ 351 per month)
- Education (1.99% of total expenditures, R\$ 103 per month)

The values above were estimated by multiplying preliminary NFNH costs by the percentage of each cost (health and education) on adjusted NFNH percentage on total expenditures for households at 2nd and 3rd deciles for nonmetropolitan urban state of São Paulo. ‘Post checks’ are needed because these expenditures vary widely across regions, sometimes reaching levels very different from the averages obtained based on secondary survey data.

In the case of our region, differences in expenditures estimated from secondary data for health and education were small when compared to the values obtained in the fieldwork. This fact confirms the accuracy of the secondary data used in this report.

9.1 Health care post check

For health, the percentage of its expenditures on total expenditures (6.8%) seems reasonable. We are referring to the average of second and third deciles of families in a relatively rich part of the country. For instance, the national average is 8.3% of total family expenditures directed to health care¹⁷. It is worth mentioning that averages in a very unequal country such as Brazil combines families with expensive private health care and other families with access only to the public system. The latter is the situation we found for the families visited in the fieldwork.

Ever since the creation of the National Public Health System (SUS), in 1988, with the Brazilian new Constitution, health system has become universal, even though its quality varies a lot across the country. The areas visited in the State of São Paulo have in general good quality services. However, for instance, the reach of the preventive “Saúde da Família” programme goes from 89% of the SUS population (not having private health insurance) in Araraquara to 19% in Bauru, according to DATASUS and National Agency of Supplementary Health (ANS) elaborated by us. The same data shows the percentage of physicians and dentists for every thousand people is very different. That is why we should assure workers have the sufficient funds available to sometimes have medical appointments out of the public system. The same is the case with medicines, even though some of them are provided free of charge, especially for diabetes and hypertension, as well as some antibiotics.

In the interviews we made, we checked costs with some clinics treating low-income people. We founded that an appointment with a general practitioner costs on average R\$ 150 and a dental consultation fee is around R\$ 200. Also, monthly expenditures on medicines are on average around R\$ 165 per family.

It should be noticed as well that the bulk of worker families we interviewed did not have private health insurance. This is confirmed by the DATASUS and ANS data. For the larger cities visited in the fieldwork – Araraquara, Bebedouro and Bauru – 40% to 50% of the population had private health insurance, most likely located in the higher income strata.

By using the assumptions presented above, we come out with the following estimates for health care expenditures for a family of four in the citrus belt area:

- One private medical appointment for every member of the family each year equal to R\$ 600 over the year,
- One private dental consultation for one member of the family each year equal to R\$ 200,

¹⁷ *Conta-Satélite de Saúde: Brasil: 2010-2017*, IBGE, 2019.

- Monthly expenditures on medicines of R\$ 165 for the entire family, leading to a yearly amount of R\$ 1,980.

This leads to a preliminary monthly expenditure on health care of R\$ 232 per family monthly. This cost is 2/3 of the R\$ 351 value reached using secondary data from POF. However, in the post check we did not take into consideration emergencies and serious illness which may represent significant expenditures not covered by the health public system. That is why we decided that the post-check should not bring about a change in the value of R\$ 351 for health care.

9.2 Education post check

In the case of education, the post-check is easier. Public schools in Brazil are either managed by municipalities or by the State government, in our case State of São Paulo. There are no school fees and most of the learning material is provided by the public system.

However, there are expenditures covered by families such as uniforms, school bags and some school material, apart from fees related to special activities. We estimate that the average monthly cost for a family of 4 with 2 children is around R\$ 80. This does not consider courses which members of the families, including the parents, could attend in order to improve their skills.

This R\$ 80 estimated monthly cost is very close to the R\$ 103 found by using secondary data. As in the case of health care, we do not think this small difference should lead to a change in the value spent on education according to our estimate previous to the fieldwork. Actually, the fieldwork assures the accuracy of our secondary data.

10. PROVISION FOR UNEXPECTED EVENTS TO ENSURE SUSTAINABILITY

As Anker & Anker (2017) point out, a marginal value should be added to the living wage to allow for unexpected events and sustainability. This is important to prevent the family from falling into poverty due to unexpected circumstances. The methodology adopts a standard percentage of 5%, with a nominal value of R\$ 178 here. In Table 9, we sum up all the living costs measured so far.

Table 9: Monthly Total Living Costs in R\$

	Values of Living Costs
Food Costs	879
Housing Costs	810
NFNH Costs	1,863
Unexpected Events	178
Total Living Costs	3,729

Source: The authors.

SECTION III. LIVING WAGE FOR WORKERS

11. FAMILY SIZE NEEDING TO BE SUPPORTED BY LIVING WAGE

The estimate of the family size used in this report was based on PNAD 2018 survey¹⁸ data for the State of São Paulo, excluding the São Paulo metropolitan area¹⁹. Based on the PNAD data, we excluded one-person households from our estimate as recommended by Anker & Anker (2017) because such households do not have children and living wage is a family concept. According to Table 10, the final value reached for the average family size was 3.64 people.

Table 10: Household size for the State of São Paulo less São Paulo metropolitan area - 2018

Family size	Rural	Urban	Total
Average Household size	3.64	3.49	3.50
Average Household size excluding single person HHs	3.78	3.63	3.64

Source: Annualized Continuous Pnad, 2018.

Another way of determining reference family size would be to add the State of São Paulo's total fertility rate of 1.66 to the number corresponding to a couple (2), adjusted in order to consider the under 5 child mortality – 13,5 deaths for each 1000 children born alive (Fundação Seade, 2018) – which leads to a family size of 3,64, exactly the same size reached by the other estimate.

However, these figures seem to underestimate an appropriate reference family size for determining a living wage for two reasons. First, they do not allow for the future replacement of the present adult population. Secondly, they fail to take into account that many families in Brazil are single-headed, meaning that only one adult is responsible for meeting the livelihood of the children.

So the possible overestimation of food costs by using a family size of four people (two adults and two children) would be compensated for by the fact that in many families there is only one full-time worker – in the case of single-headed families – providing for the needs of the family. As we shall see below, we use 1.68 is the number of adults working full-time in each family. This is denominator used to divide total living costs of the reference family.

