



Project Number: CCM/GR/000087

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Innovative technologies for climate change mitigation by Mediterranean agricultural sector	
Project number	CCM/GR/000087
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Task Leader	
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Contributing Beneficiaries	
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1. Introduction

The LIFE ClimaMED project aims to create a greenhouse gas emissions monitoring system that will measure in situ and in real time emissions from agricultural land. The implementation of the project started in July 2018 and was completed in December 2024. The greenhouse gas emissions monitoring system consists of devices that take measurements in the field, which they transmit to an operational center where they are recorded. The operator of the operational center has a complete picture of greenhouse gas emissions at the field level and for any time period desired.

The output of the project should not be left unexploited. The main objective of the LIFE ClimaMED project is to design the monitoring system in a way that is useful and can be used by farmers and authorities in order to have a complete picture of agricultural emissions. The Ministry of Rural Development and Food participated as an associated beneficiary in order to ensure this perspective. MINAGRIC planned the way in which it will utilize the greenhouse gas recording system and defined the legislative initiatives that need to be undertaken for its implementation.

In this context, it was necessary to discuss with interested parties, about the operation of the greenhouse gas emissions monitoring system and its planned utilization. Stakeholders had to be invited to express their questions and objections regarding the operation of the system and its planned utilization, to express their opinion and make relevant recommendations for its better utilization.

Furthermore, within the framework of the project, draft laws had to be created in the other three countries besides Greece, for the utilization of the greenhouse gas monitoring system in them as well. For this reason, it was necessary to hold relevant discussion with policy makers in Italy, Spain and Cyprus, to whom the system had to be presented, as well as the presentation of the plan for its use in Greece, to motivate them to implement the same in their own countries.

2. Aim of the report

In order to hold all the necessary discussions on the operation and utilization of the greenhouse gas emissions monitoring system in agriculture, it was necessary to organize round table events. According to the initial planning, four round table events were to be held in Greece and one in each of the other countries.

The purpose of this report is to present:

- The round table events that were organized, when and where they took place.
- Who participated in them.
- What was presented at them.
- What was discussed, what questions and what objections were expressed.
- Suggestions made by the participants.
- Conclusions drawn.

3. Round table events

Stakeholders with experience in the agricultural reality of each region were invited to the round table events. The purpose of the round table events was:

- To present the system to stakeholders so that they understand the possibilities and prospects for its utilization.
- To present the Ministry's plan for the utilization of the system.
- Through the discussion with stakeholders, to determine:
 - The existence of errors and vulnerabilities in the system, with a view to correcting them
 - Whether what seems to work at an experimental level will work equally well in real conditions and on a large scale.
 - What are the estimates for the acceptance of the system by farmers.
 - How will farmers be encouraged to adopt the system.
- The round table events organized in Italy, Cyprus and Spain had an additional goal: to bring the LIFE Climamed beneficiaries into contact with the policy makers of these countries with the aim of their collaboration in the production of the three draft laws for Italy, Cyprus and Spain.

3.1. Round table events in Greece

In Greece, four round table events were planned. One in Central Greece, one in the Peloponnese, one in Crete and one in the Ionian Islands. The round table event in the Ionian Islands proved problematic as no matter which island it was held on, the guests from the other islands would have to travel to Patras by boat and from there by another boat to the island where the event would take place. So it was decided to hold a round table event in Patras where the Ionian Islands would also be invited.

The first of the three round table events took place in Lamia, on Thursday 16th of May 2024, in the premises of the Cooperative of Pistachios Producers of Molos and Thermopylae, which is one of the project's stakeholders, with guests from the regions of Central Greece (Sterea Ellada and Thessaly).

The second round table event took place in Heraklion of Crete, on Friday 31st of May 2024, in the premises of the Directorate of Rural Development of Heraklion, with guests from the region of Crete.

The third one took place in Patras, on Tuesday 2nd of July 2024, in "Agora Argiri" Conference Center, with guests from the regions of Peloponnese, Western Greece, Hepirus and Ionian Islands regions.

The three round table events were mainly attended by agricultural scientists from the Directorates of Agricultural Economy of 7 out of the 13 regions of Greece. However, the following also participated:

- Deputy regional governors with responsibility for agriculture and climate change
- Private agricultural scientists and representatives of agricultural scientists' associations
- Representatives of the Geotechnical Chamber
- Representatives of agricultural cooperatives
- Professors of Agronomy University Departments

3.1.1. Round table event in Lamia, Central Greece

The round table event was attended by

- The Deputy Regional Governor for Rural Development of the Region of Sterea Ellada.
- The General Director of Rural Development of Region of Sterea Ellada
- The General Director of Rural Development of Region of Thessaly
- Four Agronomists from various Departments of Rural Development from Prefectures of Central Greece Region
- Agronomists from various Departments of Rural Development from Prefectures of Thessaly Region
- The President of Agronomist Association of Fthiotida and Evritania Prefectures
- The president and other representatives of Farmers Association of Pistachio Producers in Fthiotida
- Representative from the Department of Geotechnical Chamber of Greece from Sterea Ellada Region



