

Socioeconomic baseline on waste for households in Larnaka, Cyprus

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June 2020

Title Socioeconomic baseline on waste for households in Larnaka, Cyprus
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Date June 2020
ISBN 978-989-8649-42-3



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Project LIFE PAYT – Tool to reduce waste in South Europe (**LIFE 15 ENV/PT/000609**)
Co-funded by the LIFE programme of the European Commission



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1. Introduction

This baseline report aims to assess the impact of the project actions done within the framework of LIFE PAYT project, to establish a socioeconomic context as the starting point for the monitoring system in Larnaka. This document, prepared in June 2020, intends to provide information for the set-up of a baseline to establish a preliminary analysis divided in twelve socioeconomic indicators. The economic indicators (as for instance, the information related to costs and revenues) were obtained from the municipal authorities responsible for the MSW management based on the secondary method of data collection (from official documents provided by the municipality and agencies, or other kinds of official reports). While the data for the social indicators were based on a door-to-door survey. The English and Greek versions of the questionnaires were contextualized to the existing waste management system in Cyprus, resulting in differences from the questionnaires (mainly on questions 5 and 9) applied by the other similar projects. The coordinators of the project in Larnaka Municipality conducted the survey and collected 76 printed questionnaires, covering ~19% of the population of the pilot area. The questionnaires as well as relevant informative material were distributed at the local schools to raise awareness to waste management, as well as for PAYT principle to younger people of the pilot area.

The local MSW system in Larnaka has some contextual differences when compared with other LIFE PAYT projects. For instance, the waste tariff has two different prices and four categories: 1. Houses/ Apartments 170 €; 2. Offices/ Stores (minimum) 230 €. While the same service in Portugal is cost-based on water consumption and in Greece criteria are on a measured size relation and economic level.

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” (LIFEPAYT, 2017). 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.

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

| INDICATOR | | UNITS | CALCULATION FORMULA |
|-----------|--|---|--|
| SE1 | MSW management cost for municipality | € / year | Cost in target zone per year |
| SE2 | MSW management revenue from domestic and non-domestic sectors | € / year | MSW tariff paid value in target zone per year |
| SE3 | Individual cost of MSW management | Degree of effort (mean score between 1–5) | $\frac{\sum \text{individual scores}}{\sum \text{total answers}}$ |
| SE4 | Coverage of MSW management costs | % | $\frac{\text{MSW tariff revenue}}{\text{Cost of MSW management}} \cdot 100$ |
| SE5 | Economic revenue due to increased recycling | € / year | $\sum_i (\text{Units of recovered MSW } i \text{ fraction} \cdot \text{Unitary price of MSW } i \text{ fraction})$ |
| SE6 | Potential employment creation | Nr. jobs | $\sum_i (\text{Units of recovered MSW } i \text{ fraction} \cdot \text{Nr. jobs created by unit MSW } i \text{ fraction})$ |
| SE7 | Satisfaction with MSW collection system | % | $\frac{\sum \text{positive answers} \cdot 100}{\sum \text{total answers}}$ |
| SE8 | Acceptance of MSW management pricing | % | $\frac{\sum \text{positive answers} \cdot 100}{\sum \text{total answers}}$ |
| SE9 | Population percentage who separates MSW at source | % | $\left(1 - \frac{\sum \text{answers "I don't recycle"}}{\sum \text{total answers}}\right) \cdot 100$ |
| SE10 | Population percentage practicing home composting | % | $\frac{\sum \text{positive answers} \cdot 100}{\sum \text{total answers}}$ |
| SE11 | Population perception on the importance of recycling | Mean score between 1–5 | $\frac{\sum \text{individual scores}}{\sum \text{total answers}}$ |
| SE12 | Project visibility | % | $\frac{\sum \text{positive answers} \cdot 100}{\sum \text{total answers}}$ |

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 is divided in two parts: 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 domestic sector established as a target population affected by the project. The number of answered questionnaires represents 95% confidence interval and 10% margin of error.

Questionnaires were distributed in majority to households (n=69) and shops (n=7) of the selected area. For one week, two collaborators of the project interviewed and distributed the questionnaires.