12. NUMBER OF FULL-TIME EQUIVALENT WORKERS IN FAMILY PROVIDING SUPPORT

Now we proceed to estimate the number of full-time workers in the family, as we assume that more than only one person is responsible for meeting the cost of living of our reference family.

In order to do so, once again we followed the recommendations in the manual for estimating the living wage (Anker and Anker, 2017). The formula for obtaining the average rate of full-time work per adult in prime working ages 25-59 is the following:

¹⁸ We used the new Continuous PNAD annualized, as its data is offered by quarters.

¹⁹ For PNAD data, to exclude the metropolitan region of Campinas, as we did for RAIS data, is more complex. However, for family size and labor market data, their variation within the State of São Paulo is less important, with the exception of the metropolitan region of São Paulo, also much larger than the Campinas one. The former has a population almost seven times higher than the latter (Table 4).

$$\text{Average adult labor force participation rate} \times (1.0 - \text{unemployment rate}) \times (1.0 - [0.5 \times \text{part-time employment rate}])$$

The data refer to the State of São Paulo less the metropolitan area of São Paulo according to national household survey PNAD just as for the above section. The values were calculated for 2018 for ages 25-59 for all the rates using the formula above. The cut-off level set for part-time work was 30 hours a week. Thus, a full-time worker is someone working more than 30 hours, either as a formal, informal or self-employed worker, irrespective of the wage earned.

The rates are shown in the Table 11 below, broken down by sex.

Table 11: Labour Market Data for the State of São Paulo less São Paulo metropolitan area by sex for ages 25-59, 2018

Variable	Males	Females
Labor force participation rate	90.1	69.7
Unemployment rate	7.1	10.8
Part-time employment rate	5.8	25.5
Percentage of full-time work of spouse	81.3	54.2
# Full-time equivalent workers per couple (assuming one adult working full-time)	1.68	

Source: Annualized Continuous Pnad, 2018.

The average ratio of full-time work per adult, by applying the formula above, is 0.68. As we have one adult assumed to be already working on the orange farms, the number of full-time equivalent workers in the family is 1.68. The main idea underlying the formula is that the higher the participation rate, the lower the unemployment rate, and the lower the part-time work, the more likely it is that another adult family member will be working, which would result in a lower living wage.

We calculate the average of the percentage of full-time work for males and females, not taking into consideration their different shares in the labour market, as we consider the living wage is for a typical nuclear family with one adult male and one adult female member.

For our case, this means dividing total living costs of R\$ 3,729 by 1.68, resulting in R\$ 2,220 (USD 493) as the net living wage for this specific area.

It should be acknowledged that in February 2020, when the fieldwork was conducted, the economic recovery – that is, before the Covid-19 crisis - was still far away from many earlier forecasts. GDP growth in 2019 was 1.1%, even below the 1.3% reached in the two previous years. So, a very mild growth after a sharp recession faced in 2014-2016 period, during which there was a fall of 10% in the GDP per capita income. As a consequence, the labour market figures, by early 2020, were not very different from the 2018 PNAD data used here.

13. TAKE-HOME PAY REQUIRED AND TAKING TAXES AND MANDATORY DEDUCTIONS FROM PAY INTO ACCOUNT

One final step is required. The living wage presented above was estimated having in mind the total costs workers' families face to afford basic decency. It should be looked at as a net take-home pay required for the State of São Paulo non-metropolitan areas.

However, the gross value, which needs to be actually earned, should take into account that workers contribute to social security and pay union fees. So, at first, there is a 12-percent deduction²⁰ in their gross wage for social security. It means that we should add R\$ 306 reais (US\$ 68) to our net living wage.

The labour reform of 2017 did away with the mandatory union dues, which stated a contribution for each wage worker of an amount equivalent of one day of work per year. In practice, many unions in order to maintain their activities are signing agreements with enterprises and employers' unions that set up union confederation and/or union support dues ("contribuição confederativa" or "assistencial" in Portuguese) of a monthly value. These union dues, collected by the employers and sent to unions, varies from 1% to 2% of the gross wages in some collective agreements, as we found out during the fieldwork²¹. Although this practice is not generalized in the agricultural sector, our view is that worker representation and collective bargaining are fundamentally important rights for workers and for this reason we include 1% union dues in our gross living wage. Adding another R\$ 26 (USD 6) for union fees, we reach a gross living wage of R\$ 2,551 (USD 567).

In terms of income tax, the gross living wage falls into lowest taxed income range, from R\$ 1,904 to R\$ 2,827, with a 7.5% rate. However, workers have some room for deduction, which comprises the social security contribution and a value for each dependent child. Considering two dependents, which is reasonable for our family size of 4, workers receiving our estimated gross living wage would not be charged income tax.

²⁰ This percentage was 9% up to February 2020. Changes in the social security system increased this percentage to 12% for the wage gross values within the range R\$ 2,089.61 to R\$ 3,134.40, the range in which our gross living wage is located. This percentage is used in this report.

²¹ This is the case of the two collective agreements we had access to during the fieldwork. According to FERAESP, 217 out of 299 collective bargaining agreements signed in 2019 for rural wage workers of all agricultural sectors in the state of São Paulo had provisions for union dues. "Relatório de Acordo Coletivo de Trabalho (ACT) e Convenção Coletiva de Trabalho (CCT)", FERAESP, 2019.

SECTION IV. ESTIMATING GAPS BETWEEN LIVING WAGE AND PREVAILING WAGES

14. PREVAILING WAGES IN THE ORANGE AGRICULTURAL SECTOR IN THE STATE OF SÃO PAULO

In this section, we describe the process for estimating prevailing wages for different types of agricultural workers in the orange production of the State of São Paulo. The information was gathered from RAIS 2018. We also used information collected in the fieldwork, mainly from workers and trade unionists. It is important to note that although we reached out to the three big orange companies – Cutrale, Citrosuco and Dreyfus – we were not able to visit their farms. Citrosuco indicated that due to tight schedules they were not able to set up a meeting. The idea was to interview the farm managers and the workers and have an idea of how the farms are organized, its division of labour and the different levels of wages. As we found out during our fieldwork, access to these farms is highly restricted.