LIFE17 CCM-GR-000087



ΠΡΟΣΚΛΗΣΗ

ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
Υπουργείο Αγροτικής Ανάπτυξης και Τροφίμων

Η Διεύθυνση Περιβάλλοντος, Χωροταξίας & Κλιματικής Αλλαγής του Υπουργείου Αγροτικής Ανάπτυξης και Τροφίμων και οι υπόλοιποι εταίροι του έργου LIFE ClimaMED “Καινοτόμες τεχνολογίες για τον μετριασμό της κλιματικής αλλαγής στον Μεσογειακό αγροτικό τομέα” σας προσκαλούν σε ανοικτή συζήτηση με θέμα “Αξιοποίηση των συσκευών LIDAR και της ψηφιακής πλατφόρμας του έργου LIFE ClimaMED για την καταγραφή εκπομπών αερίων θερμοκηπίου από τους Έλληνες παραγωγούς”.

Η συμμετοχή σας και η συνεισφορά σας στον διάλογο είναι σημαντική για την αποτελεσματικότερη εφαρμογή των αποτελεσμάτων του έργου προς όφελος των παραγωγών.

Η εκδήλωση θα πραγματοποιηθεί στη Λαμία, στις εγκαταστάσεις του Συνεταιρισμού Φυτικόπαραγωγών Μώλου – Θερμοπυλών στο οικοδομικό τετράγωνο 48, της ΒΙΠΕ Λαμίας, την Πέμπτη 16 Μαΐου 2024, μεταξύ 11:00 και 13:30.

Η είσοδος είναι ελεύθερη

Ο κύριος στόχος του έργου LIFE ClimaMED

Η ανάπτυξη καινοτόμων, αξιόπιστων, γρήγορων και οικονομικά αποδοτικών τεχνολογιών επιπέδου Tier 3 για την επιτόπια μέτρηση εκπομπών αερίων θερμοκηπίου (CO₂, CH₄ και N₂O) από τη γεωργία και των μεταβολών του οργανικού άνθρακα των γεωργικών εδαφών, με σκοπό την υποστήριξη των επιστημόνων, των Αρχών και των φορέων χάραξης πολιτικής στην ποσοτικοποίηση, αξιολόγηση και χαρτογράφηση χωρικής πληροφορίας σχετικά με τις εκπομπές αερίων θερμοκηπίου και των μεταβολών οργανικού άνθρακα από τον Μεσογειακό αγροτικό τομέα. Οι συσκευές μέτρησης θα μπορούν να εγκατασταθούν μόνιμα σε καλλιεργήσιμες εκτάσεις μεμονωμένων παραγωγών ή ομάδας παραγωγών.




<https://life-climamed.eu>









Διάρκεια: 1.07.2018-31.12.2024
Προϋπολογισμός: 2.878.000 €



Καινοτόμες τεχνολογίες για τον μετριασμό της κλιματικής αλλαγής στον Μεσογειακό
αγροτικό τομέα
LIFE17 CCM-GR-000087



ΠΡΟΓΡΑΜΜΑ ΗΜΕΡΙΔΑΣ

ΛΑΜΙΑ, 16 ΜΑΙΟΥ 2024

ΕΝΑΡΞΗ-ΚΑΛΩΣΟΡΙΣΜΑ

11:00-11:30 π.μ.

11:00-11:15 • ΠΡΟΣΕΛΕΥΣΗ

11:15-11:20 • ΧΑΙΡΕΤΙΣΜΟΣ

ΒΑΣΙΛΕΙΟΣ ΖΥΓΟΜΗΤΡΟΣ, Πρόεδρος Αγροτικού Συνεταιρισμού Κελυφωτό
Φυστίκι Μώλου-Θερμοπύλες

11:20-11:25 • ΧΑΙΡΕΤΙΣΜΟΣ

ΚΥΡΙΑΚΟΣ ΛΟΥΡΑΝΤΟΣ, Προϊστάμενος Τμήματος Κλιματικής Αλλαγής και
Διαχείρισης Αποβλήτων-Υπουργείο Αγροτικής Ανάπτυξης και Τροφίμων

11:25-11:30 • ΧΑΙΡΕΤΙΣΜΟΣ

ΜΑΡΙΑ ΝΤΟΥΛΑ, Προϊσταμένη Εργαστηρίου Μη Παρασιτικών Ασθενειών,
Εδαφικών Πόρων και Γεωπληροφορικής-Μπενάκειο Φυτοπαθολογικό
Ινστιτούτο

ΠΑΡΟΥΣΙΑΣΗ ΑΠΟΤΕΛΕΣΜΑΤΩΝ LIFE CLIMAMED

11:30-12:00 π.μ.

