

Study was conducted by 30 favela youth and 15 leaders during the months of May and June 2022

# WATER AND ENERGY JUSTICE IN THE FAVELAS

Favela Researchers Gather Data Revealing Inequalities and Calling for Action

A summary of the challenges of water and energy access, quality and efficiency in 15 favelas of Greater Rio de Janeiro

15 favelas ■ 5 municipalities ■ 1156 families interviewed  
4164 people represented

REALIZED BY



COMMUNITY PARTNERS





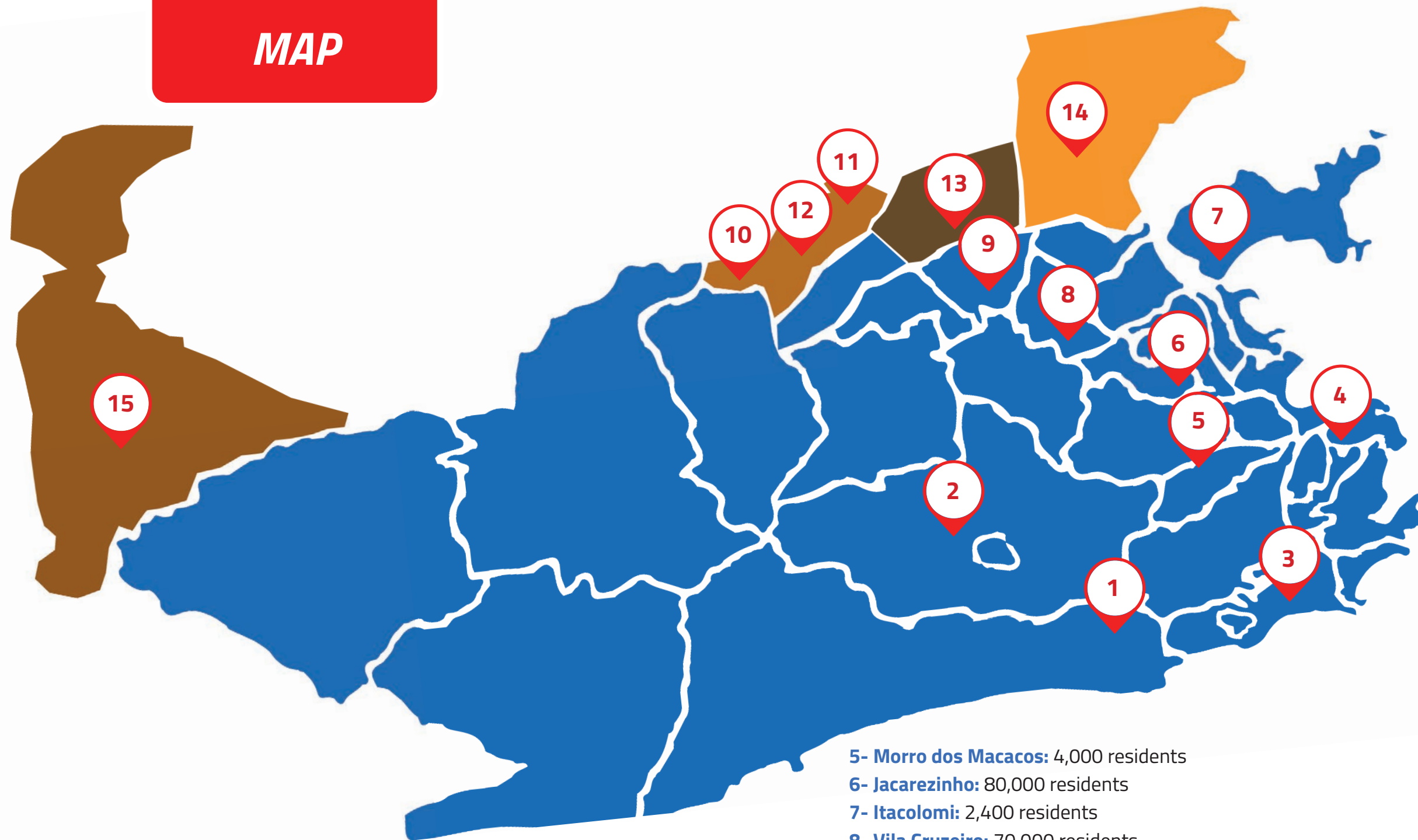
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# MAP



## 15 Favelas Contemplated by Survey\*:

- 1 - Rio das Pedras: 160,000 residents
- 2 - City of God: 55,000 residents
- 3 - Pavão-Pavãozinho Cantagalo: 3,000 residents
- 4 - Morro da Providência: 12,000 residents

- 5- Morro dos Macacos: 4,000 residents
- 6- Jacarezinho: 80,000 residents
- 7- Itacolomi: 2,400 residents
- 8- Vila Cruzeiro: 70,000 residents
- 9- Pedreira: 30,000 residents
- 10- Jacutinga (Mesquita): 24,000 residents
- 11- Cosmorama (Mesquita): 4,500 residents
- 12 - Coréia (Mesquita): 7,000 residents
- 13- Edem (São João de Meriti): 1,000 residents
- 14- Dique da Vila Alzira (Duque de Caxias): 4,000 residents
- 15- Engenho (Itaguaí): 20,000 residents

**TOTAL NUMBER OF RESIDENTS IN THE PARTICIPATING TERRITORIES: 501,900**

*\*Estimates based on data collected by local organizations.*





“The lack of data on favelas is reflected in the absence of structural public policies and in the importance of **producing data on the reality of favelas by residents themselves.**” — Alan Brum, Roots in Movement Institute (Complexo do Alemão)

While collecting data in the field, “one man said that he **felt acknowledged**, that [before this survey] nobody came here, nobody cared.” — Nilcimar dos Santos (Dique da Vila Alzira/Duque de Caxias)

“The community felt **hopeful**, mainly because it’s something that doesn’t come from public agencies.” — Laurinda Delgado (Coréia/Mesquita)



The **‘Researching and Monitoring Water and Energy Justice in Favelas’** course was conceived in the context of discussions that took place within the Favelas Unified Dashboard and the Sustainable Favela Network—initiatives carried out by a network of community collectives and coordinated by Rio de Janeiro NGO Catalytic Communities (CatComm).

Having realized how existentially important it was for favelas themselves to collect data for advocacy during the pandemic, the course was built with the objective of **demystifying the process of collecting and understanding data** and ensuring community control over the generation of data to serve advocacy campaigns. Water and energy justice was defined as the theme for the inaugural course since both are fundamental for the full development and inclusion of favelas.

This report summarizes the results of research carried out by the 30 community youth and 15 leaders who participated in the course, so their data can **draw the attention of authorities and utilities** towards recognizing the **depth of climate injustice established by the current modus operandi**, and **proposing a pilot project to transform this reality.**

The course was conducted between March and September 2022 and was comprised of the following modules: (1) the importance of research by and on favelas; (2) energy and water justice in relation to access, quality and efficiency; (3) defining indicators according to community priorities; (4) data collection in the field; (5) data analysis/understanding and identification of key data points; (6) how to advocate for change with the data gathered; (7) technical and popular data reporting; and (8) how to communicate data for advocacy and awareness-building.



Beyond training community youth and leaders in the collection, analysis, and dissemination of data and topics of energy and water justice applied to local realities, we show how through the implementation of a co-created methodology of questionnaire-building and application, **research conducted by residents can be more robust** than that conducted by outside institutions. Whether in the **greater openness of neighbors** and their interest in the results; in participants’ ability to bring context and **practical experience to comprehending the data** collected, promoting a greater understanding of the “why?” behind the data; or by the **deep desire to apply the results to achieve concrete change.**



“During the study we saw **many problems** in our community, like raw sewage, and I also saw not just one family, but others without water to make food, having to wait for the neighbor at the lower end of the street to wake up to get water to make coffee and to eat. It’s **very humiliating** not having water to bathe a small child dirty with feces.”  
— Rosana Pimentel (Itacolomi)





# REFLECTIONS ON THE RELATIONSHIP BETWEEN WATER AND ENERGY JUSTICE

by Amanda O'Hara (Instituto Clima e Sociedade)

***“Energy and water are two resources intrinsically dependent on each other. Especially in Brazil, and especially in low-income communities.”***

The dependency of energy on water became evident in 2021 when Brazilians had to deal with **an increase in electric bills** caused by the country's worst water crisis on record. The lack of rainfall lowered the water level in dams, decreasing the availability of water in hydroelectric plants to generate electricity. Without water, the country is forced to resort to other more expensive and polluting sources—such as natural gas and diesel—to have enough energy to meet demand. Since over 60% of the energy generated in the country comes from hydroelectric plants, lack of water leads to a **lack of electricity and an increase in electric bills** and emissions in the electricity sector. Hence, in Brazil: no water, no electricity.

On the other hand, **access to water also depends on energy**. Energy is necessary to make viable several services essential to life in cities. Without energy there is no light to study at night, no way to charge your cell phone or access the Internet, and you cannot preserve food in the fridge. But you also cannot pump water to points of consumption, resulting in water shortages. The further and higher the consumption point is from where the water is stored, the more electricity is needed to reach the taps and showers in homes. Those who live on top of hills, at the end of the line, know all too well: if there is no electricity, there is no water.

“If I use a pump to bring in water, I need to have electricity to have water. It ends up getting quite complicated. The problem is interlinked.” — Domênica Ferreira (Morro dos Macacos)

“I thought all houses had to have a water pump to pump water, until I researched and saw that in other regions of the city this doesn't exist. This is a problem in my community: residents use a lot of energy to pump water to their homes. One of the problems here is precisely the cost of energy to supply the house with water. Having water requires a lot of electricity.” — Juliana Cesário (Cosmorama/Mesquita)

## THE DATA

Through a **collectively designed** questionnaire based on an understanding of the on-the-ground **realities of the favelas surveyed**, the data from our study focused on issues of **access, quality and efficiency** of water and electricity in the fifteen selected territories.

The data on **water** show that this fundamental right is not met in the favelas. A considerable percentage of the population suffers from serious problems of water **quality** and **unreliable supply**. Besides this, constant **flooding, leaks**, and the **negligence of utility companies** in providing quality assistance have a severe impact on residents' lives. Nevertheless, despite many challenges, the data show that interviewees have a good level of awareness about avoiding waste.

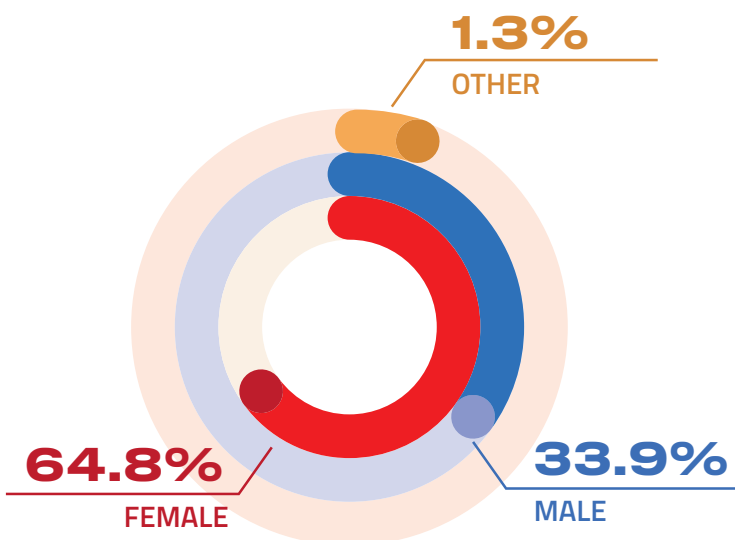
As for **electricity**, the biggest issues are around the **high cost of bills**, which throw a significant proportion of families into **energy poverty**, making it impossible to pay bills in many cases. The data show that the high cost of electricity has a **direct impact on food security** and quality of life of the interviewees and their families, who not only see their financial resources reduced, but also suffer **blackouts and low-quality assistance from the utility**.