14.1 Basic wage, cash allowances and bonuses, and overtime pay

During the fieldwork, we detected different types of workers in the orange production of the State of São Paulo's citrus belt. Two occupations are mostly of permanent workers. General service workers in charge of the agricultural cultivation and taking care of the groves. And machine workers – labeled “tratoristas” in Portuguese – who use chemical products, many implements and tractors, which means they are more skilled than the general service workers.

The third important occupation, the orange pickers, concentrates the bulk of the workers. The work here is totally manual, as this crop is not prone to mechanization, at least for the harvest, according to key informants²². The nature of its work is totally different from the other two occupations. It is much more intense as we shall see later and paid by “bags” of orange picked, that is, by piece rate production²³.

Depending on the height of groves, workers need to use stairs which cause reduction in production as it demands more time and increases the risk of accidents. The Reference Center in Worker's Health (CEREST) in Bauru reported to us that orange pickers suffer with accidents resulting from falls, venomous animal bites and repetitive strain injuries (RSI/WRMD)²⁴.

Apart from the three occupations mentioned above, there are also the ones labeled “volantes”, which is a sort of occasional agricultural worker performing different tasks. These workers are usually hired by smaller farms, especially for the harvest.

We can have an idea of the distribution of workers by occupation in the orange sector, by using disaggregated RAIS data which captures information on contracts of registered wage-earners. These data

²² See also Imaflora report “O trabalho migrante na base do agronegócio brasileiro”, In: *Perspectiva Imaflora*, n. 7. IMAFLORA, 2019 October, p. 4.

²³ It is important to mention that the minimum wages are guaranteed if the production is not enough in case of rain or other causes.

²⁴ The Reference Centers in Worker's Health (CEREST), a public institute at the municipal level linked to Brazilian Federal Public Health System (SUS), develops actions of occupational health surveillance in order to improve the work safety in the orange production.

refer to the five most important mesoregions of the citrus belt – including the three core ones in which our fieldwork was conducted.

Table 12 below shows that the orange pickers represent 63.4% of total formal jobs, whereas 26.7% of the jobs go to general service and machine workers in the orange sector. The occasional workers represent 9.9% of the total. It is important to stress that 81.7% of orange pickers have contracts which last for less than one year. The other extreme is the machine workers, with 24.8% of short-term contracts.

Table 12: Distribution of formal sector jobs by occupation and share of short-term contracts in the orange sector of the State of São Paulo *, 2018

Type of activity	% of total formal jobs in these occupations	% of formal workers with less than one-year contract
Orange pickers	63.4	81.7
General service workers	13.4	60.4
Machine workers	13.3	24.8
Occasional workers	9.9	55.8

Source: RAIS, 2018.

*the data refers to the sum of the five most important mesoregions of the State of São Paulo in terms of formal jobs in the orange sector.

Actually, the share of orange pickers in terms of total orange workers is larger than indicated in the figures presented in the Table 12, as they concentrate the non-registered wage earners, that is, workers not having formal contracts under the Brazilian labor law, as we observed in the fieldwork.

This is also the occupation in which migrant labor is most likely to be found. These workers come mostly from the Northeastern region, the poorest of the country. It is not a peculiarity of the orange sector, as these workers are also found in the coffee and sugar cane production. But in these other crops, mechanization in harvest has become more widespread. An important percentage of migrant workers can be labeled as “temporary permanent migrants” as they come every year to work in the citrus belt. In the case of these workers, non-registration is more common. According to a legal ruling (“Instrução normativa” in Portuguese) n. 76, employers should offer safe and free transport from their places of living to where they are hired. However, this has not been often followed in practice, according to Imaflora, and even certified farms have not been able to change the farm’s behavior related to the migrant labor force

²⁵

Especially after the 2017 labor reform, the inspection made by Labor Public Prosecution (Ministério Público do Trabalho) and Ministry of Labour in Brazil has been weakened in the country, which affected also the citrus belt region. This was compounded by the shrinking budget and cancelling of public recruitment of these cadres. Before there used to be task forces with both entities working together with unions in order to file complaints and investigate the situation on the ground ²⁶. According to some interviews, the weakening of the regional Labor Prosecutors and the regional representatives of the

²⁵ IMAFLORA, 2019, p. 4-8.

²⁶ This was indicated to us, not only by trade union representatives, but also from the Public Prosecutor in Bauru, the Ministry of Labour representative in Bebedouro and the CEREST officer in Bauru. See the following link with the 2015 operation of Labour Public Prosecution, held in the citrus belt area, when migrant workers were found illegally hired and living in unhealthy conditions. <http://www.prt15.mpt.mp.br/informe-se/noticias-do-mpt-campinas/335-operacao-laranja-azeda-flagra-alojamento-precario-em-fazenda-na-regiao-de-itapetininga>

Ministry of Labor – which was merged to the Ministry of Finance after 2019 - together with the weakening of trade unions highly impacted by the union reform²⁷, has led to an increase in the number of non-registered orange pickers.

In most of the cases, general service workers and machine workers are hired directly by the farms, whereas in the case of orange pickers they are mostly hired by the consortia of employers²⁸, which is provided for in the Brazilian Social Security Law since 2001. This civil company – acting as a labor intermediate with its own legal status – is entitled to employ and supply workers to the farms, especially the big ones.

The orange pickers have no direct contact with the farm or its employers. They get into the buses, operated by the team leaders - “turmeiros” in Portuguese, who more often than not were in the past subcontractors of the labor force -, pick the oranges and come back home in the same buses. The process is structured in the following way: they pick the oranges, fill the plastic bags - equivalent to the “boxes” we will mention later - which are turned into big “bags” taken from toll trucks to regular trucks, responsible for sending them to the depot where they are weighed.

Many workers say the system means the “legalization” of subcontracting, leading to precariousness of the labor force. Employers, on the other hand, point out that this system enables the workers to increase the duration of their employment, as they are moved from one farm to another, in different peak seasons, under the same contract. The existence of consortia abides by the Brazilian labor law.

