

# Soil and Water Conservation Generate Profits for Vulnerable Communities in Porto Alegre, Brazil

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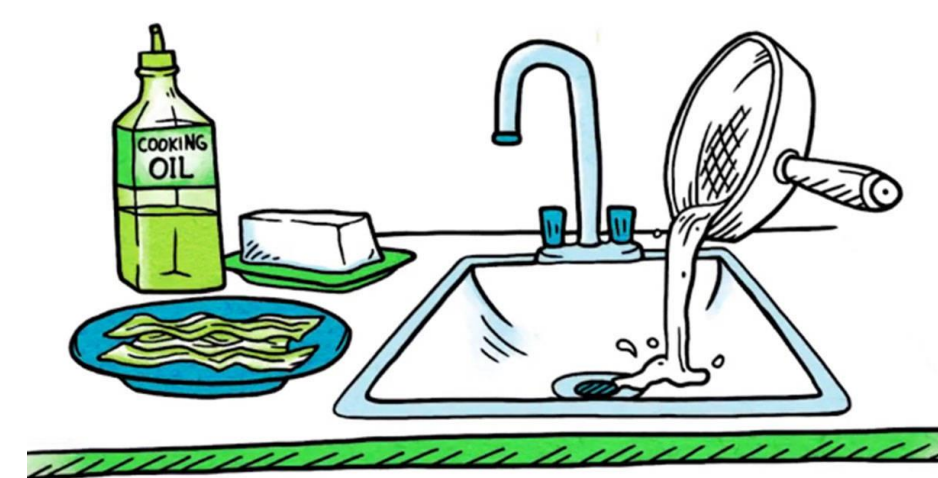
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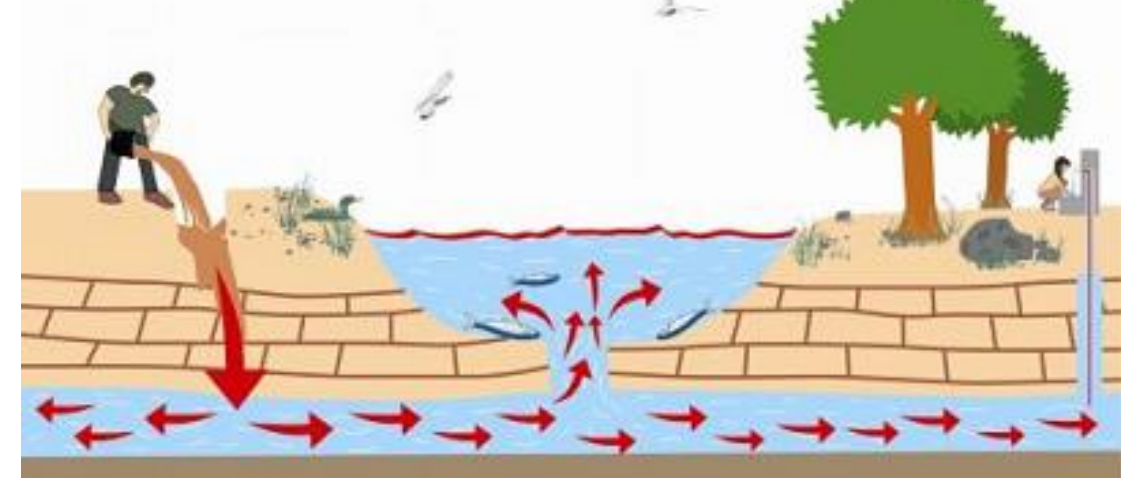
## Abstract

Many people do not dispose used cooking oil correctly. It is poured down the sink most of the time, penetrating sewage systems and complicating sewage purification to return it to water bodies. In places lacking a sewage system, the oil directly penetrates and pollutes water streams and soil. In Porto Alegre in the South of Brazil, a female group is leading the way to recycle used cooking oil. The group belongs to the "Ilheus Ecologicos" association which represents the vulnerable community of islanders in Ilha das Flores, Porto Alegre. This female group encourages citizens to recycle used cooking oil by offering collection points at the stand where they sell artisanal soaps, which are made from used cooking oil and medicinal herbs. This microbusiness, based on the principles of *Economia Solidaria*, provides them with income to improve their livelihood (better infrastructure for their homes, access to food, to health care, etc.) For over 12 weeks, participant observation was conducted during the soap production, and market opportunities were explored to expand sales of the artisanal soap. Fifty customers were interviewed at the organic fair where the soap is sold and eight other organic fairs were visited. The market study identified three more sale outlets for the artisanal soap. This means that this environmentally-friendly microbusiness can expand, and more people will be encouraged to recycle their used cooking oil; this, in turn, will contribute to the conservation of water and soil in urban areas such as the city of Porto Alegre, Brazil.