ΕΙΣΗΓΗΤΕΣ

11:30-11:40 • ΜΑΡΙΑ ΝΤΟΥΛΑ

Παρουσίαση των αποτελεσμάτων του έργου LIFE ClimaMED. Η συσκευή
LIDAR μέτρησης αερίων θερμοκηπίου και οι δυνατότητες της πλατφόρμας

11:40-12:00 • ΚΥΡΙΑΚΟΣ ΛΟΥΡΑΝΤΟΣ

Σχέδιο αξιοποίησης των αποτελεσμάτων του έργου LIFE ClimaMED από το
ΥΠΑΑΤ. Κίνητρα προς του παραγωγούς για την εγκατάσταση των
συσκευών LIDAR.

ΑΝΟΙΚΤΗ ΣΥΖΗΤΗΣΗ

12:00-13:00 μ.μ.

ΚΥΡΙΑΚΟΣ ΛΟΥΡΑΝΤΟΣ, ΜΑΡΙΑ ΝΤΟΥΛΑ

Συνεισφορά των συμμετεχόντων στη διαμόρφωση του σχεδιασμού του
ΥΠΑΑΤ με στόχο την αποτελεσματικότερη και επωφελέστερη για τους
Έλληνες γεωργούς αξιοποίηση των αποτελεσμάτων του έργου LIFE
ClimaMED

ΟΛΟΚΛΗΡΩΣΗ ΕΡΓΑΣΙΩΝ-ΕΛΑΦΡΥ ΓΕΥΜΑ

13:00-13:30 μ.μ.





3.1.2. Round table event in Heracleon, Crete

The round table event was attended by

- The Deputy Regional Governor for Rural Development of the Region of Crete
- The project coordinator of the regional program of climate change adaptation
- The General Director of Agroecology of Crete Region
- Staff of Agronomists from various Departments of Rural Development from Prefectures of Crete Region
- Professors of The Agronomy Department of the Mediterranean University of Crete
- Representative of Heracleon Agronomists Association



LIFE17 CCM-GR-000087



ΠΡΟΣΚΛΗΣΗ



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
Υπουργείο Αγροτικής Ανάπτυξης
και Τροφίμων

Η Διεύθυνση Περιβάλλοντος, Χωροταξίας & Κλιματικής Αλλαγής του Υπουργείου Αγροτικής Ανάπτυξης και Τροφίμων και οι υπόλοιποι εταίροι του έργου LIFE ClimaMED “Καινοτόμες τεχνολογίες για τον μετριασμό της κλιματικής αλλαγής στον Μεσογειακό αγροτικό τομέα” σας προσκαλούν σε ανοικτή συζήτηση με θέμα “Αξιοποίηση των συσκευών LIDAR και της ψηφιακής πλατφόρμας του έργου LIFE ClimaMED για την καταγραφή εκπομπών αερίων θερμοκηπίου από τους Έλληνες παραγωγούς”.

Η συμμετοχή σας και η συνεισφορά σας στον διάλογο είναι σημαντική για την αποτελεσματικότερη εφαρμογή των αποτελεσμάτων του έργου προς όφελος των παραγωγών.

Η εκδήλωση θα πραγματοποιηθεί στην αίθουσα της Διεύθυνσης Αγροτικής Ανάπτυξης Ηρακλείου (ΔΑΑΗ), Λεωφόρος Νικ. Πλαστήρα 100, Ηράκλειο, την Παρασκευή 31 Μαΐου 2024, μεταξύ 11:00 και 13:30.

Η είσοδος είναι ελεύθερη

Σάββατο 1 Ιουνίου 2024

Επίσκεψη σε χώρους εγκατάστασης συσκευών LIDAR στο Ρέθυμνο, υπογραφή συμφώνου συνεργασίας μεταξύ φορέων Ελλάδας, Κύπρου και Ισπανίας

Επίσκεψη στη μονάδα εκτροφής μοσχαριών της εταιρείας ΚΟΥΡΚΟΥΛΟΣ στον Άγιο Κωνσταντίνο και στον βιολογικό ελαιώνα ΚΑΛΙΤΣΟΥΝΑΚΗΣ στο Κάτω Βαλοαμόνερο, όπου έχουν εγκατασταθεί συσκευές LIDAR μέτρησης αερίων θερμοκηπίου.

- Αναχώρηση με πούλμαν από τη μαρίνα στο Ρέθυμνο, 9.30 π.μ.
- Επιστροφή στις εγκαταστάσεις του ΙΤΕ (Μελισσηνού & Νικ. Φωκά), υπογραφή συμφώνου συνεργασίας 13.00 μ.μ.
- Γεύμα, 15.00 μ.μ.