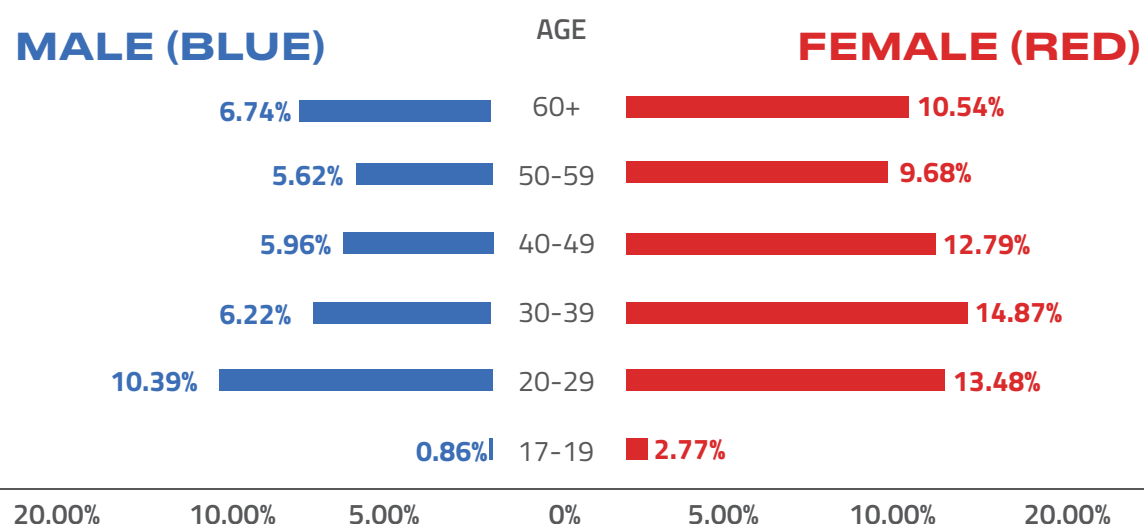


# INTERVIEWEE PROFILE

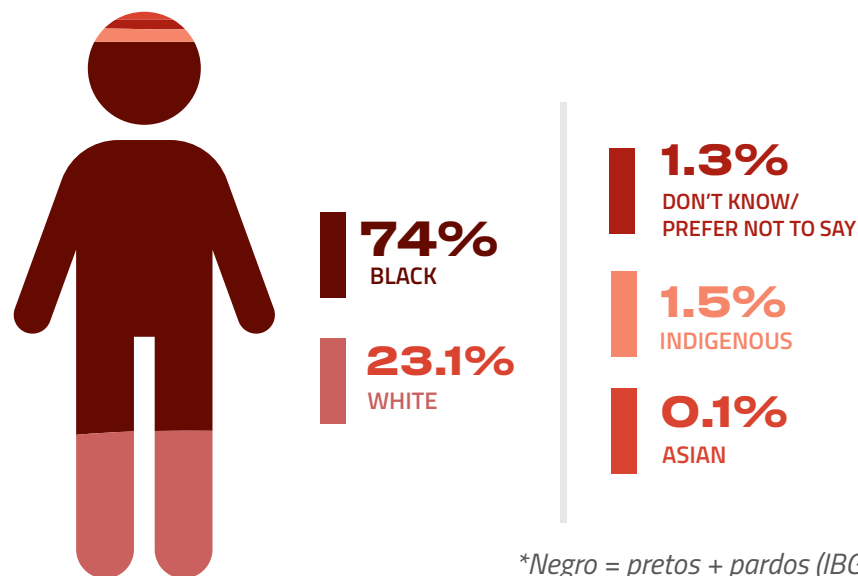
## GENDER



## POPULATION PYRAMID



## WHAT RACIAL CATEGORY DO YOU IDENTIFY WITH?

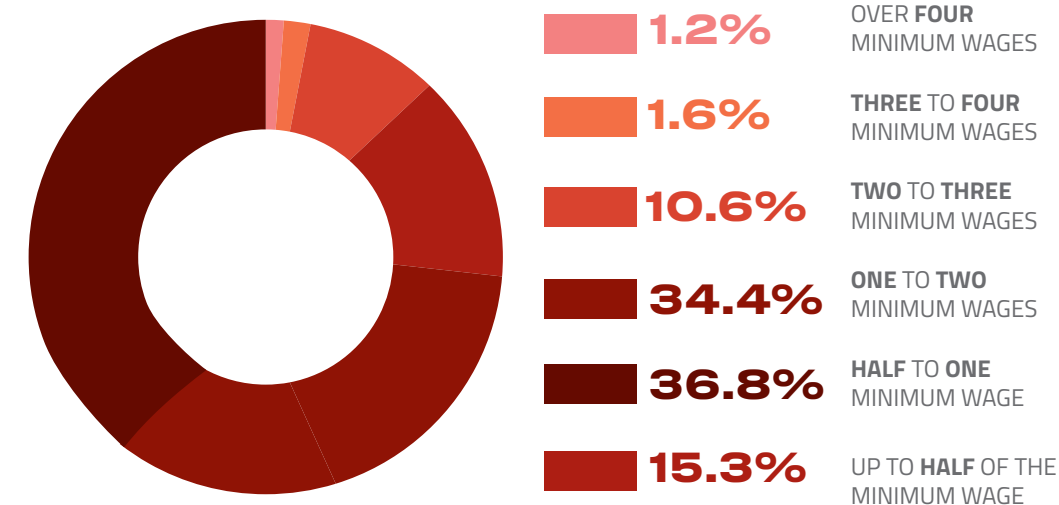


# RENDA DAS FAMÍLIAS

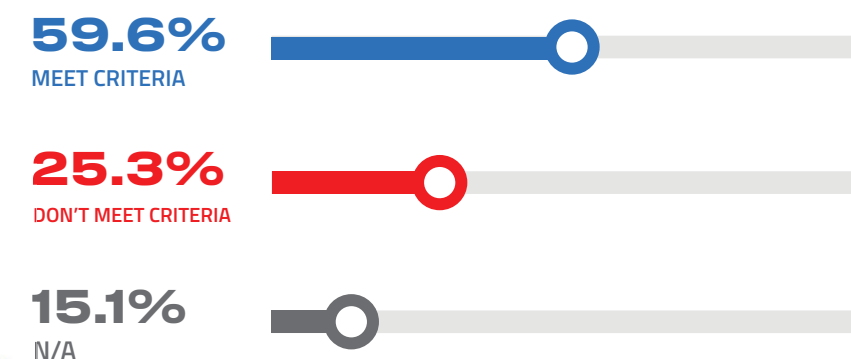
Average number of people per family: 3.6

INCOME (MONTHLY)	AVERAGE	MEDIAN	MODE
<b>FAMILY</b>	R\$1,530.70	R\$1,200.00	R\$1,200.00
<b>PER PERSON</b>	R\$427.80	R\$400	R\$300

## PERCENTAGE OF FAMILIES THAT RECEIVE



## FAMILIES THAT MEET THE INCOME CRITERIA TO JOIN CADÚNICO (%)



48.8% of families that meet the eligibility criteria said they had not registered with CadÚnico, and therefore did not receive the benefits to which they are entitled.



# WATER

Despite being one of the most fundamental rights, the **right to water is historically one of the most neglected in the favelas**. Through our research we found that although most interviewees have water in their taps, the variability of supply and its low quality mean that in practice **this right is not being adequately met**. Official surveys, which are based solely on coverage data, show an incomplete picture. As a result, many people lacked water for hygiene during the pandemic, even in places with a high number of reservoirs and water pumps, another problem since electric bills disproportionately impact people who are already socially vulnerable.

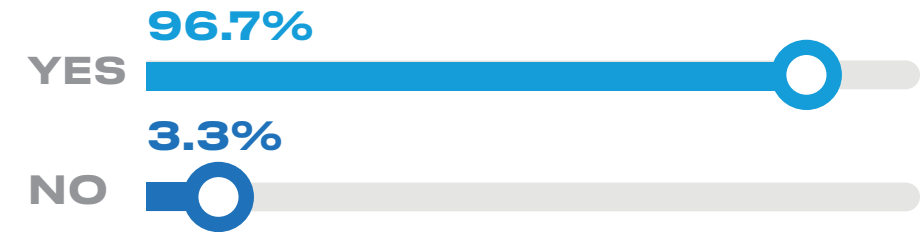
In addition, over half the population has been suffering constant **flooding**, which can be related to the high number of leaks from pipes in public areas. Respondents' memory of climactic events resulted in data indicating that floods have **worsened in recent years**. Another important factor was the **lack of technical assistance from the utility company providing the service**, with an average waiting time of over six hours to restore the service, suggesting unsatisfactory assistance. Regarding efficiency, our research showed that—despite the precarious service that generates leaks and even when residents don't pay for water—the habit of avoiding water waste by the population is widespread, showing a **high level of awareness** of the population in the interviewed territories.



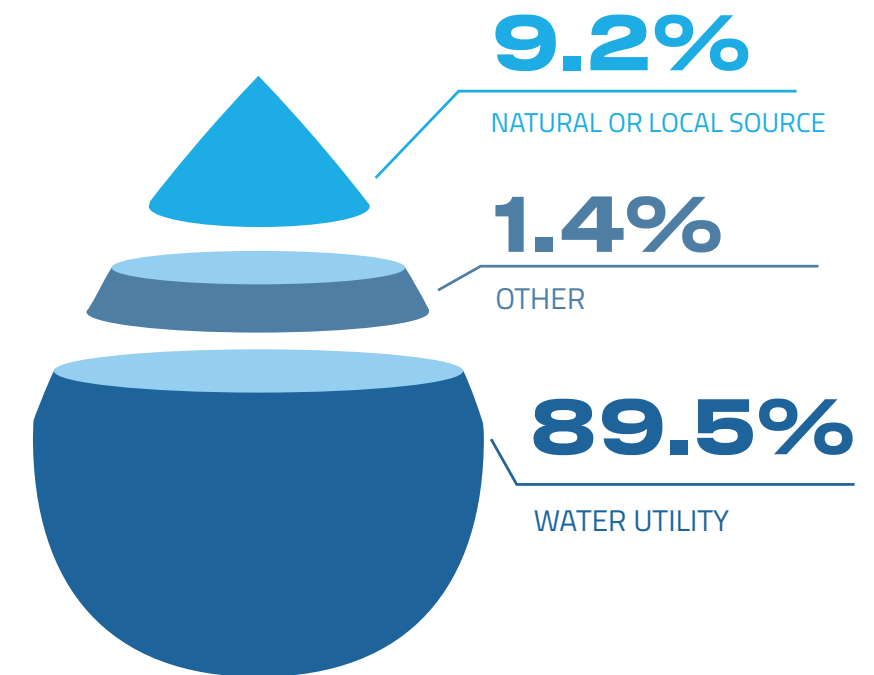
*In purely financial terms, water did not prove to be a big problem for most families, as most stated that they do not pay or receive water bills. In many cases, the utility is absent and does not bring hydrometers to favela territories. However, among the families that do pay the bill, there are cases of abusive tariffs, such as the case of a family from Morro da Providência where the water bill of R\$620 (US\$ 118) accounted for 60% of the family's income. Although these cases are not typical, they are relevant to the affected families and generate more widespread fear among residents. Both the lack of hydrometers installed by the utility and the fear of receiving high bills may explain the number of non-payers.*

# CONTEXT

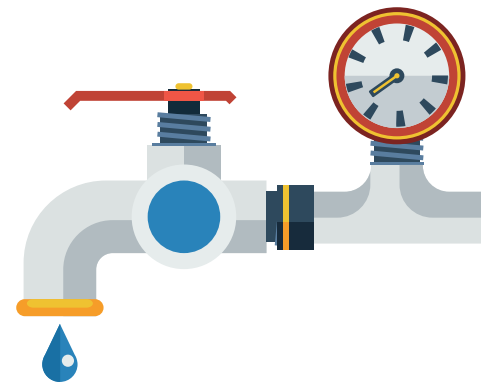
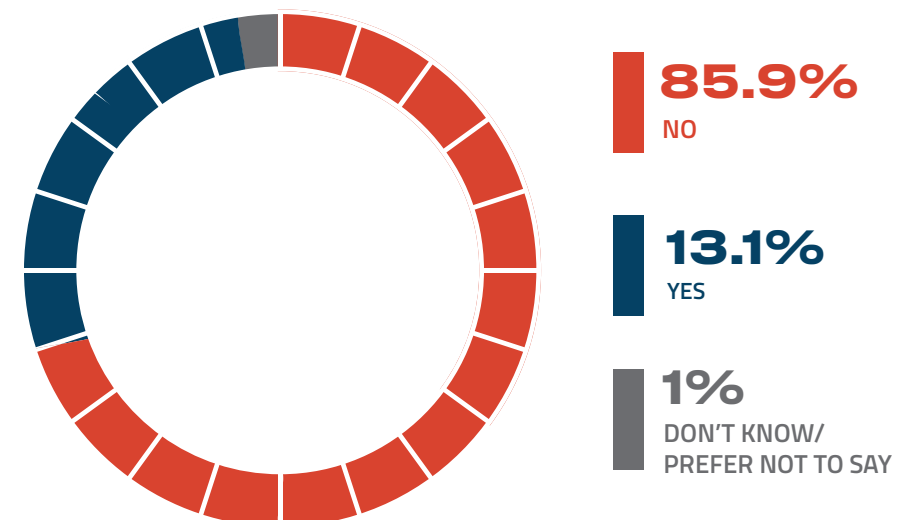
## DOES WATER REACH YOUR TAP?



