Labor Conditions in the Nicaraguan sugar industry
By PASE and the International Labor Rights Fund

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Table of Contents

I.- INTRODUCTION.....5

II.- BACKGROUND.....7

1. Nicaraguan sugar industry, 1950-1990.....7
2. Types of Sugar Cane Producers on a National Level.....10
3. Domestic Sugar Trade.....19
4. Regulating Entity for the Nicaraguan Sugar Trade.....20

III.- FIELD RESEARCH ON SUGAR SECTOR WORKERS.....22

1. Methodology.....22
2. Description of the Results.....24
    a. Labor statistics.....24
    b. Personal statistics.....31
    c. Living conditions.....39
    d. Labor conditions.....47

BIBLIOGRAPHY.....65

Appendix A: Select Export Data.....66

List of Tables

Table 1: Area of cultivation of Nicaraguan principal export products
Table 2: Employment in the sugar industry (1993-4 harvest)
Table 3: Production and destination of Nicaraguan sugar
Table 4: Sugar production in Nicaragua
Table 5: Sugar production, 1997-2003
Table 6: Daily production capacity
Table 7: Ingenio San Antonio: Changes in area under cultivation and output (98-03)
Table 8: Ingenio San Antonio: Changes in production and productive output (98-03)
Table 9: Ingenio San Antonio: Number of workers
Table 10: Ingenio San Antonio: Affiliates to "Ronald Altamirano" Union
Table 11: Workers at Ingenio Monte Rosa
Table 12: Ingenio Monte Rosa: Affiliates to union "Ramon Salvatierra"
Table 13: Importance of the sugar industry in Nicaragua
Table 14: Sugar harvest 2002
Table 15: Number of workers in each refinery
Table 16: Type of surveyed worker
Table 17: Type of work performed
Table 18: Tasks of Fieldworkers
Table 19: Tasks of workshop and operations workers
Table 20: Tasks of factory workers
Table 21: Do you have any kind of relationship with the refinery owners?
Table 22: Relationship with the refinery owners, according to type of worker
Table 23: Sex of survey respondents
Table 24: Age of survey respondents
Table 25: Marital status of survey respondents
Table 26: Work status of the survey respondents' partners or spouses
Table 27: Number of children
Table 28: Children doing some kind of informal paid child labor
Table 29: At what age did you have your first child?
Table 30: Educational level of survey respondents
Table 31: Number of illiterate families
Table 32: Current residence of respondents, by location of refineries where they work
Table 33: Number of family members who work in industries that also have a high number of labor rights violations
Table 34: Type of housing
Table 35: Building materials used in housing
Table 36: Respondents who have a latrine at their home
Table 37: Type of stove
Table 38: Gathering wood
Table 39: Type of water at respondents' homes
Table 40: Gathering water
Table 41: Head of the family
Table 42: Have you ever been a victim of domestic violence?
Table 43: Property improvements in the last two years
Table 44: Primary activities in which men and women participate
Table 45: Who is in charge of family resources?
Table 47: Workers affiliated to a union?

Table 48: Are you free to organize a union?
Table 49: Violations of the right to organize
Table 50: Participation in any kind of organization
Table 51: Role in the organization
Table 52: Type of work contract
Table 53: Did you sign a work contract?
Table 54: Do you have a copy of your work contract?
Table 55: Number of years worked at the refinery
Table 56: Period of employment (field workers)
Table 57: Work performed when not working for the refinery
Table 58: Number of working days during sugar production season
Table 59: Length of workday during sugar production season
Table 60: Were you trained to carry out the work that you do?
Table 61: Is your work high-risk?
Table 62: What kind of risks are you exposed to at work?
Table 63: Problems encountered as a result of work
Table 64: Do you believe your work is important in the sugar production process?
Table 65: Does the refinery or subcontractor give you social security benefits?
Table 66: Occurrence of work-related accidents in the refineries
Table 67: Types of work-related accidents, by work area
Table 68: Who dealt with your accident?
Table 69: Occurrence of work-related illnesses in the refineries
Table 70: Possible causes of work-related illnesses
Table 71: Principal work-related illnesses suffered by sugar workers
Table 72: Daily salary

I.- INTRODUCTION

The Nicaraguan sugar industry emerged 100 years ago. Since then, modernization and technological advances have provoked transformations in labor, environmental and social conditions associated with the industry. In the last thirty years, the sugar industry has become one of the most important sectors in the country.

The sugar industry is one of the main sources of employment and foreign currency generation for Nicaragua. Sugar is also one of the most important products for domestic consumption.

In the 1960s, sugar was the third largest agricultural export, after cotton and coffee. In the 1970s and 1980s, it was outranked by meat, but it regained its ranking in 1996 due to decreased cotton production.

Table 1: Area of cultivation of Nicaraguan principal export products

(thousands of *manzanas*)[1]							
Averages	**Coffee**	**Cotton**	**Banana**	**Sesame**	**Tobacco**	**Sugar**	**Total**
1960/61 – 1970/71	129.4	156.1	N.D.	14.2	1.011	33.4	334.1
1970/71 – 1980/81	123.8	186.5	3.6	10.5	2.188	52.0	378.6
1980/81 – 1990/91	77.7	100.3	3.7	20.4	2.283	59.0	263.4
1990/91 – 1992/93	106.5	22.1	3.3	31.9	1.312	58.8	223.9
PERCENTAGES							
Averages	**Coffee**	**Cotton**	**Banana**	**Sesame**	**Tobacco**	**Sugar**	**Total**
1960/61 – 1970/71	38.73%	46.72%	N.D.	4.26%	0.30%	9.99%	100%
1970/71 – 1980/81	32.70%	49.26%	0.95%	2.78%	0.58%	13.73%	100%
1980/81 – 1990/91	29.49%	38.09%	1.40%	7.73%	.087%	22.41%	100%
1990/91 – 1992/93	47.57%	9.86%	1.47%	14.25%	0.59%	26.26%	100%

Source: Base de Datos, Banco Central de Nicaragua (B.C.N.)

In the 1995-6 and 1996-7 cycles, sugar production increased considerably due to different factors, including an increase in the cultivation area, increased self-financing, increased national demand and increased output per area, and the recovery of international prices. Furthermore, economic incentives, such as exemption from tariffs for importing supplies and parts, have helped modernize the production system.

[1] 1 manzana = 1.728 acres or 0.7 hectares.

In the 1980s, under the administration of [redacted] of the FSLN (Frente Sandinista de Liberación Nacional) party, the Nicaraguan sugar production system was in the hands of the state (centralized system). That is to say, the state controlled and regulated the industry. During this time, the sugar industry was comprised of seven sugar refineries: [redacted]

The sugar industry began to be privatized in the early 1990s, during the government of president [redacted] from the UNO (Unión Nacional Opositora) party. During this process, three sugar refineries ([redacted] and [redacted]) closed, as a result of decreases in international prices, administrative problems, and production problems.

Table 2: Employment in the sugar industry (1993-4 harvest)

Sugar refineries	Permanent workers	Temporary workers	Total Employment	Supplying Colonos
[redacted]	549	828	1,377	102
[redacted]	310	185	495	95
[redacted]	900	650	1,550	1,300
[redacted]	1,626	2,562	4,188	135
[redacted]	228	567	795	23
Total	3,613	4,792	8,405	1,655

Source: Comité Nacional de Productores de Azúcar (CNPA)

Other sugar refineries remained, with stronger production: [redacted] and [redacted]. Currently, these refineries are part of the Nicaraguan sugar production system. They have been organized since 1993 in the National Sugar Producers Committee (CNPA). This Committee (CNPA), aims to guarantee the placement of sugar in the internal market, guarantee distribution in the internal and international market, regulate prices and sugar companies' participation in the market, carry out audits, and control domestic prices.

Today, Nicaragua has 4 sugar refineries and about 650 small independent producers that cultivate sugar cane. Nationally, there are about 60,000 manzanas of land under sugar production.

Nicaragua produces about 7,500,000.00 quintales[2] of sugar. On average, 45% is exported to the global and preferential markets, and 55% is consumed domestically. It is also estimated that the sugar industry generates about 35,000 direct and indirect jobs.

[2] A quintal is equivalent to 100 kilograms.

Table 3: Production and destination of Nicaraguan sugar

YEAR	Production (thousands of quintales)	Domestic consumption	Exports (thousands of quintales)
1987/1988	3,104.0	2,012.2	1,091.8
1988/1989	3,850.0	3,098.6	751.4
1989/1990	4,361.0	2.667.9	1,693.1
1990/1991	4,773.0	2,242.0	2,531.0
1991/1992	4,278.0	1,805.1	2,472.9
1992/1993	4,687.0	2,793.7	1,893.3
1993/1994	4,585.0	3,157.3	1,428.6
1994/1995	5,534.0	3,300.0	2,234.0
1995/1996	6,740.4	3,500.0	3,240.4
1996/1997	7,810.3	4,026.3	3,784.0
1997/1998	7,938.7	3,900.0	3,711.8
1998/1999	7,381.9	3,900.0	3,041.6
1999/2000	8,960.1	3,898.3	4,316.1
2000/2001	8,769.9	3,859.7	5,471.6

Source: Comité Nacional de Productores de Azúcar (CNPA)

II.- BACKGROUND

1. Nicaraguan sugar industry, 1950-1990

Since 1950, different scenarios have directly influenced the efficiency and productivity of the Nicaraguan sugar industry.

From 1950 to 1979, there was sustained growth in the production of sugar, reaching a record production level in 1974/5 of 5.7 million quintales of sugar, as a response to favorable prices in the international market.

This growth began with an expansion in the area planted with cane, the introduction of and experimentation with new varieties, the application of better and more appropriate cultural practices on the plantations, the introduction of new technologies in industrial processing, the modernization of the industrial plant, and a feeling of security in property and investment.

Beginning with a fall in sugar production during the 1979-1980 harvest as a result of the accumulated effects of the civil war, a period of recuperation began with the 1980-1 harvest and lasted until the 1983-4 harvest, when the production reached 5.2 million quintales, just 500,000 less than the record.

In that time, the effects of the Nicaraguan civil war provoked a scarcity of foreign currency, which made it difficult to access supplies and parts. The situation was made worse by the excessive state intervention in price fixing and domestic and international trade. State property in the sugar industry also appeared at this time, as a result of the

confiscation of the [redacted] and [redacted] refineries and the negotiated incorporation of the [redacted] and [redacted] refineries.

During the 1984-5 and 1987-8 harvests, the negative effects mentioned above continued to intensify, affecting attention to plantations, and the maintenance of the industrial plant. During this time, the effects of the monetary policies made the price of a quintal of sugar or a ton of sugar cane equal to one box of cigarettes. This led to a decrease in the amount of land planted with cane. Even more importantly, little attention was paid to the cane plantations. As a result, in the 1987-8 harvest, production only totaled 3.1 million quintales, the lowest figure in 30 years.

As a response to this deterioration, an organization was created for the 1988-9 and 1990-1 harvests that administered the state property, which represented 48% of the national production, with a high level of autonomy in the administration of financial resources, commerce, and price fixing.

After 1988, the state property was incorporated, production recovered, reaching 4.8 million quintales in 1991 (equivalent to 17.9% of annual growth).

With the change in government in 1991, exchange rate policies (fixed rate, overvalued with growing inflation), credit restrictions, and unstable political and labor conditions, once again created a marked reduction in efficiency. Production reached 3.9 million quintales, only 800,000 more than the historical minimum.

The main negative factor that determined these results was the introduction of the monetary unit known as Córdoba Oro in 1990, as a result of the monetary policies that established a 1:1 parity between the córdoba and the US dollar without correcting the distortions in relative prices that the previous government had maintained. This led to high production costs, and restrictions on credit.

As we have seen, the central government has a determining role, catalyzing and facilitating actions that reinforce and adjust existing programs related to the sugar sector, and creating new conditions that stimulate investment in new plantations and improved production processes.

Table 4: Sugar production in Nicaragua (thousands of quintales)

Harvest	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	Total
1982/83	2,552.7	----	658.7	488.2	329.7	816.3	117.0	4,957.7
1983/84	2,640.0	----	660.8	515.0	530.6	747.1	98.1	5,191.6
1984/85	1,958.7	58.8	645.8	621.2	450.6	548.9	69.9	4,354.0
1985/86	2,136.5	258.2	618.0	635.8	359.3	587.1	69.3	4,674.2
1986/87	1,538.6	385.2	680.3	587.0	365.0	544.8	51.7	4,152.5
1987/88	1,186.7	513.8	522.4	304.9	263.4	275.7	37.4	3,104.0
1988/89	1,158.1	551.7	444.2	502.4	347.4	447.6	32.3	3,483.8
1989/90	1,760.5	698.7	528.9	479.1	429.4	426.1	37.9	4,360.6
1990/91	1,831.9	1,053.7	489.6	535.5	393.7	424.5	41.0	4,772.9
1991/92	1,788.4	767.9	412.6	440.0	321.4	513.4	34.7	4,278.5

Source: Comisión Nacional del Azúcar (CONAZUCAR)

Sugar production surpassed 3.9 million quintales in the 1992-3 harvest and reached a historical record with 7.81 million quintales in the 1996-7 harvest. That was surpassed again the following year with a production of 7.938 million quintales. Production decreased in the 1998-9 harvest, totaling 556,729.49 quintales less than the previous year, due to Hurricane Mitch, when large quantities of water inundated the sugar plantations. Production totaled nearly 8.77 million quintales in 2000-1, showing a decrease of about 14% in relation to the previous year, as a result of the closure of two refineries, Victoria de Julio and Javier Guerra. There was a slight increase in production during the 2002-3 harvest, with production totaling 7.57 million quintales.

After reaching outputs of 47.68 tons per manzana in 1993-4, there was an increase of about 13.5% in the 1996-7 and 1997-8 harvest periods, reaching more than 54 tons per manzana.

However, output exceeded 54.27 tons per manzana in 1998-9, also as a result of Hurricane Mitch, as explained earlier. Production reached 51.67 tons of cane per manzana in 2000-1 and 58.22 in 2002-3.

Table 5: Sugar production, 1997-2003

Concept	Measure	1997/ 1999	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003
Harvested area	Manzanas	75,585.11	74,886.80	78,570.08	74,367.06	57,569.68	58,341.00
Milled cane	Tons.	4,101,710	3,759,297	4,160,699	3,842,604	3,459,453	3,431,301
Sugar produced	quintales	7,938,711	7,381,982	8,960,186	8,769,908	7,567,599	7,574,517
Agric. output	(Tons/ Mz)	54.27	50.20	52.95	51.67	60.09	58.22
Indust. output	(Lbs/Ton)	193.55	196.37	215.36	228.23	218.75	220.75

Source: Comité Nacional de Productores de Azúcar (CNPA)

2.- Types of Sugar Cane Producers on a National Level

There are two types of cane producers on a national level: Industrial refineries and independent producers.

2.1.- Sugar Ingenios: The sugar refineries collect and process harvested cane. They also market the molasses, which is used as a primary material for producing alcohol, rum, and cattle feed. Today there are four sugar refineries in Nicaragua, which are described below.

- [redacted]. This is the company that owns [redacted] located in [redacted]. This is the largest refinery in Nicaragua, with the capacity to process 13,000 to 16,000 tons per day. It produces approximately 63% of the sugar in the country. It produces raw sugar and sugar sulfite, and is the only Nicaraguan *ingenio* to produce refined sugar. It has a laboratory of agricultural research where it experiments with new sugar varieties.

- [redacted] This group owns the [redacted] which is located in [redacted] It is the second largest refinery in Nicaragua and has a daily milling capacity of 7,000 tons. It produces approximately 23% of the national raw sugar and sulfite sugar in the country.

- [redacted] This company owns the [redacted] which is located in [redacted] This is the third largest refinery in terms of installed capacity. It can mill about 3,500 tons per day. It produces raw and sulfite sugars and contributes 8% of the sugar produced nationally.

- [redacted] located in the [redacted] It produces raw and sulfite sugars, totaling about 5% of national sugar production. It has the capacity to process 2,500 tons per day.

