



LIFE Project Number
LIFE15 ENV/GR/000257

LIFE PROJECT NAME or Acronym
LIFE-F4F (Food for Feed)



Action:	C Monitoring of the impact of the project actions
Partner:	ESDAK - HMU - HUA
Deliverable:	C1.6 Mid-term evaluation of performance indicators

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1. Evaluation of performance indicators

Following the first evaluation of the F4F project's performance indicators (PI), in this report the evaluation of the same PI's is presenting for the period from the project's start up till April, 2020.

The concept for this Action and deliverable is the assessment of the impact of the project's realisation in a variety of parameters during the project's pilot and possible full-scale implementation.

Up to now and during this reference period, the first and the second operational period (initial operational period and 1st full scale operational period) of the project have been concluded. The complete list of key indicators for the project is reproduced below. Concerning the evaluation of performance indicators, from this period of the project the following indicators have been assessed, as presented in the paragraphs below.

1.1. Waste – Waste management

Description of indicator and target value

Annual reused quantity of food waste: 150 (metric tonnes per year). In total for the 3 periods of the project this is 450 metric tonnes.

A high level of consumption and tourist activity in the area is leading to increased waste generation. An estimated thirty thousand (30.000) metric tonnes of food wastes from the hospitality sector are produced in the area of the project annually. The management of waste is a major component of the Local Authorities' annual budget and management should provide optimal savings and benefit the community and the environment. The project's actions aim to reduce the generated food waste by -0.5% annually.

Data

Reused quantity of food waste 2018 (7.5.2018 – 31.10.2018): **149.5 metric tonnes.**

Reused quantity of food waste 2019 (3.6.2019 – 31.10.2019): **144.0 metric tonnes.**

Evaluation

During the two concluded operational periods of the project, in total **293.5 metric tonnes** have been collected and treated in the pilot unit. This quantity has been reused and consequently diverted from landfill. Therefore, this means that from the 30.000 metric tonnes of food waste that are produced in the area of the project from the hospitality sector, the 29.706,05 metric tonnes need to be disposed in landfill.

Now, the last operational period is expected (June-November, 2020) and according to up to now data from previous periods, it is expected that 150 tonnes of food residues will be collected and treated.

1.2. Resource efficiency - green circular economy

Description of indicator and target value

No. of companies where green circular economy practices are implemented: 5

During the project and up to the end of it was estimated that at least 5 companies where green circular economy practices are implemented will be involved. Such companies are relative to the waste management, hotels, animal farms, etc. When a full unit will be developed more than 50 companies is estimated to be involved.

Data

Number of companies where green circular economy practices are implemented (2018): 4 hotels

Number of companies where green circular economy practices are implemented (2018): 4 hotels from previous year, 1 new hotel added and 1 catering service. In total 6

Evaluation

During the reference period, 6 companies where green circular economy practices are implemented have been involved with the project. It has been estimated that up to the project's conclusion at least 5 relevant companies will be involved. Now it is expected that more than 9 companies will be involved in with the project up to the end of it.

1.3. Greenhouse gas emissions

Description of indicator and target value

Avoidance of GHG emissions

Avoidance of CO₂ by **50 metric tonnes CO₂eq up to the end of the project.**

Avoidance of Other greenhouse gases (CH₄) by **650 metric tonnes CO₂eq up to the end of the project.**

The reduction of GHG contributes positively to the mitigation actions of Climate Change.

Data

During the period between May and October 2018, one hundred and fifty (**150**) metric tonnes of hotels' food residues have been diverted from landfill, resulting in the avoidance of **375 metric tonnes of CO₂eq**. Thirty-seven (**37**) metric tonnes of dried animal feed were produced as a result of the initial operation of the Solar drying/ Pasteurisation pilot unit.

For the period June – October 2019, one hundred and forty-four metric tonnes of hotels' food residues have been diverted from landfill, resulting in the avoidance of **361,4 metric tonnes of CO₂eq**. Twenty-eight (**28**) metric tonnes of dried animal feed were produced as a result of the second operation period of the Solar drying/ Pasteurisation pilot unit.

In total, during the reference period, about 736 metric tonnes of CO₂eq have been avoided.

Details of the initial and the second operational period are presented in Table 1.

Table 1. Food residues diverted and avoided GHG emissions of the F4F Project

	Food residuals diverted from landfill	Avoidance of GHG emissions		Total*
		from CO ₂	from CH ₄	
	tonnes	tCO ₂ eq	tCO ₂ eq	tCO ₂ eq
May - October 2018	149.5	31.2	343.3	374.5
June- October 2019	144.2	30.1	331.3	361.4
Total:	293.7	61.3	674.6	735.9

* Total quantity in the duration of the project

Evaluation

Nevertheless, the Solar drying/ Pasteurisation Pilot Unit has successfully been operated on a consistent basis, and deviations from the targets set initially for KPIs are not anticipated, except in the case of exceptional circumstances, like the SARS-Covid 19 pandemic (SARS-CoV-2) and its impact on the tourist sector of Crete (Greece).