Contracts by these consortia conform to the same labor and social rights as every legal employer in Brazil. The consortia of rural employers must assure the state of São Paulo minimum wage of R\$ 1,163.55²⁹, higher than the national one (R\$ 1,045). The contracts are not temporary ones, as the workers are hired for an indeterminate period of work.

The orange pickers are hired for the harvest period. There is the “big harvest”, lasting for 8 months, and the “small one” with a duration of 6 months. After being dismissed, in case they are formal workers – with their labor booklet signed - they receive the severance pay which is the proportional amount of 13th month salary, vacation plus the 1/3 vacation bonus³⁰ for their period of work.

These workers are paid by production. There is a minimum number of bags³¹ of oranges required monthly in order to meet the state of São Paulo minimum wage, R\$1.163,55, or the minimum floor established by the collective bargaining agreement when relevant. This minimum requirement is not signed anywhere, but those who do not pick as many bags as stipulated are laid off.

²⁷ The union reform is a chapter of the wider labor reform.

²⁸ However, we had access to a collective agreement signed between one of the “big three” companies and a trade union of one of the larger cities visited, in which orange pickers are hired directed by the company. This seems to be an exception to the rule, as we were informed by many stakeholders in the fieldwork.

²⁹ The amount of R\$1.163,55 is valid since April 1, 2019 and must be paid to workers whose professional categories have not established wage levels through collective bargaining agreements.

³⁰ According to Brazilian labor legislation, during vacation period, the worker receives an additional amount of 1/3 of his or her wage as a bonus.

³¹ The “big bags” mentioned before.

The orange picker should collect 71 orange bags monthly in order to receive the state minimum wage of R\$ 1,163.55. Each bag represents 20 to 25 boxes of 26 to 27 kg each. According to a DIEESE³² research study conducted in August 2019, the picker receives R\$ 0.72 for each box as production salary plus R\$ 0.20 as paid weekly rest³³. The workers we interviewed reported that it is common to harvest from 80 to 100 bags per month for each worker.

So, there is an incentive to pick more oranges as a way to increase the wage. This is not done by working overtime, but by increasing the intensity of work, sometimes even prompting the workers to skip the break for lunch, which lasts one hour according to Brazilian Labor Code.

The regular work week for orange pickers is 44 hours. It consists of 8 hours for week days and 4 hours on Saturdays according to the Brazilian Constitution. The buses pick up the workers at home and they start to work at 7 AM and leave the farms at 4 PM. The working time on Saturdays is 7 AM to 11 AM. Since approval of the reform of the Brazilian labor law in 2017, workers have lost the right to be paid for overtime while in commuter transportation. So, their working time does not consider the time they spend in the bus - which is often extended as we learned from some accounts of workers, who told us they sometimes work in farms 100 kms away from home³⁴. However, some collective agreements still pay the commuting time of the workers.

Differently from general service workers and machine workers, wages of pickers vary according to the number of bags they collected, although there is a bottom – the State of São Paulo minimum floor - to which the consortia need to conform. For instance, on rainy days, the value adopted for the day must be the minimum value for a day of work according to this floor.

The above description is important in order to estimate the prevailing wages. For general service workers and machine workers, we took the wages of workers who had contracts of 1 to 2 years duration. For orange pickers, we considered the wages of workers with contracts from 6 months to less than one year as this is the most common group. The values gathered from RAIS data in 2018 – updated to February 2020 by inflation - already includes some cash allowances like 1/3 vacation bonus and health hazard allowance, especially for those working with chemical material (mostly the machine workers). So instead of adding these cash allowances to RAIS reported wages, we did the opposite, that is, we took them out of the reported average wage, in order to check if these values were close to the gross values we observed in the fieldwork. Then we added the 13th month salary, another cash allowance not computed or included by RAIS.

For the orange pickers, we also added the amount deposited in the compensation fund for period of service (FGTS) as a cash allowance, since as they are laid off after the harvest is completed each year they receive this value in cash each year. For this type of worker, we considered 8 months of work plus one

³² *Relatório das entrevistas realizadas com os trabalhadores da colheita de laranja*. DIEESE/CIR, 2019, August.

³³ We found a slightly different value (R\$ 0.66) for a box in a collective agreement for the region of Bebedouro. Dieese research was focused in the Borborema region, also a citrus belt core area. In fact, as we noticed these values vary a lot from region to region. During an online webinar on this report, some trade union representatives mentioned that this amount has been reduced recently which will lead to a fall in the prevailing wages of orange pickers, thus increasing the gap to the living wage.

³⁴ This issue was brought many times by trade union representatives in the online webinar on this report. In their regard, the loss of the payment for the so called “hours in transit” has contributed to reduce the prevailing wages of orange pickers.

month of “previous advice”, that is, one additional month of work after dismissal, as stipulated by the Brazilian labor law.

We also used the State of São Paulo floor for general service workers³⁵ as their average wage and used a 20% higher value for machine workers. For the orange pickers, we took the value most of the workers and trade unionist said was the average monthly wage with normal intensity of work (R\$ 1,400, around 85 bags) as the wage for orange pickers paid by production. These values were very close to the RAIS reported average wages for different types of workers if cash allowances were discounted.

As mentioned before, we assumed that the wages for general service workers and machine workers are paid every month in a year, whereas the orange pickers receive a wage just for nine months. For the latter, we turned their total wage into a monthly wage supposing it was paid during 12 months in a year. We, then, added the FGTS pay which is equivalent to 8% of the monthly wage plus the penalty of 40% of this value for 9 months. If it were not for the FGTS pay, the total payments received by orange workers divided by 12 would be much lower. Their severance pay is comprised of vacation, 1/3 vacation bonus and 13th month salary proportional to the period they have worked.