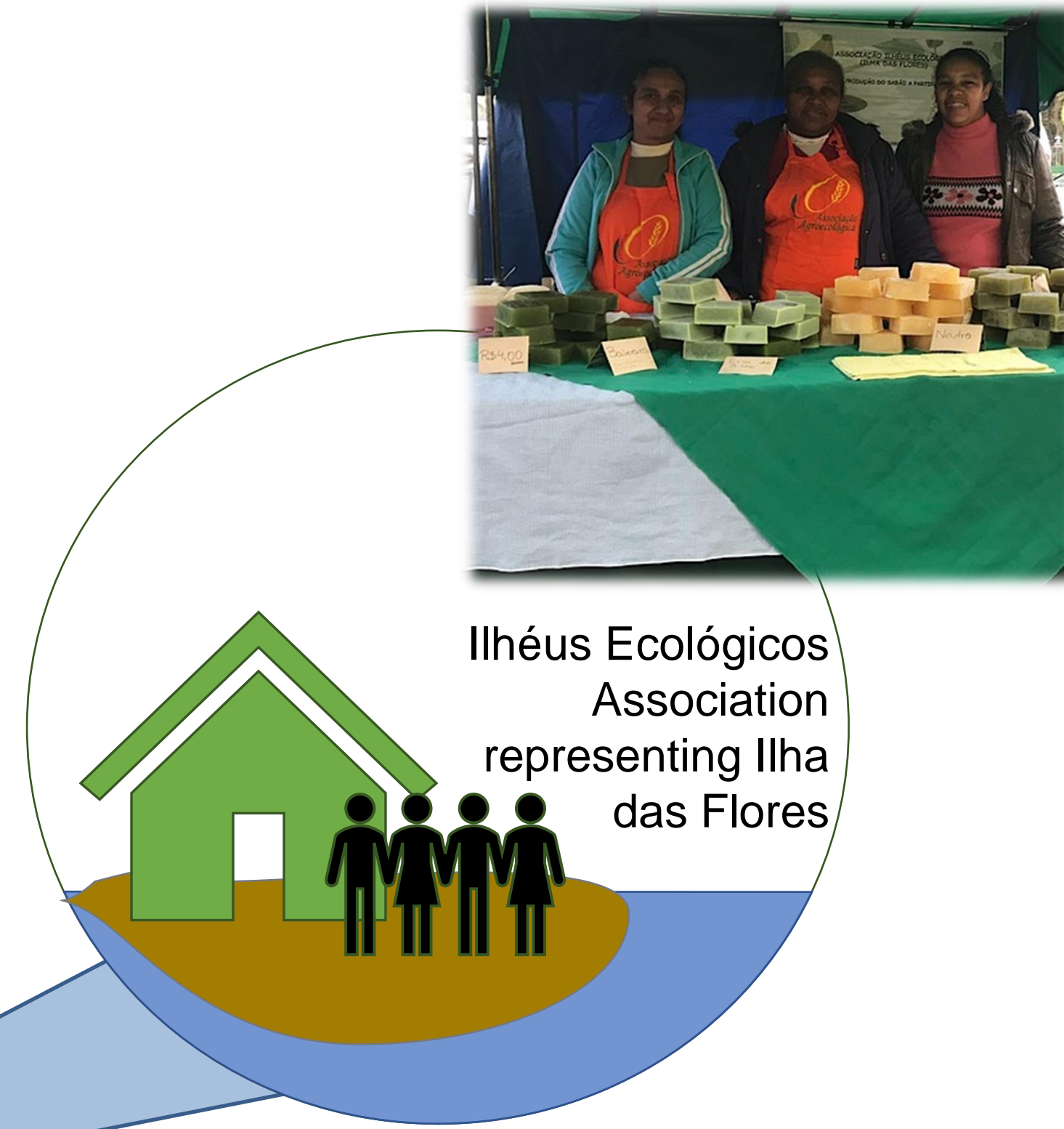
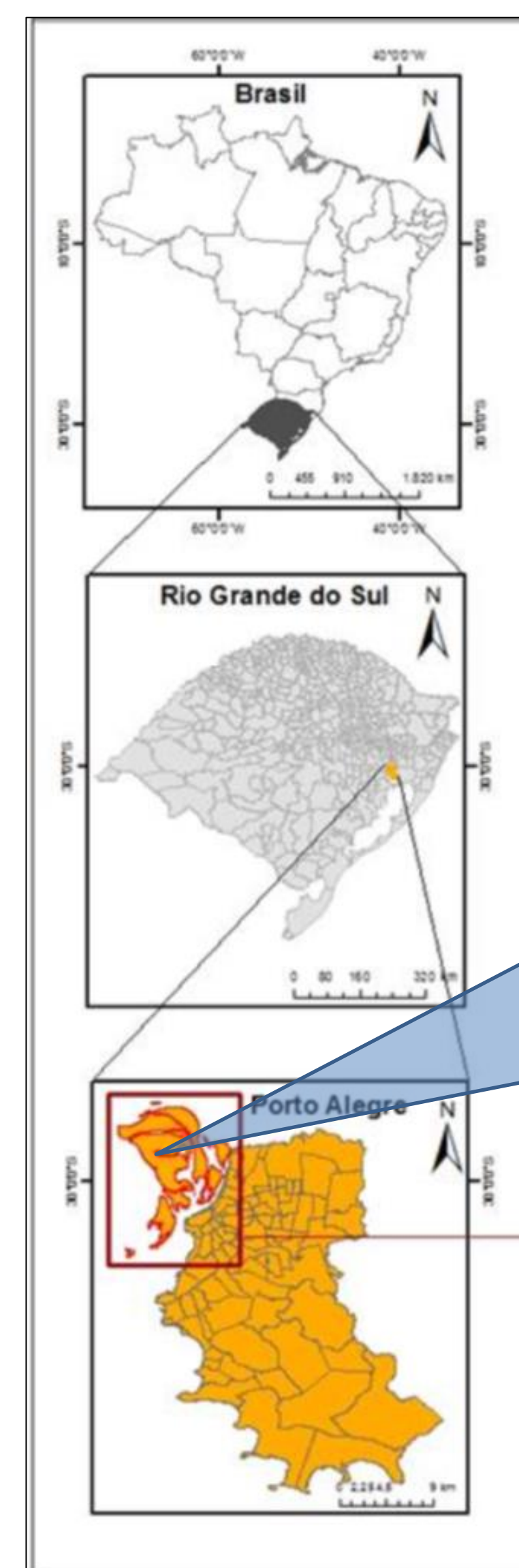
## Background



