

# Socioeconomic Baseline Report for Aveiro



**PAYT - Tool to reduce waste in South Europe**

31/11/2018



## Title: Socioeconomic Baseline Report for Aveiro

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## 1. Introduction

This report intends to be the baseline for the monitoring of the impact of the project actions done within the framework of LIFE PAYT project.

The scope of this baseline report is to establish a socioeconomic context as the starting point for the monitoring system of the LIFE PAYT project in Aveiro. This document, prepared in the end of 2018, intends to provide information regarding the set-up of a baseline for the twelve socioeconomic indicators to establish a preliminary analysis.

As shown on Table 1, every indicator is identified by an assigned code, ranging from SE1 to SE12, and they are defined on the “*Report on the development of socioeconomic indicators*” (LIFE PAYT, 2017).

**Table 1:** Set of environmental indicators for LIFE PAYT project; MSW: Municipal Solid Waste

INDICATOR		UNITS	CALCULATION FORMULA
SE1	<b>MSW management cost for municipality</b>	€ / year	Cost in target zone per year
SE2	<b>MSW management revenue from domestic and non-domestic sectors</b>	€ / year	MSW tariff paid value in target zone per year
SE3	<b>Individual cost of MSW management</b>	<b>Comercials</b>	€ Hourly salary · Necessary hours
		<b>Families</b>	Degree of effort (mean score between 1–5) $\frac{\sum \text{individual scores}}{\sum \text{total answers}}$
SE4	<b>Coverage of MSW management costs</b>	%	$\frac{\text{MSW tariff revenue}}{\text{Cost of MSW management}} \cdot 100$
SE5	<b>Economic revenue due to increased recycling</b>	€ / year	$\sum_i (\text{Units of recovered MSW i fraction} \cdot \text{Unitary price of MSW i fraction})$
SE6	<b>Potential employment creation</b>	No. jobs	$\sum_i (\text{Units of recovered MSW i fraction} \cdot \text{jobs created by unit MSW i fraction})$
SE7	<b>Satisfaction with MSW collection system</b>	%	$\frac{\sum \text{positive answers} \cdot 100}{\sum \text{total answers}}$
SE8	<b>Acceptance of MSW management pricing</b>	%	$\frac{\sum \text{positive answers} \cdot 100}{\sum \text{total answers}}$

INDICATOR		UNITS	CALCULATION FORMULA
<b>SE9</b>	<b>Population percentage who separates MSW at source</b>	%	$\left(1 - \frac{\sum \text{answers "I don't recycle"}}{\sum \text{total answers}}\right) \cdot 100$
<b>SE10</b>	<b>Population percentage practicing home composting</b>	%	$\frac{\sum \text{positive answers} \cdot 100}{\sum \text{total answers}}$
<b>SE11</b>	<b>Population perception on the importance of recycling</b>	Mean score between 1–5	$\frac{\sum \text{individual scores}}{\sum \text{total answers}}$
<b>SE12</b>	<b>Project visibility</b>	%	$\frac{\sum \text{positive answers} \cdot 100}{\sum \text{total answers}}$

The initial values calculated for the set-up of indicators defined in sub-action C2.1 constitute an assessment of the socioeconomic situation regarding MSW management in target zones prior to the implementation of the LIFE PAYT project. This initial assessment will be used as a baseline against which the progress achieved by the project in socioeconomic dimension will be evaluated.

## 2. Methodology: Key Aspects and Limitations

This assessment focuses on social aspects, as the perceived attitude of the population towards the waste issue, and on economic implications (derived from MSW data of the target area). Therefore, it was necessary to use primary and secondary sources of information.

As primary source, a survey was performed in the form of questionnaires answered by a sample of 76 respondents among the population affected by the project. Therefore, two versions of the questionnaire were prepared: for domestic (residential) and for non-domestic (commercial) MSW producers. The main limitation concerned the residential sector, because it was difficult to find people at home during the week. To solve this issue, the researchers left an invitation for an online survey on several mailboxes. The survey ended up performed in three groups or categories: through field interviews to the residents (1) and in the commercial (2) establishments of the involved area, and through an on-line questionnaire (3) available on the project's web site<sup>1</sup>. Models of the questionnaire issued

<sup>1</sup> <http://www.life-payt.eu/pt/inquerito1>

for the Aveiro survey are attached to this survey, for domestic version (Annex 1) and commercial version (Annex 2).