<https://life-climamed.eu>



Green Projects

UNIVERSITAS



Διάρκεια: 1.07.2018-31.12.2024
Προϋπολογισμός: 2.878.000 €



Καινοτόμες τεχνολογίες για τον μετριασμό της κλιματικής αλλαγής στον Μεσογειακό
αγροτικό τομέα
LIFE17 CCM-GR-000087



ΠΡΟΓΡΑΜΜΑ ΗΜΕΡΙΔΑΣ

ΗΡΑΚΛΕΙΟ, 31 ΜΑΙΟΥ 2024
Αίθουσα Διεύθυνσης Αγροτικής Ανάπτυξης Ηρακλείου
Λεωφόρος Νικ. Πλαστήρα 100, Ηράκλειο

ΕΝΑΡΞΗ-ΚΑΛΩΣΟΡΙΣΜΑ

11:00-11:30 π.μ.

11:00-11:10 • ΠΡΟΣΕΛΕΥΣΗ

11:10-11:15 • ΧΑΙΡΕΤΙΣΜΟΣ

ΣΤΑΥΡΟΣ ΤΖΕΔΑΚΗΣ, Αντιπεριφερειάρχης Αγροτικής Οικονομίας,
Περιφέρεια Κρήτης

11:15-11:20 • ΧΑΙΡΕΤΙΣΜΟΣ

ΚΩΝΣΤΑΝΤΙΝΟΣ ΥΨΗΛΑΝΤΗΣ, Γενικός Διευθυντής Περιφέρειας Κρήτης

11:20-11:25 • ΧΑΙΡΕΤΙΣΜΟΣ

ΙΩΑΝΝΗΣ ΖΗΔΙΑΝΑΚΗΣ, Προϊστάμενος Διεύθυνσης Αγροτικής Ανάπτυξης
Ηρακλείου (ΔΑΑΗ)

11:25-11:30 • ΧΑΙΡΕΤΙΣΜΟΣ

ΚΩΝΣΤΑΝΤΙΝΟΣ ΜΙΧΟΣ, Προϊστάμενος Διεύθυνσης Περιβάλλοντος,
Χωροταξίας και Κλιματικής Αλλαγής - Υπουργείο Αγροτικής Ανάπτυξης και
Τροφίμων

ΠΑΡΟΥΣΙΑΣΗ ΑΠΟΤΕΛΕΣΜΑΤΩΝ LIFE CLIMAMED

11:30-12:00 π.μ.

ΕΙΣΗΓΗΤΕΣ

**11:30-11:40 • ΜΑΡΙΑ ΝΤΟΥΛΑ (Μπενάκειο Φυτοπαθολογικό
Ινστιτούτο), ΜΙΧΑΛΗΣ ΒΕΛΕΓΡΑΚΗΣ (Ινστιτούτο Ηλεκτρονικής
Δομής και Λέιζερ, ΙΓΕ).** Παρουσίαση των αποτελεσμάτων του έργου LIFE
ClimaMED. Η συσκευή LIDAR μέτρησης αερίων θερμοκηπίου και οι
δυνατότητες της πλατφόρμας

11:40-12:00 • ΚΥΡΙΑΚΟΣ ΛΟΥΡΑΝΤΟΣ

Σχέδιο αξιοποίησης των αποτελεσμάτων του έργου LIFE ClimaMED από το
ΥΠΑΑΤ. Κίνητρα προς του παραγωγούς για την εγκατάσταση των
συσκευών LIDAR.

ΑΝΟΙΚΤΗ ΣΥΖΗΤΗΣΗ

12:00-13:00 μ.μ.

ΚΥΡΙΑΚΟΣ ΛΟΥΡΑΝΤΟΣ, ΜΑΡΙΑ ΝΤΟΥΛΑ, ΜΙΧΑΛΗΣ ΒΕΛΕΓΡΑΚΗΣ

Συνεισφορά των συμμετεχόντων στη διαμόρφωση του σχεδιασμού του
ΥΠΑΑΤ με στόχο την αποτελεσματικότερη και επωφελέστερη για τους
Έλληνες γεωργούς αξιοποίηση των αποτελεσμάτων του έργου LIFE
ClimaMED

ΟΛΟΚΛΗΡΩΣΗ ΕΡΓΑΣΙΩΝ-ΕΛΑΦΡΥ ΓΕΥΜΑ

13:00-13:30 μ.μ.