The questionnaires filled in by the representatives of shops or offices were the same ones as given to households. The strategy for the survey incorporated the distribution of printed questionnaires (see Annex 1.) during dissemination events as part of the communication campaign.

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

As a baseline process, this same survey - performed before the implementation of the project - will be conducted as well after the implementation 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 Larnaka |
|-----------|--|-----------------------|
| SE1 | MSW management cost for municipality (target area) | 435 708 €/year |
| SE2 | MSW management revenue from non-domestic sectors | 255 000€ |
| SE3 | Individual cost of MSW management | 3.4 – Moderate effort |
| SE4 | Coverage of MSW management costs | 58.5% |
| SE5 | Economic revenue due to increased recycling | 3 345 €/year |
| SE6 | Potential employment creation due to recycling | 0.25 jobs |
| SE7 | Satisfaction with MSW collection system | 98% |
| SE8 | Acceptance of MSW management pricing | 15.7% |
| SE9 | Population percentage who separates MSW at source | 97.3% |
| SE10 | Population percentage practicing home composting | 0% |
| SE11 | Population perception on the importance of recycling | 4.3 (0 to 5) |
| SE12 | Project visibility | 85.5% |

3.1. Economic Indicators

As shown on Table 3, the economic indicators for the baseline assessment focuses on: costs, revenues, tariffs, degree of efforts, economic profits, and employment creation. These financial indicators are important for PAYT systems, since the population that correctly separates their waste expects a reduction of the tariff. In Cyprus, the amount of waste management service fees charged is annual and linked to citizen's property type and the average price paid by the service is well known by the majority.

Table 3 : Economic Indicators for the baseline

| Economic Indicators | Larnaka Baseline Summary |
|--|--|
| SE1. MSW management cost for target area (2018) | |
| $\frac{* \text{€ } TC + LT + CC + ADM}{\text{total mixed waste produced in tonnes}}$ $\frac{* \text{€ } 2\,259\,862 + 0 + 2\,886\,640 + 5\,294\,059}{23\,669 \text{ t}}$ $\frac{\text{€ } 10,440,561}{23\,669 \text{ t}}$ <p>= 441€/t X 998t = 435 708€</p> <p>435 708 € in the target area (2018)</p> <p>*Values follow this order: TC: treatment costs LT: landfill tax for MSW CC: collection costs ADM: administrative costs (+HR)</p> | <p>All the mixed waste collection and treatment costs already included in this calculation were obtained from Larnaka Municipal Council. The total annual cost was divided by annual amount of mixed waste produced in tonnes in Larnaka. The price of 441€ per tonne was multiplied by the amount of waste produced only in the target area per tonnes (998 t) to calculate the MSW management cost for the target area, which is equal to 435 708€.</p> <p>If after the implementation of PAYT, there is a reduction of mixed waste produced, the MSW collection and treatment costs could decrease as well, leading to a reduction in the municipality's costs.</p> |
| SE2. MSW management revenues for domestic and non-domestic sectors | |
| <p>255 000 € in the target area (2018)</p> | <p>For the target zone, the MSW management revenue informed was 255 000 €, which means that the revenue is not covering the costs. It is expected that the adoption of PAYT will contribute to a potential reduction of tariffs paid due to a reduction on mixed waste.</p> |
| SE3. Individual cost of MSW management | |

| Economic Indicators | Larnaka Baseline Summary |
|--|--|
| <p>3.4 – moderate effort for non-domestic participants</p> | <p>This indicator aims to understand the evolution of the cost/effort bear by target population in MSW management. It is expected that throughout the project, participants will increase their time separating or composting to produce less undifferentiated waste. The 76 respondents gave a score between 1-5 for their effort in separating at source. The sum of the score divided by the total of respondents indicated the average score for their effort is: $257/76 = 3.4$. After the implementation of the PAYT system, residents will have extra reasons to separate and this score is expected to be higher.</p> |
| <p>SE4. Coverage of MSW management costs (only for the area of the project)</p> | |
| $\frac{SE2}{SE1} \cdot 100 = 58.5 \%$ $\frac{255\ 000}{435\ 708} \cdot 100 = 58.5 \%$ | <p>This indicator represents the percentage of MSW management cost that is covered by the tariffs charged. Derived from indicators SE2/SE1, the coverage of MSW management costs of 58.5% indicated that the municipality cannot afford the entire costs with revenues from taxes. The adoption of PAYT tariffs might lead to a correction of this situation, as it is expected to have less mixed MSW production and increasing recycling. The municipality does not cover all the costs with the target area and still lacks a revenue of 41.5%. In this case, the municipality can take advantage of the change of tariff induced by PAYT adoption to balance costs and revenues.</p> |
| <p>SE5. Economic revenue due to increased recycling</p> | |