Table 6: Daily production capacity

Refineries	Production capacity (T.C/día)	Production 2002/2003 (quintales)
[redacted]	16,000	4,308,721
[redacted]	7,000	2,471,532
[redacted]	3,500	533,297
[redacted]	2,500	260,967
TOTALS	**29,000**	**7,574,517**
Source: Comité Nacional de Productores de Azúcar (CNPA)		

This table shows the daily production capacity in tons of sugar produced by each of the refineries on a national level, and the total production in quintales of sugar for the 2002-3 harvest. The table serves to illustrate the productive strength that the refineries represent within the national sugar industry.

2.1.1.- Nicaragua Sugar Estates: [redacted]

In 1980, the [redacted] acquired the [redacted] plantation, located in [redacted]. Along with a group of businesspeople, they created a new company, which has been slowly growing and has become one of the largest and most technologically advanced refineries in Central America.

The [redacted] has a total area of 20,966.39 manzanas. During the 2002-3 harvest, it processed the cane cultivated on 32,975 manzanas, of which 13,108 (39.7%) manzanas were its own property, 4,424 (13.4%) manzanas were rented, and it bought the cane produced on an additional 15,443 manzanas (46.8%). The total production was 1,935,634 tons of cane, reaching an average output of 58.7 tons of cane per manzana. In the 2002-3 harvest, ISA processed 11,629 tons of cane per day for a total of 4,190,998 quintales of sugar by the end of the harvest time.

Table 7: [redacted] Changes in area under cultivation and output per manzana (Harvests 98/99 – 2002/03)

OWN PROPERTY	**Units**	**Harvest 98/99**	**Harvest 99/00**	**Harvest 00/01**	**Harvest 01/02**	**Harvest 02/03**
Area	Manzanas	12,080	11,799	12,292	12,402	13,108
Agricultural output	T.C/mz	61.18	65.73	74.47	76.63	74.09
Cane production	Ton.C.	739,143	775,622	915,336	950,367	971,060
RENTED						
Area	Manzanas			2,585	3,615	4,424
Agricultural output	T.C/mz			56.32	50.92	49.55
Cane production	Ton.C.			145,585	184,068	219,189
TENANT FARMERS						
Area	Manzanas	23,655	23,468	18,885	18.851	15.443
Agricultural output	T.C/mz	47.99	50.36	50.88	53.12	48.27
Cane production	Ton.C.	1,135,268	1,181,849	960,943	987,023	745,385
TOTAL						
Area	Manzanas	35,735	35,267	33,762	34,598	32,975
Agricultural output	T.C/mz	52.45	55.50	59.89	61.33	58.70
Cane production	Ton.C.	1,874,411	1,957,656	2,021,864	2,121,458	1,935,634

Source: [redacted]

Table 8: [redacted] Changes in production and productive output (Harvests 98/99 – 2002/03)

	Units	Harvest 98/99	Harvest 99/00	Harvest 00/01	Harvest 01/02	Harvest 02/03
Harvest days	**Days**	**187**	**170**	**167**	**180**	**168**
Milled cane	Ton. C.	1,874,411	1,957,656	2,021,864	2,121,458	1,935,635
Milling per day	Tons	10,024	11,516	12,107	11,786	11.629
Industrial output comp.	Lbs./Ton	199.50	222.62	229.36	219.06	216.51
Total sugar production	quintales	3,739,514	4,358,150	4,637,413	4,647,187	4,190,998
Refined	quintales	1,207,205	890,391	1,122,342	1,086,856	885,837
Sulfite	quintales	843,400	1,515,408	557,293	1,187,322	1,220,509
Raw	quintales	1,688,909	1,953,350	2,957,777	2,373,009	2,084,652
Miel Fina 85 Brix	Gins. T. Q.	11,180,997	11,962,735	12,067,517	12,681,800	11,361,299
Lost time	%	24.43	24.20	11.70	16.10	13.40
Saccharose (sucrose)[3] in cane	%	12.45	13.35	13.33	12.94	12.90
Saccharose in bagasse[4]	%	2.80	3.08	2.49	2.47	2.21
Total losses	%	2.64	2.37	2.04	2.16	2.21
Consumption of steam	Lbs./Ton. C	1,153	1,006	958	887	923
Consumption petroleum	Glns./Ton .C	0.61	0.16	0.05	0.06	0.07

Source: [redacted]

2.1.1.1.- Working conditions in [redacted]

[redacted] hires 3,000 temporary workers that do field work during the harvest period (November through May). It also has 500 permanent workers that prepare the fields and carry out other activities year-round. Of the 500 permanent workers, 30 (6%) are women and 470 (94%) are men. Of the 3,000 temporary workers, 100% are men.

[redacted] also has permanent employees carrying out other jobs, in the areas of administration, factories, safety and hygiene, education, etc. The workers in these areas total about 3,000 workers, of which 183 (6.1%) are women and 2,817 (93.9%) are men.

[3] A complex carbohydrate found in many plants and used as a sweetening agent.
[4] The residue of sugar cane production.

Table 9: [redacted] Number of workers

TYPE OF WORKER	WOMEN	MEN	TOTAL
Permanent	30	470	500
Temporary	0	3,000	3,000
TOTAL WORKERS	**30**	**3,470**	**3,500**
Admin area (70 technicians)	3	67	70
Factory	50	250	300
Field (80 technicians)	120	1,488	1,608
Autos and parking (10 technicians)	4	996	1,000
Safety and hygiene	6	16	22
School (32 teachers)	------	-------	--------
TOTAL WORKERS	**183**	**2,817**	**3,000**

Sources: [redacted]

Regarding the level of organization of the workers in the [redacted], the [redacted] union only has 160 affiliates, which equals 32% of the permanent workers and 4.6% of the workers hired during harvest times.

Table 10: [redacted] Affiliates to [redacted] Union

TYPE OF WORKERS	WOMEN	MEN	TOTAL
Permanent workers affiliated to union	160	130	160
Temporary workers affiliated to union	0	0	0

Source: [redacted]

Additionally, in the [redacted] there are 4 unions organized by the [redacted] which are:

- [redacted] 62 affiliates
- [redacted] 31 affiliates
- [redacted] 85 affiliates
- [redacted] 32 affiliates

TOTAL Number of Affiliates in [redacted] 210

2.1.1.2.- Relationship between private producers and th[redacted]

The relationship between private sugar cane producers and the [redacted] is established through a signed five-year contract that stipulates the formula for the sugar cane prices, the area to be harvested, the form of payment, bonuses and sanctions according to the quantity of sugar per ton of cane.

These agreements are made according to the quality of cane produced, since the basic content is 170 pounds of sugar per ton of sugar cane. If the sugar content is 200-205 pounds of sugar per ton of cane, they pay 5% extra. If the content is greater than 210 pounds, the payment is 10% extra. In contrast, if output is lower and is only 150

pounds, it is sanctioned with a payment of 15% less than the base price. If it is less than 150 pounds per ton of cane, the payment may be up to 50% less than the base price.

Another criteria that the refinery uses to establish the price paid to private cane producers is the difference between the domestic price, preferential market (USA) price, and international market price.

[redacted] provides the seeds for 3-year periods and technical assistance. The agrochemicals are sold with credit to distributors like [redacted], [redacted], [redacted] and [redacted]. They get special prices through the association of cane producers. It is a price negotiated between both parties.

The refinery also supports them with agricultural machinery for some field preparation work, and with seed transportation. During the harvesting period, the cutting and transportation of the sugar cane is done with its equipment or through subcontracted companies that do this work efficiently.

2.1.2.- Grupo Pantaleón de Guatemala [redacted]

[redacted] a private organization with Guatemalan capital. In Guatemala, this economic group owns two sugar refineries: [redacted] and [redacted]. In Guatemala, they have organized a foundation called [redacted] with its headquarters in Guatemala City.

The [redacted] foundation bought [redacted] in 2000 and invested $3 million in 2002. They also sell electricity to communities in Nicaragua.

2.1.2.1.- Working conditions at [redacted]

The workforce permanently employed by [redacted] is 280 workers, of which 28.57% are women (80). During harvesting, between October and March, temporary work is given to 2,264 people through subcontractors. That is to say, the temporary workers do not establish a direct relationship with the owners of [redacted]

Table 11: Workers at [redacted]

TYPE OF WORKER	WOMEN	MEN	TOTAL
Permanent	80	200	280
Temporary	58	2,206	2,264
Total	**138**	**2,406**	**2,544**
WORK AREA	**WOMEN**	**MEN**	**TOTAL**
Administration: Management, accounting, education, finance, human resources, health, services, social development.	115	66	181
Field: Cutters, support, irrigation, pest control.	20	1,563	1,583
Logistics: Paths, Transportation, tires, mechanized harvests, agric. mechanization	0	294	294
Factory: Supplies, storage	3	483	486
Total	**138**	**2,406**	**2,544**

Source: [redacted]

Regarding the level of organization of the [redacted] workers, there is a union called [redacted]. Only 28.57% of permanent workers are affiliated to the union. Thirty of the 80 affiliates are women (37.5%)

We have identified 78 people distributed in activities related to the areas of internal safety, commissions, and the provisional clinic. Of the total number of workers in these areas, 67 are women, and it seems that these people have important influence with the [redacted] workers.

Table 12: [redacted] Affiliates to union [redacted]

TYPE OF WORKER	WOMEN	MEN	TOTAL
Permanent workers affiliated to union	30	50	80
Temporary workers affiliated to union	0	0	0

Source: [redacted]

During the harvest period, 2,264 subcontracted temporary workers work at the refinery. They are not organized or represented by any type of worker organization.

2.1.3. [redacted]

The [redacted] had an area of 2,126 under sugar cane production for the 2002-3 harvest. It also purchases the cane produced by farmers on an additional 2,349 manzanas. The output was 67.6 tons of sugar cane per manzana on the *ingenio's* own land, and 40.5 tons per manzana on the other land.

The [redacted] produced 6,747 metric tons of molasses during the 2002-3 harvest, all of which was destined for domestic sale.

2.1.4.- [redacted]

The [redacted] is located in [redacted]. It covers 10,216 manzanas of land and cultivates sugar cane on 30% of this land (3,105 manzanas). It produces raw and sulfite sugar, and is responsible for about 5% of national sugar production.

The [redacted] uses several irrigation systems, including trickle irrigation, absorption, and gravity. It has a processing capacity of 2,500 tons of sugar cane per day, and it produces 74 tons of cane per manzana.

The 3,105 manzanas that are cultivated with sugar cane are distributed in six plantations within the installations of [redacted] (10,216 mzs). These are [redacted]

The refinery is also supplied by two private sugar cane producers, which together produced 123.72 manzanas of sugar cane for the refinery during the 2003-4 harvest. This land belongs to these independent farmers, who produce about 69 tons of sugar

cane per manzana. The refinery buys the 8,536.68 tons of sugar cane that these farmers produce during each harvest.

The relationship between these farmers and [redacted] is established through a bilateral five-year contract that establishes:

a) The price of the sugar cane for the five-year period.
b) The refinery's contributions in terms of labor (cutters), fertilizers, etc.
c) Farmers' production costs (planting, irrigation, etc).

Currently, the refinery buys the sugar cane from these farmers at a price of US$10 a ton. This price is the value established by all of the sugar *ingenios* in the country (discretionally). Costs of production and international sugar prices are included in the calculations.

The quota established for the refinery for national production and production for export is established by the [redacted] For the 2003-4 harvest, the [redacted] established that 90% of the refinery's total production would be destined for the domestic market, and the remaining 10% would be for the international market.

2.2.- Independent Producers: According to the [redacted], there are about 650 independent small sugar cane producers in Nicaragua. Many of these small producers supply the [redacted] which has the largest processing capacity in the country.

2.3.- Relationship between Independent Sugar Cane Producers and the Sugar Ingenios.

The bilateral contract between the independent producers and the refineries is identical for all producers and all refineries. This five-year contract is a legal document that defines forms of payment, prices, fines, bonuses and sanctions. It establishes that the sugar cane producer is obligated to give the refinery all of its production and that it will receive 50% of the average output (pounds of sugar per ton of cane) that the refinery obtains by the end of the harvest, at the average net price of the total sales of the refinery, both in Nicaragua and internationally, minus a corresponding deduction for the services (cutting and transportation) provided by the refinery.

In all cases, they pay for the production in three installments. The first is paid at the time the product is received, when the cost of services is also deducted. The second is paid at the end of the harvest period, generally in May. The third installment is paid at the end of the cycle, in October.

The refineries consider that the primary material that they receive from the agricultural producers frequently does not fulfill the minimum quality requirements, and they establish sanctions for those that do not produce an output of at least 170 pounds of sugar per ton of cane. They also apply sanctions for plantations that burn the fields outside of the program and that affect the industrial output of these plantations and the cutting plans.

The cane that was to be milled but was unable to be processed is known as "leftover cane". The estimated volume of this production is paid to the producer that did not manage to process the cane, through the proportional distribution of its net value (deducting cutting and transportation costs) among all of the producers, including the refinery itself. The production and transformation costs of the industrializers are affected by the level of installed capacity for processing.

2.4.- Participants in the agro-industrial chain of sugar production in Nicaragua

- **Providers:** Provide supplies and services
- **Small-time dealers**
- **Individual Sugar Cane Producers (Farmers)**
- **Industrial Transformers of Sugar Cane:** Refineries (*Ingenios*)
- **Local Sugar Distributors (domestic consumption).**
- **Purchasers of Exported Sugar.**

- **PROVIDERS:** The providers constitute a heterogeneous group that includes people who provide basic grains, agricultural mechanization services, fertilizers, tools, port services, and customs agencies. This represents a broad collection of commercial activities and services that are used both by individual producers (farmers) and by refineries, generally under credit from the provider with 30-day limits, with the exception of products covered by bank guarantees.

- **SMALL-TIME DEALERS:** These dealers acquire sugar cane from farmers, and sometimes produce it themselves, to produce solid blocks of dark-colored candy that weigh about 2 pounds and are packed in leaves, for consumption by peasants. This activity is carried out in a variety of locations and is not continuous. It does not have a significant economic importance, but represents a form of competition for *ingenios* under certain price conditions and production volumes.

- **INDIVIDUAL SUGAR CANE PRODUCERS:** The farmers use credit to obtain supplies from distributors such as [redacted], [redacted], [redacted] and [redacted] They get special prices through the sugar cane association; the price is negotiated by both parties.

  In many cases, the farmers sell their total production to a refinery based on a contractual relationship that determines the price.

  The farmers receive certain services from the refinery, principally those related to harvesting (cutting and transportation), which is not considered part of the bank financing. The farmers receive technology, seeds, technical assistance, and pesticides from the refineries, but this assistance has been decreasing recently as a result of the difficulties faced by the refineries. The farmers are organized in the [redacted]

Today, there are 650 individual sugar cane producers, which are divided as follows according to their production capacity:

1.- Farmers on small farms (2-20 manzanas): Total about 275 producers (42.3%).
2.- Small producers (20-50 manzanas): Total about 160 producers (24.61%).
3.- Medium size producers (50-150 manzanas): Total about 140 producers (21.53%).
4.- Large producers (more than 150 manzanas): Total about 75 producers (11.53%). This category includes farming companies and cooperatives.

- **INDUSTRIAL TRANSFORMERS (INGENIOS):** The refineries produce cane on their own land, occasionally using rented land, and generally produce with irrigation. They process their own primary material and acquire additional cane from independent producers, who they generally provide with seeds and other supplies, technical assistance, and services.

The refineries process the primary material to obtain white sugar for domestic consumption and raw sugar for export. One plant, [redacted], produces refined sugar, while the rest produce sulfite sugar. The refineries also maintain relationships with the companies that supply input materials.

- **LOCAL SUGAR DISTRIBUTORS:** The refineries carry out domestic and international commerce individually, through a network of distributing agents, but they are organized in a Producers' Committee which coordinates commerce policies and assigns quotas for domestic consumption and the US preferential quota.

The agent's sales margin is on the order of 3% of the price of sugar. The agent receives the product in its warehouse and pays a price that is exempt from municipal taxes and transportation costs. The agent's gross margin represents US$ 0.50 per quintal, which should cover financial costs, salaries, administration, paperwork, electricity, water, etc.

The agents generally believe that the gross margin that they receive does not represent an adequate income to be able to sustain the official sugar prices. In times of low production, the market tends to speculate with the sugar, temporarily abandoning formal commercialization processes, to supply the informal market.

