KPI Analysis Table

D3 - Monitoring KPI's

LIFE
RESILIENCE

LIFE17 CCA/ES/000030

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Deliverable Name: KPI Analysis Table

Action D3: Monitoring KPI's

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Due date: 18/06/2021

Delivery date: 17/06/2021

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Summary

During the project implementation, to the end of the project and even some years after finish, the impact of the measures adopted through the Key Project-level Indicators (KPI) will be evaluated. This document is a summary of the indicators selected for evaluate the project impact, the target set initially for each indicator, the current situation (May. 2021) and an analysis of the results with some specific deviations.

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Chapter I. 1. Key Project-level Indicator (KPI) database webtool table

1. Key Project-level Indicator (KPI) database webtool table

Partners decided the performance project indicators in the action D1 to facilitate the KPI calculation. The initial information (start value) was updated in the LIFE KPI Webtool (https://webgate.ec.europa.eu/eproposalWeb/kpi/module). The data collected from the action D1 during the initial months was synthetized to upload in the webtool for Midterm Report. However, the estimated values of these indicators have been updated as of May 2021. These data have not been recorded in the web tool, following the guidelines set, but we have collected it in this table that we show below.

REFERENCE	STATUS	DATA SNAPSHOT	COMPOUND CONTEXT	INDICATOR CODE	FIRST LEVEL DESCRIPTOR	START VALUE	END VALUE	BEYOND END VALUE	UNIT	Estimated values (Nov 20)	Estimated values (May 21)
LIFE17 CCA/ES/000030	PENDING_VERIFICATION	Snapshot CCA - First report - 2018	Increasing crop resilience against XF through sustainable best practices and technologies	1.5	Conservation or improvement of the status of an area or segment	0	250	2750	ha	0	3.105
				1.6	Other persons influenced	0	1000000	11000000	Number of other persons influenced /impacted independently of the project area	~300.000	~4.000.000
				2.3.5.3	The project's environmental or climate action outcomes linked to its main objective	0,15	0,12	0,12	m3/unit produced	0,13	0,19
				2.3.5.3	The project's environmental or climate action outcomes linked to its main objective	17000	17000	17000	units produced/year	17.000	16274,75
				9.3	Other buildings	0	25	125	Number of facilities (Nest Boxes)	0	138
				10.2	Public body/bodies	0	5	10	number of stakeholders involved due to the project	2	6
				11.1	No. Downloads	0	3000	5000	number	-	664

REFERENCE	STATUS	DATA SNAPSHOT	COMPOUND CONTEXT	INDICATOR CODE	FIRST LEVEL DESCRIPTOR	START VALUE	END VALUE	BEYOND END VALUE	UNIT	Estimated values (Nov 20)	Estimated values (May 21)
				11.1	Average visit duration (minutes)	0	5	5	No. of individuals covered/survey	5	2,416
				11.1	No. of unique visits	0	15500	62000	number	27.324	35.507
				11.1	No. of individuals	0	12000	15000	number	5.299	7.578
				11.2	Print media	0	25	50	number	4	14
				11.2	Other media (video/broadcast)	0	20	40	number	148	262
				11.2	Events/exhibitions	0	35	35	number	20	23
				11.2	Publications/reports	0	5	10	number	0	7
				11.2	Displayed information (poster, information boards)	10	20	20	number	9	2.509

REFERENCE	STATUS	DATA SNAPSHOT	COMPOUND CONTEXT	INDICATOR CODE	FIRST LEVEL DESCRIPTOR	START VALUE	END VALUE	BEYOND END VALUE	UNIT	Estimated values (Nov 20)	Estimated values (May 21)
				12.1	Members of interest groups	0	255	255	No. of individuals		120
				12.2	Members of interest groups	0	15000	15000	No. of individuals	2.500	2.800
				13	Jobs	0	5	8	No. of FTE		5
				14.1	Running cost/operating costs during the project and expected in case of continuation/replication/transfer after the project period	0	2968675	3968675	€	~800.000	1.576.463,5
				14.3	Private investors – equity			10000000	€	0	
				14.4.3	ESPAÑA					0	
				14.4.3	ITALIA					0	
				14.4.3	PORTUGAL					0	

Chapter II. 2. KPI Analysis

1. KPI Analysis

The following is a summary about the foreseen estimated impact of each KPI, presented with the proposal, the actual achievements and a preliminary analysis of the impact achieved, some deviations from the targets set initially and some additional comments.