| Economic Indicators | | | | Larnaka Baseline Summary | | | | | | | | | |
|---|--------------------------|----------------|-----------------|--|-----------|-------|---------|-------|---------|--------|------------------|--|--|
| 3 345 €* Recyclable waste: Larnaka (1 781 tonnes), and in the target area (52.42 tonnes). | | | | <p>The purpose of this indicator is to estimate any potential economic benefit derived from PAYT due to increased recycling. Green Dot is currently the only licensed system for the collection and management of packaging waste in Cyprus, following the principle of Producer's Extended Liability, where operation costs are paid by producers obliged to manage the waste that end up in the consumer market. The revenues associated to the increased sale of recovered materials for recycling may help to cover the costs of collection and sorting. In Larnaka, only the collection of paper is paid by Green Dot, having a cost of 86 069€, while the remaining recyclable material are collected free of charge. Some informal collectors might create a black market with maybe brokers, that sell the Packaging material to other industries.</p> <p>*The Green Dot in Cyprus information on Packaging Fees were obtained from: http://greendot.com.cy/en/business/packaging-fees</p> | | | | | | | | | |
| Material | Qt. Larnaka Municipality | Qt.Target Area | Green Dot Fees* | | | | | | | | | | |
| PMD (Plastic) | 696 t | 20.28 t | 100.6€/ton | | | | | | | | | | |
| PAPER | 759 t | 22.12 t | 44.78€/ton | | | | | | | | | | |
| GLASS | 326 t | 9.50 t | 27.61 €/ton | | | | | | | | | | |
| <table border="1"> <tr> <td>PMD</td> <td>2 092.48€</td> </tr> <tr> <td>PAPER</td> <td>990.53€</td> </tr> <tr> <td>GLASS</td> <td>262.29€</td> </tr> <tr> <td>Total:</td> <td>3 345.30€</td> </tr> </table> | | | | PMD | 2 092.48€ | PAPER | 990.53€ | GLASS | 262.29€ | Total: | 3 345.30€ | | |
| PMD | 2 092.48€ | | | | | | | | | | | | |
| PAPER | 990.53€ | | | | | | | | | | | | |
| GLASS | 262.29€ | | | | | | | | | | | | |
| Total: | 3 345.30€ | | | | | | | | | | | | |
| SE6. Potential employment creation | | | | | | | | | | | | | |
| 0.25 direct jobs | | | | <p>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), estimations of potential job creation by recycling show that for every 204 tonnes of recycled waste 1 direct job is created. The recyclables collected by the Municipality in the target area is in total 52.4t, divided by 204t is equal to 0.25 direct jobs. Creation of employment is a social benefit directly from the increase of materials recovered for recycling. This job creation is higher than the potential employment decrease in alternative MSW treatments (e.g. landfills) and in production of primary raw materials substituted.</p> | | | | | | | | | |
| <p>*The Directive 94/62/EC on packaging and packaging waste (paper, glass, PMD) was adopted by the Packaging and Packaging Waste Law by Cypriot law.</p> | | | | | | | | | | | | | |

3.2. Social Indicators

Due to a different social context in Cyprus, some of the indicators and questions from the survey designed for the LIFE PAYT project had to be adjusted.

For instance, considering the indicator SE10 on practicing composting, an attempt was made to find someone composting, but unfortunately people seem to have resistance, due to the high temperatures in Cyprus, people were unhappy about accepting the bucket for organic as they think there will be a strong odour.