Previously, the refineries turned over the sugar to the agent on consignment, meaning that the inventory was the property of the refineries and the agents paid them as the product was sold. This avoided the need for agents to find funds to gather inventory, but under this arrangement the agent's sales margin was 1.5%, which was increased to 3% in order to give the agent a margin that would allow it to finance their inventories.

Today, agents must turn over the value of the shipment before receiving it in their warehouses, which implies an economic cost for maintaining the inventory. It thus becomes the property of the agent, rather than remaining under the control of the *ingenio.*

- **PURCHASERS OF SUGAR FOR EXPORT:** The international buyers of sugar, known as brokers, are the only sure source of financing for the refineries. The main operators in Nicaragua have been companies like [redacted] and [redacted] These companies provide pre-financing for a one year period and Prime Rate with 1.5% interest. In exchange, they receive promises of sugar shipments, generally at a volume of 30% more than the nominal value of the spot price of the sugar.

  In some cases, payment is given in cash. In other cases, it is paid in capital goods and supplies, or as a combination of both.

Table 13: Importance of the sugar industry in Nicaragua

US$ 40,000,000	Approximate exports in 2002.
7, 500,000 quintales of sugar	Approximate sugar production in 2002-3 harvest.
C$ 20,000,000	Estimated income generated for the country.
20,000 jobs	Estimated direct jobs generated each year during the harvest (November to May).
3,000,000 quintales of sugar	Estimated exports in 2003.
4,000,000 quintales of sugar	Approximate annual internal consumption.
Source: [redacted]	

3.- Domestic Sugar Trade

After the refineries transform the sugar cane into raw, sulfite, and refined sugar, they distribute these products to wholesalers under a system of quotas stipulated by the [redacted] The wholesalers sell the product through a broad network of retailers, who then sell the sugar to consumers.

In recent years, demand for sugar has increased on a national level, as the population has grown. Nicaragua consumes approximately 51% of the total sugar produced in the country. The production plants seek to make it profitable on the domestic market, because they obtain higher prices than on the international market.

Table 14: Sugar harvest 2002

Region/ Refinery	C. of sugar, thousands T.C.	Particip of each Ingenio %	Raw sugar produced (mls/qqs)	White sugar produced. (mls/qqs)	Refined sugar produced. (mls/qqs)	Total sugar
Region II	**3,005.1**		**3,343.6**	**1,998.1**	**1,086.9**	**6,428.6**
[redacted]	2,121.4	61.3	2,373.0	1,187.3	1,086.9	4,647.2
[redacted]	883.7	25.5	970.6	810.7		1,781.4
Region III	**182.7**		**16.8**	**342.0**		**358.9**
[redacted]	182.7	5.3	16.8	342.0		358.9
Region IV	**271.1**			**583.2**		**583.2**
[redacted]	271.1	7.8		583.2		583.2
National Total	**3,459.0**	**100.0**	**3,360.5**	**2,923.4**	**1,086.9**	**7,370.8**

Source: Base de Datos, Banco Central de Nicaragua (BCN)

Sulfite and refined sugars are sold domestically in bags weighing 110 pounds (50 kg), 5 pounds, 2 pounds, and 2 kg. The commercialization is generally controlled by three large wholesalers, which belong to the refineries. The refineries have wholesale agencies that sell to retailers. The refineries sell their production to the wholesalers through quotas established by the [redacted]. Molasses is sold domestically and is used as a primary material to produce alcohol, rum, and cattle feed.

The country does not import sugar, due to a protectionist policy that applies a 50% tariff to the CIF value of such imports. As a result of the instability fo the agro-industry, which led to a drop in national production in 1988, Nicaragua was forced to import sugar to be able to supply the domestic market. This changed drastically in 1993 with the creation of the [redacted]. Since then, the [redacted] has been working with the agricultural and industrial producers to fix global quotas for supplying the domestic market, in order to guarantee the satisfaction of national demand. The quota is distributed between the four refineries according to their production capacities.

Twenty percent of domestic supply is used by industries, 10% by small and medium sized companies, and 70% by consumers.

Few entities intervene in the commercialization chain for sugar, because the refineries have their own distributors and export companies. The independent and private agents responsible for the domestic marketing of sugar have created an ordered market, without speculation.

The domestic market is supplied by about 40 distributing agencies selected by the [redacted] which is the national distributing company, which guarantees price stability and a 2-month reserve.

Sugar production continues to grow, increasing in volume by 83% (4.8 million to 8.8 million quintales) in the decade of the 1990s. In the same period, domestic consumption increased from 2.3 million to 3.9 million quintales. Exports also have tended to increase, but with some variations according to levels of production.

4.- Regulating Entity for the Nicaraguan Sugar Trade

The [redacted] is an organization composed of all of the sugar refineries ([redacted] and a delegate from the Ministry of Promotion, Industry and Commerce. It acts to regulate the domestic and export sugar markets, proportionally distributing the US and national quotas among the refineries. The excess production of each *ingenio* is exported to the international market. Every September, the [redacted] meets to determine the level of national sugar consumption.

The [redacted] aims to guarantee the placement of sugar in the internal market, guarantee distribution in the internal and international market, regulate prices and sugar companies' participation in the market, carry out audits, and control domestic prices.

Representation on the [redacted] depends on the participation of each refinery in national sugar production. The [redacted] serves to guarantee the government that there will be reliable sugar distribution for the local market. [redacted] also contracts the services of Price Waterhouse, an international external auditing company, to ensure that sugar prices and quotas for the local market are respected.

III. FIELD RESEARCH ON SUGAR SECTOR WORKERS

1. METHODOLOGY

The study was carried out between September and December 2004, during the pre-sugar production season as well as during the national sugar-producing season. As study instruments, the following were used: 1) surveys of field, factory, and workshop workers; 2) interviews of small producers (settlers) and administrative personnel of the refineries to which we had access. The way we selected the sample used was the *Aleatorio*, and the questions in the survey instruments were both open and closed. The places where we collected our sample for this survey were: communities and neighborhoods close to the refineries; in front of the refinery gates during shift changes; sugar plantations owned by the refineries; the processing plants of the [redacted] and [redacted] refineries; and the sugar plantations of the small producers.

As described in the first phase of the study, the sugar sector generates around 35,000 direct and indirect jobs during the pre-harvest and harvest season. This working population is linked to four refineries ([redacted] and a small number of workers labor for the small sugar producers (settlers) as well. These small producers, in turn, supply the different refineries with sugar cane.

To define the study sample, we calculated the average number of workers who directly labor in the different refineries, as well as the number of members affiliated to the diverse unions in each refinery. In this study, we selected 5% of the workers and unionists per refinery, basing the sample in relation to the working population in three of the four established refineries in Nicaragua ([redacted].

Due to circumstances beyond our control that we will explain in this report, it was not possible to incorporate a sample of 5% of the union affiliates of the different unions in the included refineries, so we added this sample to the total number of workers surveyed per refinery. The subjects were distributed in this way: 365 workers plus five settlers for the [redacted] refinery, 148 workers plus two settlers for the [redacted] refinery, and 130 workers from the [redacted] refinery, equaling a total of 650 workers surveyed.

To determine the selection of the refineries that make up our study sample, we weighed several economic, social, labor-related, political, and environmental aspects, which we knew through secondary sources such as the media over the last few years. The determining factors in the selection of the study sample are as follows:

1) The [redacted] refinery is the only refinery in the country that produces refined sugar for export. Thus, it has the highest indices, among the established refineries in Nicaragua, of complaints on the national and international level of irreversible consequences to the health of the workers, due to the use of highly dangerous agrochemicals in the production process, primarily affecting workers who labor in the fields (sugar workers).

2) The [redacted] refinery is the only refinery in Nicaragua with foreign capital (from Guatemala). Thus, it is considered by the local media to have the best labor conditions for the workers with a direct contract with the refinery. On the other hand, the owner of the company is criticized for contracting many temporary workers (called "contractors") in order to have a sufficient supply of labor during the seasons of sugar production. The critics say that the refinery refuses to offer social benefits and labor conditions established by law, due to the lack of a direct labor relation between the refinery and these workers, despite the fact that these workers are their own bosses of the temporary work agency.

3) The [redacted] refinery is the only refinery close to the coast (800 meters from the sea), causing complaints on a national level by local authorities and environmental organizations, who accuse the company of environmental contamination. There is a growing lack of confidence by members of the nearby communities about the condition of the drinking water (from individual and communal wells and from rivers), due to the chemical waste products that the refinery dumps directly into the ground, and due to the chemical products used by the refinery to fumigate its plantations, which circulate in the air in the nearby areas.

In relation to the development of this field study, only the administrative personnel of the [redacted] refinery, which is the refinery with the least capital and smallest productive capacity, assisted in the research, through authorizing supervisors to allow the surveying of the workers in the refinery's different work areas (factory, workshop, and fields). In this case, the study was carried out in the various areas of the refinery, and the only problem was the inability to locate the settlers who supply the refinery with sugar cane during the period in which we collected the sample.

In the case of the [redacted] refinery, the refinery with foreign capital and second in productive capacity, the relation with the administrative and managerial personnel was not friendly or helpful. On the other hand, we were able to count on the logistical support of the union in this refinery. As a result, with their help, we were able to enter the grounds of the refinery in order to survey the factory personnel. We were also able to coordinate with them visits to neighboring communities and interviews with the small producers who supply the refinery with sugar cane.

Finally, due to the seriousness of the national and international complaints against the [redacted] refinery about the health hazards to the workers due to the use of dangerous agrochemical products, we decided to develop the sample for this refinery with the logistical support of the former workers of the refinery, in order to directly understand the point of view of the workers and ex-workers.

Through the support of the ex-sugar workers, we were able to carry out the field research in the different nearby communities close to the refinery and we were able to contact the organization of ex-workers affected by these agrochemicals, who have filed national and international lawsuits against the refinery. Thus, these workers facilitated the carrying out of the interviews with settlers who supply the refinery, only allowing us to have access to the smallest producers, due to the lack of accessibility to the large sugar producers who were hostile and unwilling to provide the required information.

2.- DESCRIPTION OF THE RESULTS

A) Labor Statistics

Table 15: Number of workers in each refinery

Refinery	Women		Men		Total	
	#	%	#	%	#	%
[redacted]	3	0.4%	127	19.6%	130	20%
[redacted]	26	4%	124	19%	150	23%
[redacted]	17	2.6%	353	54.4%	370	57%
Total	**46**	**7%**	**604**	**93%**	**650**	**100%**

It can be observed that the composition of the workforce in the sugar industry is not equal in terms of gender. Only 7% of the study sample was of female workers, despite the initial goal of having 25% of the sample (163 surveys) be female workers. This is due to the reduction of the national female agricultural workforce in the different agricultural sectors and in non-traditional industries, as shown by the media over the last few years.

According to this information, the female workforce laboring in different activities in the field (preparing the land, sowing, irrigation, fumigation, burning, cutting) necessary for the development of products such as sugar, banana, wheat, corn, rice, beans, and plantain, has been shrinking considerably since 2000.

According to public information, in 2000, the female workforce in the agricultural sector and in non-traditional sectors, represented around 19% of the total on a national level. Now, it is estimated that only 8% of the workforce in the agricultural sector is female, and most of these women work in the sugar sector.

The statistics produced by these sources can be compared against the results of this investigation, which reflect only 7% of women as survey participants, of which 6.6% are sugar workers. The existence of this labor inequality between farmworkers of different sexes directly prejudices the female sugar workers, since the sugar industry is nationally one of the industries that generates the greatest number of permanent, temporary, direct, and indirect jobs.

It should be mentioned that all of these agricultural activities are located in rural zones and the homes of rural workers all over the country. The geographical closeness between this productive activity and the rural zones where this workforce exists, signifies that these economic sectors are the primary source of employment and sustenance for these communities, which in general live in extreme poverty, with a high dependence on these kinds of activities.

The reduction in the feminine agricultural workforce is primarily due to the contractor companies that conduct the hiring of these kinds of rural workers who at the same time are subcontracted by the refineries – which does not reduce their responsibility in this phenomenon despite the form of hiring – to work in the production of sugar during the annual production periods. These companies believe that women sugar workers are less desirable, due to their apparently lower productive capacity (physical capacity) in carrying out different rural tasks.

Table 16: Type of surveyed worker

Refinery	Permanent Worker		Temporary		Settler	
	#	%	#	%	#	%
[redacted]	35	5.3%	95	14.6%	0	0.0%
[redacted]	16	2.5%	132	20.4%	2	0.3%
[redacted]	10	1.5%	355	54.6%	5	0.8%
Total	**61**	**9.3%**	**582**	**89.6%**	**7**	**1.1%**

Table 16b: Type of surveyed worker by sex

Type of Worker	Women		Men		Total	
	#	%	#	%	#	%
Permanent	1	2.2%	60	9.9%	61	9.3%
Temporary	43	93.5%	539	89.2%	582	89.6%
Settler	2	4.3%	5	10.9%	7	1.1%
Total	46	100%	604	100%	650	100%

This type of workforce subcontracting that the refineries in Nicaragua practice for established lengths of time and for certain work activities, can be observed in the number of workers that are temporarily contracted by contractor companies or by the refineries themselves. The statistics obtained in this study show that 89.6% of the survey subjects said that they are temporary workers. From a gender-based perspective, the incorporation of temporary workers according to sex is very similar, representing in both cases more than 89% of the survey subjects.

On the other hand, if these statistics are compared with the incorporation of temporary workers in the different sugar industries across the region of Central America, it is observed that this trend is similar across the region, with more than 85% of workers in this sector contracted temporarily.

A common practice by the refineries in the country is the form of hiring a worker. For example, a sugar worker could be hired directly or indirectly by the refinery or by a contractor company, depending on the needs of the refinery. The refineries primarily hire permanent and temporary workers who labor directly in the companies' plants (factory, administration, security personnel, workshops, warehouses, etc.). In general, these workers enjoy the principal benefits offered by the refinery (medical assistance, food subsidies, social security, raises, etc.), in compliance with the obligations of the employer with a direct labor relation to his employee as per Nicaraguan labor law.

On the other hand, the refinery has a demand for labor in order to carry out the sugar production during each annual production cycle. For this reason, the contractor companies mentioned earlier facilitate the mass subcontracting of thousands of workers for the refineries, who primarily work in the fields during the sugar production season. In many cases, these workers receive less benefits and worse working conditions from the contractor companies and the refineries themselves.

If we look at the table referring to the [redacted] refinery, which is the smallest refinery in terms of economic and productive capacity, there exists the largest number of surveys completed by permanent workers (from the factory, workshop, and operations department). This is due to the accessibility facilitated by the managerial personnel, allowing the surveying of workers within the refinery's plant.

Table 17: Type of work performed

Refinery	Field worker		Workshop or Operations Department Worker		Factory Worker		Settler	
	#	%	#	%	#	%	#	%
[redacted]	83	12.8%	12	1.8%	35	5.7%	0	0.0%
[redacted]	124	19.1%	8	1.2%	16	2.5%	2	0.3%
[redacted]	349	53.8%	7	1.1%	9	1.3%	5	0.8%
Total	**556**	**85.6%**	**27**	**4.1%**	**60**	**9.2%**	**7**	**1.1%**

Table 17b: Type of work performed, by sex

Type of Work	Women		Men		Total	
	#	%	#	%	#	%
Field	39	6%	517	79.5%	556	85.6%
Workshop and Operations	0	0.0%	27	4.2%	27	4.1%
Factory	5	0.8%	55	8.5%	60	9.2%
Settler	2	0.2%	5	0.8%	7	1.1%
Total	46	7%	604	93%	650	100%

A disadvantage in having fieldwork be the principal source of jobs is the high level of occupational hazards and work-related illnesses. An example is the uncontrolled and open exposure to ultraviolet rays and agrochemical products used in fumigations for extended periods of time during the workday, with health consequences that include dehydration, skin cancer, and sterility. The consequences of this type of exposure that the field workers in the sugar industry suffer are determined by the amount of time they are exposed. In this way, a sugar worker could be exposed to these conditions for periods that fluctuate between 3-7 months according to the productive capacity of the refinery, as the worker carries out his labors in the field and is exposed for approximately 8-12 hours a day.