The field interviews were conducted during two days in the end of April 2018 at the target zone (Forca-Vouga neighbourhood). There were 9 respondents for the residential sector and 23 for the commercial one. The online survey collected data from 44 respondents.

As a secondary source, the values of the indicators were obtained from information from the municipal authorities responsible for the MSW management, as for instance, the information related to costs and revenues. The information was found on official documents provided by the municipality and agencies, or on outside organization's report and other kinds of communication materials.

There were key challenges to obtain adequate baselines on each of the indicators. For instance, the fast replacement of human resources among the project partners, due to political exchange or changes in careers. As well as for the change in the MSW operators that affected even the flow of information on the annual reports provided by the municipalities.

The same survey - that was performed before the implementation of the project to build this baseline - will be conducted as well after the implementation, in order to check the possible improvement comparing it with the initial situation.

### 3. Results and discussion

This section shows the initial values of the socioeconomic indicators, which form the baseline for the project area. The data presented on Table 2 will be used as reference in the end of the project, when the final situation in each target area will be compared with this baseline previously established.

**Table 2:** Results of the 12 socioeconomic indicators

INDICATOR		RESULTS Aveiro
SE1	<b>MSW management cost for municipality</b>	36 845 €/year
SE2	<b>MSW management revenue from domestic and non-domestic sectors</b>	53 698 €/year
SE3	<b>Individual cost of MSW management</b>	Min. hourly salary 2.3 €/week

INDICATOR		RESULTS Aveiro
	<b>Families</b>	3.2 – Moderate effort
<b>SE4</b>	<b>Coverage of MSW management costs</b>	146%
<b>SE5</b>	<b>Economic revenue due to increased recycling</b>	16 470€/year
<b>SE6</b>	<b>Potential employment gains due to recycling</b>	0.21 jobs (per 54 tonnes collected)
<b>SE7</b>	<b>Satisfaction with MSW collection system</b>	56.5%
<b>SE8</b>	<b>Acceptance of MSW management pricing</b>	1.7%
<b>SE9</b>	<b>Population percentage who separates MSW at source</b>	92.2%
<b>SE10</b>	<b>Population percentage practicing home composting</b>	2.8%
<b>SE11</b>	<b>Population perception on the importance of recycling</b>	4.9
<b>SE12</b>	<b>Project visibility</b>	61.0%

### 3.1. Economic Indicators

As shown on Table 2, the economic indicators for the baseline assessment focuses on: costs, revenues, tariffs, degree of efforts, economic profits and employment creation.

**Table 2.** Economic Indicators for the baseline

Economic Indicators	Aveiro Baseline Summary
<b>SE1. MSW management cost for municipality (2017)</b>	
$\frac{CC + TC + LT + AD}{\text{yearly MSW}} = 82\text{€/ton}$ <b>36 845 € in the target area (2017)</b> CC: collection costs TC: treatment costs LT: landfill tax AD: administrative costs	There was an influencing factor in 2018: Aveiro has a new operator for collection, which is about 20% cheaper than the previous one. This calculation includes the administrative costs (AD) from Aveiro Municipal Council, which is another part of the information collected by Portuguese regulatory body (ERSAR). If after the implementation of PAYT, there is a reduction of mixed waste produced, the MSW costs could decrease as well, leading to a reduction in the municipalities costs.
<b>SE2. MSW management revenues for domestic and non-domestic sectors</b>	
<b>53 698 € in the target area (2017)</b>	Although the municipal revenue with the MSW tariffs already covers the costs, a possible reduction of mixed MSW fraction due to PAYT, may reduce even more the price paid by the population. The expected variations in