The waste management sector in Cyprus is very different from the one in Greece, for instance, how the fee is calculated and how the system for the recycling process is organized.

The average age of survey participants was 47 years-old, while average member per household was 3.2. Regarding the living infrastructure, there were 30 households in blocks of flats; 39 detached houses, and 7 participants from shops/offices. Citizens in Larnaka pay for the municipal waste collection services every year according to their income. For detached households, there is an individual waste bin, while for households in blocks of flats there is a shared waste bin.

Regarding the legislation for taxes on collection of solid waste (Law No 111/1985), the amount is decided by the Municipal Council within some frameworks. The tax is paid by tenants and/or owners of all residential units or shops: Houses/flats pay 170€ per premise per year; Shops and offices pay 230€ per premise per year. The cases in which discounts are granted to residents are related with high degree of incompetence, households with more than 4 children, people with very low pensions and/or low income below 1,000 €. In these cases, collection tax is 10% on the total income and the maximum payment amount is 100 € per year.

3.2.1 Contextualizing the social indicators

The objective of these social indicators is to measure, for instance, the satisfaction with the MSW system and the knowledge on the tariff. However, the initial Portuguese and English versions of the questionnaires had to be adjusted to the context in Larnaka, while the Greek version of the questionnaire was developed.

The pre-test of the questionnaire indicated that people were reluctant to answer too many questions that seemed too vague to them, therefore, for instance, question 10.2 (Do you think the existing tariff is fair?) was omitted. This question was initially related to indicator SE8, but as there are several tax reliefs for some economically disadvantaged groups, the pre-test pointed out that citizens are very familiar with the amount that appears at the bill provided by the electricity suppliers of the country. So, the question 10.2 was replaced by chosen question 11 (Do you know that you are paying household waste management in relation to household members and economic situation?), also supported by question 12 ("Would you rather prefer to pay waste management in relation to the amount of waste you produce, and not based to the existing pattern?").

Social indicators for the baseline assessment are shown on Table 4

Table 4: Social Indicators for the baseline

| Social Indicators | Larnaka Baseline Summary |
|---|---|
| SE7. Satisfaction with MSW collection system | |
| Satisfaction with the system: 98% | Based on question 8 from questionnaire, this indicator measures whether the participants are satisfied with the MSW collection service provided by the local administration. Regarding the evaluation of the MSW collection system, most of the respondents 98% (n=75) indicated a positive perception of the service provided, so there is a satisfaction with the municipal solid waste system. Only one person was negative and not satisfied with the MSW management service. |
| SE8. Acceptance of MSW management pricing | |
| | As participants were not able to answer question 10.2 (Do you think the existing tariff is fair?) from the |

| Social Indicators | Larnaka Baseline Summary |
|---|--|
| Acceptance: 15.7% (n=12) | survey, to determine this indicator question 11 (Do you know that you are paying household waste management in relation to household members and economic situation?) was established as the base to evaluate the acceptance of the existing tariff. This indicator took into consideration the 76 valid answers of participants, only 12 answered 'yes', resulting in about 15.7% of positive knowledge on the structure that builds how the waste tariff is determined. It means that 64 (84.3%) that answered 'no' have no knowledge to judge if the existing tariff is fair or not. |
| SE9. Population percentage who separates MSW at source | |
| 97.3% (n=2) any kind of separation | The objective of this indicator is to establish the population percentage that separates waste at source at the beginning of the project. The difference between the initial and final percentages should be considered a strong indicator of the project success, since separation at source is a fundamental parameter in the behavioural transformation of the population. For question 5, only two respondents were negative about recycling and separation at source, which means that 97.3% separate at source in some level. After asking if they practice or not recycling, the interviewers should have asked "which materials do they recycle?", to distinguish among e.g. paper and cardboard, glass, or plastic. However, by a misunderstanding this data was not collected. |
| SE10. Population percentage practicing home composting | |
| 0% of respondents practice composting | Organic waste represents the largest quantity of urban waste component, so composting is a strong factor to reduce waste that needs to be raised at the beginning of the project. This indicator identifies the branch of population that already practices composting. Concerning question 6.1, the absolute universe of respondents was unanimous to say that they do not practice home composting. Besides that, there was no biowaste separate collection system in the target area or municipality. However, when asked if they would be interested, 4 people (5%) said yes. |
| SE11. Population perception on the importance of recycling | |
| Likert scale with 0 to 5 levels: 4.3 - Commercial | The perception of the importance of recycling is an indicator that points out to the household commitment for the correct destination of the waste. Regarding the importance of recycling on question 4, the respondents had to give a score from 1-5, and the average score for the understanding of |