## SOURCE OF WATER

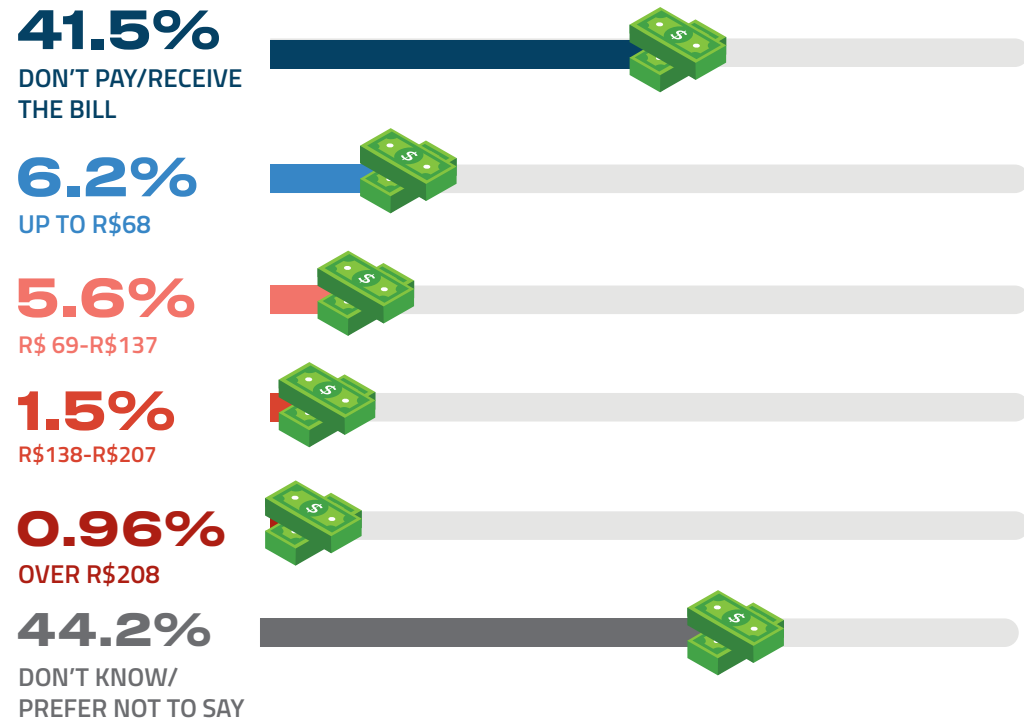


## DOES YOUR HOME HAVE A HYDROMETER?





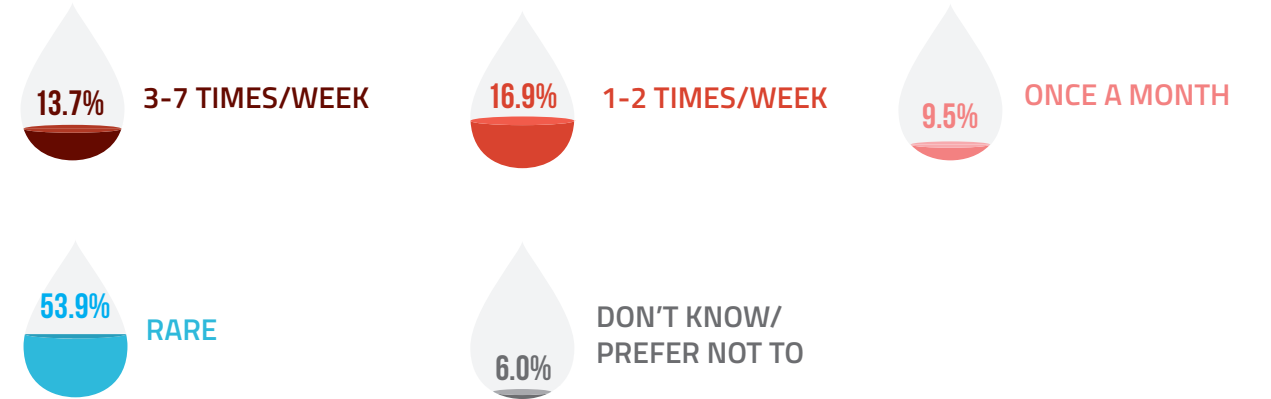
## LAST WATER BILL



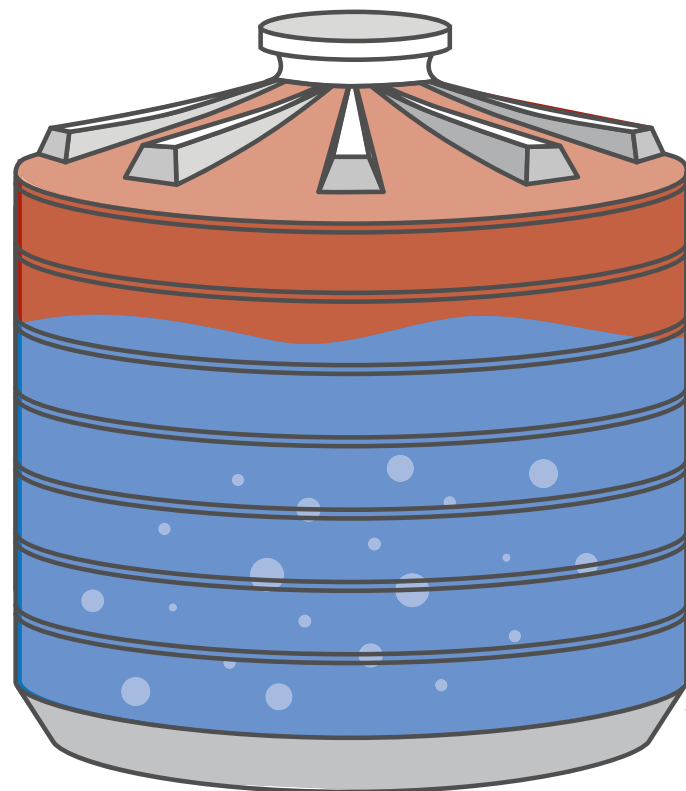
Average water bill  
(among those who pay):  
**R\$100.02**

## WATER ACCESS

### FREQUENCY OF WATER SHORTAGES IN THE HOME



### DOES YOUR HOME HAVE EQUIPMENT TO STORE WATER (E.G. RESERVOIR, TANK, CISTERN)?



**13.3%**

NO

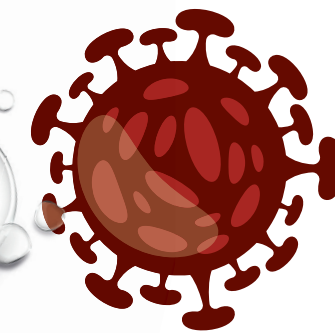
**86.5%**

YES

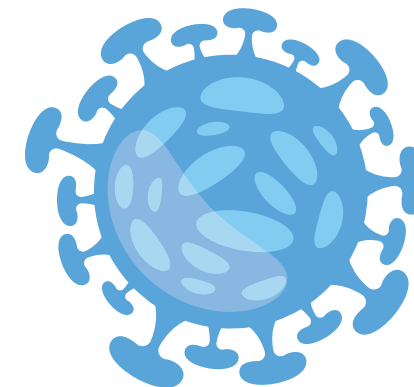
**0.2%**

DON'T KNOW

### AT ANY POINT DURING THE PANDEMIC WERE YOU LEFT WITHOUT ACCESS TO WATER FOR BASIC HYGIENE?



**42.5%**  
YES



**56%**  
NO



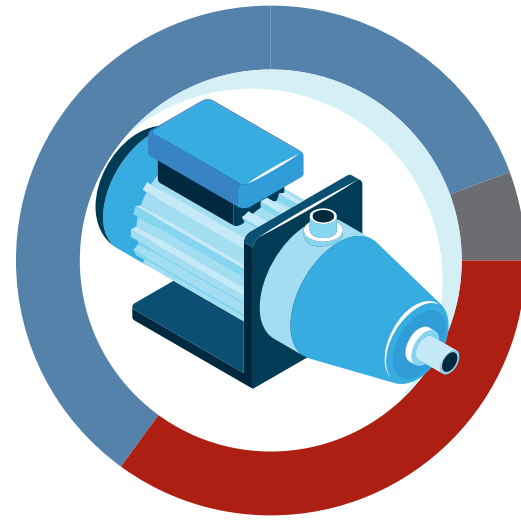
**1.6%**

DON'T KNOW/  
PREFER NOT TO SAY

**490 families were left without access** to the water they needed for their basic hygiene at some point during the pandemic. That's despite 424 of these same families having water storage facilities.



## DO YOU NEED TO USE A WATER PUMP TO ACCESS WATER AT HOME?

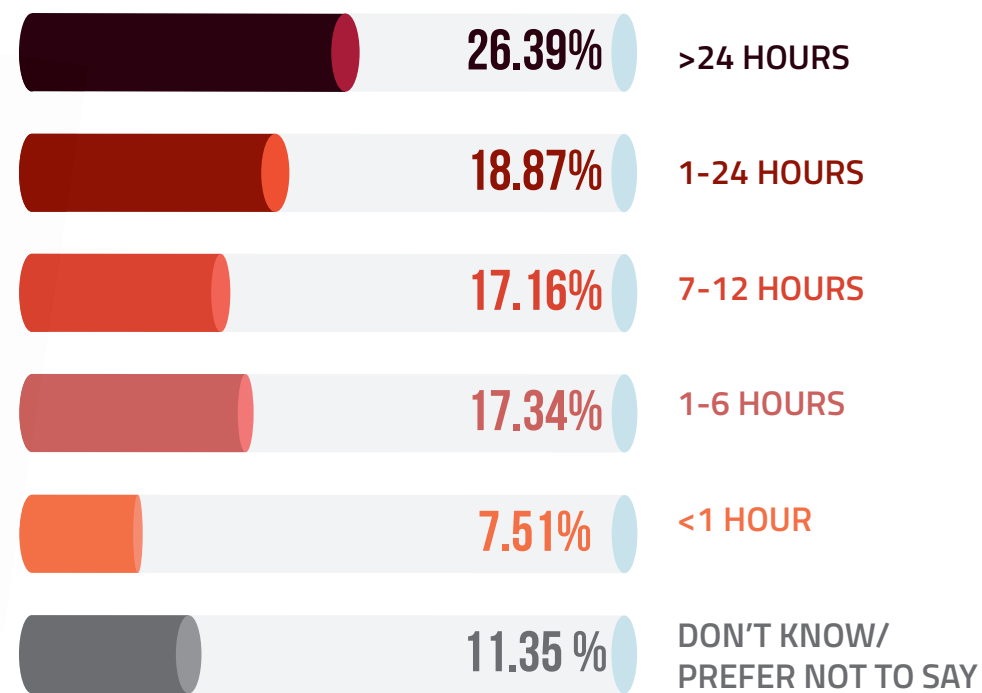


**51%**  
NO

**48.2%**  
YES

**0.8%**  
DON'T KNOW/  
PREFER NOT TO SAY

## WHEN THERE'S NO WATER, HOW LONG, ON AVERAGE, DOES IT TAKE TO RETURN?



## WATER ACCESS

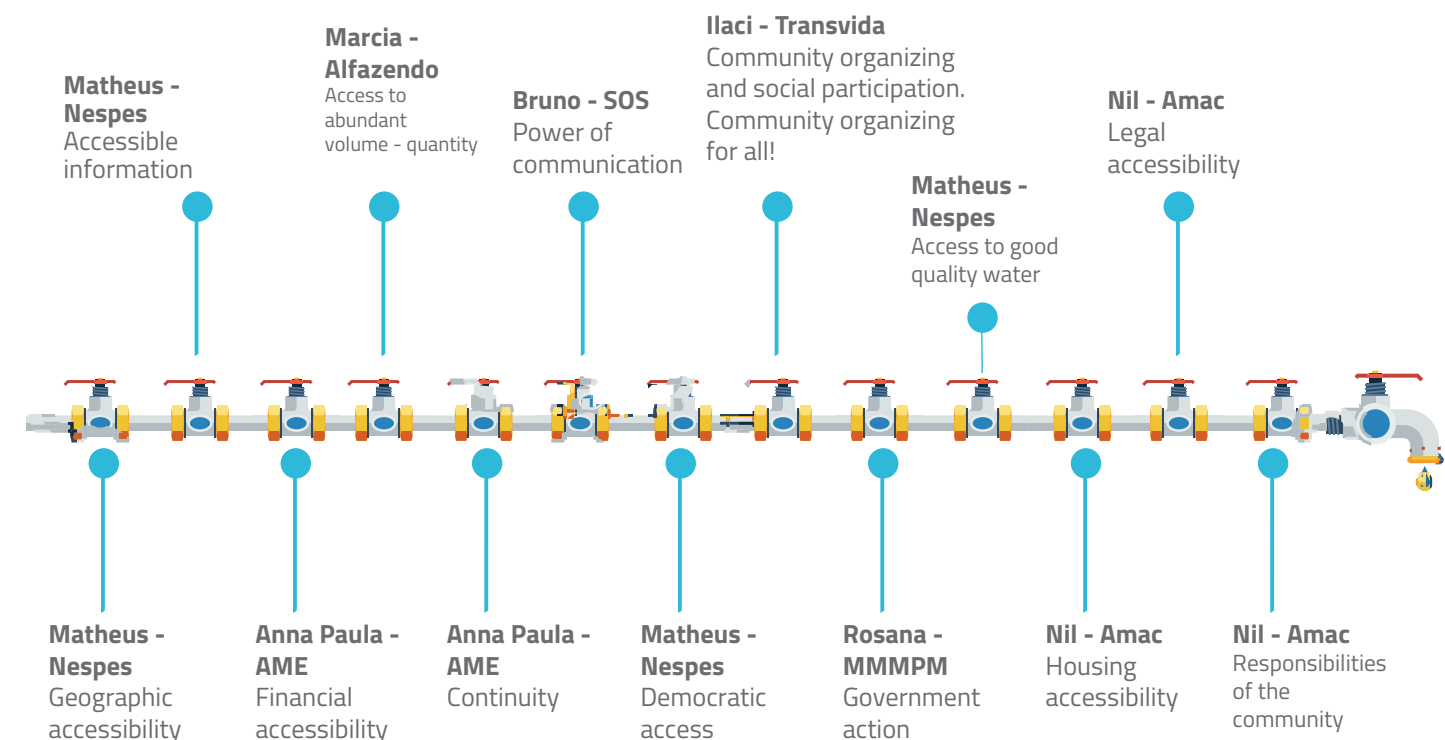
"Regardless of where you live or your income, you **have to have the right to water**, to basic sanitation." — Miguel Wesley (Engenho/Itaguaí)

"For many, 'there is rarely a lack of water' according to the survey only because sometimes people don't realize the water supply has stopped—they're not at home and what arrives is enough for them, so they don't even notice that it dropped. I think there's a **normalization of the lack of rights**. It is a health issue. People think that the utility company is doing them a favor and not that it's their right." — Rayssa Ferreira (Vila Cruzeiro)

"Most people don't have water without a pump. We don't know why, but that's how it is. **I don't have a water tank** and installing it is expensive, so the lack of water affects me a lot." — Élide Nascimento (Éden/São João de Meriti)

"In Rio das Pedras we've noticed that the water flow is stronger at night and bursts the pipes. This is also a problem for us. Here at my door my **pipe bursts with the water pressure**." — Ivone Costa (Rio das Pedras)

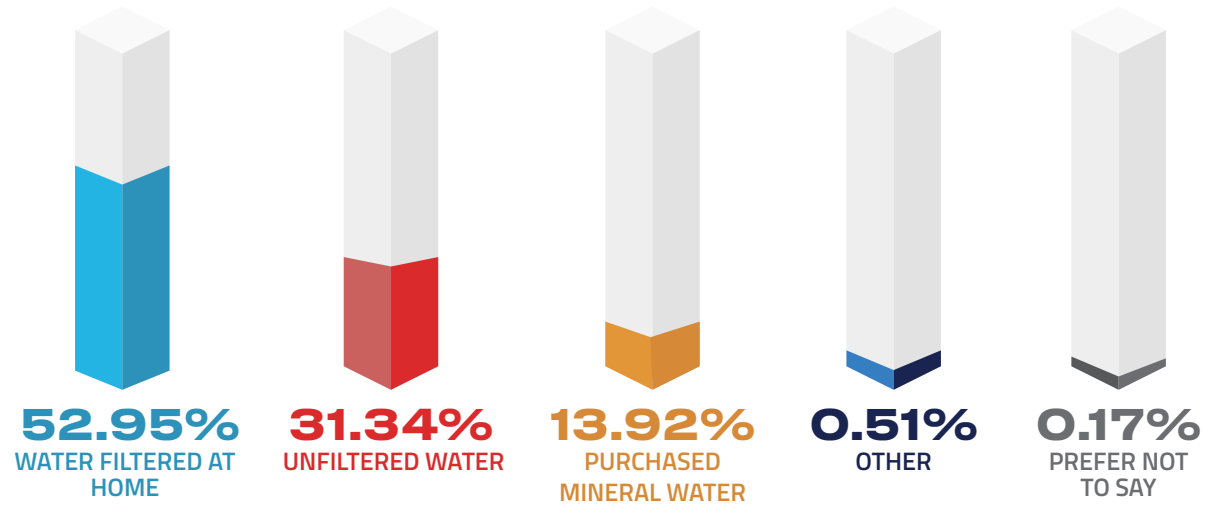
"It's important for everyone to have water. There is a part of the community, on the last street, that has no water. People **collect water in the early hours of the morning**. This is very intense in the summer." — Ivone Costa (Rio das Pedras)



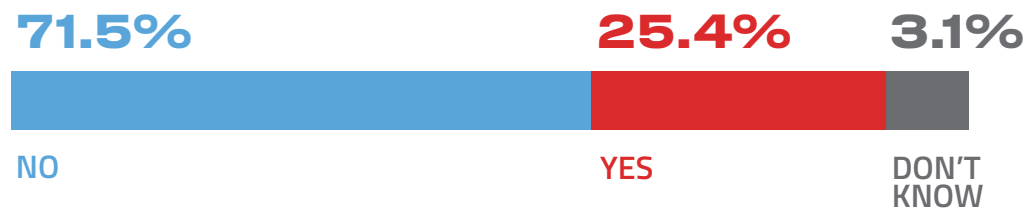


# WATER QUALITY

## THE WATER YOU AND YOUR FAMILY DRINK AT HOME IS:



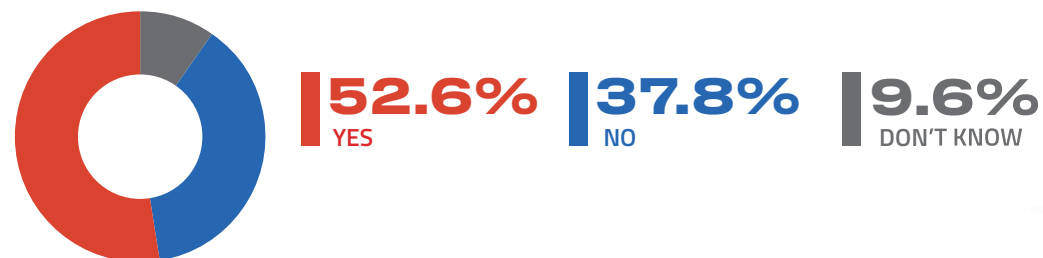
## DOES THE WATER IN YOUR HOUSE HAVE A BAD TASTE?