This can be analyzed through the results of this study, which show that the vast majority of the 13.3% of the surveyed workers who carry out their labors in the factories or in the workshops (processing, electricity, mechanics, grinding, boiling, etc) of the refineries studied come from communities and cities more distant from the refineries. They migrated due to the need for a specialized workforce, thus obtaining better working conditions and salaries from the refineries.

Finally, returning to the gender issue, a pronounced inequality is observed in the incorporation of female workers in the fields, equaling a mere 6% of the workforce, with male field workers making up 79.5% of the total workforce. These statistics confirm the declarations made by the local media, who state that there has been a reduction from 19% to 8% of the female workforce carrying out activities in the field related to these sectors.

Table 18: Tasks of Fieldworkers

Refinery	Cutting		Sowing		Burning		Irrigation		Controlling Pests	
	#	%	#	%	#	%	#	%	#	%
[redacted]	55	9.8%	9	1.6%	5	0.9%	8	1.4%	6	1.0%
[redacted]	90	16.2%	10	1.7%	7	1.2%	9	1.6%	8	1.4%
[redacted]	272	48.9%	34	6.2%	12	2.2%	18	3.2%	13	2.4%
Total	**417**	**74.9%**	**53**	**9.5%**	**24**	**4.3%**	**35**	**6.3%**	**27**	**4.8%**

Table 18b: Fieldworker tasks, by sex

Type of task	Women		Men		Total	
	#	%	#	%	#	%
Cutting	0	0.0%	417	75%	417	75%
Sowing	39	7%	14	2.5%	53	9.5%
Burning	0	0.0%	24	4.3%	24	4.3%
Irrigation	0	0.0%	35	6.3%	35	6.3%
Controlling Pests	0	0.0%	27	4.8%	27	4.8%
Total	39	7%	517	93%	556	100%

Another statistic showing the gender inequality in the hiring of the field laborer workforce is that reflecting the number of tasks that are carried out by both men and women. Women generally carry out tasks in the field that supposedly require less physical force, such as preparing the land, caring for other workers (the "nurse" of a work squad), and sowing. The statistics show that 39 female workers carry out the sowing in the different fields, while the men dominate tasks such as cutting, burning, irrigation, and controlling pests, making up 93% of the field laborer workforce surveyed.

The surveyed fieldworkers mention men's control over diverse tasks carried out in the fields. For example, a male sugar worker can be hired during the production season to cut, burn, water, or fumigate the sugar cane, while the female worker can only carry out the tasks that the refinery and the contractor company say she is able to do, such as sowing, preparing the land, and being the nurse of a work squad.

In the case of the [redacted] refinery, there exists the so-called "nurses of the work squads," who are in the fields (cane fields or cutting areas) during the harvest with small first aid kits to take care of common accidents (cuts, scrapes, etc.) that the sugar workers suffer when they are carrying out their tasks in the field. Another task that is carried out by women fieldworkers is that of preparing the fields. Unfortunately, we could not locate any of these women workers to include them in the study sample, proving further the displacement of the female workforce by the male workforce due to their supposed greater productive capacity.

The labor situation that the women sugar workers are confronting is worrying, as their work opportunities are now limited. It is very common that while women can no longer carry out these same tasks in the refineries, they can do the same tasks in other sectors of the agricultural industry, yet there too they face the same situation of labor inequality. Thus, it is necessary to give them technical training in activities such as

sewing, handicrafts, and styling, which would allow them to face the difficult situation of labor inequality in relation to male fieldworkers.

Table 19: Tasks of workshop and operations workers

Refinery	Warehouse		Loading		Transport	
	#	%	#	%	#	%
[redacted]	1	3.7%	5	18.5%	6	22.2%
[redacted]	2	7.4%	2	7.4%	4	14.8%
[redacted]	1	3.7%	3	11.1%	3	11.1%
Total	**4**	**14.8%**	**10**	**37%**	**13**	**48.1%**

In general, the work in the workshop and in operations is composed of the warehouse, transport, and loading areas, according to the operational structure of each refinery. For the effects of this study, we will classify these tasks in this way and so this is how they are presented in the table.

It is very common to have a minimum number of permanent workers in each of these areas (warehouse, loading, and transport), directly involved in the pre-production and production season work. The personnel in these areas can be hired directly by the company, either temporarily or permanently. In the case of the independent truckers (transport workers) who are hired temporarily during the production season, they are hired through a short-term work contract for "special services." This means that these workers do not appear on the payroll and do not receive the benefits that the rest of the temporary workers contracted in the warehouse, loading, and transport areas receive.

The small sugar producers (settlers) and the independent truckers (transport workers) play important yet indirect roles in the sugar production cycle. On the one hand, the settlers provide the needed sugar cane, so that the refinery can reach its production goals for each production season. On the other hand, the transport workers facilitate the movement of the sugar cane from the settlers to the sugar processing plants located at the refineries. For these reasons, special contracts are established with each worker.

The refinery provides small sugar producers with benefits all year, including raw materials, technical assistance, training, and workers, so that they can comply with the refinery's demands for sugar cane. In turn, in many cases, the independent truckers that use their vehicles to transport the sugar cane to the refinery's plants during the production period do not get technical assistance (vehicle maintenance) from the refinery during the non-production periods, so that these transportation services can be in good working condition and in good maintenance when, like the settlers, they are needed by the refinery.

Table 20: Tasks of factory workers

Refinery	Grinding		Boiling		Processing		Laboratory		Industrial Mechanics		Mechanized Harvesting	
	#	%	#	%	#	%	#	%	#	%	#	%
[redacted]	4	6.6%	4	6.6%	8	13.3%	2	3.3%	12	11.2%	5	5.1%
[redacted]	3	5.1%	3	5.1%	2	3.3%	2	3.3%	4	6.6%	2	3.3%
[redacted]	1	1.6%	1	1.6%	2	3.3%	3	5.1%	1	1.6%	1	1.6%
Total	**8**	**13.3%**	**8**	**13.3%**	**12**	**11.2%**	**7**	**11.6%**	**17**	**28.3%**	**8**	**13.3%**

Table 20b: Tasks of factory workers, by sex

Type of Work	Women		Men		Total	
	#	%	#	%	#	%
Grinding	0	0.0%	8	13.3%	8	13.3%

In the factory, with the exception of laboratory work, which is primarily done by women, the rest of the tasks are completely carried out by male personnel. This is explained by the high level of occupational risk and the requirement of much physical strength to carry out these activities. There is also gender inequality within this area of work, with the female workforce making up a mere 8.3% of the workers carrying out these tasks.

If these results are compared with those in the refineries in Guatemala and El Salvador, which are the countries with the most production of this agricultural product in the region, we see that the female workforce is also primarily concentrated in the laboratory area, with the exception that female personnel are now carrying out supervisory and control functions in other areas.

These facts indicate that the female workers are considered "trustworthy and responsible." These statistics can be compared with the reality of this industry which shows a predominance of female personnel in the human resources and administrative areas of the different refineries in the country.

Table 21: Do you have any kind of relationship with the refinery owners?

Refinery	Friendship		Know them		Only know their names		Do not know them at all	
	#	%	#	%	#	%	#	%
[redacted]	0	0.0%	8	1.2%	14	2.1%	108	16.6%
[redacted]	0	0.0%	0	0.0%	19	2.9%	131	20.1%
[redacted]	0	0.0%	17	2.7%	215	33.2%	138	21.2%
Total	**0**	**0.0%**	**25**	**3.9%**	**248**	**38.2%**	**377**	**57.9%**

Table 21b: Relationship with the refinery owners? Answers categorized by sex.

Refinery	Women		Men		Total	
	#	%	#	%	#	%
Friendship	0	0.0%	0	0.0%	0	0.0%
Knows them	0	0.0%	25	3.9%	25	3.9%
Only knows their names	4	0.6%	244	37.6%	248	38.2%
Does not know them at all	42	6.4%	335	51.6%	377	57.9%
Total	**46**	**7%**	**604**	**93%**	**650**	**100%**

More than 96% of the survey respondents have never had any visual or direct contact with the refinery owners. The vast majority of the survey respondents who responded in this way are subcontracted field laborers. This explains the lack of direct contact with the administrative and management personnel of the refinery, since their direct labor relationship is not with the refinery.

It is also surprising to note that *all* of the women who answered this question said that they did not know the refinery owners. And the 3.9% of the survey respondents who said that they did know them were all male factory workers or independent truckers who work for the refinery during the sugar production season.

The sample from the [redacted] refinery shows a large number, in comparison with respondents from other refineries, of survey respondents who know the names of the refinery owners. This is due to the fact that the owners of the San Antonio refinery are influential people in the Nicaraguan political and economic scene ([redacted] and [redacted]).

Table 22: Relationship with the refinery owners, according to type of worker

Type of Worker	Friendship		Know Them		Only Know Their Names		Don't Know Them	
	#	%	#	%	#	%	#	%
Permanent	0	0.0%	19	2.9%	34	5.2%	8	1.2%
Temporary	0	0.0%	5	0.7%	209	32.2%	368	56.6%
Settler	0	0.0%	1	0.2%	5	0.7%	1	0.1%
Total	**0**	**0.0%**	**25**	**3.8%**	**248**	**38.1%**	**377**	**57.9%**

The settlers are considered to be people with greater access and closeness to the administrative and managerial personnel, since they are seen by the refineries as having an important labor relation with the company due to their help in allowing it to fulfill its production goals each season. However, it is interesting to note that only one of the seven settlers interviewed said that they directly knew the refinery owners, and five of the seven settlers said that they only knew the names of the owners of the [redacted] and [redacted] refineries.

With regard to this point, it should be recognized that we were only able to interview the sugar cane producers with less productive and economic capacity. The statistics show that there are settlers who can supply the studied refineries from 500 to 5,000 bushels of sugar cane each harvest season. But the settlers interviewed for this study only have a productive capacity of 50 bushels of sugar cane, thus, these settlers have a contractual relation with the administrative personnel and not directly with the refinery owners.

B) Personal Statistics

Table 23: Sex of survey respondents

Refinery	Woman		Mana		Total	
	#	%	#	%	#	%
[redacted]	3	0.4%	126	19.4.%	125	20.5%
[redacted]	26	4.0%	124	19.1%	134	22.0%
[redacted]	17	2.6%	354	54.5%	350	57.5%
Total	**46**	**7%**	**604**	**93.0%**	**650**	**100.0%**

Despite the fact that the vast majority of women surveyed work in the fields, they carry out tasks considered "of lesser physical capacity," such as sowing, preparing the fields, and nurses of the work squads.

We can also see that in the factory, in tasks such as processing, boiling, electricity, mechanics, grinding, etc., there is zero female presence, with the sole exception of the laboratory area. But, it can be seen that in the accounting department and in the

laboratory, there is a predominance of female workers, since they are seen as workers of high reliability.

The almost non-existent presence of women fieldworkers in the [redacted] refinery should be noted, as we were only able to interview one female sugar worker. Out of all the refineries studied, this refinery has the fewest female fieldworkers.

Table 24: Age of survey respondents

Refinery	16 - 21		22 - 28		29 - 35		36 - 45		More than 46	
	#	%	#	%	#	%	#	%	#	%
[redacted]	36	5.5%	62	9.5%	20	3.1%	5	0.7%	3	0.5%
[redacted]	53	8.1%	71	10.9%	25	3.6%	2	0.1%	2	0.1%
[redacted]	91	14%	221	34.0%	50	7.5%	5	0.7%	4	0.6%
Total	**180**	**27.6%**	**354**	**55.4%**	**95**	**14.2%**	**12**	**1.5%**	**9**	**1.2%**

Table 24b: Age of survey respondents, by sex

Range	Women		Men		Total	
	#	%	#	%	#	%
16 – 21	16	2.5%	164	25.7%	180	27.6%
22 – 28	25	3.8%	329	50.6%	354	55.4%
29 – 35	3	0.5%	92	14.1%	95	14.2%
36 – 45	1	0.1%	11	1.7%	12	1.5%
More than 46	1	0.1%	8	1.2%	9	1.2%
Total	**46**	**7%**	**604**	**93%**	**650**	**100.0%**

It is interesting yet worrying to observe the preference of both the refineries and the contractor companies for "the youngest workforce." As shown, 83% of the workers who participated in the study are between 16 and 28 years old. These statistics reveal the limitations that agricultural workers over age 30 face in finding work in this economic sector. This study shows that only 12 of the survey respondents are between 36 and 45 years old, all of them male.

One worrying fact is that the short working life of many of these agricultural workers is related to the dehydration, malnutrition, and exposition – for long periods of time – to ultraviolet rays and agrochemical products used in fumigation. These factors cause many chronic and serious illnesses, even at a young age. These illnesses include skin cancer, kidney diseases, and sterility, among others. Due to these horrible conditions, approximately 85% of the women surveyed also are between the ages of 16 and 28 years old.

Table 25: Marital status of survey respondents

Refinery	Married		Single		With Partner		Widow(er)		Single Mother	
	#	%	#	%	#	%	#	%	#	%
[redacted]	19	2.9%	34	5.2%	73	11.2%	3	0.4%	2	0.3%
[redacted]	18	2.7%	37	5.7%	78	12%	0	0.0%	17	2.6%
[redacted]	47	7.2%	132	20.3%	178	27.4%	1	0.2%	11	1.7%
Total	**84**	**12.8%**	**203**	**31.2%**	**329**	**50.6%**	**4**	**0.6%**	**30**	**4.6%**

Table 25b: Marital status of survey respondents, by sex

Marriage Status	Woman		Man		Total	
	#	%	#	%	#	%
Married	2	0.3%	82	12.5%	84	12.8%
Single	2	0.3%	201	30.9%	203	31.2%
With Partner	11	1.7%	318	48.9%	329	50.6%
Widow(er)	1	0.1%	3	0.5%	4	0.6%

It is important to note that many of the 50.6% of the survey respondents who said that they have a partner are under age 21. This indicates that these young people are having sexual relations at a very young age, putting their physical and sexual health at risk. The majority of survey respondents in this category are young men.

The most revealing statistic is that related to "single mothers." Of the 46 women who participated in the study, 30 are single mothers, representing more than 65% of the female survey sample. In addition, it can be seen that the vast majority of these single mothers are between the ages of 22 and 28 years old.

Table 26: Work status of the survey respondents' partners or spouses

Partner or Spouse	Montelimar		Monte Rosa		San Antonio		Total	
	#	%	#	%	#	%	#	%
Works	12	2.9%	15	3.6%	43	10.4%	70	16.9%
Does Not Work	80	19.3%	81	19.6%	182	44.1%	343	83.1%
Total	**92**	**22.2%**	**96**	**23.2%**	**225**	**54.5%**	**413**	**100.0%**

The respondents to this question were those who answered that they are married or live with their partner. This question was designed to measure the incomes of family units, given that more than 85% of the survey respondents have at least one child, which is documented in the following table.

As it is observed in the table, of the 413 survey respondents (63.5% of the total) who said they have a partner, only 16.9% of them can depend upon the economic assistance of their partner in order to cover household costs and costs related to their children.

It can be observed that more than 83% of these survey respondents represent the only economic income to cover household costs of the family unit. This statistic is very worrying, as these households live in extreme poverty and in horrible conditions.

Table 27: Number of children

Refinery	None		1 - 3		4 - 6		More Than 7	
	#	%	#	%	#	%	#	%
[redacted]	14	2.1%	60	9.2%	45	6.9%	11	1.6%
[redacted]	20	3.1%	55	8.4%	57	8.7%	18	2.7%
[redacted]	58	8.9%	175	26.9%	116	17.8%	21	3.2%
Total	**92**	**14.1%**	**290**	**44.5%**	**218**	**33.4%**	**50**	**7.5%**

Table 27b: Number of children, by sex of respondent

Range	Women		Men		Total	
	#	%	#	%	#	%
None	3	0.4%	89	13.8%	92	14.2%
1 - 3	9	1.4%	281	43.2%	290	44.6%
4 - 6	28	4.3%	190	29.2%	218	33.5%
More Than 7	6	0.9%	44	6.8%	50	7.7%
Total	**46**	**7%**	**604**	**93%**	**650**	**100.0%**

More than 85% of the survey respondents have at least one child. This statistic is troubling, as the places in which the survey respondents live are general extremely poor rural communities. In addition, 83% of the total survey

sample (650 respondents) are young people between 16 and 28 years old.