Economic Indicators	Aveiro Baseline Summary
	the MSW revenues allows us to understand the influence of the PAYT project.
<b>SE3. Individual cost of MSW management</b>	
For domestic/effort and non-domestic/cost participants:  1. Commercials: average time per week spent is 38 min, considering the minimum hourly salary of 3.62 €, the proportional salary is <b>2.3 €</b> 2. Families: the average answer on the Likert scale (five levels) was: <b>3.2 (moderate effort)</b>	This indicator aims to understand the evolution of the cost/effort bear by privates in MSW management. It is expected that throughout the project, participants will increase their time in MSW management, by separating, composting, etc., in order to produce less residual waste. On the survey (question 2) for the commercial sector, the non-specific answers related to the employee responsible for the waste management influenced the hourly salary. The answers were, namely: 11 specific cleaning-persons; 9 average employees non-related with cleaning; 3 non-specific employees. Since the higher number of responses indicated a cleaning-person, the decision was to consider that the employee responsible for the waste receives the minimum salary of € 580. In the case of domestic participants, the idea is to evaluate their perception of household effort in MSW management. The average of all the 53 answers about the 5 levels pointed to level 3.2. At the frequency level, it was verified that the most repeated level was 4, with 18 responses of respondents.
<b>SE4. Coverage of MSW management costs (only for the area of the project)</b>	
<b>SE2/SE1·100 = 146%</b>	This indicator represents the percentage of MSW management cost of the municipalities that is covered by the tariffs charged. The municipality covers the costs and still has a profit of almost 50%.
<b>SE5. Economic revenue due to increased recycling</b>	
<b>16 470 €<sup>2</sup></b>	The purpose of this indicator is to understand if there are any economic benefits derived from PAYT as a result of increased recycling. The revenues associated to the increased sale of recovered materials for recycling has a potential to increase.
<b>SE6. Potential employment gains due to recycling</b>	
Target zone generates 54 tons of recyclables (5.7 t glass, 28.6 t paper, 13.7 t plastics, 3.6 t steel, 0.3 Al and 2.3 t beverage boxes). That implies:  <b>0,21 direct jobs</b>	Literature review pointed that job creation is greater than the potential decrease resulting from employment loss in alternative MSW treatments (e.g. landfills) and in the production of new raw materials. According to the report "More jobs, less waste" (Friends of the Earth, 2009) <sup>3</sup> , estimations of potential job creation by recycling show that for every 204 tons of recycled waste 1 direct job is created with an economic value of € 72,500 per year (BIO Intelligence Service, 2011) <sup>4</sup> .

### 3.1. Social Indicators

Social Indicators	Aveiro Baseline Summary
<b>SE7. Satisfaction with MSW collection system</b>	

<sup>2</sup> The information on prices obtained from Portuguese law: "Despacho nº 14202-C/2016" published in "Diário da República, 2<sup>a</sup> Série, 227/2016", 25<sup>th</sup> November 2016.

<sup>3</sup> Friends of the Earth (2009), More jobs, less waste. Potential for job creation through higher rates of recycling in the UK and EU.

<sup>4</sup> BIO Intelligence Service (2011), Implementing EU Waste Legislation for Green Growth, Final Report prepared for European Commission DG ENV.

Social Indicators	Aveiro Baseline Summary
Satisfaction with the system: <b>56.5%</b>	This indicator measures whether the participants are satisfied with the MSW collection service provided by the local administration. The indicator measures the percentage of participants who thinks that the waste collection system works well. The commercial sector is more satisfied (69%) than the household (50,9%). However, it is the household sector who separates more MSW at source (SE9).
<b>SE8. Acceptance of MSW management pricing</b>	The financial question is decisive for PAYT systems, since the population that correctly separates their waste expects a reduction of the tariff. In Portugal, for example, the amount charged is linked to the water bill and goes unnoticed by the majority. The focus of the indicator is the participant's opinion on the amount paid for the collection of urban waste, but not all the respondents were aware of the amount paid for the MSW tariff. The indicator measures the percentage of participants that consider that the tariff they currently pay is fair. The information needed for the calculation is provided by the questionnaire applied to families and commercial participants (question 10.2).
<b>SE9. Population percentage who separates MSW at source</b>	The objective of this indicator is to establish the percentage population that practices waste separation at source at the beginning of the project. If we disaggregate the number of materials that are separated, the household shows more effort than the commercial sector. The difference between the percentages is a strong indicator of the project success, since it is understood that the separation at source is a fundamental parameter in the behavioural transformation of the population.
<b>SE10. Population percentage practicing home composting</b>	Composting is a strong factor to be raised at the beginning of the project, because the main component of urban waste is the fraction of organic waste. It is important to know the branch of population that already practices home composting. Home composting is made feasible with domestic composters, which are intended to be distributed to some participants at the beginning of the project. The participants that already practice composting will function as a control population, establishing the base level for this indicator. There were only two participants that practice home composting in target area.
<b>SE11. Population perception on the importance of recycling</b>	The perception of the importance of recycling is an indicator that points also to the commitment of the population to give the correct destination to MSW. However the result is contradictory if the sectors are disaggregated: the commercial has the highest scores for importance of recycling (SE11), also for the satisfaction (SE7) with the MSW system (69%), but for separation at source has the lowest score (SE9).
<b>SE12. Project visibility</b>	In the course of the project, it is important to evaluate the progress on the knowledge of the population regarding LIFE PAYT, in order to verify if the means of

Social Indicators	Aveiro Baseline Summary
	dissemination of the project fulfil their function. Awareness raising is a key element for effective PAYT implementation and it was more efficient among the household sector.