Objective	Indicators		Estimated Impact (absolute values)	Estimated Impact (in %)*	Current impact regarding to estimated impact (in %) (May 2021)
* Change expected (in %) compared to the initial situation. Please explain reference data used to set the initial situation. This is normally directly linked to the baseline you have developed in the proposal.					
Improved Environmental and Climate Performance (including resilience to climate change)	Reduction of greenhouse gas emissions (GHG)	CO2	18665 tons/ 3.5 years	100% change	6%
Better use of natural resources	Water	Reduced water consumption	389375 m3	20% change	100%
Sustainable land use, agriculture and forestry	Agriculture	Areas of agricultural land under sustainable management	250 ha	100% change	100%
	Soil / Land	Soil Surface improved	Available Water Capacity	15% change	At the end of the project
			Soil enzymatic activity	15% change	100%
Economic Performance, Market Uptake, Replication	Replication / Transfer	N . of replication / Transfer	10	not applicable	100%
	Market uptake	Increased value production	kg/ha	10%	100%
	Cost Reduction	Phytosanitary and Fertilizer costs	75,000 Euros/yr	60%	-
Communication, dissemination, awareness rising	Awareness raising	Number of entities/individuals reached/ made aware	1,140,200	100%	43%
	Website	Number of individuals reached	8000	n/a	94,70%
	Behavioural change	Number of entities/individuals changing behaviour	11.400,000	10%	43%

Objective	Indicators		Estimated Impact (absolute values)	Estimated Impact (in %)*	Current impact regarding to estimated impact (in %) (May 2021)
Other (please specify)	Product Quality	Organoleptic quality of olive oil	N/A	30%	50%
	Biodiversity	Increased presence of insects, birds, etc	100% occupation	100%	35%
		Improved biodiversity surround the agricultural fields	Auxiliary crop coverage	100%	100%
	Disease prevalence	Level of infection	0 hectares of land under management will be infected	100% success	100%
		Tree Health	Defense Response	N/A	100%
			Tree Temperature	N/A	100%

- **Reduction of greenhouses gas emissions (GHG) CO_2**

The reduction of GHG emission estimated in the proposal were over-estimated. The activities implemented in the project have been the same as those initially proposed, no action has been modified. However, the estimates were made considering that all the treatments (5) would be applied simultaneously on the entire surface (250 ha). However, to evaluate the impact that each treatment has on soil, plant, biodiversity, etc., each farm has been divided into subplots (5) and a different treatment has been applied to each of them.

The reduction in GHG emission is being achieved by the current implementation of the following activities (equals planned):

1. Diesel: Reduction of 5 tractor passes due to cover crops installation. As results there are not passes use for 4 weed control-neither 1 preparation of soil. [20L/ha*5passes*3.14 kgCO2/L/1000=0.314 Tn CO2/ha]

2. Energy Use for Water pumping: (Reduction due to deficit irrigation-20%). [100.000 kWh*0.2*0.357 kgCO2/kWh/1000=7,14 Tn CO2/ha]

3. Substitution of Phytosanitary use (for wee control).[3kg/ha*36%purity* 4 application/* 3,5244 kg Co2 eq/ kg /1000.= 0.0423 Tn CO2/ha]

4. Potential Carbon store due to cover crop installation [8 Tn CO2/ha]

We have currently avoided, 15,50 ton of CO2 Eq per ha and year.