3.1.3. Round table event in Patra, Peloponnesse

The round table event was attended by

- The Deputy Regional Governor of Rural Development in Western Greece Region
- Staff of Agronomists from various Departments of Rural Development from Prefectures of Peloponnesse
- Staff of Agronomists from various Departments of Rural Development from Prefectures of Western Greece
- Staff of Agronomists from various Departments of Rural Development from Prefectures of Ionian Islands
- Staff of Agronomists from various Departments of Rural Development from Prefectures of Ipiros Region
- The President of Korinthos Agronomists Association



LIFE17 CCM-GR-000087



ΠΡΟΣΚΛΗΣΗ

ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
ΥΠΟΥΡΓΕΙΟ ΑΓΡΟΤΙΚΗΣ ΑΝΑΠΤΥΞΗΣ
ΚΑΙ ΤΡΟΦΙΜΩΝ

Η Διεύθυνση Περιβάλλοντος, Χωροταξίας & Κλιματικής Αλλαγής του Υπουργείου Αγροτικής Ανάπτυξης και Τροφίμων και οι υπόλοιποι εταίροι του έργου LIFE ClimaMED **"Καινοτόμες τεχνολογίες για τον μετριασμό της κλιματικής αλλαγής στον Μεσογειακό αγροτικό τομέα"** σας προσκαλούν σε ανοικτή συζήτηση με θέμα **"Αξιοποίηση των συσκευών LIDAR και της ψηφιακής πλατφόρμας του έργου LIFE ClimaMED για την καταγραφή εκπομπών αερίων θερμοκηπίου από τους Έλληνες παραγωγούς"**.

Η συμμετοχή σας και η συνεισφορά σας στον διάλογο είναι σημαντική για την αποτελεσματικότερη εφαρμογή των αποτελεσμάτων του έργου προς όφελος των παραγωγών.

Η εκδήλωση θα πραγματοποιηθεί στην Πάτρα, στον Συνεδριακό Χώρο «Αγοράς Αργύρης», Αγίου Ανδρέου 12, την Τρίτη 2 Ιουλίου 2024, μεταξύ 10:30 και 14:00.

Η είσοδος είναι ελεύθερη

Ο κύριος στόχος του έργου LIFE ClimaMED

Η ανάπτυξη καινοτόμων, αξιόπιστων, γρήγορων και οικονομικά αποδοτικών τεχνολογιών επιπέδου Tier 3 για την επιτόπια μέτρηση εκπομπών αερίων θερμοκηπίου (CO₂, CH₄ και N₂O) από τη γεωργία και των μεταβολών του οργανικού άνθρακα των γεωργικών εδαφών, με σκοπό την υποστήριξη των επιστημόνων, των Αρχών και των φορέων χάραξης πολιτικής στην ποσοτικοποίηση, αξιολόγηση και χαρτογράφηση χωρικής πληροφορίας σχετικά με τις εκπομπές αερίων θερμοκηπίου και των μεταβολών οργανικού άνθρακα από τον Μεσογειακό αγροτικό τομέα. Οι συσκευές μέτρησης θα μπορούν να εγκατασταθούν μόνιμα σε καλλιεργήσιμες εκτάσεις μεμονωμένων παραγωγών ή ομάδας παραγωγών.




<https://life-climamed.eu>









Διάρκεια: 1.07.2018-31.12.2024
Προϋπολογισμός: 2.878.000 €



Καινοτόμες τεχνολογίες για τον μετριασμό της κλιματικής αλλαγής στον Μεσογειακό
αγροτικό τομέα
LIFE17 CCM-GR-000087



ΠΡΟΓΡΑΜΜΑ ΗΜΕΡΙΔΑΣ

ΠΑΤΡΑ, 2 ΙΟΥΛΙΟΥ 2024

ΕΝΑΡΞΗ-ΚΑΛΩΣΟΡΙΣΜΑ

10:30-11:00 π.μ.

10:30-10:45 • ΠΡΟΣΕΛΕΥΣΗ

10:45-10:50 • ΧΑΙΡΕΤΙΣΜΟΣ

ΑΝΔΡΕΑΣ ΦΙΛΙΑΣ, Αντιπεριφερειάρχης Αγροτικής Ανάπτυξης Περιφέρειας
Δυτικής Ελλάδας

10:50-10:55 • ΧΑΙΡΕΤΙΣΜΟΣ

ΚΥΡΙΑΚΟΣ ΛΟΥΡΑΝΤΟΣ, Προϊστάμενος Τμήματος Κλιματικής Αλλαγής και
Διαχείρισης Αποβλήτων-Υπουργείο Αγροτικής Ανάπτυξης και Τροφίμων

10:55-11:00 • ΧΑΙΡΕΤΙΣΜΟΣ

ΜΑΡΙΑ ΝΤΟΥΛΑ, Προϊσταμένη Εργαστηρίου Μη Παρασιτικών Ασθενειών,
Εδαφικών Πόρων και Γεωπληροφορικής-Μπενάκειο Φυτοπαθολογικό
Ινστιτούτο

ΠΑΡΟΥΣΙΑΣΗ ΑΠΟΤΕΛΕΣΜΑΤΩΝ LIFE CLIMAMED

11:00-11:45 π.μ.