If we compare the percentage of respondents who said they are single (31.2%) to the percentage of respondentse who said that they do not have children (14.1%), it can be seen that more than half of the single respondents have at least one child and are the only economic support for their children, such as in the case of single mothers. As a result, the survey respondents who have children and who are single fathers are 24.6% of the total sample. If to this 24.6% is added the 46.6% of survey respondents who have a partner yet are the only wage earner for their families, this statistic represents more than 71% of the total sample. This is an indicator of the high levels of economic troubles that many of these family units experience.

It is worth mentioning that 85.9% of the survey respondents have children, and 40.9% have four or more children. The respondents to this survey are primarily field laborers, who receive a monthly salary no more than $55 a month. It would be very difficult to maintain and educate four or more children on this salary. Due to this, there is a good possibility that in many of these family units, there are children and teenagers who work in the informal sector, as garbage collectors, shoe shiners, street vendors, or other functions. We will look at these statistics later.

If we look at the educational level of this 40.9% of the sample, we can see that in the majority of cases, these respondents only have a primary level of schooling, showing the determining factor that education plays in lifestyle choices of people, whether or not they are poor. Thus, the majority of survey respondents in the total sample live in extreme poverty, yet the number of children of each respondent is primarily determined, in many cases, by their educational level.

Finally, it can be observed that 74% (34) of the women surveyed have four or more children. Thus, of the 30 single mothers interviewed, 28 have this number of children, being the only wage earner for their family unit, and experiencing the work discrimination that women confront in these kinds of rural labor activities.

Table 28: Children doing some kind of informal paid child labor

Type of Work	Women		Men		Total	
	#	%	#	%	#	%
Shoe Shiners	2	4.6%	29	5.6%	31	5.5%
Garbage Collectors	3	7%	35	6.8%	40	7.2%
Field Laborers	8	18.7%	93	18.6%	101	18.1%
Street Vendors	19	44.2%	104	20.2%	123	22%
Total	**32**	**74.5%**	**261**	**50.7%**	**295**	**52.8%**

Many parents must force their children to carry out some form of child labor. In the case of the 43 women who said that they have children, 32 (74.5%) said that their children who are minors do some kind of labor to help the economic situation of the household. Of the 515 men who said that they have children, 261 (50.7%) of them said that they force their children to carry out these inhuman practices. In conclusion, of the 558 survey respondents who said that they have children and at least one is a minor, 295 (52.8%) said that they force them into these systems of repressive child labor due to economic necessity.

A particularly alarming statistic is that the vast majority of survey respondents who answered this question are field workers. Also, of the 30 single mothers, 29 (96.6%) said that their children carry out some kind of child labor to help them economically.

These statistics are very unfortunate, as in a sample so small (650 respondents), more than 45% said that they forced their children to work. This statistic should be put in perspective with the reality that there are more than 30,000 sugar workers who carry out fieldwork during the sugar production period in refineries all over the country. This shows the cruel reality that thousands of children and adolescents from these rural areas must face.

Table 29: At what age did you have your first child?

Refinery	12 - 15		16 - 18		19 - 21		22 – 25		Over 26	
	#	%	#	%	#	%	#	%	#	%
[redacted]	23	4.2%	32	5.8%	42	7.5%	15	2.6%	4	0.7%
	28	5.0%	36	6.4%	40	7.2%	19	3.4%	7	1.2%
	55	9.9%	88	15.7%	115	20.6%	36	6.4%	18	3.1%
Total	**106**	**19.1%**	**156**	**27.9%**	**197**	**35.3%**	**70**	**12.4%**	**29**	**5%**

Table 29b: At what age did you have your first child? Answers categorized by sex of respondent

Range	Women		Men		Total	
	#	%	#	%	#	%
12 - 15	7	1.2%	99	17.7%	106	19.1%
16 – 18	16	2.9%	140	25%	156	27.9%
19 – 21	17	3%	180	32.2%	197	35.3%
22 – 25	4	0.7%	66	11.8%	70	12.4%
More than 26	2	0.3%	27	4.8%	29	5%
Total	**43**	**7.7%**	**515**	**92.3%**	**558**	**100.0%**

As can be observed in the table, more than 82% of the survey respondents had their first child between the ages of 12 and 21. This shows a high level of early sexual activity present in all different generations (ages) among the survey population living in rural zones.

It is very difficult to break with these kinds of deep-rooted behaviors in these rural communities, and even more difficult due to the high levels of illiteracy and school abandonment, especially in the cases of children and teenagers who are forced to do some kind of informal work.

It is important to remember that the refinery hires thousands of sugar workers during the pre-sugar harvest and sugar harvest seasons. This is a sole opportunity for these workers, with so many needs to be fulfilled in order to survive, which does not allow them to attend school during these periods. But the refinery could take advantage of this massive grouping of workers in order to offer them trainings and educational programs on topics of family interest, such as sexual and reproductive health, domestic violence, the consequences of child labor, and the consequences of illiteracy and school abandonment, among others.

The refineries, in general, give trainings to the field laborers on the use and importance of the tools and equipment used in the work. However, these types of trainings are not that important or transcendental in their lives. For example, what benefit does a training

on the use and importance of a machete have to a sugar cane worker who has used a machete his whole life, who has cut himself with it, and who manages it better than any trainer from the refinery's human resources department?

Table 30: Educational level of survey respondents

Refinery	Illiterate		Primary		Secondary		University		Technical School		Post-Graduate	
	#	%	#	%	#	%	#	%	#	%	#	%
[redacted]	20	3.1%	63	9.7%	10	1.6%	2	0.3%	32	4.9%	3	0.5%
[redacted]	38	5.8%	88	13.5%	7	1.1%	1	0.1%	14	2.2%	2	0.3%
[redacted]	91	14%	262	40.3%	6	0.9%	1	0.1%	9	1.2%	1	0.1%
Total	**149**	**22.9%**	**413**	**63.5%**	**23**	**3.6%**	**4**	**0.5%**	**55**	**8.3%**	**6**	**0.9%**

Table 30b: Educational level of survey respondents, by sex

Educational Level	Women		Men		Total	
	#	%	#	%	#	%
Illiterate	18	2.8%	131	20.1%	149	22.9%
Primary	22	3.4%	391	60.2%	413	63.5%
Secondary	1	0.1%	22	3.4%	23	3.6%
University	1	0.1%	2	0.3%	4	0.5%
Technical School	1	0.1%	54	8.3%	55	8.3%
Post-Graduate	3	0.5%	3	0.5%	6	0.9%
Total	**46**	**7%**	**604**	**93%**	**650**	**100%**

As the statistics show, 63.5% of the survey respondents only attended or finished primary school, and 22.9% of the survey respondents have no academic education (illiterates). These two categories together make up 86.4% of the total sample. This can be compared with the sample of field laborers, which represents 85.6% of the total sample. Sadly, these, along with five of the seven settlers, are the sugar workers who said that they are illiterate or have only finished their primary schooling.

The 13.5% of respondents who had higher educational levels (secondary, university, technical school, and post-graduate) are the workers in the factory, workshop, and operations departments. Two settlers are included in this percentage. It should also be mentioned that out of this 13.5% of survey respondents, only one woman, in the post-graduate category, is included.

As stated earlier, it is very difficult to try to change the reality of these extremely poor communities, since their multiple (primarily economic) necessities prevent this. For this reason, it is necessary to offer them technical training (in mechanics, electricity, carpentry, sewing, hairdressing, and handicrafts, etc.) which would be very useful for them in their struggle to obtain the minimal economic resources they need for their survival.

Table 31: Number of illiterate families

# of Illiterates in the Family	Women		Men		Total	
	#	%	#	%	#	%
From 1 – 3	29	7.8%	271	72.8%	300	80.6%
From 4 – 8	7	1.8%	38	10.2%	45	12%
From 9 - 13	3	0.8%	24	6.4%	27	7.4%
Total	**39**	**10.4%**	**333**	**89.4**	**372**	**100%**

These statistics reflect the cruel reality faced by the inhabitants of these extremely poor communites located near the sugar

refineries.

It is sad to note that only 63.5% of the survey respondents only attended primary school, and that 22.9% of the survey respondents are illiterate. But it is even more lamentable that of these 86.4% of survey respondents, more than 57% have at least one other family member that is also illiterate, reflecting the generalized reality of these rural populations.

Eliminating the high levels of illiteracy, as well as the high levels of child labor, in these rural zones is very difficult, since it is necessary to train these young people in technical skills that will allow them to obtain better jobs with more dignity, better pay, and better working conditions. The extreme poverty faced by these families is what forces these children and teenagers to be involved in the worst forms of child labor.

Table 32: Current residence of survey respondents, by location of refineries where they work

[redacted]				[redacted]				[redacted]			
Managua		Migrants		Chinandega		Migrants		Chinandega		Migrants	
#	%	#	%	#	%	#	%	#	%	#	%
109	83.8	21	16.2	124	82.7	26	17.3	305	82.4	65	17.6
Location of Permanent Residence of Migrants Montelimar Refinery				**Location of Permanent Residence of Migrants MonteRosa Refinery**				**Location of Permanent Residence of Migrants San Antonio Refinery**			
City	Distance	#		City	Distance	#		City	Distance	#	
Masaya	35 kms	10		León	35 kms	21		León	25 kms	58	
Granada	45 kms	7		Esteli	110 kms	3		Esteli	120 kms	4	
Rivas	140 kms	4		Chontales	130 kms	2		Matagalpa	145 kms	3	
Total		**21**		**Total**		**26**		**Total**		**65**	

1) The [redacted] refinery is located in the city of [redacted] and as we can see in the table, of the 130 survey respondents from this refinery, 109 are residents of this city, with a migrant workforce of approximately 16.2%.

2) The [redacted] refinery is located in the [redacted] and as we can see in the table, of the 150 survey respondents from this refinery, 124 are residents of this city, with a migrant workforce of approximately 17.3%.

3) The [redacted] refinery is [redacted], and as we can see in the table, of the 370 survey respondents form this refinery, 305 are residents of this city, with a migrant workforce of approximately 17.6%.

If it seems curious why there are 79 migrant workers form the city of León, it is due to the fact that the two refineries located in [redacted] are located relatively close (between 25 - 35 Kms) to this city.

However, we also see migrant workers at the [redacted] refineries who come from cities such as Esteli, Chontales and Matagalpa, which are located from 110-145 kms away from the refineries. Similarly, some of the migrant workers at the

[redacted] refinery, located in the city of [redacted], come from cities such as Granada, Masaya, and Rivas, which are located from 35-140 kms fron the refinery. In this way, it is worrying that more than 16% of the workforce at the refineries is migratory.

It should be mentioned that the large majority of the migrant workers at the three refineries studied, are workers who primarily labor in the factory (grinding, boiling, processing, industrial mechanics, and mechanized harvesting), workshop, and operations department, as well as a large number of transport workers. As a result, the entire migrant workforce is male.

Table 33: Number of family members who work in industries that also have a high number of labor rights violations

Workplace	[redacted]		[redacted]		[redacted]		Total	
	#	%	#	%	#	%	#	%
Refineries	47	36.1%	59	39.3%	133	35.9%	239	36.8%
Free Trade Zones	35	26.9%	18	12.1%	29	7.8%	82	12.6%
Banana Plantations	0	0.0%	12	8.1%	15	4.1%	27	4.1%
Total	**82**	**63.1%**	**89**	**59.5%**	**177**	**47.8%**	**348**	**53.5**

As we can see in the table, in each one of the refineries included in this study, more than 36.8% of survey respondents have a family member who also works in a refinery, in order to ameliorate the extreme poverty in which their families live. It is important to note that all the survey respondents who answered this question were field laborers, representing more than 62% of the field laborer workforce.

Some family members also work in maquiladora factories. In the case of the [redacted] refineries, more than 19% of the survey respondents have family members working in maquiladora factories. It is very likely that these maquiladora workers are employed at the maquiladora factories located in the city of León, 30 kilometers away. In the case of the [redacted] 26.9% of respondents said that they have family members working in free trade zones, most likely in the maquiladora factories in the cities of Masaya and Granada, which are located [redacted] and [redacted] kilometers away.

A smaller number of survey respondents have family members who work in banana plantations. This is due to the economic difficulties that the banana plantations have faced in the last five years, which has forced them to layoff part of their workforce.

More than 53% of survey respondents have family members who work in the industries listed in the table. This shows the large number of agricultural workers in Nicaragua who must accept bad labor conditions with little occupational health or hygiene in the sugar and banana sectors due to the high levels of extreme poverty among this segment of the population. It is worrying that every year the sugar industry increases its profits but does not improve conditions for the workers. The poor and worsening labor conditions in the sugar sector primarily affect the temporary subcontracted workers.

The study also reflects that a growing number of people who live in rural areas are now working in free trade zones, where bad labor practices are also common.

C) Living Conditions

Table 34: Type of housing

Refinery	Own House		Rent House		House of a Family Member		House Owned by the Company	
	#	%	#	%	#	%	#	%
[redacted]	30	4.6%	4	0.6%	77	11.8%	19	2.9%
[redacted]	40	6.1%	8	1.2%	102	15.6%	0	0.0%
[redacted]	144	22.1%	13	2.0%	213	32.7%	0	0.0%
Total	**214**	**32.8%**	**25**	**3.8%**	**392**	**60.1%**	**19**	**2.9%**

Table 34b: Type of housing, by sex

Type of Housing	Women		Men	
	#	%	#	%
Own House	4	8.6%	210	34.8%
Rented House	0	0.0%	25	4.2%
House of a Family Member	42	91.4%	350	57.9%
House Owned by the Company	0	0.0%	19	3.1%
Total	**46**	**100%**	**604**	**100%**

Only [redacted] refinery workers live on company property. The administrators of [redacted] confirmed that these are workers who have lived for many years on land owned but not used by the refinery. It should be mentioned that these 19 workers are temporary workers hired by a subcontractor to work in the fields. According to the refinery's estimates, there are about 350 families who live on unused company land.

The study data shows that more than 60% of the survey respondents live in a house that is the property of a family member. Upon looking deeper into this question, we found out that this percentage of survey respondents live in houses with 2 or 3 other families. Sadly, a large number of these respondents are young people with their own children, who, in many cases, live in their parents' houses along with the family units of their brothers and sisters.

These statistics are even more tragic when we consider that any one house could have 10-20 inhabitants from different family units. It is common for these family units to have more children than they can economically support. It should also be mentioned that all of these survey respondents (60.1%) are temporary workers who work in the fields during the sugar production seasons.

If a comparative study is done by sex on housing conditions, only 8.6% of women respondents have their own house, as compared to the more than 34% of men. More than 91% of the women surveyed live in the home of another family member, while this is true for 57% of men.

It should be mentioned that the 25 people who rent their homes are men who work in the factory. The difference between the economic possibilities of these workers, who can afford this expense, and that of the field laborers, many of whom must live in the house of a family member due to their economic inability to acquire their own home, can be noted.

The remaining survey respondents from the factory, workshop, and operations areas, as well as all of the settlers, said that they had their own homes.

Table 35: Building materials used in housing

Refinery	Concrete		Wood		Cardboard, Plastic, or Tin	
	#	%	#	%	#	%
[redacted]	40	6.1%	49	7.5%	41	6.4%
[redacted]	25	3.8%	70	10.7%	55	8.5%
[redacted]	19	2.9%	210	32.3%	141	21.8%
Total	**84**	**12.8%**	**330**	**50.5%**	**237**	**36.7%**

Table 35b: Building materials used in housing, by sex

Materials	Women		Men		Total	
	#	%	#	%	#	%
Concrete	2	4.3%	82	13.2%	84	12.8%
Wood	13	28.2%	317	52.7%	330	50.5%
Cardboard, Plastic, or Tin	31	67.5%	206	34.1%	237	36.7%
Total	**46**	**100%**	**604**	**100%**	**650**	**100%**

As it is shown in the table, only 12.8% of the survey respondents (who were factory personnel, transport workers, and settlers) have houses made of concrete. These survey respondents have better living conditions than the rest of the survey sample, which is composed primarily of field laborers (sugar workers).