- **Reduced water consumption**

El Valenciano farm (Olive. Spain) and Charqueirao farm (Almond. Portugal) have applied Regulated Deficit Irrigation strategy during the last two seasons. El Valenciano farm reduced the water consumption around 14% (432 m^3/ha) during the first year and 20% (700 m^3/ha) the second year with RDI strategy (around 56.600 m^3). Charquerao farm reduced the water consumption around 27.8% (100 m^3/ha) every year (around 50.000 m^3). Considering that the estimated saving was of 77.875 m^3, we can already consider that we have reached 100% of the estimated saving

- **Areas of agricultural land under sustainable management**

The demonstration sites include one 150 ha plot and two 50 ha plots (total 250 ha). When the project started there were 0 ha under sustainable management, but at this moment we have 250 ha under this management with which this parameter has been improved by 100%.

- **Available Water Capacity**

This indicator was measured using Agrodrone´s Map2Soil system (MR Annex 06, 07, 08). A base value has been established during the initial soil assessment for each farm. On average from 13% to 15% of the total volume of the soil could be filled with water available for plants. We expect an improvement in available water capacity thanks to biostimulants and cover crops application. On the one hand, it has been observed that the use of biostimulants increases the activity of soil microorganisms. In this sense, the microbial activity of the soil improves the structure of the soil due to the formation of new aggregates. On the other hand, the use of vegetation covers prevents soil loss due to phenomena such as runoff and erosion. In addition, these practices allow a higher percentage of moisture to be conserved in the soil by preventing direct evaporation. Because soil dynamics is a slow process, these effects on the soil can be better accounted for towards the end of the project.

- **Soil enzymatic activity**

Soil enzymatic activity is measured every year: β-glycosidase, dehydrogenase, urease, phosphatase and catalase. To measure soil enzymatic activity a soil zoning was done previously (base value has been established during the initial soil assessment) (MR Annex 09). The results obtained during the two years (Deliverable C2. Yearly report on activities in demonstration sites Y1 and Deliverable C2. Yearly report on activities in demonstration sites Y2) show improvement from 20% to 100% depending on the enzyme. Since the improvement objective to be achieved in this indicator was 15%, we can consider that this parameter has been improved by 100%. However, an average increase in soil enzyme activity must be established during the duration of the project. Due to soil enzymatic activity will continue to improve with the application of the treatments over time, it will be interesting to analyse the evolution of this parameter at the end of the project. The use of

biostimulants and plant coverings improves also the soil health. This improvement in soil health will be evident at the end of the project.

- **Replication / Transfer**

10 replication sites will be secured and implemented before the end of the project, with an expected total distribution of 2,500 total hectares in replication. The replication action is being implement in 11 replication sites which occupy a surface greater than 2.800 ha. Therefore, we have met the expectations of this indicator. This increase in the area in which we are implementing the new practices model will have a significant impact on the expected values in the rest of the indicators at the end of the project.

- **Increased value production**

Due to the application of sustainable practices such as the use of biostimulants that, for example, increase phenolic compounds in olives, we reached a quality increase in the harvest obtained and therefore an increase in the value of the yield obtained. However, in the field there are many parameters that vary annually depending on the climate and that affect production. The last two year the production has been improving, however it is not a constant and fixed value, each year the percentage of improvement varies. At the end of the project, an average of the value obtained during each year of the project will be calculated.

- **Phytosanitary and Fertilizer costs reduction**

Phytosanitary and Fertilizer costs reduction were also over-estimated. As it happened with the reduction of GHG emissions, it was thought to reduce in a larger area and the cost of the product was also estimated above the current value of herbicides. We have reduced the herbicide consumption, but the cost is not being as expected.

1. Herbicide Cost [4 passes* 3 l/ha * 3,3€/l= 39,6 €/ha/año]

- **Awareness raising**

The consortium´s network has a direct line of communication with more than 1,140,200 farmers through various cooperatives and farmers association. In addition, the social media,

publication on papers, ratio or tv and more than 40 opens days organized in the El Valenciano farm increase the number of individuals reached. At the end of the project, the real impact will be evaluated.