ΕΙΣΗΓΗΤΕΣ

11:00-11:15 • ΜΑΡΙΑ ΝΤΟΥΛΑ

Παρουσίαση των αποτελεσμάτων του έργου LIFE ClimaMED. Η συσκευή
LIDAR μέτρησης αερίων θερμοκηπίου και οι δυνατότητες της πλατφόρμας

11:15-11:45 • ΚΥΡΙΑΚΟΣ ΛΟΥΡΑΝΤΟΣ

Σχέδιο αξιοποίησης των αποτελεσμάτων του έργου LIFE ClimaMED από το
ΥΠΑΑΤ. Κίνητρα προς του παραγωγούς για την εγκατάσταση των
συσκευών LIDAR.

ΑΝΟΙΚΤΗ ΣΥΖΗΤΗΣΗ

11:45-13:00 μ.μ.

ΚΥΡΙΑΚΟΣ ΛΟΥΡΑΝΤΟΣ, ΜΑΡΙΑ ΝΤΟΥΛΑ

Συνεισφορά των συμμετεχόντων στη διαμόρφωση του σχεδιασμού του
ΥΠΑΑΤ με στόχο την αποτελεσματικότερη και επωφελέστερη για τους
Έλληνες γεωργούς αξιοποίηση των αποτελεσμάτων του έργου LIFE
ClimaMED

ΟΛΟΚΛΗΡΩΣΗ ΕΡΓΑΣΙΩΝ-ΕΛΑΦΡΥ ΓΕΥΜΑ

13:00-14:00 μ.μ.



3.2. Round table events in Italy, Cyprus and Spain

Three round table events took place in Italy, Cyprus and Spain. The events were attended by policy makers and stakeholders from these countries, to whom the greenhouse gas emissions recording system was presented.

The greenhouse gas emissions monitoring system and the possibilities it provides for controlling greenhouse gas emissions from agricultural land were presented. Also, the Ministry of Rural Development and Food's plan for the utilization of the system in Greece was presented.

Finally, it was explained that one of the purposes of the project is to prepare a draft law for each country that will aim at the utilization of the system in that country. The aim is to have the possibility of immediate adoption and use in the future of the greenhouse gas emissions monitoring system by these countries.



3.2.1. Round table event in Genova, Italy

The round table event took place in Genova, Italy on 22 October 2024 at the premises of the Region of Liguria in Sala di Rappresentanza Liguri.

The event was attended by:

- Representatives of the Region of Liguria
- Representatives of ISPRA, which is Italy's Institute for Environmental Protection and Research. It is a public body, under the supervision of the Ministry for Environment, Territory and Sea and recommends environmentally friendly policies to the Ministry.

The GHG emissions monitoring system was presented by BPI, CERSAA, FORTH, GP, TUC, UMH and MINAGRIC.





3.2.2. Round table event in Nicosia, Cyprus

The round table event took place in Nicosia, Cyprus on 30 October 2024 at the premises of the Cyprus Agricultural Research Foundation. The Cyprus Agricultural Research Foundation is the competent body for proposing legislative initiatives in Cyprus on agricultural issues.

The GHG emissions monitoring system was presented by BPI, CERSAA, FORTH, GP, TUC, UMH and MINAGRIC.

Members of the Cyprus Agricultural Research Foundation presented the program being developed in Cyprus for the accurate assessment of emissions from agriculture and livestock farming and discussed how this can be combined with the LIFE ClimaMED emissions monitoring system.





3.2.3. Round table event in Elche, Spain

The round table event took place in Elche, Spain, on November 19, 2024, at the premises of the Riegos de Levante irrigation network management organization. The GHG emissions monitoring system was presented by BPI, UMH, ENVITECH, GP and MINAGRIC.



<https://life-climamed.eu/>

MEETING STAKEHOLDERS AND PARTNERS

LIFE ClimaMED project, SPAIN

"Mitigation of GHGs emissions in farming systems and legislative proposals from Greece"

REUNIÓN DE PARTES INTERESADAS Y SOCIOS

Proyecto LIFE ClimaMED, ESPAÑA

"Mitigación de las emisiones de GEI en los sistemas agrícolas y propuestas legislativas de Grecia"

Elche, Valencian Community, Spain

19th November 2024

Objective:

Collaborative work with LIFE ClimaMED partners and stakeholders, together with representatives of farmers' associations. Analysis of the Greek proposal to compensate farmers who reduce greenhouse gas emissions.

Objetivo:

Trabajo colaborativo con socios y stakeholders de LIFE ClimaMED, junto a representantes de asociaciones de agricultores. Análisis de la propuesta griega de compensación a los agricultores que reduzcan las emisiones de gases de efecto invernadero.