100 million gallons of waste cooking oil produced per day in the USA [1]



1 liter of waste cooking oil can pollute 1000 liters of water [2]



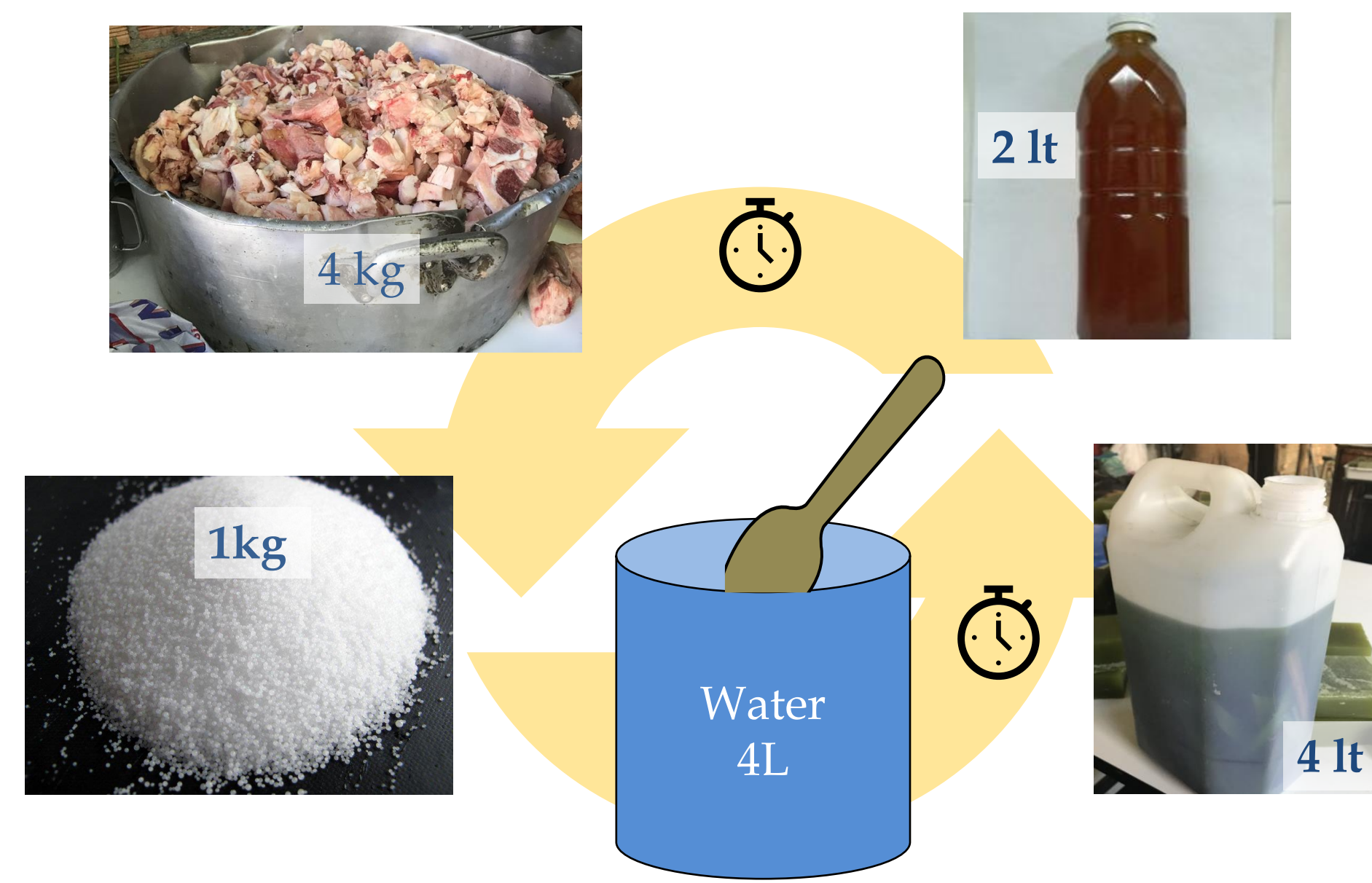
Social Factors	Environmental Factors	Economic Factors
<ul style="list-style-type: none"> <li>Government programs dependence</li> <li>Safety issues</li> <li>Health access and education</li> </ul>	<ul style="list-style-type: none"> <li>Protected Area</li> <li>High-risk flooding</li> <li>Waste issues</li> <li>Displacement risk</li> </ul>	<ul style="list-style-type: none"> <li>Low-income families</li> <li>Unemployment</li> <li>National economic situation</li> </ul>

## Objective

The objective of this study was to contribute to the increase of artisanal soap sale outlets and thus promote conservation of soil and water in urban areas.

## Methods

1. **Participant Observation** at the "Ilheus Ecologicos" association site. Ingredients needed to produce 48 bars of artisanal soap:



2. **Focus Interviews with Customers [3]**

Goal: 50  
Five Saturday mornings at the organic fair: Bom Fim



3. **Online research about organic fairs in Porto Alegre**

Gathered names, location, distance, transportation means, and schedules.