## DOES THE WATER IN YOUR HOUSE HAVE A COLOR?



## IS THERE A DIFFERENCE IN YOUR WATER SUPPLY BETWEEN SUMMER AND WINTER?



# WATER QUALITY

“Regardless of whether they pay or not, **every citizen has the right to consume quality water**. A lot of people think they don’t have the right to demand this service because they don’t pay.” — Élide Nascimento (Éden/São João de Meriti)

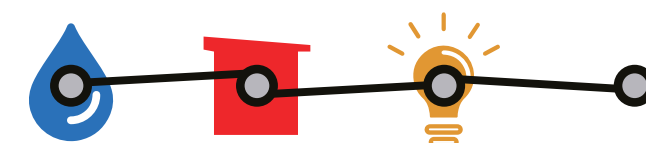
“As I applied the survey, the situation that struck me most was the case of a family with an unemployed father and mother, a small child and a newborn without water to bathe, eat and drink. They had to **buy mineral water to prepare the baby’s bottle**. And the mother was dependent on favors and asking for help. She would even **choose water over a basic food basket**. That really struck me.” — Laurinda Delgado (Coréia/Mesquita)

“A girl here told us that she had to buy mineral water to feed her baby, because she got into a cycle: when she couldn’t afford drinking water because she didn’t have a filter, the child got a stomach ache, which led to diarrhea. Then she had to wash the baby, but then there was no water to wash with. So what did she do? She had to buy mineral water to treat the child and she started to get better, just like that. But she couldn’t afford it.” — Matheus Botelho (Coréia/Mesquita)

“People who live in the community already feel inferior because of where they live. When the water comes with a strange color and taste they think they can’t complain because they don’t pay a bill. They say ‘what are you going to complain about if you don’t pay?’ and that if we go [to the service provider], **they will cut it off.**” — Letícia Nascimento (Jacarezinho)

“One story that really stuck with me was that people **consume water without even filtering it**. A lot of people can’t afford to buy a tap with a filter.” — Matheus Botelho (Coréia/Mesquita)

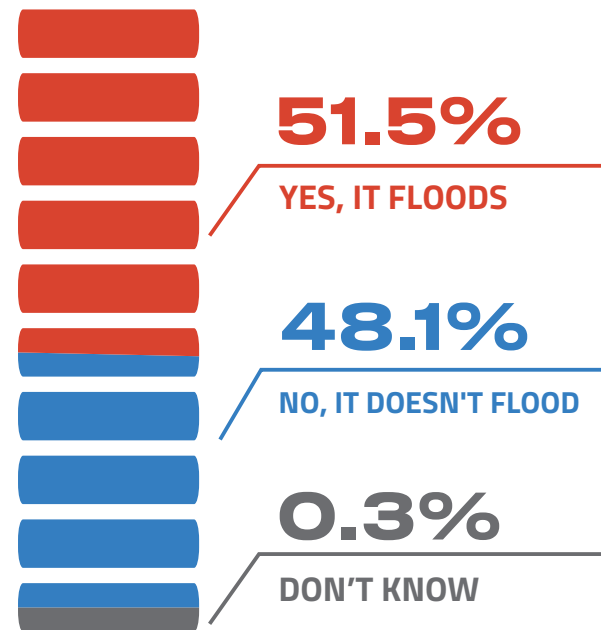
(On seasonality) “The **environmental racism** becomes clear when the peripheries suffer more with the lack of water because the water that would come to the peripheral population is **sent to mansions.**” — Anna Paula Sales (Engenho/Itaguaí)



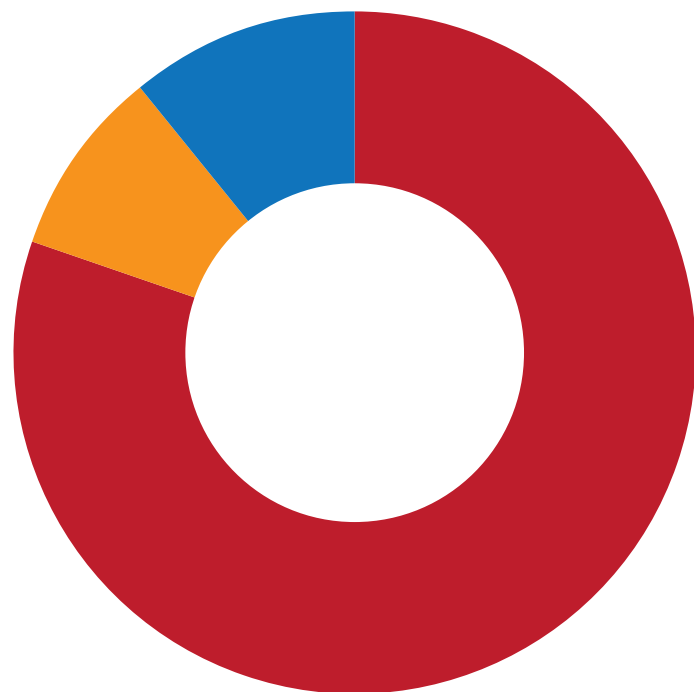


# FLOODING

## WHEN IT RAINS, DOES YOUR HOUSE OR STREET FLOOD?



## HAS THIS PROBLEM GOTTEN BETTER OR WORSE IN THE LAST TWO YEARS?



**80.1%**  
WORSE

**10.9%**  
BETTER

**8.9%**  
DON'T KNOW

**0.2%**  
PREFER NOT TO SAY



# FLOODING



“There was a girl we interviewed in the street. She doesn’t have running water; she washes with a bucket and gets a cup of water to brush her teeth. And so she goes on living like this. This really shocked me because it’s unusual these days for someone not to have a water tank or indoor plumbing. **We don’t know what people’s reality is like until we knock on their door and do a survey like this.** These are things that sometimes shock us because of the current situation we live in, but it is the reality for a lot of people.” — Janyne Souza (Itacolomi)

“The data on flooding are of utmost importance because they serve as a marker that proves **climatic effects.**” — Anna Paula Sales (Engenho/Itaguaí)

“I interviewed a lady and asked about sanitation and whether it flooded there. **She said that it always floods and that she had already lost a lot of furniture to flooding. She said that’s why she had almost no furniture** in her house, because she was always **afraid of the rain.** She had a bed, a stove, but none of the burners worked. She was retired.” — Caio Gabriel (Complexo da Pedreira)

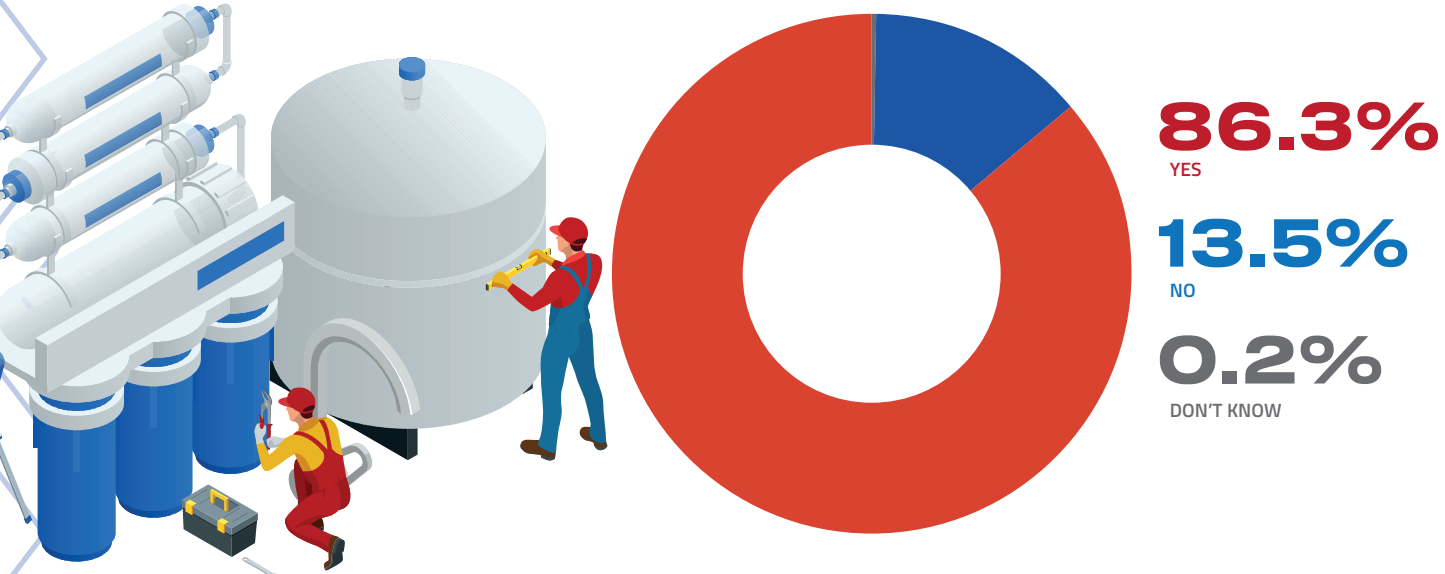
“Here the water pipes are next to the sewage pipe, so when the water pipe breaks the sewage mixes in the water and people drink this **contaminated water.**” — Tânia Alexandre (Cosmorama/Mesquita)



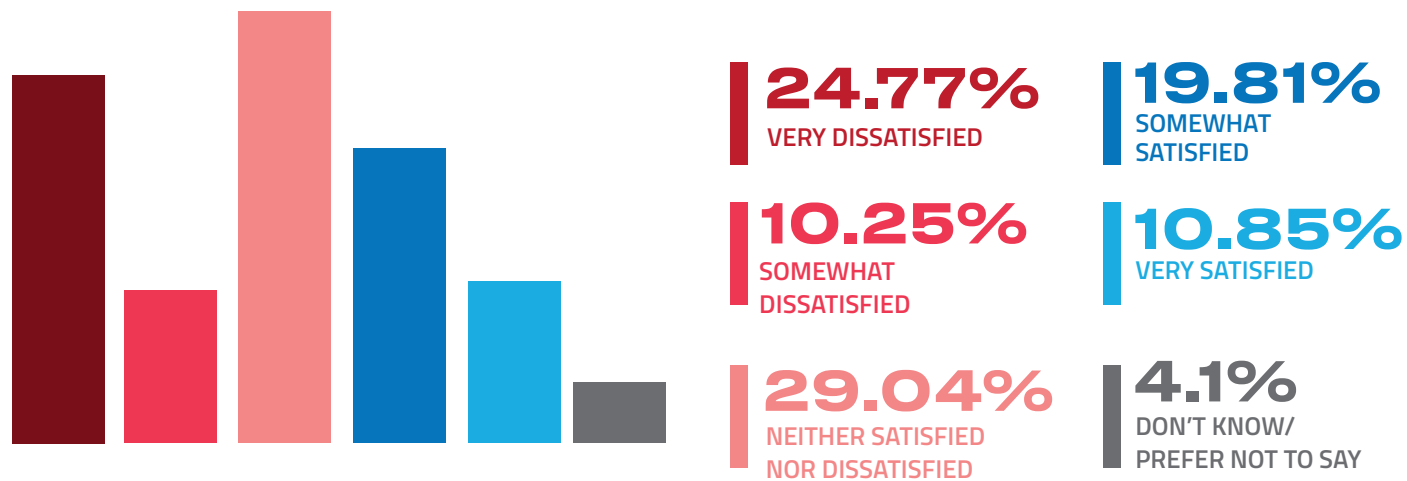


# SERVICE PROVIDER RESPONSIVENESS

HAVE YOU EVER REQUESTED A REPAIR OR MADE A COMPLAINT TO THE WATER UTILITY?



ON A SCALE FROM VERY DISSATISFIED TO VERY SATISFIED, WHAT IS YOUR LEVEL OF SATISFACTION WITH THE SERVICE PROVIDED BY THE WATER AND SEWERAGE UTILITY?