Extra data extracted from the questionnaires:

- 22% of households throw away up to 2 waste carry bags (30 L) per week.
- Even though 92,2% separate MSW at source, only 56% is satisfied with MSW collection system.
- Out of 76, only 30 participants (39%) would be interested to compost if they receive a composter.
- The most separated material is glass: 90%.
- The main complaint (47%) concerned the opening of the drum waste disposal: 27 out of the 57 valid answers. Because of the previous experience in 2017 during the implementation of the first container model which had a very small drum for 30L/bag instead of 40L/bag.
- The population was concerned about the illegal dumping of waste and aware that they could end up holding waste at home too long until the bag was filled, which is a problem especially in apartment buildings and in the summer.

#### 4. Conclusions

The problem related with the survey among the household sector was solved with the online survey, but the problems faced with the MSW data from the municipality of Aveiro still needs attention regarding the year 2018. The fact that the new MSW operator has changed the costs makes it more difficult to identify the impact of the PAYT system. There were key challenges to obtain the results of each indicator. Little adjustments on the titles and description of the indicators were necessary in order to have more specific results.

Out of these preliminary results, it was possible to identify some contradictions:

1. Online surveys received higher scores on dissatisfaction than the pen and paper questionnaires, in which the respondents indicate uncertainty rather than dissatisfaction.
2. Another contradiction concerns the commercial sector, that has the highest score for importance of recycling (SE11) and for the satisfaction (SE7) with the MSW system but has the lowest perception of separation at source (SE9) and knowledge about the project

(SE12). The reason might be because the responsibility is shared among employees and less attention is paid on waste management.

Since the population of the target area had a previous bad experience with the small drum waste disposal of the containers (first attempt in 2018), the respondents were very critical and aware of the risks of the new system.

## 5. Annexes

- Annex 1: Model of the questionnaire issued for the Aveiro survey (domestic version)
- Annex 2: Model of the questionnaire issued for the Aveiro survey (commercial version)

**Esclarecimento inicial:** O Projeto LIFE PAYT, do qual fazem parte a Câmara e a Universidade de Aveiro, está a decorrer no bairro da Forca Vouga. Pioneiro na redução dos resíduos produzidos pelos moradores e estabelecimentos comerciais neste bairro, o projeto pretende aumentar as taxas de recolha seletiva dos materiais de embalagem.

A sua opinião é muito importante! Por isso gostaríamos de lhe fazer umas breves perguntas muito simples, que demoram apenas alguns minutos. Garantimos o anonimato e a confidencialidade das suas respostas, que serão tratadas em conjunto com todas as outras de um modo científico, não havendo nunca identificação dos participantes no estudo.

### RESÍDUOS E RECICLAGEM

1. Qual a quantidade de resíduos que a sua família deita semanalmente no caixote de lixo? _____ sacos (um saco regere-se a um saco de supermercado típico, 30L)							
2. Em sua casa, quem coloca os resíduos no contentor? _____							
3. Diga, numa escala de 1 a 5, se concorda com a seguinte frase: "A gestão de resíduos é uma responsabilidade de todos e eu, enquanto cidadão, sou também responsável". (1 significa "discordo em absoluto" e 5 significa "concordo em absoluto")	1	2	3	4	5		
4. Numa escala de 1 a 5, na sua opinião, como classifica a importância da reciclagem? (1 – nada importante e 5 muito importante)	1	2	3	4	5		
5. Que materiais recicla? (assinalar com X)	6. Relativamente aos resíduos orgânicos:						
Papel e Cartão	6.1. Pratica compostagem doméstica?					Sim	Não
Vidro							
Plástico e Metal	6.2. Se sim, qual o destino do composto produzido?						
Resíduos orgânicos e resíduos verdes							
Equipamento elétrico e eletrónico	6.3. Quantos kg ou L de resíduos orgânicos coloca no compostor por semana?						
Baterias							
Óleos alimentares usados	6.4. Se fossem distribuídos compostores, teria interesse em fazer compostagem doméstica?						
Medicamentos							
Outros						Sim	Não
Não faço qualquer reciclagem							
7. Numa escala de 1 a 5, em que 1 significa "nenhum esforço" e 5 significa "muito esforço", classifique o grau de esforço da sua família na gestão dos resíduos (fazer separação e depositar no ecoponto, compostagem, ...)	1	2	3	4	5		

### SISTEMA DE GESTÃO DE RESÍDUOS

8. Considera que o sistema de recolha de lixo funciona bem?				Sim	Não
9. Há alguma coisa que gostasse de ver melhorada no sistema atual de recolha de lixo?					