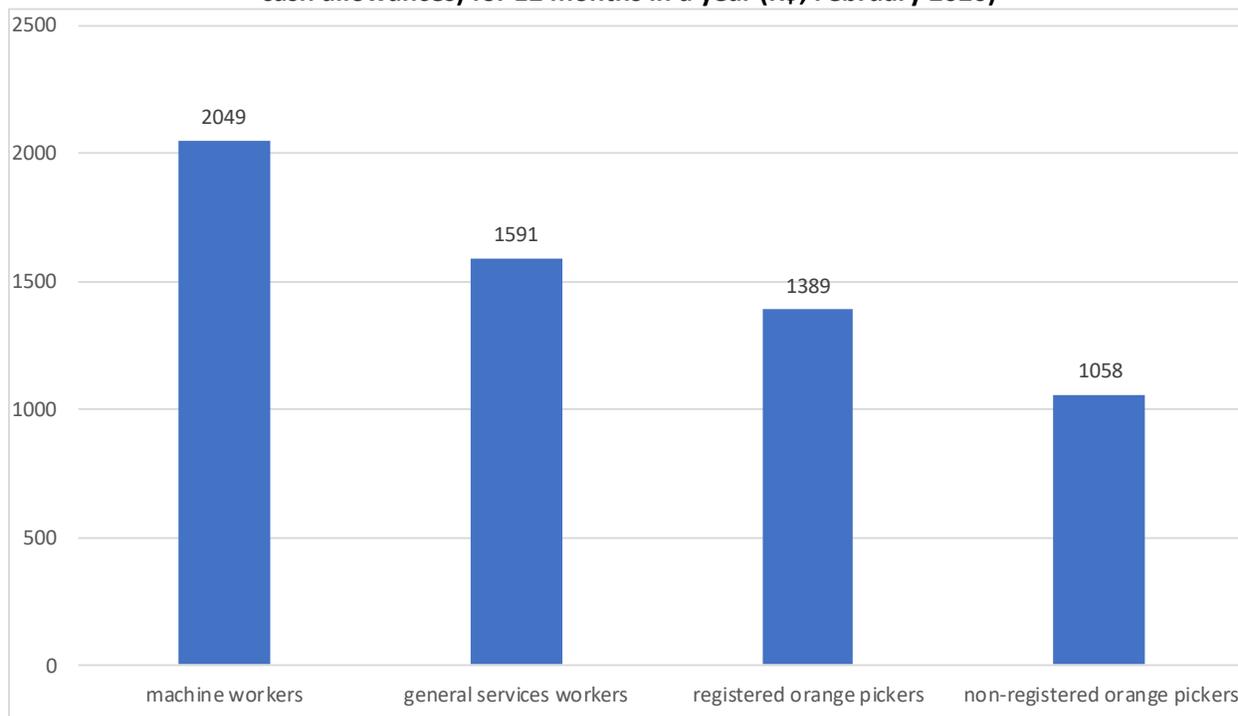
For the general service workers and machine workers, as they are permanent, we take into account the cash allowances of the 1/3 vacation bonus and the 13th month salary.

In the case of non-registered orange pickers who do not have a contract, we divided their total wages earned during 9 months of work by 12, without cash allowances, severance pay and FGTS, as these workers have no legal contracts.

Below we present in Graph 5 our estimate of prevailing wages for different types of orange sector workers over 12 months in a year, irrespective of the duration of the contract of the workers.

³⁵ This is reasonable as the average wage floor stipulated in the collective agreements in the agricultural sector of the State of São Paulo is only 6% above the São Paulo minimum wage according to FERAESP data.

Graph 5: Value of prevailing monthly wages for different types of orange sector workers (including cash allowances) for 12 months in a year (R\$, February 2020)



Source: RAIS 2018 updated to February 2020 (IPCA/IBGE consumption price index) and adapted taking into account information collected in the fieldwork.

A last point should be made. During our research, we had access to a Public Civil Action³⁶ which gave a glimpse on the history of labor relations in the orange juice industry in São Paulo. Until 1994, the citrus industry was responsible for collecting the oranges “in the groves” (“fruta no pé” in Portuguese), whereas from 1995 onwards it changed the system in order to have the fruit “put” in the industry (“fruta posta” in Portuguese), giving up the orange picking activity it once assumed as under its reach.

Thereafter, the full amount of expenses incurred by orange farmers includes also this activity. This change in the way the production process is organized, and its duties divided between economic actors, meant an increase of precariousness of labor relations as a way of lowering production costs. It happened

³⁶ “Ação Civil Pública n. 121-88.2010.5.15.0081”, filed on February 11, 2010 by the Regional Labor Prosecutor Office of the 15th Region before the Labor Court in Matão, a city close to Araraquara. This public civil section presented charges related to illegal outsourcing from the industries. See <https://pje.trt15.jus.br/consultaprocessual/detalhe-processo/00001218820105150081>

because smaller farmers still needed to accept the low prices fixed by the “big three” companies, acting as an oligopsony³⁷, even though their expenditures had risen with the new system³⁸.

Actually, relations between processors and farmers vary a lot. It is often the case that groups of farmers can get better prices for their oranges if they can assure a high supply to big processors. It may be also the case that a small juice processor cannot offer a price as high for the small producers of their value chain³⁹. Anyway, the issue of wages paid in the farms is related to the bigger picture of how the prices offered by industry to farms are set, and the big processors have a key role on this.

14.2 In-kind benefits as partial payment of living wage

The only common provision of an in-kind benefit in the orange sector of the São Paulo’s citrus belt is for transport, as the workers do not need to pay for it. On further consideration as explained below, we decided not to include transport as an in kind benefit that could be considered a partial payment of living wage.

First, there is no regular transport services easily accessible to the orange farms. Second, this means that providing the transport of the workers by the farms is required for ensuring a sufficient supply of workers and their arrival at the farm in time - and so in a sense an essential business expense.

It is worth mentioning that the transport is provided by the “turmeiros” who get higher wages than the orange pickers’ team led by him; and their wages are also calculated in terms of production. The “turmeiros” wages are related not only to the transportation as they also have the responsibility of “recruiting” the workers of the team and of supervising their work in the groves. Some of them own the buses more often than not financed by the employers.