# SERVICE PROVIDER RESPONSIVENESS

“There is no transparency! We don’t know where to complain, we don’t know who to turn to. Águas do Rio has a toll free number, but how can we complain to Águas do Rio? There has to be another monitoring [body].” — Matheus Botelho (Coréia/Mesquita)

“If [from the data, we see that someone] is neither satisfied nor dissatisfied, the issue is not indifference [on their part]. It is a lack of accessibility, of a telephone [to call]. Here **we have to take a bus to complain** [to the service provider].” — Anna Paula Sales (Engenho/Itaguaí)

“I believe that sometimes the population doesn’t have access to the necessary information or has accepted some situations. Some people said in the interview that they **were already used to it** [the lack of water] and that’s why they didn’t complain.” — Matheus Edson (Rio das Pedras)

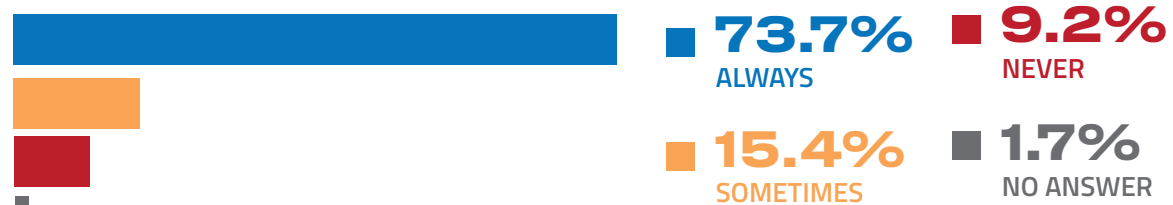
“The fact is that [when I call the service provider], they make a commitment to fix it immediately, to quickly [respond to the] demand, putting people on the job to fix it. Then when we call and say that nobody came, **they say they did.**” — Ana Leila Gonçalves (Jacutinga/Mesquita)



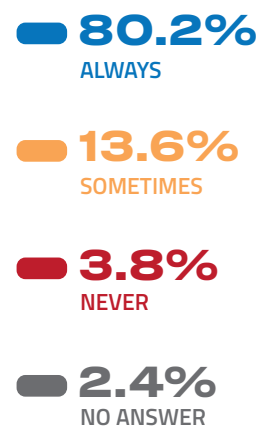
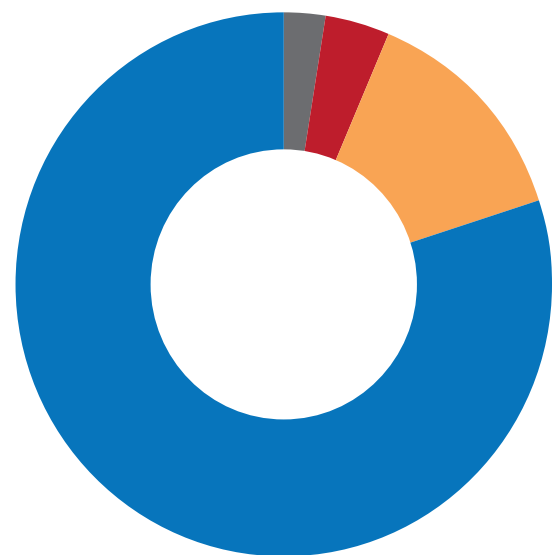


# EFFICIENCY

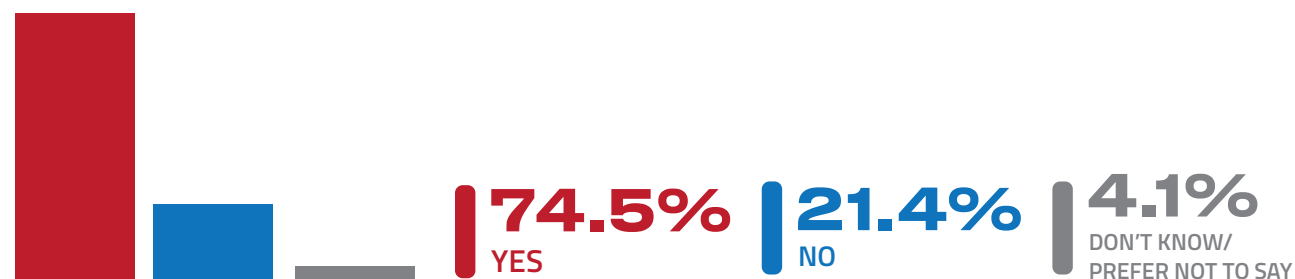
DO YOU TURN OFF THE FAUCET WHILE YOU BRUSH YOUR TEETH?



DO YOU FIX LEAKS IN YOUR HOUSE RIGHT AWAY?



IS IT COMMON TO SEE PIPES LEAKING WATER IN THE STREETS OF THE COMMUNITY?



# WATER EFFICIENCY



“Regarding efficiency, people are aware of their habits, but it’s no use if the person doesn’t have good access to water. **If you don’t even have water, how can you talk about efficiency?**”  
- Matheus Botelho (Coréia/Mesquita)



Extract from the SNIS report “Panorama of Basic Sanitation in Brazil”:

“Considering the extension of the network and water connections in Brazil, it is estimated that **40.1% of all water made available is lost during distribution**. Although it is not possible to differentiate between real and apparent losses, this represents a total of 6.6 million m<sup>3</sup> of water wasted or not accounted for by service providers in the distribution systems, an average considered high in relation to developed countries. Even if this is an overestimate regarding the volume of apparent losses, such a volume of water **would be able to supply the demand** of locations that suffer from water scarcity, or that are not served by public water supply services for a number of reasons.”



# ELECTRICITY

The favela is similarly neglected with regard to energy rights. In our research, it was noted that **high electric bills** and a lack of technical assistance directly impact the percentage of people with meters, on the one hand, and on the other their **capacity to meet basic survival needs**, such as food.

Over half of those interviewed said they don't have an electric meter, but it's no wonder: the strain of the electric bill on the household budget **puts most families in the condition of energy poverty**. If people's bills were reduced, shockingly, most affirmed they would use the savings to buy the most basic of things: **food**. As for the quality of access, at least one fifth of the population suffers blackouts at least once a month, and one third of interviewees said they have experienced a **blackout** of more than 24 hours in the last three months.



## CONTEXT

### HOMES WITH ACCESS TO ELECTRICITY

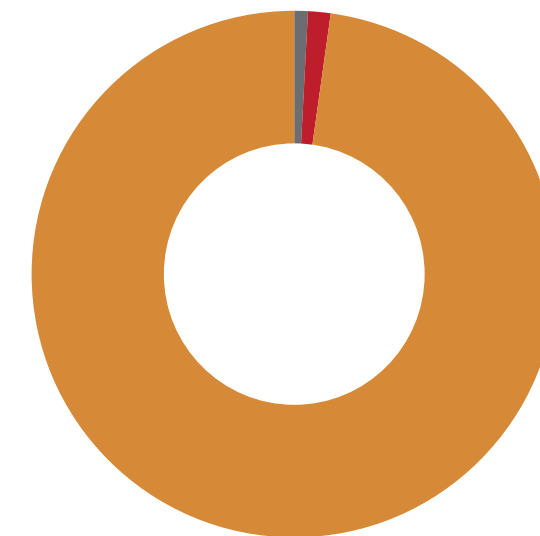
98.7%

YES

1.3%

NO

### SOURCE OF ELECTRICITY

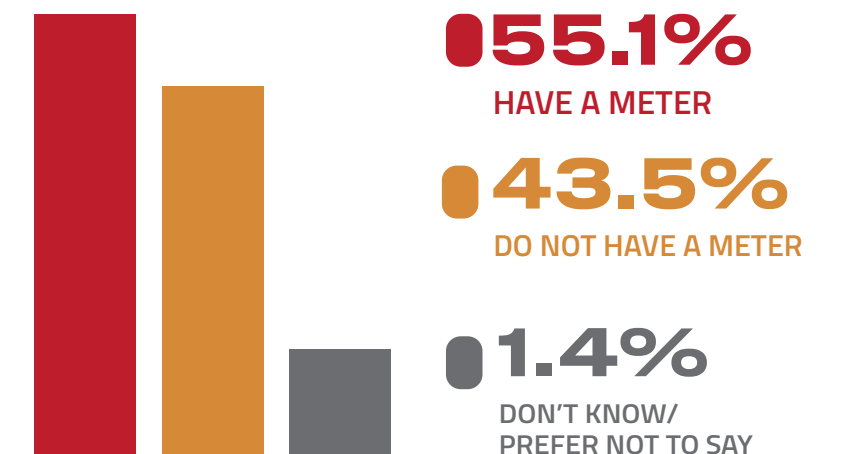
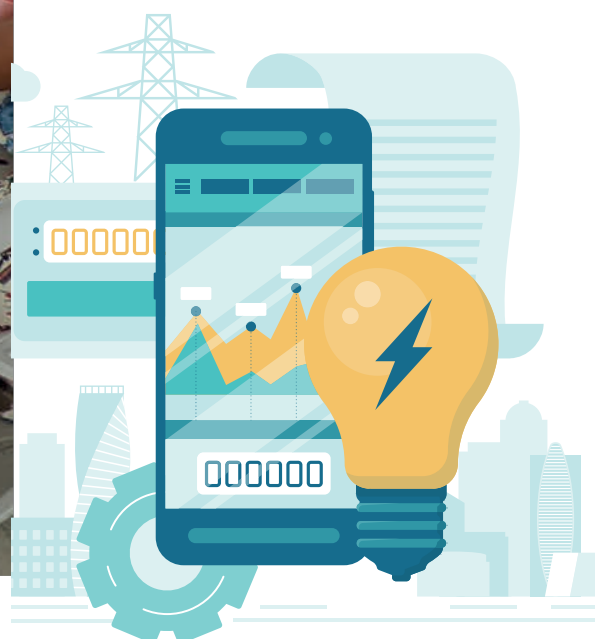


97.9%  
UTILITY

1.4%  
OTHER

0.7%  
UNAVAILABLE  
RESPONSES

### HOMES WITH AN ELECTRICITY METER



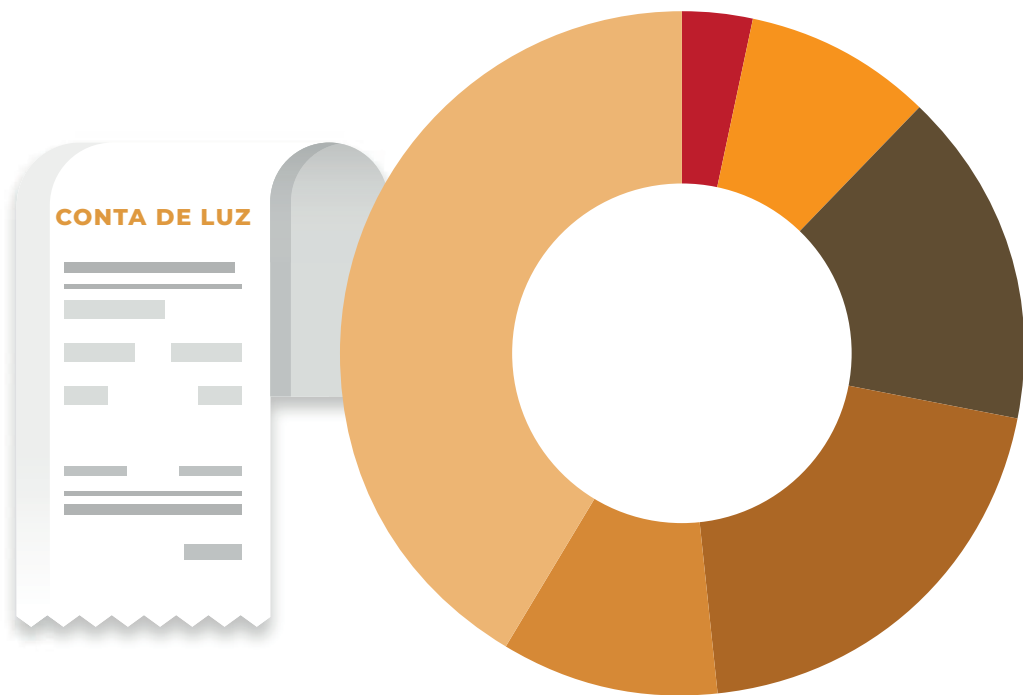
55.1%  
HAVE A METER

43.5%  
DO NOT HAVE A METER

1.4%  
DON'T KNOW/  
PREFER NOT TO SAY



## COST OF MOST RECENT ELECTRIC BILL



**41.5%**  
DON'T PAY/DON'T RECEIVE BILL

**10.2%**  
<R\$60

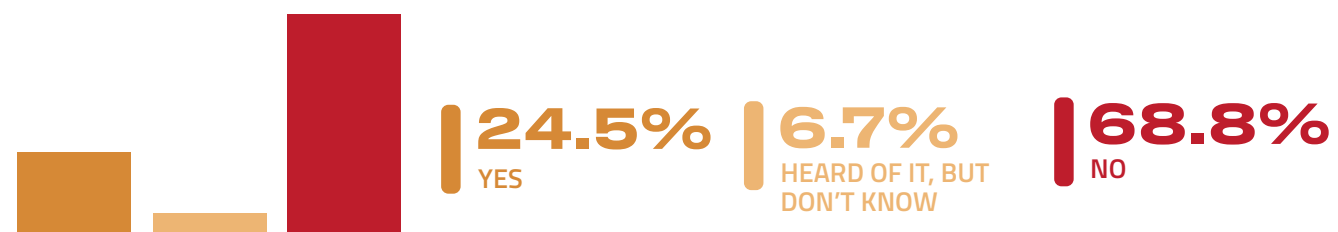
**20.3%**  
R\$ 61-120

**15.9%**  
R\$ 121-240

**8.8%**  
R\$ 241-360

**3.3%**  
R\$ 361+

## DO YOU KNOW ABOUT THE ELECTRICITY SOCIAL TARIFF (TSEE)?



**68.8%** (794 respondents) are unaware of the Electricity Social Tariff (TSEE).

Among those who know about it, **32.7%** (93 respondents) say they receive the benefit.