### TARIFA

10. Sabe que existe uma tarifa municipal destinada a cobrir os custos de gestão dos resíduos?				Sim	Não
10.1. Sabe quanto paga mensalmente pelos resíduos que produz?	sim	não	Quanto? _____ (€/mês)		
10.2. Considera que a tarifa que paga atualmente é justa?	sim	não	sem opinião		
11. Sabe que essa tarifa depende da quantidade de água consumida?				Sim	Não
12. Preferia pagar os resíduos em função da quantidade que deita fora?				Sim	Não
12.1. Se respondeu não, explique porquê _____					
13. Sabia que não paga os resíduos recicláveis que coloca no ecoponto?				Sim	Não
14. É de opinião que as famílias que fazem separação do lixo (reciclagem ou compostagem) deveriam ser beneficiadas?				Sim	Não

**PROJETO LIFE PAYT**

15. Alguma vez ouviu falar no Projeto LIFE PAYT?	Sim	Não
15.1.Se sim, por que meio?	Jornal	Cartaz
Outro: qual?		Autocolante (contentor) Internet

Para terminar, gostaríamos que nos indicasse alguns dados pessoais para a análise sociológica do estudo. Estes dados serão utilizados apenas para controlo interno pela equipa do projeto, e não serão fornecidos a nenhuma entidade externa, não sendo nunca identificadas nem nomeadas pessoas individuais, apenas os dados agregados de todos os inquiridos. Contudo, se preferir poderá não responder a alguma questão. Pedimos contudo que nos forneça um contacto telefónico para o caso deste inquérito ser escolhido aleatoriamente para controlo de qualidade e ser validada a sua participação neste estudo.

**A. Dados do inquirido e do agregado familiar**

Membro do agregado doméstico	Idade (anos)	Profissão	Nível de Escolaridade	Género (M/F)
1)				
2)				
3)				
4)				
5)				
6)				
7)				
8)				

**B. Tipo de habitação (assinalar com X)**
**C. Rendimento Líquido Mensal do Agregado familiar (assinalar com X)**

Apartamento		Com pátio		< 557 €	
				entre 557€ e 1.000€	
				entre 1.001€ e 2.000€	
Moradia		Com jardim		Entre 2.001€ e 3.000€	
				> 3.000 €	
				não sabe / não responde	

Nome do Inquirido:	Morada:	Email:	Contacto (obrigatório):
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**AGRADECIMENTO: MUITO OBRIGADO(A) PELA SUA COLABORAÇÃO!**
**Hora de fim:**
**Observações:**

**Esclarecimento inicial:** O Projeto LIFE PAYT, do qual fazem parte a Câmara e a Universidade de Aveiro, está a decorrer no bairro da Forca Vouga. Pioneiro na redução dos resíduos produzidos pelos moradores e estabelecimentos comerciais neste bairro, o projeto pretende aumentar as taxas de recolha seletiva dos materiais de embalagem.

A sua opinião é muito importante! Por isso gostaríamos de lhe fazer umas breves perguntas muito simples, que demoram apenas alguns minutos. Garantimos o anonimato e a confidencialidade das suas respostas, que serão tratadas em conjunto com todas as outras de um modo científico, não havendo nunca identificação dos participantes no estudo.