Sadly, the Agriculture and Forestry Ministry, MAGFOR, which is responsible for controlling the levels of deforestation in the rural areas of Nicaragua, does not do its job very well, allowing the inhabitants of these areas to sell wood to make a living. This can be confirmed by the fact that more than 50% of the sample said that their houses are made of wood. In many of these cases, the respondents themselves cut the wood for the construction of their houses in forest areas or bought it from informal wood sellers.

The high levels of poverty suffered by a large number of these workers is very worrying. Almost 37% of survey respondents live in houses constructed of unsafe and flammable materials, such as cardboard, plastic, and tin. Sadly, more than 67% of the women surveyed answered in this way, displaying the predominant gender inequality in terms of living conditions. All of the single mothers who participated in this study live in these conditions of extreme poverty, without any economic assistance, making it even more necessary for their children to be forced into child labor.

Table 36: Respondents who have a latrine at their home

Refinery	Yes		No	
	#	%	#	%
[redacted]	103	15.8%	27	4.2%
[redacted]	112	17.3%	38	5.9%
[redacted]	327	50.2%	43	6.6%
Total	**542**	**83.3%**	**154**	**16.7%**

Table 36b: Respondents who have a latrine at their home, by sex

Latrine?	Women		Men	
	#	%	#	%
Yes	6	13%	490	81.1%
No	40	87%	114	18.9%
Total	**46**	**100%**	**604**	**100%**

It is surprising to discover that are there still families who take care of their physiological necessities (urinate and defecate) by making holes in the ground and then covering the holes up with dirt, or simply doing it in the open air, without any kind of hygiene or health measure.

As we can see in the table, more than 16% of the survey respondents live in this horrible situation, due to the extreme poverty in which they live.

This statistic (16.7%) should only be compared with the sample of field laborers, who live in worse conditions than the factory, workshop, and operations workers. Almost 20% of the field laborers (sugar workers) do not own a latrine in order to take care of their physiological necessities. It is even more worrying to do this comparison by sex, as only 13% of the female sugar workers have a latrine, as compared to 81% of the male sugar workers.

Administrators of the [redacted] refineries say that they donate many items to the sugar workers, such as school supplies for their children and bicycles. It would be even more helpful if they gave the workers latrines, as taking care of physiological necessities in such a primitive and unhygienic way is damaging to the health of the workers' families and of the residents of the community. This expense would not even equal 1% of the profits that these refineries obtain from selling the sugar that they produce on a national and international level.

Table 37: Type of stove

Refinery	Wood		Gas		Electric	
	#	%	#	%	#	%
[redacted]	124	19.1%	5	0.7%	1	0.2%
[redacted]	139	21.3%	9	1.3%	2	0.4%
[redacted]	347	53.4%	19	2.9%	4	0.6%
Total	**610**	**93.9%**	**33**	**4.9%**	**7**	**1.2%**

Table 37b: Type of stove, by sex

Type of Stove	Women		Men		Total	
	#	%	3	%	#	%
Wood	44	95.6%	566	93.7%	610	93.9%
Gas	1	2.2%	32	5.4%	33	4.9%
Electricity	1	2.2%	6	0.9%	7	1.2%
Total	**46**	**100%**	**604**	**100%**	**650**	**100%**

These statistics confirm the high levels of poverty in which the neighboring communities to the refineries live, as 94% of the survey respondents only use wood to cook. Only 6.1% of the workers have access to gas or electric stoves. These workers are factory workers and thus are more educated (professionals and technicians). In addition, this type of cooking is done by taking advantage of the wood obtained through deforestation, thus affecting the ecosystem of these rural areas, and permitted through the lack of governmental supervision.

Table 38: Gathering wood

Who gathers the wood?	[redacted]		[redacted]		[redacted]		Total	
	#	%	#	%	#	%	#	%
Men	14	11.1%	17	12.2%	50	14.4%	81	13.2%
Women	23	18.5%	25	17.9%	69	19.8%	117	19.1%
Boys	57	46.1%	60	43.2%	146	42.1%	263	43.2%
Girls	30	24.2%	37	26.7%	82	23.7%	149	24.5%
Total	**124**	**100%**	**139**	**100%**	**347**	**100%**	**610**	**100%**

This question was asked to the 610 (93.8%) people from the three refineries who said that they cooked with wood. It interested us to know who in the family is in charge of gathering the wood for this domestic activity (in many cases, the wood is located several kilometers away).

If we compare the number of survey respondents who have at least one child (85.4%) with the percentage of children who gather wood for their homes in order to cook (67.7%), this shows that almost 80% of the survey respondents who have children make them carry out activities that for these young people represent a form of child labor, directly prejudicing their human development.

In addition, it can be observed that this activity is carried out more frequently by the woman (19.1%) as compared to the man (13.2%), despite being an activity that requires much physical force. However, in this case, it is the children who are most responsible for carrying wood for long distances on horseback, by wagon, or on foot.

Table 39: Type of water at respondents' homes

Refinery	Drinkable		Private Well		Communal Well		River	
	#	%	#	%	#	%	#	%
[redacted]	26	4%	56	8.6%	38	5.8%	10	1.7%
[redacted]	33	5.2%	59	9.1%	45	6.9%	13	2%
[redacted]	77	11.8%	148	22.7%	121	18.5%	24	3.7%
Total	**136**	**21%**	**263**	**40.4%**	**204**	**31.2%%**	**47**	**7.4%**

Table 39b: Type of water at respondents' homes, by sex of respondent

Type of Water	Women		Men		Total	
	#	%	#	%	#	%
Potable	1	2.1%	135	22.3%	136	21%
Private Well	20	43.5%	243	40%	263	40.4%
Communal Well	22	47.9%	182	30.1%	204	31.2%
River	3	6.5%	44	7.6%	47	7.4%
Total	**46**	**100%**	**604**	**100%**	**650**	**100%**

As it is shown in the table, only 21% of the survey respondents have access to potable water. These respondents are primarily factory workers, settlers, and transport workers. A small number of these respondents are sugar workers who benefit from drinkable water due to a program administered by the municipal authorities of their rural area.

A statistic to emphasize is related to the number of people who utilize water from communal and private wells and from rivers for human consumption, representing more than 79% of the total sample. This water has been proven unfit for human consumption due to the high levels of bacteria and microbes that are present in these water sources, putting at risk the health of the survey respondents and of their families.

However, it should also be mentioned that in these rural areas which have been included in the study, there is much agricultural production. As a consequence, hundreds of agrochemical products are used in fumigation, which stay for long periods of time in the surrounding environment for areas up to five kilometers away from the place in which they were sprayed.

As a result, the water sources for human consumption (wells and rivers) in these communities are completely exposed to these chemical components, damaging the health of the residents. However, the local health clinic does not take any measures to lessen the exposure of these water sources to these agrochemical products used in fumigation. This is lamentable, as these water sources are highly contaminated.

Table 40: Gathering water

Who gathers the water?	[redacted]		[redacted]		[redacted]		Total	
	#	%	#	%	#	%	#	%
Man	9	9%	12	10.2%	29	9.9%	50	9.7%
Woman	25	24%	28	23.9%	48	16.4%	101	19.6%
Boy	42	40%	44	37.6%	119	40.6%	205	39.9%
Girl	28	27%	33	28.3%	97	33.1%	158	30.8%
Total	**104**	**100%**	**117**	**100%**	**293**	**100%**	**514**	**100%**

This question was asked to the 514 survey respondents who said that their source of water for human consumption is either a private well, communal well, or a river, making up 79% of the total sample.

In general, many of the communal wells established as a water source for rural populations (to use in irrigation, cleaning, etc.) is located at some distance from the houses of the residents. That is to say, that for some families, these water sources are located hundreds of meters away from their houses. Those respondents whose primary water source is a river are also in a similar situation, as in many cases, these rivers are located kilometers away from their houses.

Due to this, a large number of children do this kind of family activity which for them represents a form of child labor. As the table shows, more than 70% of respondents said that their children take care of this task.

In addition, we see that women do this domestic task with more frequency (19.6%) than do men (9.7%), despite the fact that it requires much physical strength. However, boys and girls are most responsible for carrying out this task.

It should be mentioned that in many cases, these respondents, in addition to forcing their children to carry out these domestic tasks that require much physical force, also make them do informal paid jobs so that their families can survive. Some of these jobs fall into the category of the worst forms of child labor.

Table 41: Head of the family

Are you the head of the family?	Women		Men		Total	
	#	%	#	%	#	%
Yes	30	65.2%	413	100%	443	96.5%
No	16	34.8%	0	0.0%	16	3.5%
Total	**46**	**100%**	**413**	**100%**	**459**	**100%**

It is very common that in Latin American countries, including Nicaragua, there is a high level of *machismo* present in different households, irrespective of the economic status that they have, and especially in rural areas.

This can be confirmed by the high numbers of families led by men who participated in this study, representing almost 90% of the total sample. There are also many single mothers, who also all fall into this category, due to the fact that they must play the role of both father and mother at the same time. These gender inequalities bring as a

consequence the submission of many of these women to treatment that threatens their moral and, in some cases physical, integrity. This inequality produces many cases of domestic violence. These *machista* characteristics are found more commonly among rural communities, where the *machista* practices bring greater numbers of physical attacks against rural women.

Table 42: Have you ever been a victim of domestic violence?

Refinery	YES		NO		TOTAL	
	#	%	#	%	#	%
[redacted]	1	2.1%	2	4.3%	3	6.4%
[redacted]	14	30.4%	12	26.2%	26	56.6%
[redacted]	10	21.7%	7	15.3%	17	37%
Total	**25**	**54.2%**	**21**	**55.8%**	**46**	**100%**

The responses to this question clearly show the consequences of the repression of women, due to *machista* attitudes present in many conjugal relations in rural areas. The women who said that they had at some time suffered a situation of domestic violence that included physical violence are all female sugar workers and single mothers. That is to say, more than 83% of single mothers have been attacked by their partners.

According to the Nicaraguan Ministry of Family Affairs, Nicaragua is the third ranking country in the Central American region with respect to domestic violence. The only countries with higher incidences of domestic violence are Guatemala and Honduras, which are countries with a large number of indigenous communities, in which the women who form part of those communities are commonly forced to endure *machista* practices, which include domestic violence, physical aggression, and other expressions of gender inequality.

Table 43: Property improvements in the last two years

Refinery	Infrastructure of the House		Cultivated Land		None		Total	
	#	%	#	%	#	%	#	%
[redacted]	11	1.7%	3	0.5%	116	17.8%	130	20%
[redacted]	16	2.5%	5	0.8%	129	19.8%	150	23%
[redacted]	21	3.3%	8	1.2%	341	52.4%	370	57%
Total	**48**	**7.5%**	**16**	**2.5%**	**586**	**90%**	**650**	**100%**

Table 43b: Property improvements in the last two years, by sex of respondent

Property Improvements	Women		Men		Total	
	#	%	#	%	#	%
Infrastructure of the House	0	0.0%	48	7.9%	48	7.5%
Cultivated Land	0	0.0%	16	2.6%	16	2.5%
None	46	100%	540	89.5%	586	90%
Total	**46**	**100%**	**604**	**100%**	**650**	**100%**

90% of the survey respondents said that they had not made any improvements to their property in the last two years, a fact that shows the economic limitations in which many of these workers live. Of the 46 women surveyed, not one had carried out an improvement in her property in the last two years.

Of the 48 workers who had carried out home improvements, 100% are factory workers, settlers, or transport workers. All of the settlers who had carried out home improvements mentioned expanding the cultivated area of their sugar cane fields. Some factory workers said that they had bought farm animals, such as chickens, ducks, and pigs.

Table 44: Primary activities in which men and women participate

ACTIVITIES	WOMEN				MEN			
	YES		NO		YES		NO	
	#	%	#	%	#	%	#	%
Cook	46	100%	0	0.0%	31	5%	573	95%
Clean the House	46	100%	0	0.0%	28	4%	575	96%
Wash Clothes	46	100%	0	0.0%	24	4%	580	96%
Go Shopping for the Household	46	100%	0	0.0%	20	3%	584	97%
Make Repairs to the House	25	54%	21	46%	591	98%	13	2%
Care for Sick Children	46	100%	0	0.0%	40	7%	564	93%
Help Children With Homework	38	83%	8	17%	39	6%	565	94%
Go to School Meetings	35	76%	11	24%	34	5%	570	95%
Participate in Community Organizations	32	69%	14	31%	58	10%	546	90%
Participate in Environmental Education Programs	12	26%	34	74%	20	3%	584	97%
Participate in Self-Help Organizations in the Community	8	17%	38	83%	34	5%	570	95%

Gender inequality is not just seen through the incidence of domestic violence, but also through the housework which women, due to their unequal condition, are forced to do.

The results of this study demonstrate how women are responsible for the housework. As we can see, all 46 women who participated in the study (100%) carried out domestic chores, such as cooking, cleaning, washing clothes, shopping, and caring for sick children. In contrast, only 8% of the 604 men surveyed said that they did these kinds of chores. The only chore which the men do is household repairs, representing 98% of the men surveyed.

76% of the women and 40% of the men surveyed help their children with their homework and attend school meetings.

Finally, women (69%) show more interest in community organizations than do men (10%). This statistic shows that the women, despite the gender inequality, have more interest in improving their living conditions through collective work.

Table 45: Who is in charge of family resources?

Resources	Women		Men		Both		Total	
	#	%	#	%	#	%	#	%
Land	39	16.3%	164	68.7%	36	15%	239	100%
Work Tools	0	0.0%	413	100%	0	0.0%	413	100%
Credit	14	26%	31	57.4%	9	16.6%	54	100%
Jobs	0	0.0%	327	79.1%	86	20.8%	413	100%
Income	0	0.0%	327	79.1%	86	20.8%	413	100%
Savings	14	26%	31	57.4%	9	16.6%	54	100%
Market/Store	61	76.2%	8	10%	11	13.8%	80	100%
Family Labor	0	0.0%	327	79.1%	86	20.8%	413	100%

Table 46: Who is in charge of family benefits?

Benefits	Women		Men		Both		Total	
	#	%	#	%	#	%	#	%
Education	320	77.4%	31	7.5%	62	15.1%	413	100%
Food	362	87.6%	25	6.1%	26	6.3%	413	100%
Clothing	351	85.1%	28	6.7%	34	8.2%	413	100%
Health Care	337	81.6%	34	8.2%	42	10.2%	413	100%
Skills Trainings	18	4.3%	385	93.3%	10	2.4%	413	100%

Of the 239 survey respondents who said that they own their own homes, 39 (16.3%) women (mostly single mothers) said that they have control over household resources. The majority of men (68.7%) answered in this way, with only 15% saying that they shared control of these resources.

It is also observed the women have an absolute control over household benefits that their families receive. More than 80% of respondents said that they are in control of things like health care, food, and clothing.

D) Labor Conditions

Table 47: Workers affiliated to a union?

Refinery	YES		NO		Total	
	#	%	#	%	#	%
[redacted]	0	0.0%	130	100%	130	20%
[redacted]	0	0.0%	150	100%	150	23%
[redacted]	3	0.4%	367	99.6%	370	57%
Total	**3**	**0.4%**	**647**	**99.6%**	**650**	**100%**

As mentioned earlier, in the sugar industry is increasingly outsourcing the agricultural workforce through a third party (contracting company). In this way, the refinery massively subcontracts this workforce. As a result, the refinery is not directly responsible for the labor rights of its workers, since the labor relation is solely between the contractor company and the temporary agricultural worker.

Due to these hiring practices, subcontracted workers have lost the ability to collectively organize to protect their labor rights, since the right to form unions is only granted to workers who are directly hired by the refinery.

Intelligently, the refineries [redacted] that we investigated in this study have learned how to take advantage of this form of subcontracting of the workforce. This subcontracting is the product of a loophole in the labor law that favors this kind of industry. The subcontracting allows the companies to impede workers' ability to collectively bargain, which unions used to be able to do in this sector when workers were directly hired.

Today, there still are unions in the refineries we studied, which were created before the implementation of the subcontracting system. However, these unions can no longer claim the same rights as before. As a result, the number of union members has shrunk considerably. Many permanent workers have decided to resign from the unions, due to the union's loss of power and representation in the refineries.

In addition, the refineries have created yellow unions, which are formed by employees of confidence of the refinery (administrative and managerial personnel), as well as employees of confidence in the factory area, in order to clean up its public image and respond to the questioning of some local actors.