## AVERAGE NUMBER OF HOUSEHOLD APPLIANCES PER FAMILY

Appliance	Average Number
Lightbulbs	5
Refrigerator	1
TV	1
A/C	1
Electric Shower	1
Washing Machine	1
Fan	2

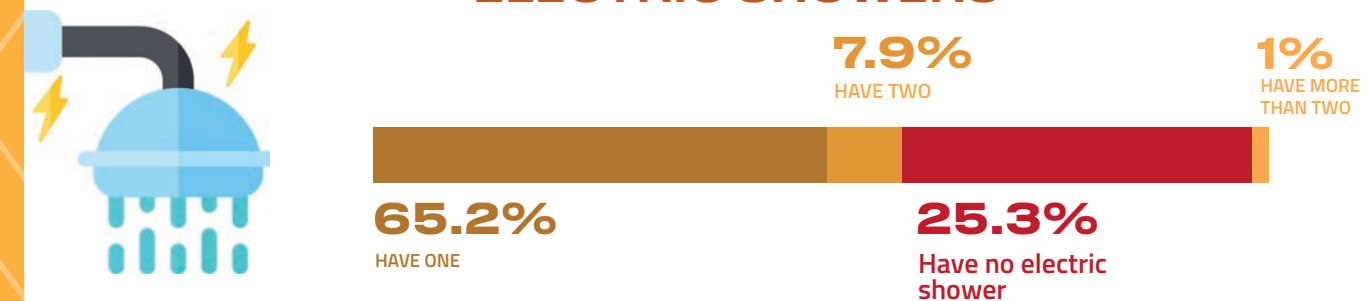
### REFRIGERATORS/FREEZERS



### TVs



### ELECTRIC SHOWERS



### WASHING MACHINES



## ELECTRICITY CONTEXT

“One young woman said that in her house, there were only two rooms and a double bed with seven children where everyone slept. They didn’t have a stove, they **cooked with wood** and there was no bathroom in the house.” — Janyne Souza (Itacolomi)

“One resident simply turned to me and said that she had no reason to lie, that she did have a clandestine electricity connection because **she can’t afford the basics in her house**, so imagine paying for electricity and water. But I told her that **electricity and water are basic human rights**. They are necessities that we deserve and need in order to survive. This made a big impression on me, because if she couldn’t even afford to supply her needs—which she thinks are the basics, food and hygiene—imagine [having to pay for] electricity and water?” — Domênica Ferreira (Morro dos Macacos)

“I don’t pay for **electricity anymore because my electric bill became very expensive after they changed the meter**. This is what happens here in the favela.” — Tânia Alexandre (Cosmorama/Mesquita)

“When we were doing field research, I met a lady who lived in her house with three people and they didn’t pay for energy, they had a “gato” (clandestine electricity connection). She said that the ‘gato’ wasn’t worth it, that there were a lot of power outages, and with the power outages she had **lost electrical appliances**. She said she wanted to change the situation, but that Light [the electric utility] didn’t want to make the deal because she lives in a favela. Even though she couldn’t afford it, **she wanted to use legal tools but couldn’t because of Light’s prejudice** towards residents of the peripheries.” — Anny Verissimo (Complexo da Pedreira)

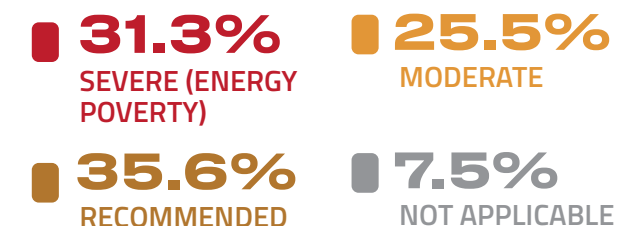
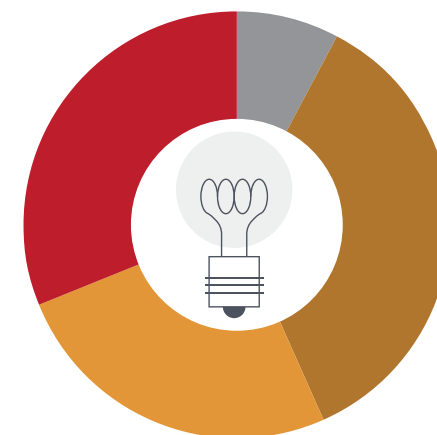
“What shocked me the most was that people did not know about the Social Tariff. Many pay the full bill without knowing [they have the right to a discounted rate]. When we told them [about the Social Tariff], they were surprised. We told them all about it, and the Ca-dÚnico as well.” — Bruno Tavares (Providência)

”



## AFFORDABILITY

### STRAIN OF ELECTRIC BILL ON THE HOUSEHOLD BUDGET

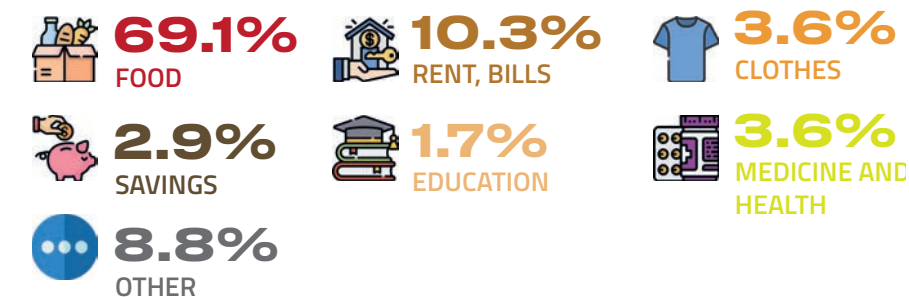
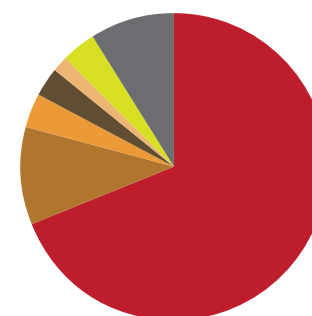


According to **official recommendations**, an electricity bill that represents over 10% of monthly family income is listed as a case of ‘energy poverty’; between 6.9% and 10% is moderate, and less than 6.8% of monthly family income is recommended.

MEDIAN BILL	MAXIMUM AMOUNT TABLE TO PAY	DIFFERENCE BETWEEN AVERAGE AMOUNT WILLING TO PAY AND MEDIAN
<b>R\$120</b>	<b>R\$60</b>	<b>R\$60</b>

Based on the median bill and the average that families are able to pay, families that pay for electricity are paying double what they can actually afford.

### IF YOUR ELECTRIC BILL WAS CUT IN HALF, WHAT WOULD YOU SPEND THE EXTRA MONEY ON?





## AFFORDABILITY

“This is why there’s hunger. Electricity is draining money from the poor population who live on minimum wage.” — Ana Leila Gonçalves (Jacutinga/Mesquita)

“We conducted surveys with two neighbors, each with **different problems**. One received CadÚnico and didn’t pay for electricity. The other paid R\$300 per month even though she was never at home.” — Luiz Miguel Ribeiro (Coréia/Mesquita)

“In our community, the most common doubts are about the Social Tariff.” — Laurinda Delgado (Coréia/Mesquita)

“People who have the right to TSEE are not receiving this right. **Those who have CadÚnico are not automatically receiving this benefit** (like they should be!)” — Nilcimar dos Santos (Dique da Vila Alzira/Duque de Caxias)

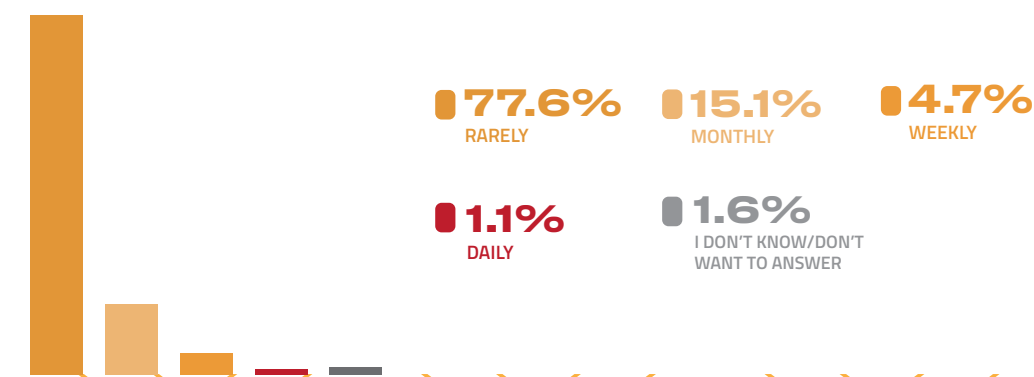
“What called our attention most was that people interviewed stated that [if the electric bills were lower] **they would spend the extra money on food**. This is the most urgent need affecting the vast majority of people at the moment: being able to exercise the right to quality food, capable of supplying all the nutrients a person needs. It’s intense, isn’t it, to see this situation? Of all the testimonials, what struck me most was this issue of people finding it difficult to feed themselves. — Élide Nascimento (Éden/São João de Meriti)

“There are people who pay their bills, and among these the majority said they would buy more food [if there was money left over after paying their electricity bill]. This is **distressing** because **we all want to eat well, right?**” — Ana Maria Santos (Morro dos Macacos)

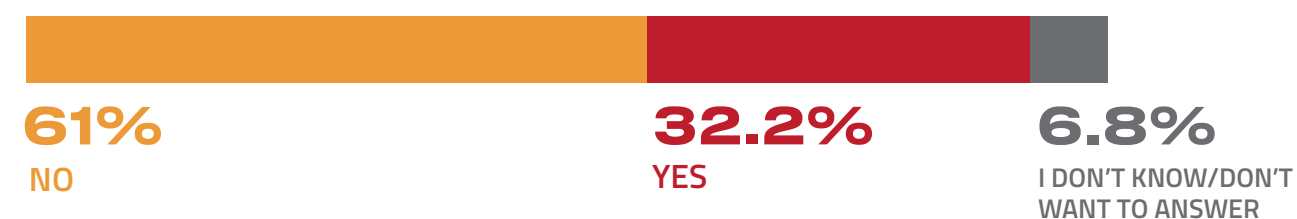
“What I found most important was the 60 year old lady I interviewed who said that she never goes out. She’s never had a hamburger, never gone out for a snack. **She never left the house** because she had very little money. The money she had went for food and paying the rent, paying the electric bill, paying the water bill, you know?” — Luiz Miguel Ribeiro (Coréia/Mesquita)

## ACCESS QUALITY

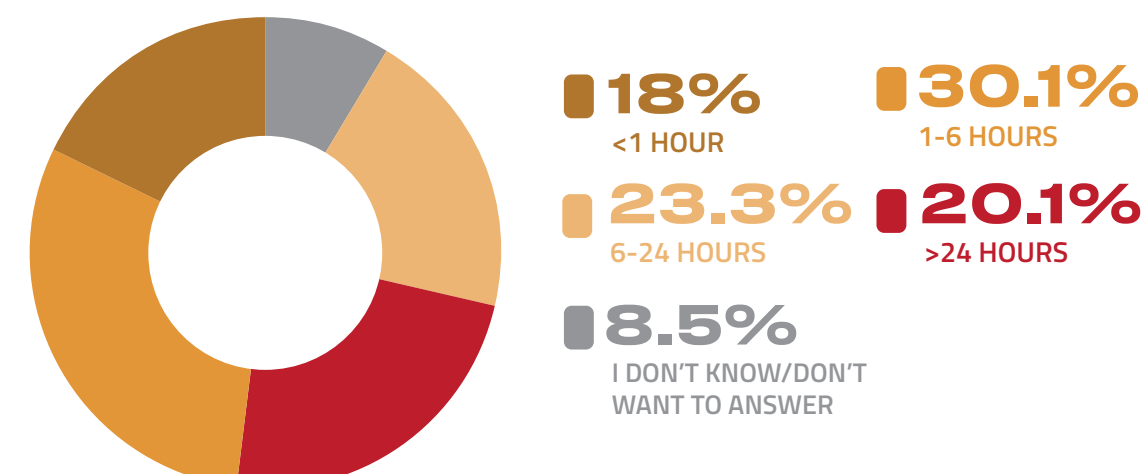
### HOW OFTEN DOES THE LIGHT GO OUT IN YOUR HOME



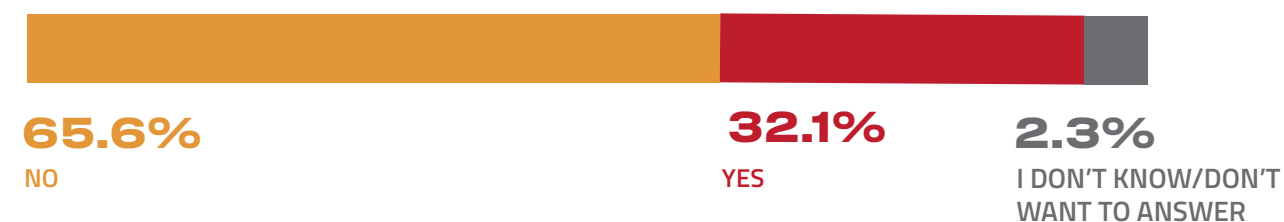
### IN THE LAST 3 MONTHS, HAS YOUR HOME EXPERIENCED A POWER OUTAGE LASTING OVER 24 HOURS?