| Social Indicators | Larnaka Baseline Summary |
|-----------------------------------|---|
| | environmental benefits were 4.3 . More specifically, 44.7% (n=34) of the respondents gave 5 (highest score) for importance of recycling, the majority 48.6% gave (n=37) the score 4, followed by the last 5 people that indicated the middle value 3. |
| SE12. Project visibility | |
| 85.5% (n=65) of visibility | During the project it is important to evaluate the knowledge of the population regarding LIFE PAYT visibility to verify if the project's dissemination activities achieve their goals. Awareness raising is a key element for effective PAYT implementation, so the visibility of the LIFE PAYT project was evaluated on question 15. The majority 85.5% (n=65) of the respondents knew the project in advance, while 11 people heard about the project for the first time during the survey. The main communication strategy that helped 35 of the participants to hear about the project was leaflets and website, while other 27 ones got to know the project only through leaflets, and one single person was informed through newspaper and website. |

3.2.2 Extra data extracted from the questionnaires

This section presents the data results from the questionnaire (see Annex 1) that were not mentioned during the previous indicators analysis.

- Question 1: On average, a participant throws away 3,78 bags per week, a total of 111 litres of waste.
- Question 2: There were 71 husbands/wives responsible for taking the garbage to the street bin, in opposition to only 5 landlords.
- Question 9 : Although, the majority seemed pleased with the waste management system, for instance, the way the Larnaka Municipality collects the rubbish, this question from survey asked whether there is anything that could further improve the MSW management system. Out of the 76 participants, there were 59 that missed nothing, but 17 people asked for more bins for mixed and recyclable waste.

- Question 10.1.1: by mistake the information regarding the amount they thought to be paying for the existing waste tariff was not filled in the excel file.
- Question 13 in the original was “Did you know that you are not paying for the recyclables which are brought to the collection points?”, but it has been noticed that people are not fully aware about which waste fractions they are charged for. Therefore, the question was formed as “Do you know that you are charged for every ton of waste that is landfilled, while there is no charge corresponding for the recyclables treated?”. 89.4% (n=68) were aware of being charged for every ton of waste, while 8 participants were not well informed about this free service.
- Question 14: Majority of households 93.4% (n=71) thinks that who separates waste should be favoured, the other ones (n=5) think the benefit is not necessary.



4. Conclusions

This baseline analysis had to overcome some obstacles to find results for the indicators, as the MSW system in Cyprus has another context. Regarding the questionnaire, it was necessary to make broad adjustments on the questions to have more specific results. For instance, questions 5 and 9 were changed during the interview process by mistake, and it reduced the data and information gathering. Due to the non-existence of composting, question 6.2 (How many kg or L of biowaste do you put in the composter per week?) was not answered by anyone. Question 13 showed that population was well-informed, but in comparison with all the other LIFE PAYT projects, the question 15 revealed an extremely high rate of visibility of the project and it was not possible to identify the reasons.

The satisfaction with the MSW system seems to be mid-level or neutral, but there is a huge lack of information about the current tariff system among population. The positive aspect of the household waste management sector in Larnaka is that people seem to be well informed; on the negative aspect, only 5% seemed interested to practice composting and to be committed to good practices.

5. Annexes


Annex 1: Model version of questionnaire issued for the survey in Larnaka for households

| | | | | |
|---|--|-------------|---------------------------|---|
|  | Survey for evaluation of socio-economic indicators of LIFE PAYT project RESIDENTIAL AREAS | Date: _____ | Questionnaire code: _____ |  LIFE 15 ENV/PT/609 |
|---|--|-------------|---------------------------|---|

Previous Information: The LIFE PAYT Project, in collaboration with the Municipality and the National Technical University of Athens, will take place in Larnaka. Pioneering the reduction of MSW generated by activities of this neighbourhood, the project pretends to primarily increase the rate of separated collection of recyclable packaging materials.