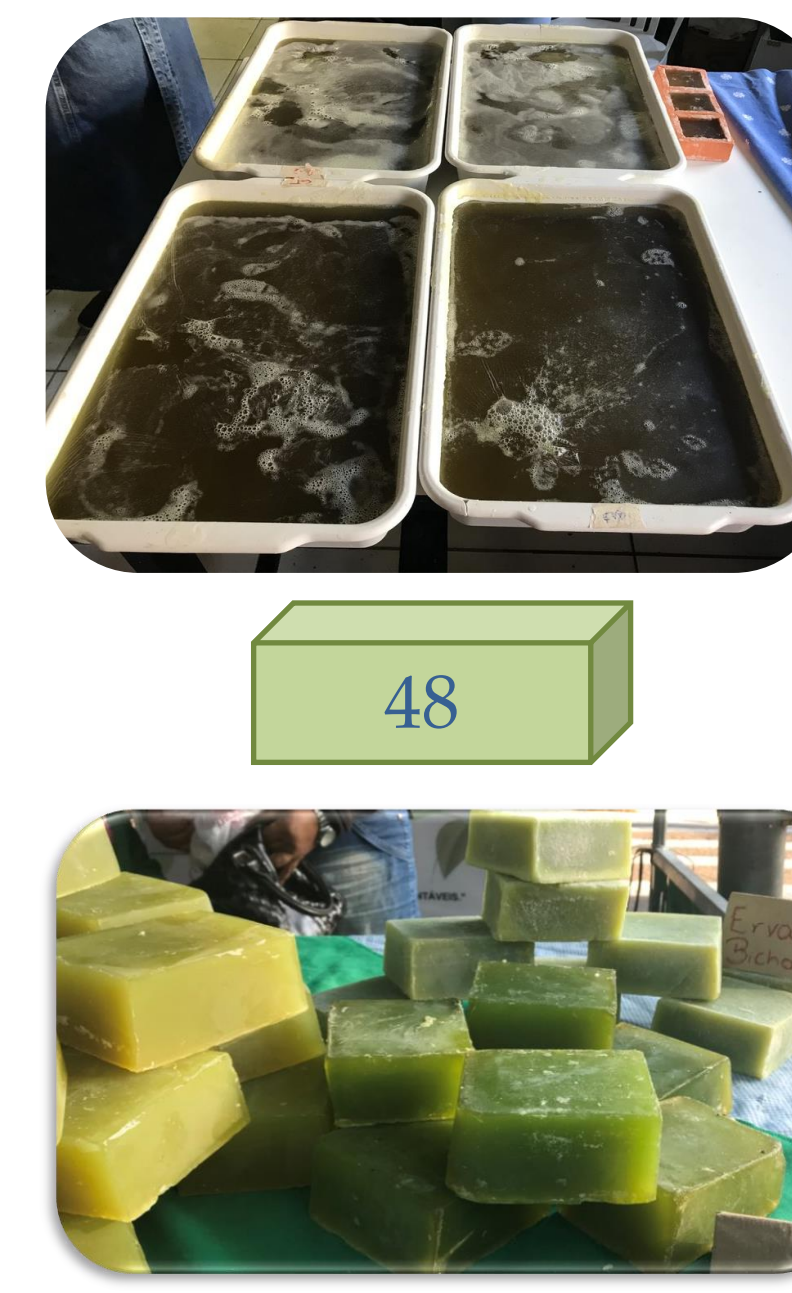
4. **Visits to most popular organic fairs in Porto Alegre** to explore paperwork and permit requirements.