### WHEN THE POWER GOES OUT, HOW LONG DOES IT TYPICALLY TAKE TO COME BACK?



### HAVE YOU LOST AN APPLIANCE DUE TO POWER OUTAGES?



## ACCESS QUALITY

“When I asked a resident if she’d lost an appliance because of power outages, she said yes, that a fan was spinning and working normally, but when the power went out, it kept spinning and **caught fire**. It started to catch fire out of nowhere! The fire spread and caused despair in her home. She thought it was going to burn all the furniture. There was a desperate rush to put out the fire. In the end it burned the edge of the nearest furniture, some cloth, the sofa cover. She pointed out how important our work is, and that it’s not every day that someone comes by in the community asking about water and electricity. **Usually, all that comes is the bill.**” — Bruno Tavares (Providência)

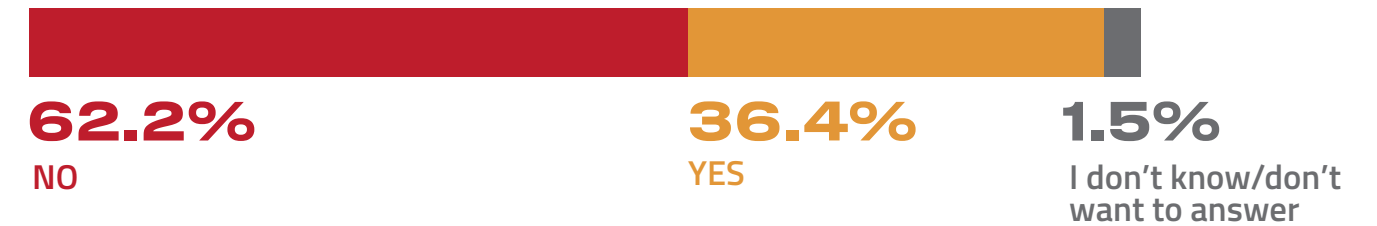
“We went door to door and ended up meeting a lady living in the dark as she didn’t have a light fixture or a reliable person to install one. She used to turn on the **sole light bulb she had only at critical moments** so as not to be completely without light. We found a lamp and installed it for her. — Edilma de Carvalho (Providência)

“One woman **bought her own electricity pole** and wire so she could supply electricity to her home. She offered to pay a high amount, R\$150 or R\$200 I think, when it was regulated and she was attended to, because until then they [Light] had never gone there.” — Matheus Botelho (Coréia/Mesquita)

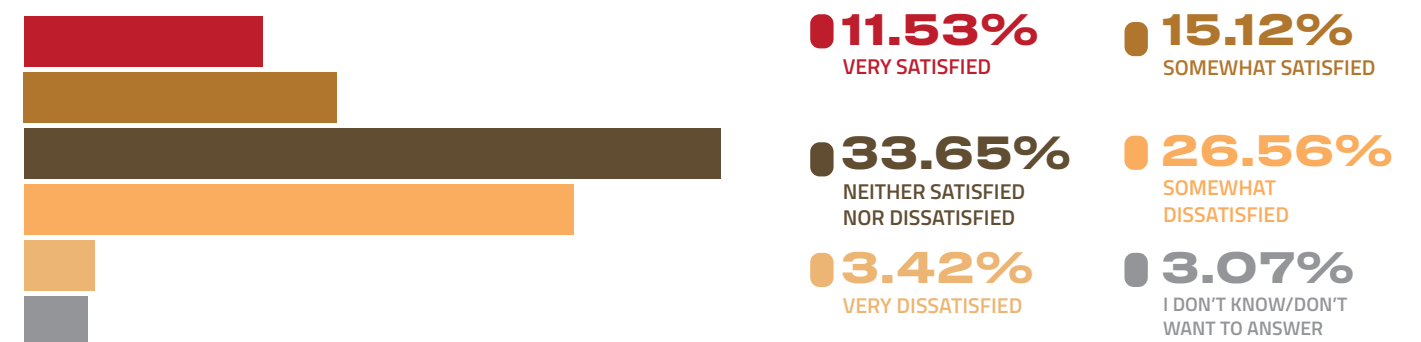


## SERVICE PROVIDER RESPONSIVENESS

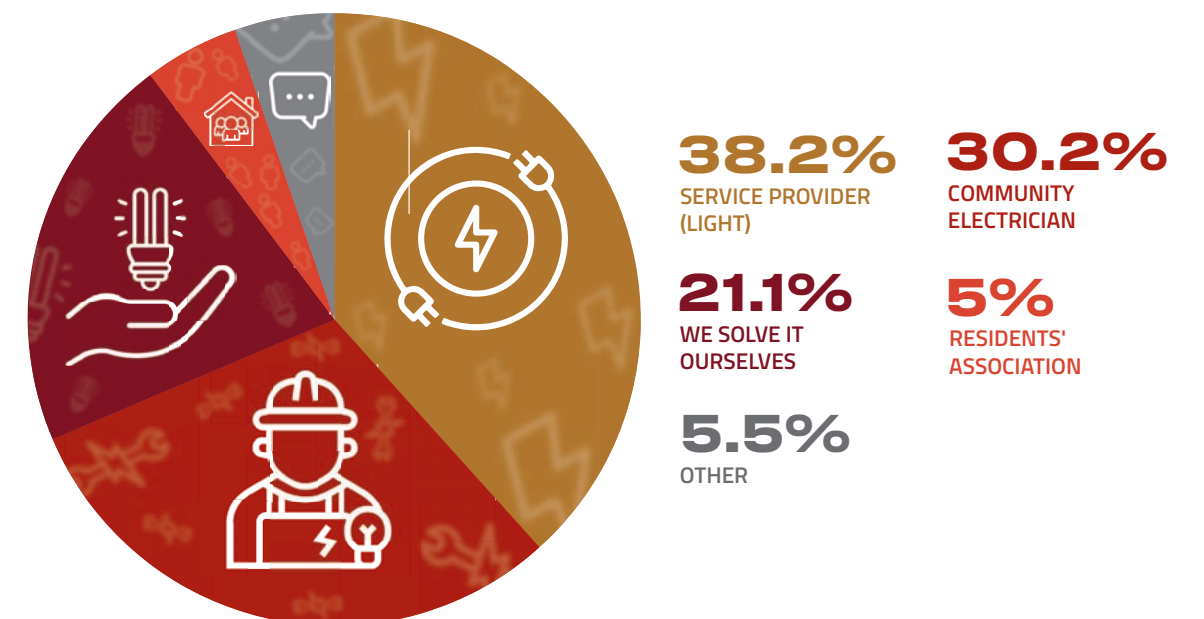
HAS ANYONE IN THE HOUSEHOLD EVER REQUESTED ASSISTANCE OR FILED A COMPLAINT WITH THE SERVICE PROVIDER (LIGHT)?



BETWEEN VERY DISSATISFIED AND VERY SATISFIED, WHAT IS YOUR LEVEL OF SATISFACTION WITH THE SERVICE PROVIDED BY THE ELECTRIC UTILITY?



WHEN YOU HAVE A PROBLEM WITH THE POWER SUPPLY, WHO DO YOU TURN TO?





# SERVICE PROVIDER RESPONSIVENESS

“The utility doesn’t go into the favelas. Only in extreme cases. I spent five days without electricity and we ended up calling the community electrician to sort it out because Light didn’t respond to me at all.” — Gabrielle Conceição (City of God)

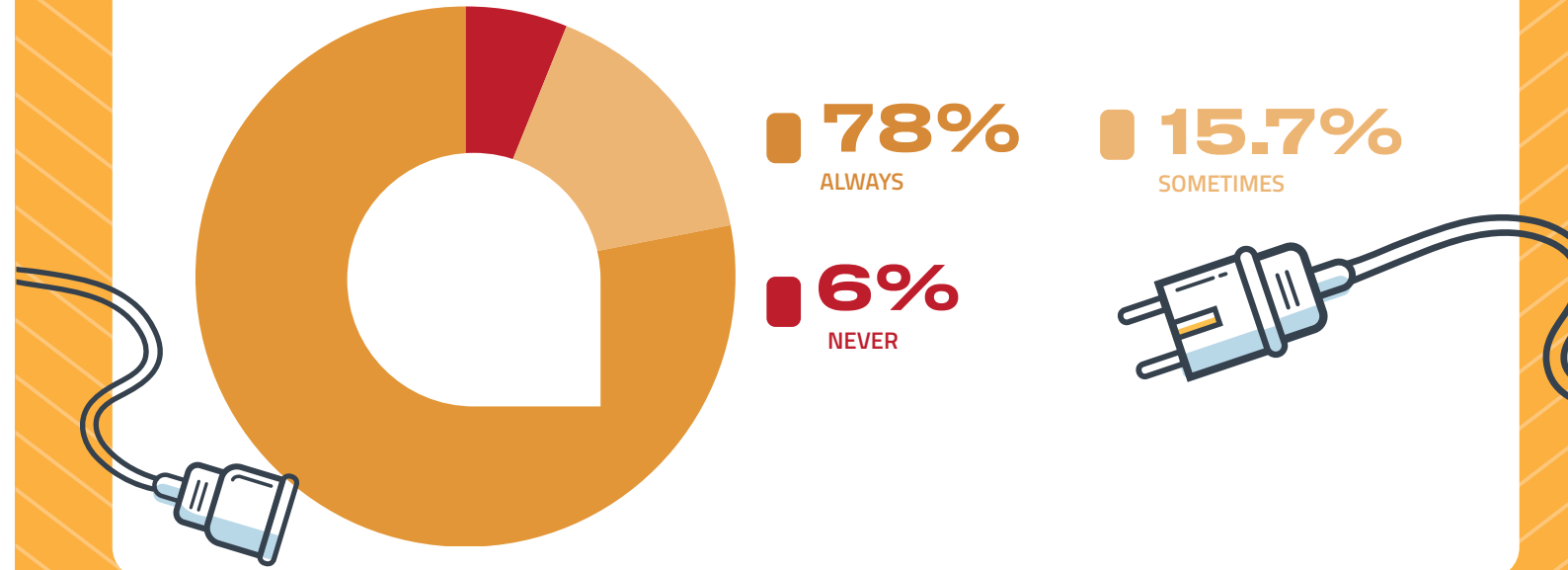
“People get organized, they go after the community electrician who has already gone up there and learned. Then they don’t even bother [calling Light] anymore. Residents are so distrustful, they don’t believe that complaining will make a difference.” — Juliana Rufino (Providência)

“I used to think that by paying I would have rights. Now [that I pay] I see that it’s not like that. If I don’t have electricity for five days, I get the feeling of ‘damn, we don’t even know where to start demanding the service’. These **moral damages**, you don’t even realize are moral damages.” — Juliana Rufino (Providência)

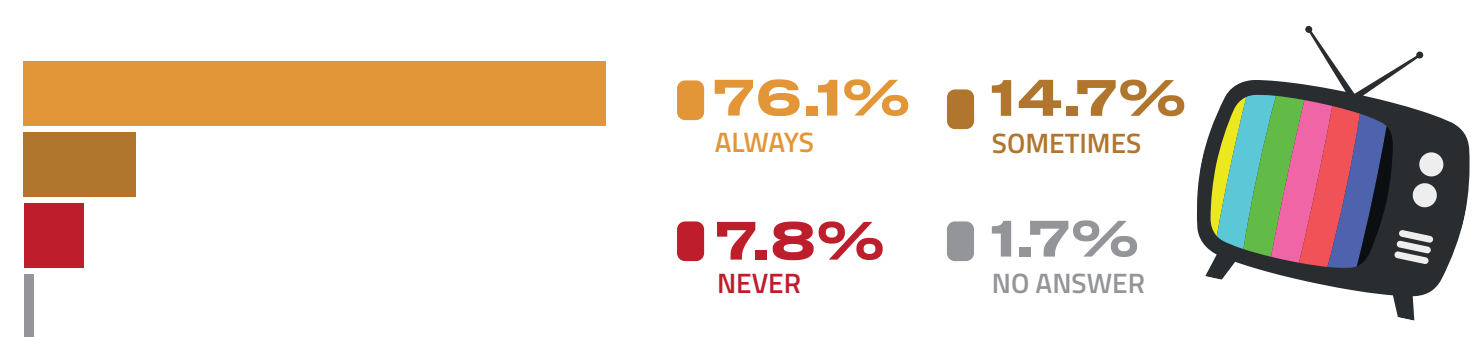


# ENERGY EFFICIENCY

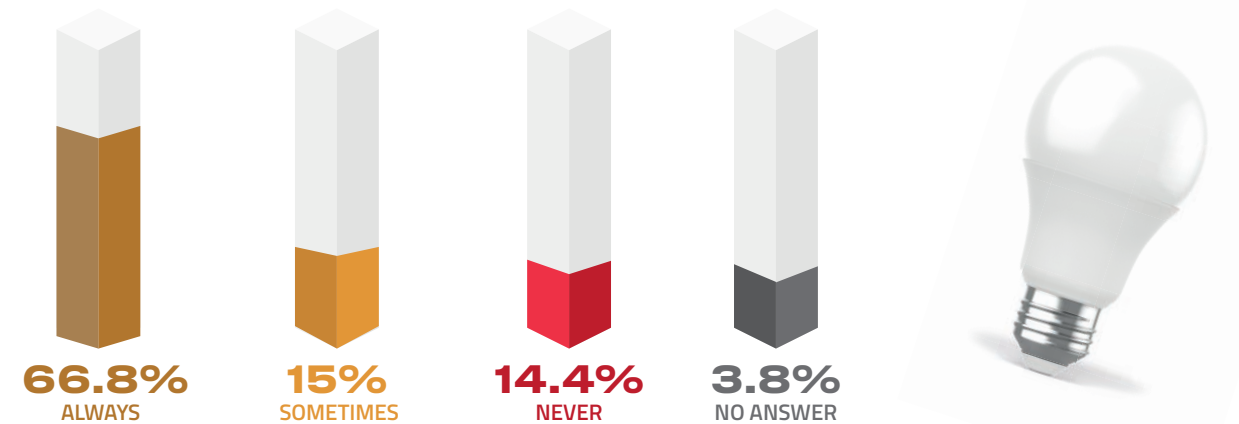
HOW OFTEN DO YOU REMEMBER TO TURN OFF THE LIGHTS WHEN LEAVING THE ROOM?



WITH WHAT FREQUENCY DO YOU TURN OFF THE TV WHEN YOU’RE NOT WATCHING?

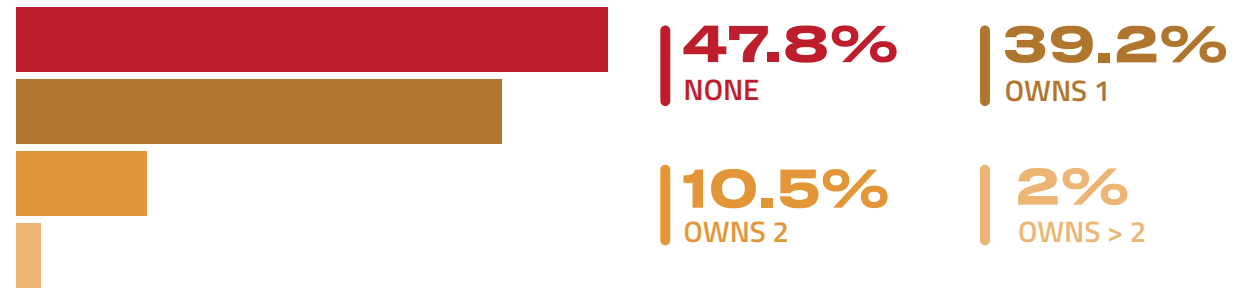
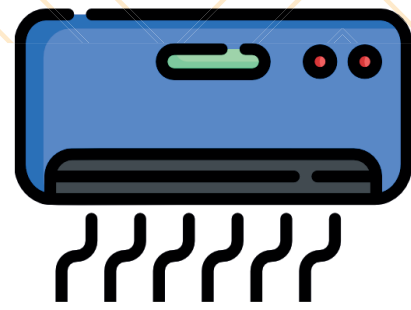


WITH WHAT FREQUENCY DO YOU CHOOSE LED LIGHT BULBS?