Your opinion is very important to us! That is why we would like to ask you some brief questions, which will take only a few minutes. We ensure anonymity and confidentiality of your answers, which will be scientifically analysed along with that of other participants, without any identification of the participants in the study.

WASTE AND RECYCLING




| | | | | | | | | |
|--|--|---|--|---|-----|----|---|---|
| 1. How many household waste bags do you/your family generate per week? _____ bags (typical supermarket bag, small 15L/ big 30L) | | | | | | | | |
|  | | | | | | | | |
| 2. Who takes usually garbage to the street bin at your home? _____ | | | | | | | | |
| 3. From 1 to 5, how much do you agree with this? "Waste management is a shared responsibility to which I am, as a citizen, also responsible". (1 means "disagree at all" and 5 means "agree at all") | | | | 1 | 2 | 3 | 4 | 5 |
| 4. From 1 to 5, How important is recycling for you? (1 – nothing important and 5 very important) | | | | 1 | 2 | 3 | 4 | 5 |
| 5. Which materials do you recycle? (mark with x) | | 6. Regarding biowaste : | | | | | | |
| Paper and Cardboard | | 6.1. Do you practice home composting? | | | Yes | No | | |
| Plastic and metal packaging | | | | | | | | |
| Glass | | 6.2. How many kg or L of biowaste do you put in the composter per week? | | | | | | |
| Biowaste and green waste | | | | | | | | |
| Electric and electronic equipment | | | | | | | | |
| Batteries | | | | | | | | |
| Cooking oil | | 6.3. If composters were offered, would you be interested? | | | Yes | No | | |
| Medicaments | | | | | | | | |
| Other | | | | | | | | |
| I do not recycle at all | | | | | | | | |
| 7. From 1 to 5, where 1 means "no effort" and 5 "too much effort", how much effort your family does in household waste management? (do separation and deposit in the containers for recycling, composting, ...) | | | | 1 | 2 | 3 | 4 | 5 |

WASTE MANAGEMENT SYSTEM

| | | |
|--|-----|----|
| 8. Is the current waste collection system working properly? | Yes | No |
| 9. Is there anything you would like to change in the current collection service? | | |
| | | |

WASTE TARIFF

| | | | |
|--|-----|-----|-----------------------------------|
| 10. Are you aware that there is an existing municipal tariff charge system for supporting waste management? | | Yes | No |
| 10.1. Do you know how much you pay for your household waste management? | Yes | No | 10.1.1. How much? _____ (€/month) |
| 11. Do you know that you are paying household waste management in relation to household members and economic situation? | | Yes | No |
| 12. Would you rather prefer to pay for waste management services in relation to the amount of waste you produce and not based to the existing pattern? | | Yes | No |

| | | | | |
|---|--|--|---|---|
|  | Inquérito para avaliação dos indicadores socio económicos do projeto LIFE PAYT | |  |  |
| | SETOR RESIDENCIAL | | | |

| | | |
|---|-----|----|
| 13. Do you know that you are charged for every ton of waste that is landfilled, while there is no charge corresponding for the recyclables treated? | Yes | No |
| 14. Do you think that households separating their waste at source should be favoured? | Yes | No |

LIFE PAYT PROJECT

| | | | | | |
|--|-------|--------|-------|----------------------|----------|
| 15. Have you ever heard about LIFE PAYT project? | Yes | No | | | |
| 15.1. If yes, how? | Press | Poster | Flyer | Sticker on container | Internet |
| Other: which? _____ | | | | | |

Just finishing, we would like you to give us some personal data for sociological assessment of the study. These data will only be used to internal control by staff of project, and will not be supplied to any other external entity, neither identifying nor using names of individuals, only aggregated data from all enquired persons. Nevertheless, if you prefer feel free to not answering any question. However, we kindly ask you to give us a contact (telephone number) just in case this enquiry is randomly selected for quality control and your participation in this study is validated.