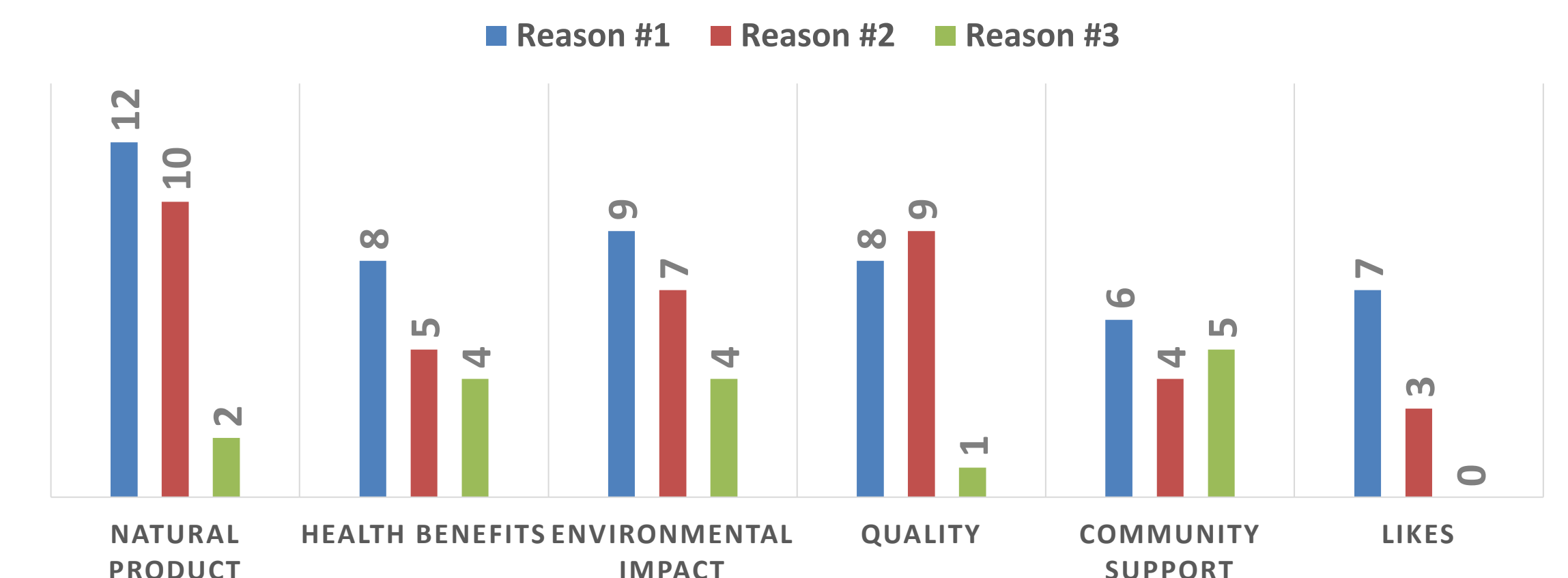
## Results

Item	Quantity	Price (R\$)
Water	4L	0
Animal Fat	4.5 kg	0
Used cooking oil	2L	0
Caustic Soda	1kg	8.49
Alcohol	4L	17.2
Breu	1 tbsp	0.357
Gas		18.4