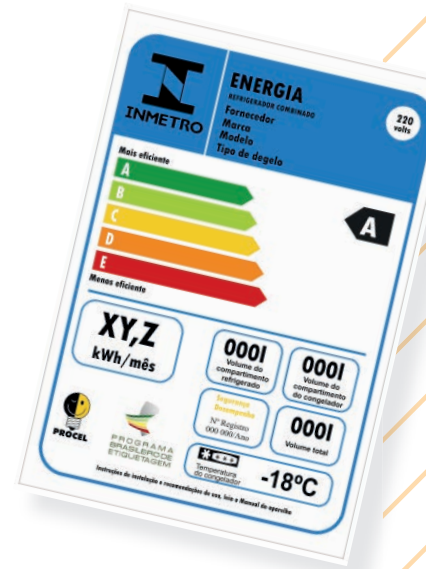
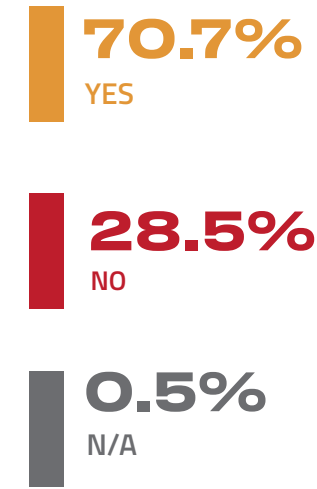
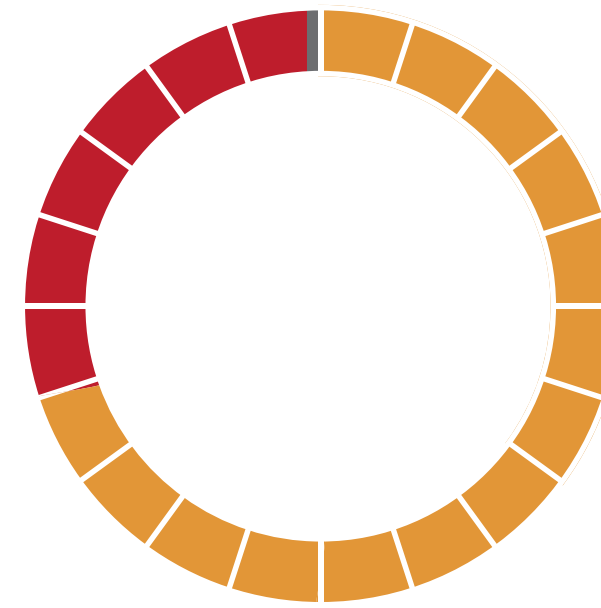
## OWNERSHIP OF A/C UNITS AMONG FAMILIES



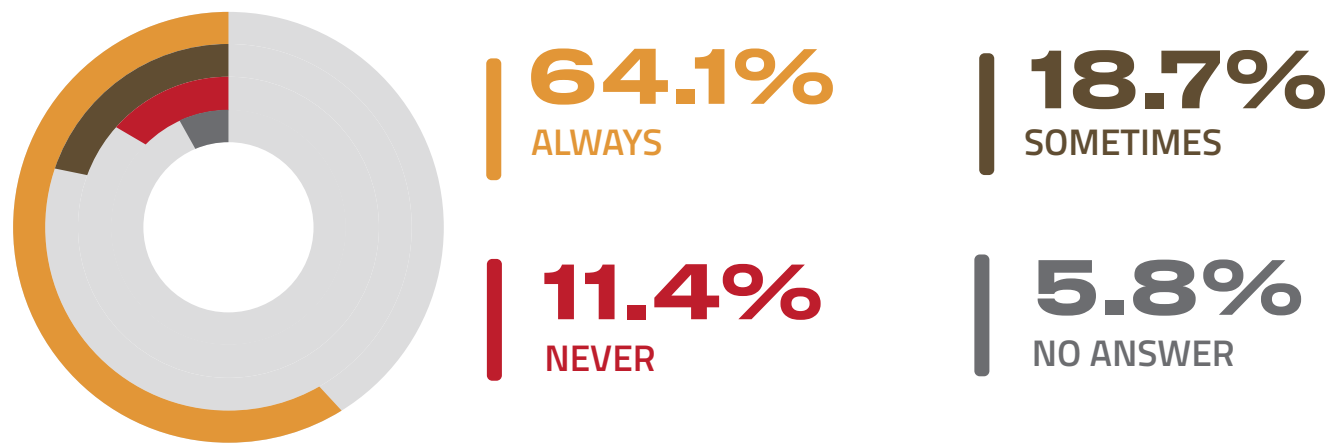
## OWNERSHIP OF FANS AMONG FAMILIES



## DO YOU RECOGNIZE THE NATIONAL ENERGY CONSERVATION LABEL (ENCE)?



## WITH WHAT FREQUENCY DO YOU CHOOSE TO BUY FANS OVER A/C UNITS?







“This thing about not buying appliances with the ENCE [energy efficiency rating] label is **because of the price**. Refrigerators are much more expensive when classified as A.”  
— Thayná Mendes (Dique da Vila Alzira/Duque de Caxias)

“People try to save money. They turn off the lights, turn off the TV, they know the efficiency ratings of their appliances, but when the time comes to buy a new one, a lot of people won’t buy a more efficient appliance because the difference in cost is too great.” — Janyne Souza (Itacolomi)



## PROPOSAL FOR REALIZING WATER AND ENERGY JUSTICE IN THE FAVELAS

This report summarizes the research findings of 30 youth and 15 leaders from 15 favelas in Greater Rio de Janeiro who interviewed their neighbors between May and June 2022 as part of the course “Researching and Monitoring Water and Energy Justice in the Favelas.”

Our goal is to call attention of the authorities and utility companies to the **profound climate injustice** generated by the current modus operandi. But we will not stop there. Before concluding, we **propose a pilot project to transform this reality**. A proposal to achieve water and energy justice in the favelas.

We call on the utilities responsible for water and electricity services—Águas do Rio and Light—to carry out a pilot project in the 15 communities surveyed that, if successful, could serve as a broader model for both companies. We offer to conduct this same research at the end of the second year of the pilot project to determine its effectiveness in achieving social (water/energy justice) and efficiency (financial and consumption) goals.

Components of the **pilot project** that **should be applied in the 15 surveyed territories**:

1 - Creation of the “**Community Water Post**” and “**Community Electricity Post**” programs

**A** • **Local service points maintained by the two utilities**, with employees that have both technical and empathic skills and training and are residents of the serviced region who are empowered to: **(1) receive reports and complaints** regarding power cuts or low quality service in real time; **(2) respond promptly** to reports and complaints; **(3) provide assistance** to residents to access social tariffs, the CadÚnico, and report difficulties; **(4) conduct comprehensive campaigns** to raise awareness among residents about: their rights, such as the right to access and quality of services (regardless of whether paid for or not); information on which agencies to call for inspection and monitoring; social tariffs; how to access efficient appliances, etc. **(5) perform water quality tests** every six months or when many people in a given area identify problems with the water supply; and **(6) identify when a water shortage is causing an emergency situation** (as happened during the pandemic or as may happen in urban heat islands), so that the utility can send a water truck immediately

**B** • **Training local electricians and plumbers to be hired by the utilities** to work at the local service points, empowered to **quickly resolve** demands brought by residents, without delays due to “risks” of operating in favelas (as they are community technicians), all while **generating local income**.





**C** • In communities with interrupted access to **water** more than twice a month, **pumps should be subsidized** alongside water storage equipment (water tanks, cisterns, etc.), ensuring that those who depend on a pump to access water receive a discount on their electric bill.

**D** • In communities where access to formal **electricity** remains irregular, regularize access using traditional meters, but charging a **universal subsidized rate agreed upon in close dialogue with the local population**.

**E** • **Offer opportunities to trade in appliances and light bulbs** for newer, more efficient ones to demonstrate goodwill on the part of the utilities, improve residents' quality of life, reduce bills, and increase energy efficiency.

**F** • Ongoing monitoring of the silting of local rivers to carry out **priority works to improve the drainage system**.

2. **Establishment of an accessible, simple and highly responsive system for monitoring** calls for water and electricity repairs, ensuring that people with limited education can track their requests and monitor their implementation. The **utilities should answer to this monitoring body** which will report directly to regulatory agencies when the utilities are in violation of regulations, and take legal action when utility providers break the law (whether consumer law or otherwise). This system can be created by federal law or by a legal ruling from competent regulatory agencies.



## ADVOCACY PROPOSALS



"We have to reach the authorities so they're aware of what is happening and that we no longer accept this. **We can't live on promises alone.**" — Élide Nascimento (Éden/São João de Meriti)

"Sometimes it's a small thing, but Light takes three or four days to come claiming that we pay too little and that they'll come when they feel like it. Having **electricians within the community who are registered and trained** by Light to solve these problems would eliminate many complaints." — Nilcimar Santos (Dique da Vila Alzira/Duque de Caxias)

"People want to make things legal, they want a meter, but for a reasonable price. **They want to be able to pay.** That's why there is a need for a flat rate or a social tariff." — Élide Nascimento (Éden/São João de Meriti)

"The people who pay end up paying for the people who don't. What the government could do to improve this would be to impose a **flat fee for everyone in the community**, a R\$30 fee that wouldn't be a burden to anyone." — Thayná Mendes (Dique da Vila Alzira/Duque de Caxias)



Extract from the article "Investments in Basic Sanitation Reduce Hospitalizations and Health Expenses" published by G1:

*"Investing not only in water, but also in treated sewage, is indispensable to prevent this and other diseases. The World Health Organization points out that for every R\$1 invested in sanitation, there is a R\$4 savings in public health expenditures.*

*Of the diseases related to sanitation, diarrhea represents more than 80% of the cases, being responsible for about 40% of hospital admissions in children under 5 years old in the world, according to UNICEF (United Nations Children's Fund) and the WHO."*



## CONCLUSION

“Subnormal agglomerations.” This is how favelas are conceptualized by the federal census. This research was conducted by **45 young people and leaders from 15 favelas** in the Greater Rio de Janeiro metropolitan region and aimed at providing them with methodological, technological, and theoretical tools to **promote favela and peripheral authorship in research** about their communities. We contrast the vision of subnormality with something else: of a knowledge rooted in local reality and pertinent to those whose data are extremely relevant.

The control of data related to favela territories (including the control inherent to not collecting such data), both by the State and by service providers, influences the creation of public policies (or lack of creation, which is also a public policy: the policy of neglect). The guarantee of water or electricity (or lack of this guarantee) is the result. In this sense, the actions of the organizations involved here aim to **tell a new story** which breaks with stereotypes and centuries of prejudice. Using the data collected, they claim control of information in order to propose solutions, innovation, and the **transformation of the water and energy reality** verified in this report. This initiative, unprecedented in its formulation, dimension, and construction, launches a new way of producing knowledge—rooted in those who are committed to producing a new reality for themselves and their communities.

The survey data show the **varying levels of water and energy injustice** to which residents of the 15 favelas covered are subject to. Although fundamental, the rights to water and electricity are violated, both in access and quality. While the vast majority of homes have piped water and electricity, a considerable number need a water tank and pump to access water, which raises the question of whether their rights are being guaranteed. The cost of the electric bill, on the other hand, throws many families into energy poverty. As shown by the research, the great majority of families would buy more food for their homes if their bills were reduced. The violation of these rights persists in the low quality of water—with its color and smell—irregular supply between seasons, and the delay in restoring service after shortages.

The low standard of quality also applies to electricity with a high number of household appliances being lost due to a faulty electrical grid and the delay in restoring service after power outages. This leads the majority of the population to seek **community solutions** to energy problems, rather than the service provider. The data on dissatisfaction with services provided by these utilities reveal how feeble the right to water and electricity in the favelas is.

Efficiency—crucial for managing water and electricity in a period of intensifying climate change that has a disproportionate effect on socially vulnerable populations—presents structural problems such as leaking pipes in the streets and a lack of incentives for consumers to acquire efficient appliances. On the other hand, people’s habits illustrate their **concern with the efficient use of water and electricity**. Concerning access, quality and efficiency, this study brings a (self) portrait that highlights the failures of public authorities and utility providers and the challenges for low-income communities, in addition to suggesting paths and presenting proposals to building environmental justice by and for the favelas.

**Environmental racism** is defined as the unequal exposure of black and brown populations to socio-environmental impacts and risks. This unequal exposure is justified by geography, the socio-political, economic and environmental characteristics of certain regions, and by the structural racism that legitimizes the areas occupied by vulnerable populations as **sacrificial zones**—where high-impact and industrial activities are allowed, leading to pollution and contamination and the receipt of by-products of systemic processes, such as irregular waste disposal, effluent discharge, etc. Although strictly related to impacts, environmental racism also presents itself in the daily lives of disadvantaged populations through the denial of basic rights and the lack of access to natural resources like water and energy, be it electric, solar, wind, etc. The data presented in this report show how environmental racism, related to water and electricity, presents itself in the daily lives of the 15 communities surveyed in the Greater Rio de Janeiro metropolitan region.

The data demonstrate how **environmental racism unfolds in the favelas**, going beyond exposure to environmental impacts and risks, such as increased flooding in recent years, manifesting itself also in the denial of basic rights. It shows itself in water shortages, low-quality water unfit for consumption, power outages, and the risk of fires due to a lack of technical assistance by the utility provider to certain areas. The study exposes environmental racism through the neglect shown by services provided to the communities and the absence of public oversight to guarantee rights to water and electricity, suggesting the need **for favelas to have an active voice** in urban, political, strategic, and environmental planning. Regarding water and energy, favelas are disadvantaged through systemic inequalities that generate the daily environmental racism suffered by families. This is supported by data showing that 42% of families lacked access to sufficient water for basic hygiene during the pandemic, or that they needed to buy their own light pole and electric wiring to access electricity. Although favelas are systematically made vulnerable, they are **potent territories that are aware of the systemic problems** that plague them and propose creative, low-cost, and resourceful solutions.



# WATER AND ENERGY JUSTICE IN THE FAVELAS:

COMMUNITY RESEARCHERS GATHER DATA REVEALING INEQUALITIES AND CALLING FOR ACTION

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