PROGRAM / PROGRAMA

Date: 19th November 2024

10:00. Meeting point in front of the Congress Centre of Elche, Elche, Spain.

Close to recommended hotels in the city centre. Mini bus will be ready for partners in Eugeni D'Ors street.

Program





4. Issues discussed at the round table events

The round table events were divided into two sections:

In the first section, presentations were made by the consortium:

- Initially, a description of the system and its mode of operation was given. It was described what the system consists of, how the devices are installed, what information the system provides and what its capabilities are
- In the second phase, an analysis was made of the possibilities that exist for the utilization of the system in agriculture and the planning of the Ministry of Rural Development and Food for the establishment of legislation that will utilize the system in Greece.

In the second section, a discussion was held with the participants. In this section:

- Clarifying questions were asked so that the participants could understand in depth the above presentations,
- Observations were made on points where there were reservations from the participants,
- Conclusions were drawn from the discussion, regarding the planning of the utilization of the system.

4.1. Presentation of the GHG emissions monitoring system

During the round table events, the operation of the greenhouse gas emissions monitoring system, created by LIFE ClimaMED, was explained to the participants as follows:

The emissions monitoring system created by LIFE ClimaMED consists of LIDAR devices that measure the concentration of greenhouse gases in the air above a plantation and an operational center that gathers the measurements and, using algorithms, calculates the greenhouse gas emissions of the field.

The LIDAR devices measure the concentration of three greenhouse gases: carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O), at a height of three meters above the ground. Measurements are taken twice a day, in the morning and in the evening.

The measurements are transmitted to an operational center where, they are converted into kilos of emitted gases. The user of the operational center can see at any time how much carbon dioxide or methane or nitrous oxide was emitted by the field during a specified time period.

There is something we cannot measure with the monitoring system and this is the carbon storage in the soil. When a farmer applies organic matter such as manure or compost to his field, there will be increased emissions due to the decomposition of the organic matter. However, at the same time, carbon is stored in the soil in an amount greater than that emitted, resulting in an overall negative carbon footprint. For this reason, there is a provision for the farmer to report the organic material he applies to the field, uploading the invoice that proves the purchase of the organic material. The system calculates the quantity of avoided emissions and subtracts them from the measurement shown by the LIDAR device.

A farmer or a group of farmers who will own the device can join the monitoring system. The farmer or farmers declare all the plots they wish to include in the system. At the same time, they make a declaration allowing the user of the monitoring system (in this case, the Ministry) to access the data from the payment agency. The Ministry has access to the data and is able to have information about the farmer, the plot, and the crop cultivated in it. The plot is displayed on the electronic map of the system.

With this process, we are able to know at any time the emissions of a field for any time period we desire. It could be:



- A calendar year
- A growing season
- Or any time period of interest

Access to this information is available to:

- The user of the operational center (in our case the Ministry)
- The user of the device (and that means the farmer)

The user of the device has the ability to automatically take a certificate without human intervention, confirming the level of emissions from the fields of interest. This certificate compares the emissions measured with the expected emissions and certifies the achievement of the target for emissions reduction. The certificate includes a QR CODE to verify its authenticity.

4.2. Utilization of GHG emissions monitoring system

It was explained to the participants that the utilization of the GHG emissions monitoring system is based precisely on the issuance of the certificate mentioned in the previous section.

- This certificate can be included on the product label. The user can print the QR code on the label. By scanning the QR code, the consumer will see that the Ministry of Rural Development & Food certifies that the product has a low carbon footprint.
- This certificate will also be for the farmer's participation in agri-environmental measures and ecoschemes aiming at reducing emissions.
- In the future, when emissions of agriculture join the Emissions Trade System the farmers will be able to sell the emissions avoided.

In Greece, MINAGRIC plans to send a draft law to the Greek Parliament that will establish the greenhouse gas monitoring system as valid. A ministerial decision will follow, outlining the process that must be followed by a farmer to be integrated into the monitoring system.

However, farmers need an incentive to convince them to join the monitoring system. For this, MINAGRIC will design an agri-environmental measure that will reward farmers who reduce the emissions from their farms and prove this reduction through the monitoring system.

The law we will issue will authorize the Minister of Rural Development to make two ministerial decisions.

- The first will concern the definition of the process to be followed by a farmer to join the monitoring system and to be able to have a certificate for his emissions.
- The second decision will outline the process by which the farmer will collaborate with the Ministry of Rural Development and Food and provide it with data that will be useful for drawing conclusions about the correlation between agricultural practices and their impact on carbon footprint. This way, for example, it will be possible to measure how carbon footprint is affected by tillage or on-site composting. We believe that this will prove that the carbon footprint from agricultural practices in Mediterranean countries is lower than what has

been estimated, and in any case, we will have real measurements rather than estimates.