	<b>Total (BrR\$)</b>	<b>44.45</b>
	<b>Total (USD)</b>	<b>12</b>

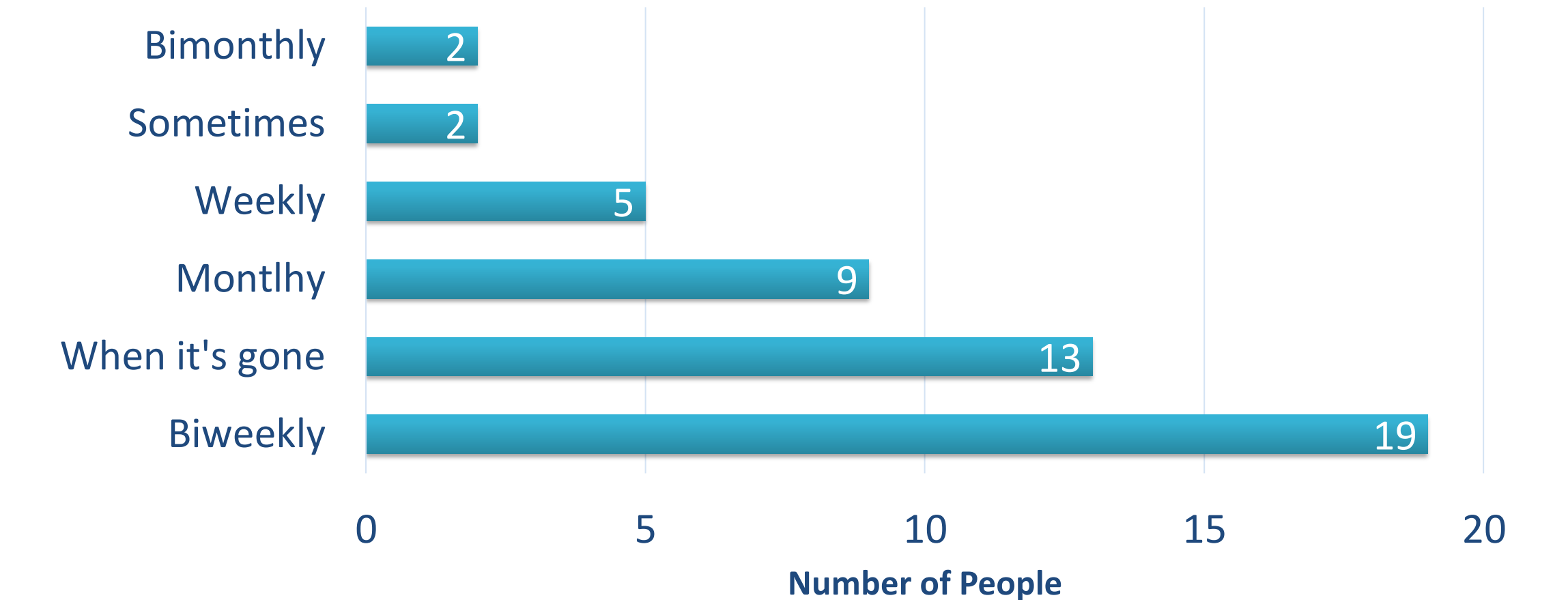
Unit price	R\$ 4.00	\$1.07
Cost (unit)	R\$ 0.93	\$0.25
Profits	R\$ 3.07	\$0.82