### RESÍDUOS E RECICLAGEM

1. Qual a quantidade de resíduos que a sua empresa produz diariamente? _____ sacos (um saco regere-se a um saco de supermercado típico, 30L)						
2. No seu estabelecimento, quem coloca os resíduos no contentor?						
3. Diga, numa escala de 1 a 5, se concorda com a seguinte frase: "A gestão de resíduos é uma responsabilidade de todos e eu, enquanto cidadão, sou também responsável". (1 significa "discordo em absoluto" e 5 significa "concordo em absoluto")		1	2	3	4	5
4. Numa escala de 1 a 5, na sua opinião, como classifica a importância da reciclagem? (1 – nada importante e 5 muito importante)		1	2	3	4	5
5. Que materiais recicla? (assinalar com X)		6. Relativamente aos resíduos orgânicos:				
Papel e Cartão		6.1. Pratica compostagem a partir dos resíduos produzidos no estabelecimento?			Sim	Não
Vidro		6.2. Se sim, qual o destino do composto produzido? _____				
Plástico e Metal		6.3. Quantos kg ou L de resíduos orgânicos coloca no compostor por semana? _____				
Resíduos orgânicos e resíduos verdes		6.4. Se fossem distribuídos compostores, teria interesse em fazer compostagem?			Sim	Não
Equipamento elétrico e eletrónico						
Baterias						
Óleos alimentares usados						
Medicamentos						
Outros		7. Na semana passada, quanto tempo (em horas) foi gasto na gestão dos resíduos do estabelecimento? _____ horas (desde que foram produzidos até que foram colocados no contentor ou ecoponto, ...)			Sim	Não

### SISTEMA DE GESTÃO DE RESÍDUOS

8. Considera que o sistema de recolha de lixo funciona bem?		Sim	Não
9. Há alguma coisa que gostasse de ver melhorada no sistema atual de recolha de lixo? _____			

### TARIFA

10. Sabe que existe uma tarifa municipal destinada a cobrir os custos de gestão dos resíduos?		Sim	Não	
10.1. Sabe quanto paga mensalmente pelos resíduos que produz?		Sim	Não	Quanto? _____ (€/mês)
10.2. Considera que a tarifa que paga atualmente é justa?		Sim	Não	Sem opinião
11. Sabe que essa tarifa depende da quantidade de água consumida?		Sim	Não	
12. Preferia pagar os resíduos em função da quantidade que deita fora?		Sim	Não	
12.1. Se respondeu não, explique porquê _____				
13. Sabia que não paga os resíduos recicláveis que coloca no ecoponto?		Sim	Não	
14. É de opinião que as empresas que fazem separação dos resíduos (reciclagem ou compostagem) deveriam ser beneficiadas?		Sim	Não	

**PROJETO LIFE PAYT**

<b>15.</b> Alguma vez ouviu falar no Projeto LIFE PAYT?	Sim	Não			
<b>15.1.</b> Se sim, por que meio?	Jornal	Cartaz	Panfleto	Autocolante (contentor)	Internet
Outro: qual?					

Para terminar, gostaríamos que nos indicasse alguns dados da empresa para a análise sociológica do estudo. Estes dados serão utilizados apenas para controlo interno pela equipa do projeto, e não serão fornecidos a nenhuma entidade externa, não sendo nunca identificadas nem nomeadas pessoas individuais, apenas os dados agregados de todos os inquiridos. Contudo, se preferir poderá não responder a alguma questão. Pedimos contudo que nos forneça um contacto telefónico para o caso deste inquérito ser escolhido aleatoriamente para controlo de qualidade e ser validada a sua participação neste estudo.

<b>A. Tipo de atividade comercial</b> (assinalar com X)					
Hotelaria		Restauração e similares	Comércio	Indústria	
Serviços		IPSS/adm. central e local	Saúde	Agrícola/Pecuária	
Outra, qual?					

<b>B. Número de anos de funcionamento:</b> _____
--

<b>C. Número de trabalhadores:</b> _____
--

<b>D. Área ocupada pela empresa:</b> _____ m <sup>2</sup>
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<b>E. Volume de negócios anual:</b> _____ € (euros)
---

<b>Nome da empresa:</b>	
<b>Nome do inquirido:</b>	
<b>Email:</b>	
<b>Morada:</b>	<b>Contacto:</b> <b>(obrigatório)</b>

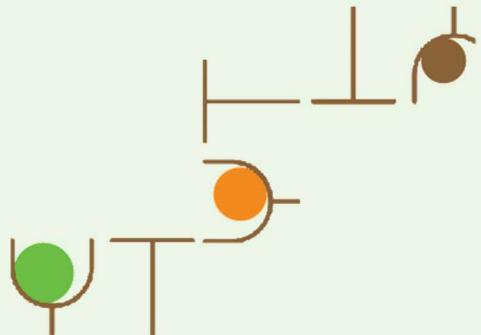
<b>AGRADECIMENTO:</b> MUITO OBRIGADO(A) PELA SUA COLABORAÇÃO!	<b>Hora de fim:</b>
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<b>Observações</b>
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## Tool to reduce waste in South Europe

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