1.4. Resource Coverage / Range of the environmental / climate change impact

Description of indicator and target value

Total human population and area to be affected by the project

Total human population to be affected by the project (mandatory for floods/droughts, air, noise, climate adaptation): **11.000,00 of individuals** to be affected by the project

Permanent Population: **1.000,00 of individuals** to be affected by the project

Visitors / tourists: **10.000,00 of individuals** to be affected by the project

Total area to be affected by the project: **400 km² of total area** to be affected by the project

Data

7 May 2018 – 31 October 2019 (for the two operational periods):

Total human population to be affected by the project (mandatory for floods/droughts, air, noise, climate adaptation): **11.000,00 of individuals** to be affected by the project

Permanent Population: **1.000,00 of individuals** to be affected by the project

Visitors / tourists: **10.000,00 of individuals** to be affected by the project

Total area to be affected by the project: **400 km² of total area** to be affected by the project

Evaluation

The project achieved the aimed targets in terms of population and total area.

1.5. Implication of NGO (mandatory) including interventions supporting EU environmental and/or climate change policies and of other stakeholders

Description of indicator and target value

NGO: 3

Local Authorities: 2

Regional Authorities: 1

other interventions supporting EU environmental or climate change policies: 2

Data

NGO: 0

Local Authorities: 2

Regional Authorities: 1

other interventions supporting EU environmental or climate change policies: 0

Evaluation

Two municipalities (Local Authorities), Municipality of Heraklion and Municipality of Hersonissos, and the Regional Authority of Crete are implicated with one or another way to the project.

1.6. Information and awareness- General public reached and/ or made aware of

Description of indicator

Website (number of individuals reached): 15.000 visits

Other tools for reaching/raising awareness of the general public

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Events/exhibitions; print; other media (videos, broadcasts): 5,000 individuals

No. of copies of articles, newspapers or brochures distributed (print media): 25

Active participation in events: 500

Surveys carried out regarding awareness of the environmental/climate problem addressed (only obligatory for information and awareness projects)

General public (no. of individuals covered/survey): 500

Data

Website (number of individuals reached): **19,925 visits (12,823 unique visits)**

Other tools for reaching/raising awareness of the general public

Events/exhibitions; print; other media (videos, broadcasts): **3,800** individuals

No. of copies of articles, newspapers or brochures distributed: **250**

Active participation in events: **130**

Surveys carried out regarding awareness of the environmental/climate problem addressed (only obligatory for information and awareness projects)

General public (no. of individuals covered/survey): **120**

Evaluation

The project is on course to achieve the set targets in terms of population reached and/ or made aware of the issues related to the project.

1.7. Capacity building

Description of indicator

Networking and other professional training or education

Professionals (No. of individuals trained): 200

Networking (No. of individuals): 80

Conferences (No. of individuals): 50

Open days – workshops (No. of individuals trained): 200

Data

Professionals (No. of individuals trained): **340**

Networking (No. of individuals): **22**

Conferences (No. of individuals trained): **0**

Open days – workshops (No. of individuals trained): **180**

Evaluation

It is anticipated that up to the end of the project the aimed targets will be achieved.

1.8. Jobs

Description of indicator and target value

Full-time equivalents (FTE) - Permanent (no. of FTE): 12,00

Unskilled: 2,00

Skilled: 10,00

Data

Full-time equivalents (FTE) - Permanent (no. of FTE): **4,00**

Unskilled: **2,00**

Skilled: **2,00**

Evaluation

The project is at the development stage and it is not possible to fully evaluate this indicator at this stage. However, some progress towards the creation of permanent jobs has been achieved.

1.9. Economic growth

Description of indicator and target value

Running cost/ operating costs during the project and expected (in case of continuation/ replication/ transfer after the project period): 200,000,00 €/year

Capital cost expected (in case of replication/ transfer/ continuation after the project): 1,500,000,00 €

Savings/ revenue expected in case of replication/ transfer/ continuation after the project: 2,000,000 €/year

Payback time: 3 years

Continuation/replication/transfer scope:

Continuation and replication: 1

Continuation - Bank loans and others: 1

Replication - Public funding & bank loans: 3

Data

Not available for the reference period.

Evaluation

It is not possible to evaluate this indicator at this stage of the project's progress.

2. Epilogue

The Key Project-level Indicators (KPI) are a measurable value that demonstrates how effectively the F4F project is achieving key objectives. KPIs set for the F4F project are referred to a full-scale implementation of the F4F process, after the end of the project.

The F4F process has made significant progress towards the KPIs, during the two periods of operation. Two hundred and ninety-four (293.7) metric tonnes of hotels' food waste have been diverted from landfill (KPI = 450), resulting in the avoidance of 736 metric tonnes of CO_{2eq} (KPI = 700). Sixty-five (65) metric tonnes of dried animal feed were produced as a result of the two operational periods of the Solar drying/ Pasteurisation pilot unit.

The Solar drying/ Pasteurisation Pilot Unit has successfully been operated on full scale basis, and deviations are not expected from the set targets.