15. LIVING WAGE IN CONTEXT AND COMPARED TO OTHER WAGES

15.1 Wage ladder

Graph 6 below compares our gross living wage with gross prevailing wages of the three main types of workers predominant in the orange production. As indicated in Section 14, prevailing wages already include cash allowances such as 13th month salary and 1/3 bonus on vacations for general service and machines workers. For orange pickers, cash allowances include severance pay and FGTS total amount.

On Graph 6 (see blue color columns), we can see the difference between the living wage and the three prevailing wages in the orange sector. The living wage is 24% higher than the prevailing wage of machine

³⁷ In 2018, CADE - the Brazilian antitrust governmental body – decided in favor of the charge against the big three companies for their anti-competitive procedures. In 2016, these companies signed a conduct adjustment term, by which they admitted that they manipulated the prices against the orange farmers. Also, they accepted the fines imposed by the government body, which amounted to R\$ 301 million. See <http://www.cade.gov.br/noticias/cade-encerra-processo-contra-cartel-no-mercado-de-compra-de-laranjas>

³⁸ According to Flávio Viegas, president of Associtrus (Brazilian Association of Citrus Producers), producers are having trouble with rising costs and lower prices, as they have to compete with the farms owned by the “big three”, which have privileged access to processing units. See <https://revistagloborural.globo.com/Noticias/Agricultura/Laranja/noticia/2014/06/semana-da-citricultura-em-sp-foca-julgamento-de-processo-trabalhista.html>

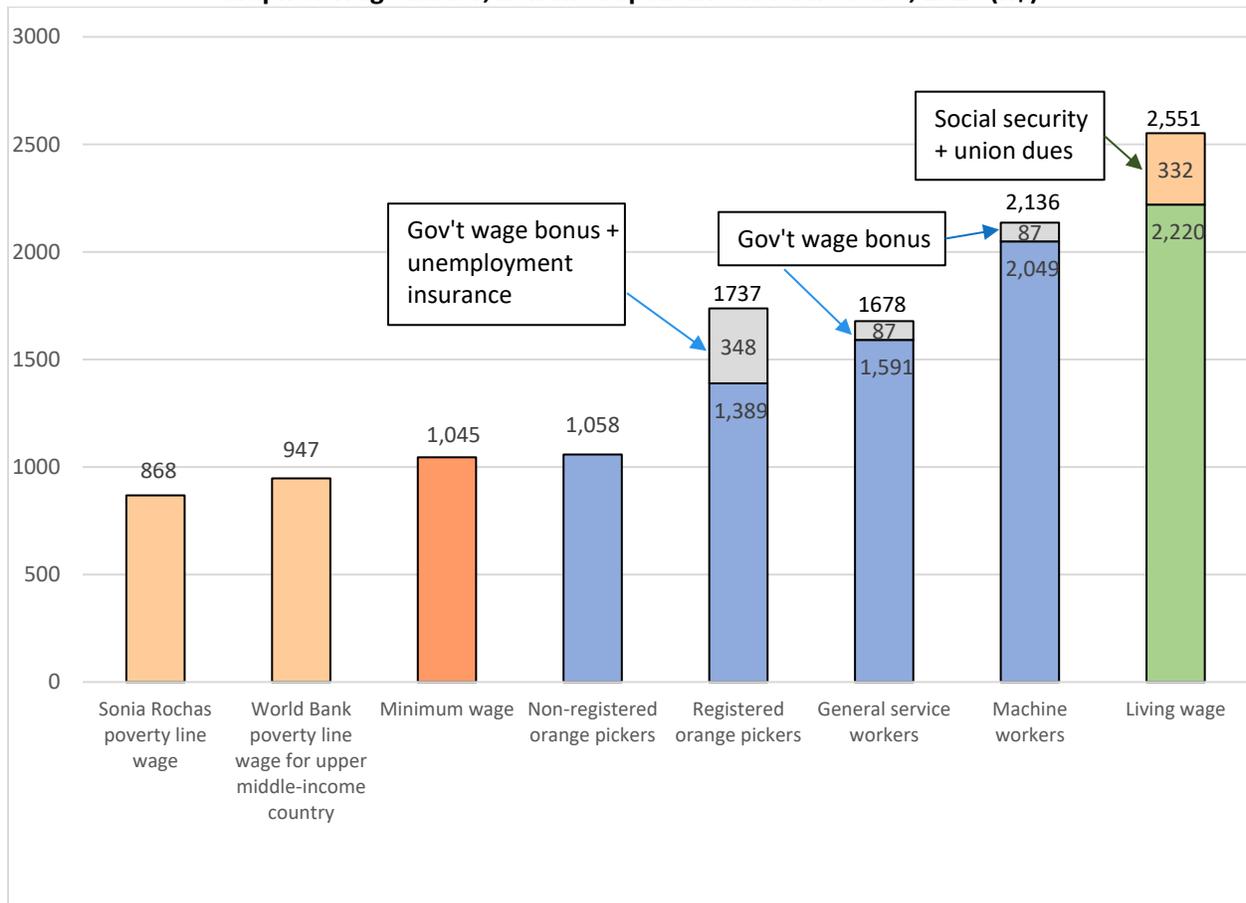
³⁹ This clarification of the several patterns in the relations between industry and farms was offered by some small farmer cooperatives attending the online webinar presentation sessions of this report.

workers, 60% higher compared to general services workers, and 84% higher compared to registered orange pickers. For the non-registered pickers, the gap is 141%.

The living wage is 2.4 times higher than the minimum wage, 2.7 higher than the World Bank poverty line wage for an upper-middle income country like Brazil, and 2.9 higher than the wage at the poverty line for São Paulo State (excluding the São Paulo metropolitan region) estimated by Sonia Rocha.

It is important to keep in mind that, especially in upper-middle income countries like Brazil, to be out of poverty (as narrowly defined by a poverty line) is indeed very different than earning a wage which assures a minimum level of decency in terms of standards of living.

Graph 6: Wage ladder, non-metropolitan São Paulo State, 2020 (R\$)



Source: the authors.