## ARTISANAL SOAP CHARACTERISTICS THAT MOTIVATE CUSTOMERS TO PURCHASE IT



## CUSTOMERS FREQUENCY OF PURCHASING ARTISANAL SOAP



FEIRAS ECOLOGICAS NO PORTO ALEGRE									
	A	B	C	D	E	H	I	J	
1									
2	Nome/Barrio	Endereço_POA	Praças/Referência	Distância_IE (km)	Tempo_Uber (min)	Dias	Horário Começa	Horário Termina	
3	Bom Fim	Av. José Bonifácio, 665	Praça Redenção	11.7	15	Sábado	7:00	13:00	
4	Auxiliadora	Travessa Lancelos Negros	Praça Lancelos Negros	11.5	18	Terça-feira	7:00	13:00	
5	Três Figueiras	R. José Antônio Aranha, 155	Praça Desembargador La Hire Guerra	13.5	21	Sábado	8:00	13:00	
6	Rômulo Telles	Rua Rômulo Telles Pessoa	Praça André Forster	14	21	Sábado	7:00	13:00	
7	Petrópolis	Rua General Tibúrcio, 1-71	Praça Ruy Teixeira	14.3	21	Quarta-feira	13:00	18:00	
8	Menino Deus	Av. Getúlio Vargas, 1251	Secretaria Estadual da Agricultura	14.6	23	Sábado	7:00	12:30	
9	Bom Jesus	Rua São Felipe, 140	Centro Medico Publico	15.1	24	Sexta-feira	6:00	11:00	
10	Tristeza	Av. Wenceslau Escobar, 2380	Praça da Parroquia	21.7	28	Sábado	7:00	12:30	
16	Fair Name	Educational Site	Address	Distance_IE (km)	Time_Uber (min)	Days	Start Time	End Time	
17	Mulheres da Terra	Faculdade de Educação	Rua Paulo Gama 98	11.2	17	Tuesdays	10:30	15:30	
18	Quintanda	Unidade Central IPA	Entrada pela rua Casemiro de Abreu s/nº	12.5	18	Thursdays	14:00	19:00	
19	Feira orgânica do João XXIII	Colégio João XXIII	Rua Sepé Tiarajú, 1013 - Santa Tereza	16.5	22	Thursdays	10:00	18:30	
20		Amigos do Verde	Rua Honório Silveira Dias, 1675 - Higienópolis	10.4	19				
21									
22	Other Popular Fairs mentioned by customers								
23	Name of the Fair	Times Repeated	Days						
24	UFRGS	3	Tuesdays						
25	Menino Deus	5	Saturdays						
26	Auxiliadora	3	Tuesdays						
27									

## Conclusion

Instead of being poured down the sink, used cooking oil can be recycled into new products, like artisanal soap, which can generate profits for vulnerable communities. This study identified three additional sale outlets for the artisanal soap produced by the *Ilheus Ecologicos* Association. This will allow them to expand production and recycle more oil. The used cooking oil collected at local fairs encourages customers to recycle it and thus contributes to the conservation of water and soil in urban areas such as the city of Porto Alegre, Brazil.

## References

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- [2] Martin, R.I., and de Laet, M. (2018). Geographies of fat waste. Or, how kitchen fats make citizens. *The Sociological Review*, 66(3):700-717. <https://doi.org/10.1177/0038026117726731>
- [3] Gray, D.E. (2014). *Doing Research in the Real World*. London: Sage Publications.

## Acknowledgements

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