| A. Data of enquired person and household | | B. Housing type (mark with x) | | | |
|--|-------------------|-------------------------------|--|-------------|--|
| Household member | Age/ Gender (M/F) | Apartment | | With yard | |
| 1) | | | | | |
| 2) | | | | | |
| 3) | | | | | |
| 4) | | | | | |
| 5) | | Detached house | | With garden | |
| 6) | | | | | |
| 7) | | | | | |
| 8) | | | | | |

| | | | |
|--------------------------|----------|--------|---------------------|
| Name of enquired person: | Address: | Email: | Contact (required): |
| | | | |

ACKNOWLEDGMENT: THANK YOU VERY MUCH FOR YOUR COLLABORATION!

OBSERVATION:

Annex 2: Excel with the data collected from the questionnaires

| | | |
|-----------------------------------|--|-------|
| | 1. How many supermarket bags (30L) for garbage do you use per week? | |
| Average (30L per bag = 111Liters) | | 3,78 |
| Median | | 4 |
| | 2. Who takes usually garbage to the street bin at your home? | |
| Husband/Wife | | 71 |
| Landlord/Shop owner | | 5 |
| | 3. From 1 to 5, how much do you agree with this? "Waste...responsible". | |
| Average Likert | | 4,36 |
| 5 | | 33 |
| 4 | | 38 |
| 3,2,1 | | 5/0/0 |
| | 4. From 1 to 5, How important is recycling for you? | |
| Average Likert | | 4,38 |
| Nº 5 | | 34 |
| Nº 4/3 | | 37/5 |
| | 5. Which materials do you recycle? (Do you recycle?) | |
| Yes | | 74 |
| No | | 2 |
| | 6.1. Do you practice home composting? | |
| No | | 76 |
| Yes | | 0 |
| | 6.3. If composters were offered, would you be interested? | |
| Yes | | 4 |
| No | | 72 |
| | 7. From 1 to 5, how much effort your family does in waste management? | |
| Average | | 3,38 |
| Median | | 3 |
| | 8. Is the current waste collection system working properly? | |
| Yes | | 75 |
| No | | 1 |
| | 9. Is there anything you would like to change in the current collection service? | |
| Waste bins | | 17 |
| Nothing | | 59 |
| | 10. Are you aware ... existing municipal tariff charge system..waste management? | |
| No | | 32 |
| Yes | | 44 |
| | 10.1. Do you know how much are you paying for your household waste management? | |
| Yes | | 65 |
| No | | 11 |

| | | |
|-------------------|--|----|
| | 11. Do you know that you are paying waste...to household members and economic situation? | |
| yes | | 12 |
| no | | 64 |
| | 12. Would you rather prefer to pay for waste management services...waste you produce...? | |
| Yes | | 74 |
| No | | 2 |
| | 13. Do you know that you are charged for every ton of waste that is landfilled? | |
| Yes | | 68 |
| No | | 8 |
| | 14. Do you think that households separating their waste at source should be favoured? | |
| Yes | | 71 |
| No | | 5 |
| | 15. Have you ever heard about LIFE PAYT project? | |
| Yes | | 65 |
| No | | 11 |
| | 15.1. If yes, how? | |
| Leaflets | | 27 |
| Leaflets/Website | | 35 |
| Newspaper/Website | | 1 |

| | | |
|------------------------------|-------------------------------|------|
| | A. Education level | |
| Tertiary educational level | | 74 |
| Primary educational level | | 2 |
| | B. Age | |
| Median | | 46 |
| Average | | 47,4 |
| | D. income level | |
| I don't want to answer | | 18 |
| 2000-3000 | | 22 |
| >3000 | | 36 |
| | Housing type [Apartment] | |
| Household in blocks of flats | | 30 |
| Shop | | 7 |
| | Housing type [Detached house] | |
| Detached house | | 39 |
| | Household member | |
| Average | | 3,2 |



Tool to reduce waste in South Europe

Co-funded by the LIFE programme of the European Union
LIFE15 ENV/PT/000609