15.1.1 Effect of federal government social policies on reducing gap to living wage

We made an exercise to take into account the role of the federal government and its social policies and observe how they affect the gap to living wage. The conclusion is that they significantly reduce the gap. This is shown on Graph 7.

For machine workers and general service workers, if they earn a wage from 1 minimum wage up to 2 minimum wages, as in our case, they are entitled to a sort of 14th month salary equal to the minimum wage value as a wage bonus (or “abono salarial” in Portuguese). This is financed by FAT (Fund of Worker’s Assistance – “Fundo de Amparo ao Trabalhador” in Portuguese).

In the case of registered orange-pickers, they have the right to access the wage bonus of 1 minimum wage – proportional to their duration of work over the year – and also to receive 3 months of unemployment insurance benefit paid by FAT. This happens only when they have a formal job for at least 6 months before they are dismissed and, more important, if this is the third time they apply for the benefit. The value of the benefit is equal to 80% of their average gross wages of the last 3 months of work, if it is not over R\$ 1,600 as in our case.

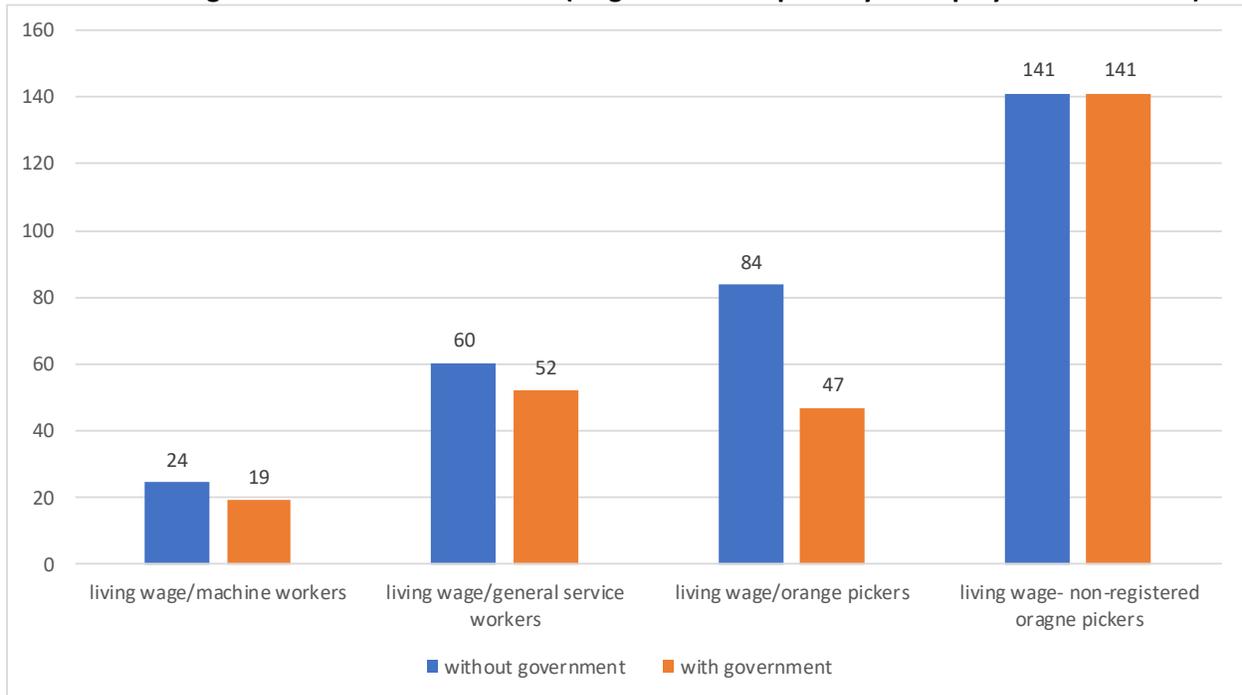
So, our assumption is that orange pickers - as we observed in the fieldwork – can be considered a “permanent temporary job” performed every year mostly by workers having experience in this kind of work. And we think it is reasonable to assume that the bulk of them have already accessed the benefit at least twice. That’s why the difference between prevailing wage and living wage with and without government benefits is larger for this type of worker compared to the other two types, as the latter only receive the wage bonus because they are not dismissed during the year. Lastly for non-registered orange pickers, the gap to living wage is unchanged, because there are no government programs for precarious workers.

In Graph 7 (see orange color columns), we can notice that the gap to living wage falls from 24% to 19% for machine workers, from 60% to 52% for general service workers, and from 84% to 47% for registered orange pickers. The latter fall is largest, because registered orange pickers receive the proportional wage bonus and the unemployment insurance benefit for 3 months.

It can be argued that government benefits might work as a disincentive for employers to raise the prevailing wages as they would be substituting for the amount paid by government. This is not the case here. For the more permanent workers in the orange production – general service and machine workers - the amount paid as wage bonus is not only low, but also decreases as the wage rises. For instance, for general service workers the monthly value of wage bonus is 5.5% of total gross wage plus cash allowances, whereas for machine workers it is 4.2%. Only when the gross prevailing wage goes beyond R\$ 2,090 (2 minimum wages), does it cease to be paid.

In the case of registered orange pickers, the bulk of the difference is related to the unemployment insurance benefit. In case the prevailing wages were increased, the value of this benefit would go down after a threshold, as the highest value paid is R\$ 1,813 per month. Even so, government contribution would still help to lower to lower the gap to living wage.

Graph 7: Percentage difference between the Gross Living Wage and the Gross Prevailing Wages with and without government cash allowances (wage bonus and possibly unemployment insurance)



Source: the authors.

SECTION V. CONCLUSIONS

This report estimated a living wage for non-metropolitan areas of the State of São Paulo which excludes the metropolitan regions of São Paulo and Campinas, thus covering the remainder of the urban areas of the State. The fieldwork was conducted in three core mesoregions of the citrus belt – Araraquara, Bebedouro and Bauru – which have socio-economic indicators that are very similar to those in the other non-metropolitan areas of the State of São Paulo. That is, even though the focus of this report is on the orange citrus belt, the living wage estimated in this report is also relevant for and so a reference for this larger region covering a population of 20 million inhabitants.