These statistics show that only three surveyed workers said that they are union members. All three are from the factory area and are members of a union established by the San Antonio refinery management.

Table 48: Are you free to organize a union?

Refinery	YES		NO		Total	
	#	%	#	%	#	%
[redacted]	23	3.5%	107	16.5%	130	20%
[redacted]	34	5.2%	116	17.8%	150	23%
[redacted]	56	8.6%	314	48.4%	370	57%
Total	113	17.3%	537	82.7%	650	100%

Table 48b: Are you free to organize a union? Categorized by sex of respondent

Refinery	Women		Men		Total	
	#	%	#	%	#	%
YES	0	0.%	113	18.5%	113	17.4%
NO	46	100%	491	81.5%	537	82.6%
Total	46	100%	604	100%	650	100%

The practice of subcontracting weakens the negotiating power and strength of the union organizations freely established in these refineries. The subcontracted workers view the

loss of the right to organize and collectively bargain as a limitation on their right to associate.

This fact is supported by the findings of this study; 82.6% of the survey respondents consider that there are restrictions on their right to unionize.

Although the refineries form yellow unions in order to quiet public opinion, workers are not convinced that they have the right to join independent unions.

Table 49: Violations of the right to organize

Refinery	Threats of Firings		Threats of Wage Cuts		Threats of Transfers		TOTAL	
	#	%	#	%	#	%	#	%
[redacted]	95	17.7%	8	1.4%	4	0.8%	107	19.9%
[redacted]	101	18.8%	10	1.8%	5	0.9%	116	21.6%
[redacted]	285	53.1%	20	3.7%	9	1.6%	314	58.5%
Total	**481**	89.6%	**38**	7.1%	**18**	3.3%	**537**	**100%**

These workers believe that their limitations on the right to organize are due to the threats of retaliations by the refineries that would affect their job security, such as threats of firings, wage cuts, and transfers to a less desirable position.

Almost 90% of the survey respondents that answered this question said that freedom to organize is primarily limited by threats of firings. The refineries constantly deny this, assuring the media that freedom to organize does exist, due to the existence of the yellow unions. But only permanent workers who are trusted by the refinery managers belong to these unions.

Table 50: Participation in any kind of organization

Refinery	Religious		Community		Sports		None	
	#	%	#	%	#	%	#	%
[redacted]	10	1.5%	27	4.1%	35	5.4%	58	8.9%
[redacted]	18	2.7%	36	5.5%	43	6.7%	53	8.1%
[redacted]	34	5.3%	51	7.9%	109	16.8%	176	27.1%
Total	**62**	**9.5%**	**114**	**17.5%**	**187**	**28.9%**	**287**	**44.1%**

Table 50b: Participation in organizations, by sex

Type of Organization	Women		Men		Total	
	#	%	#	%	#	%
Religious	14	30.4%	48	15.2%	62	17.1%
Community	32	69.6%	82	25.9%	114	31.4%
Sports	0	0.0%	187	59%	187	51.5%
Total	**46**	**100%**	**317**	**100%**	**363**	**100%**

Despite the fact that these subcontracted workers do not have the ability to join unions in order to collectively bargain with the refineries, many of them do belong to other kinds of organizations in which they carry out personal, family, and social activities.

According to the results of this study, women are more frequently involved in community organizations, representing almost 70% of the sample. Many women are also involved in religious organizations, representing more than 30% of the women surveyed who belong to any kind of organization.

Men are more likely to participate in sports organizations, with 59% of the sample doing so. In addition, 41% of the men surveyed participate in either a religious or community organization. In this way, more than 52% of the men surveyed participate in some kind of organization.

Table 51: Role in the organization

Type of Organization	Member		Leader		Total	
	#	%	#	%	#E	%
Religious	61	16.8%	1	0.3%	62	17.1%
Community	110	30.3%	4	1.2%	114	31.4%
Sports	180	49.5%	7	1.9%	187	51.5%
Total	**351**	**96.6%**	**12**	**3.4%**	**363**	**100%**

Table 51b: Role in the organization, by sex

Role	WOMEN		MEN		TOTAL	
	#	%	#	%	#	%
Member	46	100%	305	96.2%	351	96.6%
Leader	0	0.0%	12	3.8%	12	3.4%
Total	**46**	**100%**	**317**	**100%**	**363**	**100%**

With regard to the roles that the survey respondents play in the social and personal organizations of which they are a part of, more than 96% are members, with only 12 survey respondents occupying a leadership position in these organizations.

The leadership positions that the survey respondents hold are in all three types of organizations (religious, community, and sports). But despite the fact that women participate more than men in the community organizations, not one woman holds a leadership position, with the men occupying all the highest posts in all three types of organizations. Thus, we see gender inequality in these types of activities as well.

Table 52: Type of work contract

Refinery	Temporary Contract with a Contractor Company		Temporary Contract Directly with the Refinery		Permanent Contract Directly with the Refinery		TOTAL	
	#	%	#	%	#	%	#	%
[redacted]	91	14%	4	0.6%	35	5.4%	130	20%
[redacted]	125	19.2%	9	1.4%	16	2.5%	150	23%
[redacted]	343	52.8%	17	2.6%	10	1.5%	370	57%
Total	**559**	**86%**	**30**	**4.6%**	**61**	**9.4%**	**650**	**100%**

Table 52b: Type of work contract, by sex

Type of Contract	WOMEN		MEN		TOTAL	
	#	%	#	%	#	%
Temporary Contract with a Contractor Company	39	84.8%	520	86.1%	559	86%
Temporary Contract Directly with the Refinery	4	8.7%	26	4.3%	30	4.6%
Permanent Contract Directly with the Refinery	3	6.5%	58	9.6%	61	9.4%
Total	**46**	**100%**	**604**	**100%**	**650**	**100%**

As mentioned earlier, subcontracting is increasingly common; 86% of the surveyed workforce is now hired by a subcontractors. Only 14% of the survey respondents have a direct worker-employer relation with the refinery. In this way, these workers who labor for the refinery can theoretically organize and join unions, but these workers believe that their right to organize is nullified by the threats of firings.

Table 53: Did you sign a work contract?

Refinery	Yes		Verbal Contract		Total	
	#	%	#	%	#	%
[redacted]	129	19.8%	1	0.2%	130	20%
[redacted]	126	19.4%	24	3.6%	150	23%
[redacted]	355	54.6%	15	2.4%	370	57%
Total	**610**	**94.8%**	**40**	**6.2%**	**650**	**100%**

Table 53b: Did you sign a work contract? Categorized by sex

Did you sign a work contract?	Women		Men		Total	
	#	%	#	%	#	%
Yes	11	24%	599	99.2%	610	94.8%
Verbal Contract	35	86%	5	0.8%	40	6.2%
Total	**46**	**100%**	**604**	**100%**	**650**	**100%**

It is interesting to note that of the 39 female sugar workers surveyed, almost 90% (35) said that they only have a verbal work contract. This reflects further gender inequality.

More than 94% of the survey respondents signed a paper work contract at the moment they were hired.

Although Nicaraguan labor law permits both forms of contracts in the context of a worker-employer relationship, this gender inequality in the form of hiring is stunning.

Table 54: Do you have a copy of your work contract?

Refinery	Yes		No		Total	
	#	%	#	%	#	%
[redacted]	3	0.4%	126	20.6%	129	21%
[redacted]	6	0.9%	120	19.6%	126	20.5%
[redacted]	8	1.5%	347	57%	355	58.5%
Total	**17**	**2.8%**	**593**	**97.2%**	**610**	**100%**

Table 54b: Copy of work contract, by sex

Refinery	Women		Men		Total	
	#	%	#	%	#	%
YES	2	33%	18	3%	20	3.2%
NO	4	77%	586	97%	590	96.8%
Total	**6**	**100%**	**604**	**100%**	**610**	**100%**

According to the study, only the small sugar producers (settlers) and transport workers have a copy of the contract that establishes their working relationship with the refinery, making up less than 3% of the survey respondents. That is to say, more than 97% of the respondents said that they do not have a copy of the work contract that they signed the moment they were hired by the refinery.

Nicaraguan labor law states that workers who sign written work contracts must be given a copy, yet the refineries refuse to do this for the field laborers.

Table 55: Number of years worked at the refinery

Refinery	1 - 3		4 - 6		7 - 10		More than 10		Total	
	#	%	#	%	#	%	#	%	#	%
[redacted]	7	1.1%	12	1.8%	15	2.3%	96	14.8%	130	20%
[redacted]	16	2.4%	35	5.4%	44	6.7%	55	8.4%	150	23%
[redacted]	70	10.8%	88	13.5%	98	15.1%	114	17.6%	370	57%
Total	**93**	**14.3%**	**135**	**20.7%**	**157**	**24.1%**	**265**	**40.8%**	**650**	**100%**

Table 55b: Number of years worked at the refinery, by sex

Number of Years Worked	Women		Men		Total	
	#	%	#	%	#	%
1 - 3	2	4.3%	91	15%	93	14.3%
4 - 6	8	17.4%	127	21%	135	20.7%
7 – 10	12	26.1%	145	24%	157	24.1%
More than 10	24	52.2%	241	40%	265	40.8%
Total	**46**	**100%**	**604**	**100%**	**650**	**100%**

Despite the fact that more than 85% of the workers surveyed are temporary workers only hired during the harvest season, there are many sugar workers who have worked for many years in the refineries. These workers have had to adapt themselves to changes in their labor conditions and changes in their form of hiring, from being direct employees of the refinery to being hired by a subcontractor.

According to the study, 85% of the survey respondents have worked four or more years at the refinery. These results, compared with the ages of the respondents which primarily fall between 16-28, show that these young people began their working lives as sugar workers when they were adolescents, since this is the primary source of employment in these rural areas.

Table 56: Period of employment (field workers)

Refinery	1 – 3 months		4 – 6 months		More than 7 months		Total	
	#	%	#	%	#	%	#	%
[redacted]	4	0.7%	68	12.3%	11	1.9%	83	14.9%
[redacted]	7	1.2%	103	18.5%	14	2.5%	124	22.3%
[redacted]	12	2.2%	289	51.9%	48	8.6%	349	62.7%
Total	**23**	**4.1%**	**460**	**82.8%**	**73**	**13.1%**	**556**	**100%**

Table 56b: Period of employment, by sex

Period of Employment	Women		Men		Total	
	#	%	#	%	#	%
1 - 3 months	10	23.8%	13	2.5%	23	4.1%
4 - 6 months	31	73.8%	429	83.4%	460	82.8%
More than 7 months	1	2.4%	72	14.1%	73	13.1%
Total	**42**	**100%**	**514**	**100%**	**556**	**100%**

In the sugar production activities in the fields, the tasks vary according to the needs of the refinery. The tasks include sowing, irrigation, preparing the land, burning, fumigating, and cutting the sugar cane. The period of time in which these field laborers work is dependent on the kind of task that they carry out. As we can see, more than 85% of these respondents work 4-7 months throughout the year, and are exposed to bad labor and health conditions, malnutrition, dehydration, and high levels of exposure to ultraviolet rays and agrochemical products used in fumigation.

Table 57: Work performed when not working for the refinery

Refinery	Agricultural Worker		Informal Vendor		Nothing		Total	
	#	%	#	%	#	%	#	%
[redacted]	51	9.1%	23	4.1%	9	1.6%	83	14.9%
[redacted]	78	14%	31	5.5%	15	2.7%	124	22.3%
[redacted]	197	35.5%	95	17.7%	57	10.3%	349	62.7%
Total	**326**	**58.6%**	**149**	**26.8%**	**81**	**14.6%**	**556**	**100%**

Table 57b: Type of work, by sex

Type of Work	Women		Men		Total	
	#	%	#	%	#	%
Agricultural Worker	7	16.6%	319	63%	326	58.6%
Informal Vendor	31	73.8%	118	23%	149	26.8%
Nothing	4	9.6%	77	14%	81	14.6%
Total	**42**	**100%**	**514**	**100%**	**556**	**100%**

The field laborers who participated in this study represent 85% of the total sample, and according to their responses, more than 58.6% of these sugar workers do other kinds of agricultural work when they are not working for the refinery. They work for other agricultural sectors with presence in the country, such as corn, wheat, banana, rice, beans, and plantains.

An interesting fact is that only 16.6% of the female sugar workers interviewed work in other agricultural sectors when they are not employed by the refinery. More than 73% (31) of the female respondents work as informal vendors, while only 23% of male respondents carry out this activity.

Table 58: Number of working days during sugar production season

Refinery	4 - 6 days		All week		Total	
	#	%	#	%	#	%
[redacted]	18	2.8%	112	17.4%	130	20.2%
[redacted]	21	3.2%	127	19.7%	148	23%
[redacted]	35	5.5%	330	51.3%	365	56.8%
Total	**74**	**11.5%**	**569**	**88.5%**	**643**	**100%**

Table 58b: Number of working days, by sex

Working Days	Women		Men		Total	
	#	%	#	%	#	%
4 – 6 days	28	63.6%	46	7.6%	74	11.5%
All week	16	36.4%	553	92.4%	569	88.5%
Total	**44**	**100%**	**599**	**100%**	**643**	**100%**

According to the study results, 88% of the survey respondents work all week during the sugar production period. It should be remembered that more than 85% of respondents said that they work 4-7 months when they are temporarily employed during the sugar harvest seasons, so that is to say

that during those months, the workers work all week.

We can see that 63% of women said that they do not work all week, instead only working from 4-6 days a week. This is related to the limited kinds of tasks that they are allowed to carry out in the fields. However, the female sugar workers who work as field nurses do work all week, in order to attend to the common accidents that occur in the sugar cane fields.

Table 59: Length of workday during sugar production season

Refinery	1 - 4 hours		5 - 8 hours		8 - 12 hours		Total	
	#	%	#	%	#	%	#	%
[redacted]	2	0.3%	20	3.1%	108	16.8%	130	20%
[redacted]	4	0.6%	25	3.9%	119	18.5%	148	23%
[redacted]	7	1.2%	46	7%	312	48.5%	365	57%
Total	**13**	**2%**	**91**	**14%**	**539**	**83.9%**	**643**	**100%**

Table 59b: Length of workday during sugar production season, by sex

Length of Workday	Women		Men		Total	
	#	%	#	%	#	%
1 - 4 hours	6	13.6%	7	1.1%	13	2%
5 - 8 hours	11	25%	80	13.3%	91	14.1%
8 -12 hours	27	61.4%	512	85.6%	539	83.9%
Total	**44**	**100%**	**599**	**100%**	**643**	**100%**

83.9% of the respondents work from 8-12 hours a day. The working conditions during the harvest season are horrible, directly affecting the health and wellbeing of these workers.

The female sugar workers who do not have to work more than 4 days a week are still forced to work long hours.

Table 60: Were you trained to carry out the work that you do?

Refinery	Field Laborer				Factory Worker				Trained Workers	
	YES		NO		YES		NO			
	#	%	#	%	#	%	#	%	#	%
[redacted]	10	1.6%	73	11.8%	31	5%	4	0.6%	41	34.7%
[redacted]	17	2.7%	107	17.3%	10	1.6%	6	0.9%	27	19.3%
[redacted]	42	6.8%	307	49.9%	7	1.2%	2	0.4%	49	13.7%
Total	**69**	11.2%	**487**	79%	**48**	7.8%	**12**	1.9%	**117**	19%

Table 60b: Occupational training, by sex										
Refinery	**Women**				**Men**				**Trained Workers**	
	YES		**NO**		**YES**		**NO**			
	#	%	#	%	#	%	#	%	#	%
Field Laborer	0	0.0%	42	95.4%	69	12%	445	77.8%	69	12.4%
Factory Worker	2	4.5%	0	0.0%	46	8%	12	2.2%	48	80%
Total	**2**	4.5%	**42**	95.4%	**115**	20%	**457**	80%	**117**	19%

As can be observed, only 19% of the survey respondents said that they were trained to carry out the work that they do. In the case of the female respondents, only two of the five women who work in the factory said that they had been given occupational training, representing less than 5% of the women who answered this question.

The type of training that these field laborers receive is on how to use the protective equipment-- yet how helpful can this training be if the refinery only provides them with leg protectors and machetes to cut the sugar cane? These trainings are unnecessary and unimportant, since these workers already have much knowledge of how to use this equipment properly.