- **Number of entities/individuals reached/ made aware. Website. Number of individuals reached**

At the time there are approximately 3,000 downloads on the project website. Web visits last an average of 2,4 minutes while web visits amount to 33,440. About social network 1 Facebook account was created, and 1 YouTube channel. The impact in audience during the project was estimated of 803k.

- **Behavioural change. Number of entities/individuals changing behaviour**

The consortium´s network has a direct line of communication with more than 1,00,000 farmers.. Assuming we are able to reach/affect 1% of those + some farmers or entities that are not directly connected to the consortium. Data will be available at the end of the project after implementation of protocols in the new management system would be evaluated.

- **Product Quality. Organoleptic quality of olive oil**

Using a qualified panel, oil taste and aroma will be evaluated. Also, olive oil quality, acidity, free fatty acid (FFA) content, peroxide value (PV), UV specific extinction coefficients (K232 and K270) and sensory score will be measured in each harvest in every treatment. These parameters were established by The International Olive Oil Council (IOOC, 2001) and the EEC (EC, 1991) to define the quality of olive oil. The results shown during the last 2years (Deliverable C2. Yearly report on activities in demonstration sites Y1 and Deliverable C2. Yearly report on activities in demonstration sites Y2) show improvement of around 15% about the control treatment.

- **Biodiversity. Increased presence of insects, birds, etc.**

125 birds' hotels were installed in the 3 demo farms. The first evaluation by specialists will be done during Autumn 2021. However, technicians ´s farm can observe that the occupation is around 20%.

- **Biodiversity. Improved biodiversity surrounds the agricultural fields. Auxiliary crop coverage**

Data will be available after the implementation of protocols in the new management system the consortium considers the auxiliary crop implementation to be successful. Currently there are no auxiliary crops, therefore the addition of them to each demonstration site is a 100% improvement.

- **Disease prevalence. Level of infection**

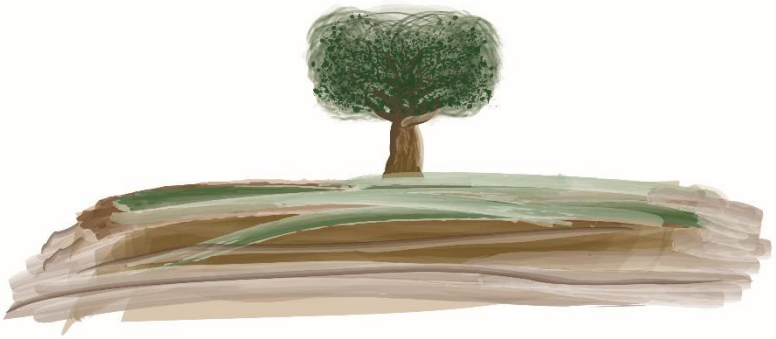
The consortium expects the best-practices and innovative technologies applied in the project to raise the overall health and balance of the field system resulting in a stronger capacity to defend itself resulting in no infections by the pathogen. it is still too early to venture results in this regard. Currently, we assume 0 trees will be infected resulting in a 100% success rate. At this moment there are no infected trees on the demonstration farms.

Tree Health and Nutritional state

With the aim to measure the olive trees response defence against pathogens, phenolic compounds content on the fruits will be measured once a year per treatment. The greater the presence of phenolic compounds, the healthier a tree is, and the healthier it is, the stronger it can fight potential attacks from pests and diseases. Samples were analysed in the Deliverable C2. Yearly report on activities in demonstration sites Y1 and Deliverable C2. Yearly report on activities in demonstration sites Y2

- **Tree Health. Tree Temperature**

Tree temperature is being measured to determine infection presence. As XF attacks a tree it cuts off its ability to transport water causing "scorching" which can be visualized by increased temperatures in the tree (like a fever). We assume 0 trees will be infected resulting in a 100% success rate. At this moment there are no infected trees on the demonstration farms.



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