The gross living wage estimated for the non-metropolitan areas of the State of São Paulo is R\$ 2,551 (USD 567) per month, and therefore R\$ 98 (USD 22) per workday assuming 26 workdays per month. This value refers to the wage workers need to receive each month over the year in order to have a basic but decent living, as described in detail in this report. Every section in this report describes steps undertaken to fully apply the worldwide known Anker methodology.

Brazilian IBGE databases such as POF, the household survey on family expenditures, and PNAD, which have detailed and disaggregated data on labor, as well as RAIS – a register of formal jobs organized by the Ministry of Economy – were strategic as secondary data sources. This information, together with the fieldwork data collected on food prices and housing costs and on consumption habits, enabled the research team to estimate not only the living wage but also the prevailing wages.

If the living wage is time and place specific, the prevailing wages refer to the orange sector, in which we selected the three main types of agricultural workers. General service workers and machine workers tend to be more permanent. Orange pickers, representing the bulk of the workers, are less permanent and tend to be hired for the harvest. Their contracts are signed, not by the orange farm, but mostly with the consortia of employers, which are legally entitled to employ and supply these workers to the farms.

This report shows that registered orange pickers, mostly hired by consortia of employers, are paid by piece rate production, whereas the other two types of workers earn fixed wages. As we did not have access to orange farms, RAIS data provided us values for wages for these three types of workers, which include some cash allowances such as 1/3 vacation bonus. We added to this also 13th month salary for general service workers and machine workers. For orange pickers, we included severance pay and FGTS deposits plus the 40% penalty, since orange pickers are always dismissed during the year. All prevailing wages refer to average monthly wages paid for 12 months in the year, even if they are hired, as in the case of orange pickers, for just 9 months.

This report shows that the living wage for the non-metropolitan São Paulo region is 24% to 84% higher than prevailing wages in the orange sector depending on the type of worker. Moreover, we made an exercise to estimate the effect on the gap to living wage of government programs such as the “wage bonus” and the unemployment insurance benefit. In the case of orange pickers – who represent the bulk of workers in the sector - the gap to living wage falls from 84% to 47% if they are registered workers. Unemployment insurance is responsible for the largest part of this decrease.

It is worth mentioning that non-registered workers on orange farms – having no contracts at all – can be found in the region. Migrant workers especially are likely to be found under the category of non-registered orange pickers. For those engaging in this precarious form of work, the living wage is 141% higher than

prevailing wages in part because they do not receive cash allowances or income from any of the government programs.

This report does not address compliance of farms with social, labor and environmental standards, which is somewhat dealt with, but not fully, through the certification of farms according to IMAFLORA. However, paying a living wage should not let anyone lose sight of the broader goal of improving labor conditions.

How to pay a living wage and bridge the current gap is not easy. We feel that the stakeholders should address this issue in a transparent way by showing their needs and constraints. The Anker methodology, by measuring the living wage, seeks to contribute to this dialogue.

One last point should be made about how the responsibility for raising wages towards a living wage should be shared by all actors in the value chain. This discussion should take place while recognizing that the big three orange companies - Citrosuco, Cutrale and Louis Dreyfus – are not only major producers of oranges but they also own the processing units through which other orange farms sell their production, even though small processors do exist and are not irrelevant. This means that how they set prices and their relations with other farms is important as it also affects relations between small processors and producers.

It is widely viewed that if the big three orange companies set prices for oranges at a low level this has the consequence of making it difficult especially for smaller orange farms to pay decent wages and provide good labor conditions, especially to orange pickers. This is what we heard from small farmer cooperatives, workers and regional labor prosecutors. As a result, due to their major role in the chain, the big 3 orange companies in Brazil have an important responsibility for improving wages in the orange sector.

At the same time, it is important to keep in mind that value chain demands for competitive prices contribute to orange prices being set at a low level. In addition, the value chain has marketing processors with their own consumer brands outside of Brazil, which is also highly vertical and concentrated in nature, and they also have some responsibility for helping to bridge the gap between the prevailing wages and the living wage in the orange sector in Brazil - especially given that Brazil is by far the largest exporter of oranges in the world.

Table 13: Summary table for calculating living wage

PART I. FAMILY EXPENSES		
	Local currency	USD
Food cost per month for reference family (1)	879	195
Food cost per person per day	7.82	1.74
Replacement cost of free school meals per family per day	2.39	0.53
Food cost per person per day adjusted for replacement cost of free school meals	7.22	1.61
Housing costs per month (2)	810	180
Rent per month for acceptable housing	580	129
Utility costs and minor repairs and maintenance per month	230	51
Non-food non-housing (NFNH) costs per month taking into consideration post check adjustments (3)	1,863	414
Preliminary estimate of NFNH costs per month	1,863	414
Healthcare post check adjustment	0	0
Education post check adjustment	0	0
Additional amount (5%) for sustainability and emergencies (4A)	178	39
Additional possible amount (usually 5%) for extended family support (4B)	0	0
TOTAL LIVING COSTS PER MONTH FOR BASIC BUT DECENT LIVING STANDARD FOR REFERENCE FAMILY SIZE (5) [5=1+2+3+4A+4B]	3,729	829
PART II. LIVING WAGE PER MONTH		
NET LIVING WAGE PER MONTH (6) [6=5/#full time workers]	2,220	493
Statutory deductions from pay (7) ^b	332	74
Statutory payroll deductions that are a % of pay (7A)	306	68
Income tax (7B)	0	0
Other statutory deductions from pay: union dues (7C)	26	6
GROSS LIVING WAGE PER MONTH (8) [8=6+7]	2,551	567

Source: The authors.

Table 14: Key values and assumptions for living wage estimate

KEY VALUES AND ASSUMPTIONS	
Location	Southern/Southwestern Minas Gerais
Exchange rate of local currency to USD	4.5
Number of full-time workdays per month	26
Number of hours in normal workweek	44
Number of workers per couple	1.68
Reference family size	4
Number of children in reference family	2
Ratio of non-food/non-housing costs to food costs	2.12

Source: The authors.

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