In addition, what kind of impact can a seminar given by human resources personnel on work-related risks related to agrochemicals have on a worker, when the refinery forces that worker to keep laboring in the sugar cane fields where the fumigations take place?

Table 61: Is your work high-risk?

Refinery	**Yes**		**No**		**Total**	
	#	%	#	%	#	%
[redacted]	113	18.3%	5	0.8%	118	19.1%
	129	20.9%	11	1.8%	140	22.7%
	330	53.8%	28	4.6%	358	58.2%
Total	**572**	**93%**	**44**	**7%**	**616**	**100%**

The sugar industry is an economic sector in which the level of professional risk is high and there are many work-related illnesses. The study reflects this fact, as 93% of the respondents said that they believed their jobs are high-risk.

In this industry, most work-related accidents occur in the factory and workshop, due to the handling of highly dangerous machinery. The majority of work-related illnesses occur among the field laborers, due to their exposure to inappropriate labor conditions (long workdays, exposed to agrichemical products and ultraviolet rays).

Table 62: What kind of risks are you exposed to at work?

Refinery	Illnesses		Accidents		Both		Total	
	#	%	#	%	#	%	#	%
[redacted]	47	7.3%	28	4.3%	55	8.5%	130	20%
[redacted]	60	9.3%	23	3.6%	65	10.1%	148	23%
[redacted]	105	16.4%	58	9%	202	30.5%	365	57%
Total	**212**	**33%**	**109**	**16.9%**	**322**	**49.1%**	**643**	**100%**

Table 62b: Work risks, by sex

Type of Risk	Women		Men		Total	
	#	%	#	%	#	%
Accidents	0	0.0%	109	18.2%	109	16.9%
Illnesses	44	100%	168	28%	212	33%
Both	0	0.0%	322	53.8%	322	49.1%
Total	**44**	**100%**	**599**	**100%**	**643**	**100%**

More than 49% of the total sample said that in the course of their work, they could suffer some kind of work-related accident or work-related illness.

It is understandable that all the women surveyed see more risk in their work and believe that there is a possibility that they could suffer a work-related illness, due to the large number of female field laborers in the sample, as well as the women who work in the laboratory, where they are directly exposed to chemical products.

One of the disadvantages that the sugar workers who are field laborers have, due to the fact that they are exposed to many labor risks which include work-related illnesses that can even possibly cause death, is the lack of responsibility that the refineries have in regards to their working conditions, as this responsibility is now in the hands of the subcontractors.

Table 63: Problems encountered as a result of work

Refinery	Accident		Illness		Tiredness		Stress		None		Total	
	#	%	#	%	#	%	#	%	#	%	#	%
[redacted]	28	4.3%	40	6.2%	39	6.1%	21	3.2%	2	0.3%	130	20%
[redacted]	31	4.8%	43	6.7%	45	7%	24	3.7%	5	0.7%	148	23%
[redacted]	82	12.9%	93	14.4%	105	16.2%	74	11.6%	11	1.8%	365	57%
Total	**141**	**22%**	**176**	**27.3%**	**189**	**29.3%**	**119**	**19.3%**	**18**	**2.8%**	**643**	**100**

Table 63b: Work-related problems, by sex

Type of Problems	Women		Men		Total	
	#	%	#	%	#	%
Accident	0	0.0%	141	%	141	22%
Illness	20	45.5%	156	%	176	27.3%
Tiredness	13	29.5%	176	%	189	29.3%
Stress	10	22.8%	109	%	119	19.3%
None	1	0.2%	17	%	18	2.8%
Total	**44**	**100%**	**599**	**100%**	**616**	**100%**

With regard to the obstacles that prevent workers from efficiently carrying out their tasks, the survey respondents mentioned primarily work-related accidents and work-related illnesses, with more than 49% of the total sample responding in this way. More than 48% of workers believe that tiredness and stress are obstacles to the realization of their labors. These kinds of obstacles are directly related to long workdays, lack of job stability, pressure by the bosses, and bad living conditions (extreme poverty). The risk of accidents and illnesses, however, are more directly related to the inadequate working and hygienic conditions to which the workers are exposed.

Only 2.8% of the interviewed workers said that they have no problems at work.

Table 64: Do you believe your work is important in the sugar production process?

Refinery	Yes		No		Total	
	#	%	#	%	#	%
[redacted]	129	19.9%	1	0.2%	130	20%
[redacted]	147	22.6%	3	0.4%	150	27%
[redacted]	364	56%	6	0.9%	370	57%
Total	**640**	**98.5%**	**10**	**1.5%**	**650**	**100%**

Despite the conditions in which many of the field laborers live, they do recognize the importance of their work in the sugar production process.

In this sense, the high levels of discontent and rejection by these workers of the systems of subcontracting that the contractor companies and the refineries are profiting from is understandable, as the workers do not benefit from this kind of hiring. In addition, the role that these workers play in the sugar production process is not appreciated, as the

refineries have all the power and the property, yet the workers are the ones who generate the economic and political power for these large refineries.

In this way, the discontent and outcry by the workers in this industry is understandable, as these new forms of hiring bring about inadequate labor conditions, fewer benefits, and less attention to occupational health and safety.

Table 65: Does the refinery or subcontractor give you social security benefits?

Refinery	Yes		No		Total	
	#	%	#	%	#	%
[redacted]	124	19.1%	6	0.9%	130	20%
[redacted]	144	22.1%	6	0.9%	150	23%
[redacted]	362	55.7%	8	1.3%	370	57%
Total	**630**	**96.9%**	**20**	**3.1%**	**650**	**100%**

Table 65b: Social security benefits, by sex

Do you have social security benefits?	Women		Men		Total	
	#	%	#	%	#	%
Yes	44	95.6%	586	97%	630	89.6%
No	2	43.4%	18	3%	20	9.4%
Total	**46**	**100%**	**604**	**100%**	**650**	**100%**

The only people who said that they did not receive social security benefits from the refineries are the small sugar producers that supply this product, and the independent transport workers who transport the sugar cane. The rest of the workers in the three production areas said that they are insured.

Many workers are unsatisfied with the social security benefits that the contractor companies and refineries give them. They believe that there is not a fair relationship between the work-related accidents and illnesses that they suffer as a result of their work, and the treatments or medications that they receive as part of this social security benefit in order to manage these work-related risks.

These are practices that illustrate the labor inequality between workers and employers, as the workers make it possible for these economic powerhouses to achieve their objectives in each harvest season. However, the workers do not benefit from the profits they earn; instead they suffer numerous work-related accidents and illnesses, which are not treated adequately.

Table 66: Occurrence of work-related accidents in the refineries

Refinery	Yes		No		Total	
	#	%	#	%	#	%
[redacted]	58	9%	72	12.4%	130	20%
[redacted]	64	10%	84	14.3%	148	23%
[redacted]	146	21.7%	219	35.2%	365	57%
Total	**268**	**41.7%**	**375**	**58.3%**	**643**	**100%**

Table 66b: Work-related accidents, by sex

Have you had an accident?	Women		Men		Total	
	#	%	#	%	#	%
Yes	0	0.0%	268	44.7%	268	41.7%
No	44	100%	331	55.3%	375	58.3%
Total	**44**	**100%**	**599**	**100%**	**643**	**100%**

The arguments stated earlier can be proven with the high levels of work-related accidents that workers have had in the last two years, representing almost 42% of the total sample. One interesting fact is that none of the women who work in the fields had suffered any kind of work-related accident.

It is possible that this is due to the limited number of tasks, with less physical force required and less time employed, which these female workers are permitted to carry out.

According to data from the local authorities, the level of work-related accidents in agroindustries are some of the highest levels among all national industries, topping the level of accidents that occur in the construction industry and in the free trade zones. This data is proved by the high accident rate among sugar industry workers.

Table 67: Types of work-related accidents, by work area

Type of Accident	Field Laborer		Factory Worker		Transport Workers		Total	
	#	%	#	%	#	%	#	%
Cuts	222	82.9%	7	2.6%	0	0.0%	227	85.5%
Burns	0	0.0%	20	7.5%	0	0.0%	20	7.5%
Broken Bones	0	0.0%	11	4.1%	0	0.0%	11	4.1
Traffic Accidents	0	0.0%	0	0.0%	8	3%	8	3%
Total	**222**	**82.8%**	**38**	**14.2**	**8**	**3%**	**268**	**100%**

As we can see, the largest number of work-related accidents is cuts that field laborers suffer, representing more than 85%. There are other types of work-related accidents that occur with less frequency (14%), such as burns suffered by industrial mechanics in the factory, broken bones, and traffic accidents incurred by the independent transport workers.

These statistics give an idea of the high risks that many of these workers in different areas of the refinery face, which in some cases result in work-related accidents that are not dealt with properly by the refinery or the contractor companies.

Table 68: Who dealt with your accident?

	Company	Social Security Institute	Nobody	Company & Soc. Security	Total

	#	%	#	%	#	%	#	%	#	%
[redacted]	10	3.7%	19	7.1%	28	10.4%	1	0.4%	58	21.6%
[redacted]	11	4.1%	21	7.8%	32	12%	0	0.0%	64	24%
[redacted]	17	6.3%	32	12%	93	34.7%	4	1.5%	146	54.5%
Total	**38**	**14.1%**	**72**	**26.1%**	**153**	**57.1%**	**5**	**1.8%**	**268**	**100%**

Table 68b: Who dealt with your accident? By work area

Who dealt with your accident?	Field Laborers		Factory Workers		Transport Workers		Total	
	#	%	#	%	#	%	#	%
Company	30	11.2%	8	3%	0.0	0.0%	38	14.1%
Social Security (INSS)	50	18.6%	22	8.3%	0.0	0.0%	72	26.1%
Nobody	140	52.2%	5	1.8%	8	3%	153	52.2%
Company & INSS	2	0.7%	3	14.2%	0.0	0.0%	5	1.8%
Total	**222**	**35.7%**	**38**	**27.3%**	**8**	**3%**	**268**	**100%**

The sugar workers have social security benefits imposed on them by the refinery and the subcontractors, and these benefits do not give them sufficient assistance when they suffer serious work-related accidents or illnesses. In these cases, the medicines and treatment that they receive from social security are insufficient, leaving them in a risky health situation.

This is reflected in the high number of workers (47%) who mentioned the lack of help from competent authorities (subcontractors, refineries, and insurance companies) in resolving their delicate health conditions. This percentage is largely made up of workers who are employed by contractor companies who are directly responsible for resolving these kinds of situations.

Table 69: Occurrence of work-related illnesses in the refineries

Refinery	Yes		No		Total	
	#	%	#	%	#	%
[redacted]	87	13.5%	43	6.7%	130	20%
[redacted]	90	14%	58	9%	148	23%
[redacted]	201	31.2%	164	25.5%	365	57%
Total	**378**	**58.8%**	**265**	**41.2%**	**643**	**100%**

Table 69b: Work-related illnesses, by sex

Suffered a work-related illness?	Women		Men		Total	
	#	%	#	%	#	%
Yes	40	87%	338	56.4%	378	58.8%
No	4	3%	261	45.6%	265	41.2%
Total	**44**	**100%**	**599**	**100%**	**643**	**100%**

The women interviewed in this study said that they are very prone to work-related illnesses, which can be explained by the labor conditions described earlier in which they are exposed to in the fields, as women field laborers make up more than 87% of all the women workers surveyed.

The occurrence of work-related illnesses in the different work areas of this industry reflect the high professional risks that go along with the tasks that are carried out as part of the sugar production process.

Table 70: Possible causes of work-related illnesses

Causes	Field Laborer		Factory Worker		Total	
	#	%	#	%	#	%
Exposure to Agrochemical Products Used in Fumigation	200	53%	0	0.0%	200	53%
Extended Exposure to Ultraviolet Rays	142	37.5%	0	0.0%	142	37.5%
Exposure to Toxic Wastes	0	0.0%	36	9.5%	38	9.5%
Total	**342**	**90.5%**	**36**	**9.5%**	**378**	**100%**

Table 70b: Causes of work-related illnesses, by sex

Causes	Women		Men		Total	
	#	%	#	%	#	%
Agrochemical Products	19	47.5%	181	53.5%	200	53%
Ultraviolet Rays	20	50%	122	36%	142	37.5%
Toxic Wastes	1	2.5%	35	10.5%	36	9.5%
Total	**40**	**100%**	**338**	**100%**	**378**	**100%**

As shown, the primary causes of work-related illnesses are related to the inadequate working conditions in the fields.

In this case, more than 53% of the workers said that they suffer some kind of work-related illness related to the exposure to agrochemical products used in fumigation, and 37.5% said that the extended exposure to ultraviolet rays is the principal cause of their work-related illnesses. More than 90% of these respondents are field laborers. The remaining percentage of workers come from the factory area and said that exposure to toxic wastes is the primary cause of the work-related illnesses that they suffer.

Table 71: Principal work-related illnesses suffered by sugar workers

Type of Illness	Field Laborer		Factory Worker		Total	
	#	%	#	%	#	%
Skin Cancer	118	31.2%	7	1.8%	125	33.1%
Sterility	95	25.1%	5	1.3%	100	26.4%
Kidney Deformation	97	25.6%	3	0.8%	100	26.4%
Lung Cancer	8	2.1%	9	2.4%	17	4.5%
Partial Loss of Vision	24	6.3%	12	3.2%	36	9.5%
Total	**342**	**90.5%**	**36**	**9.5%**	**378**	**100%**

Regretfully, the sugar workers who carry out their labors in the fields are the workers who are most exposed to work-related illnesses. Many of these illnesses are irreversible, and in some cases, can cause death in the long term. It is sad to note that more than 58.7% of the survey respondents suffer such serious illnesses due to their work in this industry, which they carry out in inadequate labor conditions and without assistance from their employer.

Table 72: Daily salary

SALARY RANGES (per day)	Field worker		Factory worker		Workshop/ admin.		Total	
	No.	%	No.	%	No.	%	No.	%
C$ 10 - C$ 29 (US$0.61-1.78)	204	31.7%	2	0.3%	3	0.4%	209	32.5%
C$ 30 - C$ 39 (US$1.79-2.40)	300	46.6%	21	3.3%	5	0.7%	326	50.7%
C$ 40 - C$ 49 (US$2.41-3.00)	37	5.7%	19	2.9%	8	1.2%	64	9.9%
More than C$ 50 (US$3)	15	2.3%	18	2.8%	11	1.7%	44	6.8%
Total	**556**	**86.5%**	**60**	**9.3%**	**27**	**4.2%**	**643**	**100**

More than 83% of surveyed workers earned less than US$70 per month, which is less than the amount needed to cover a family's basic needs. For many surveyed workers, this salary was their only source of income.

These percentages show the tough situation of poverty suffered by many of the workers who labor in different parts of the sugar production process. Meanwhile, this industry earns millions of dollars each year by selling the sugar on the national and international markets.

It is important to mention that these field workers often have more children than they can economically support, as a result of their low levels of education.

In the case of Nicaragua, the Ministry of Labor has a salary table created to regulate the minimum wage for different economic sectors. It has established that the minimum wage for agriculture should be generalized, that is to say that all agricultural workers in all sectors (banana, corn, sugar, beans, wheat, rice, plantains, etc) should have the same minimum wage. According to this salary table, which was approved in January 2004, the minimum wage for agricultural workers is 1,200 cordobas per month (US$ 72.00).

Through the [redacted] the sugar mills have established salaries or fixed pay for each activity related to the sugar harvest. Cane cutters, for example, are paid C$ 10.56 (US$ 0.65) per ton of cut sugar cane, according to the general manager of Montelimar; this adds up to a daily salary of US$ 4.25. Thus a cane cutter would earn a monthly salary of about 2,100 córdobas (US$ 128), which is considerably higher than the minimum wage for the agricultural sector.

However, these figures do not match the results of our survey. In our study, over 90% of interviewed workers who work in different field activities earn less than C$ 40 (US$

2.40) per day. Given this figure, the workers earn a monthly salary of C$ 1,200 (US$ 72). If we place more credibility on the information given by surveyed workers and not on the information given by the mill manager, we can see that sugar workers actually earn something very close to the minimum wage established by the Ministry of Labor.

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