The first decision will be issued immediately. It will detail the process to be followed so that a farmer or a group of farmers can install a LIDAR device and join the emissions monitoring system. It will describe what the farmer needs to do for the device to function properly and send measurements to the operational center of the Ministry. It will define the method for determining the reference emissions with which the emissions measured by the monitoring system will be compared, in order to assess the reduction of emissions. In the case of achieving reduced emissions, the farmer will have the opportunity to take a certificate that certifies this. This certificate will be automatically generated by the system without any human intervention, and the farmer will be able to download it from his home. The certificate will include a QR code to verify its authenticity.

The certificate serves the farmer in two ways:

1. To assure with the seal of the Ministry, that his product is a product of low carbon footprint, or maybe a carbon negative product and to include this certification on the product label.
2. To participate in support programs for farmers aimed at reducing their emissions. We are designing such a program, which we will describe below.

The agri-environmental measure MINAGRIC is planning will stipulate that:

- Farmers will install devices and integrate into the greenhouse gas emissions recording system, measuring their emissions for five years.
- During the first two years, they will cultivate using the usual farming practices, as they have always done. Their emissions will be recorded, and the amount of CO₂ equivalent emitted from the fields and recorded in the system will be defined as a threshold.
- In the last three years, farmers will cultivate using methods that reduce carbon footprint. Their emissions will be recorded and compared to the threshold.
- A certificate will be issued by the system, certifying that they achieved a reduction of emissions. Farmers will be paid for the reduction achieved in proportion to the level of reduction. Greater reduction will lead to bigger reward.
- Additionally, farmers will be compensated for the installation and maintenance of the device.

4.3. Issues discussed at the round table events in Greece

1. What is the cost of the device?

The cost of the device is not fixed. If a manufacturer is asked to construct only a few devices, the cost reaches 10-11 thousand €. However, if a large number of devices are manufactured, then the cost of the components is reduced due to mass ordering and the assembly cost is reduced due to the industrialized production line and the final cost of the device reaches below 5,000 €.

2. Why would a farmer pay to install such an expensive device on his field? What does he gain by joining the greenhouse gas emissions monitoring system?

The greenhouse gas emissions monitoring system enables a farmer to measure the GHG emissions of his fields. Until now, all he could do was estimate these emissions. The measurements are made automatically. The system also automatically calculates the reduction in emissions that has been achieved. In this way, the farmer is given the opportunity to prove that he cultivates with methods that reduce greenhouse gas emissions. This information is provided automatically by the system and the farmer can use it to certify his products as having a reduced carbon footprint. This certification can be placed on the product label in order to add value to it. It can also be evidence that the farmer provided an environmental service, to reduce his carbon footprint. This environmental service may be rewarded through participation in a relevant agri-environmental program.

3. How will a farmer be paid by any agroenvironmental program? What does this program expect from him to do?

It is the intention of the Ministry of Rural Development to create such an agro-environmental program. The objective of the program will be lower GHG emissions from the fields. The farmer will be compensated according to the percentage of lower GHG emissions the system records. For every ton of equivalent CO₂ decreased, a price will be set in the program.

After many discussions between parties involved, it was clear that this method of compensation would be unfair for different types of cultivations. There are cultivations that the decrease of emissions is an easy task in both

farming practices and financially and others that the same decrease requires much more effort and money. So, instead of using equivalent tons of CO₂, it would more efficient and fairer to compensate the bigger percentage of decrease of the GHG emissions.

4. **It is clear that any farmer, who will decrease his emissions, will be compensated. If the case is the other way round, that is, increase his emissions, will he suffer any penalty?** No. Joining any, relevant to this program, agro-environmental program is a voluntary action. Compensations will be paid when his emissions are registered by the monitoring system as decreased. Nothing will happen for the other way round scenario.

5. **In any case, the cost of a device is high for a single farmer. He has to be in the possession of a large area. Would the scenario of many farmers coming into terms for buying a single device, would be possible?**

After meticulous conversations, we came to the conclusion that compensating the 100% of the price of a single device is both necessary and possible. We also have decided that a single device can be used by more than one farmer. We believe that it is a plausible scenario to let a group or consortium of farmers buy a single device and those farmers will later join an appropriate agri-environmental program.

6. **The GHG registration system has to work in specific intervals of time. What consequences will a malfunction of the device will have in the registration procedure? Will there be ways for such a malfunction is repaired in the shortest time possible?**

It is a high probability that the devices will suffer malfunctions or damages due to internal or external factors. It is clear that everything has to be restored in the shortest possible time. The restoration is possible either repaired in situ by authorized personnel or transported and repaired in an authorized laboratory.

7. **The emissions registered will come mainly from the field. It is certain, however, that other emissions occur from adjacent land and activities. For example, it could be an adjacent, to the field concerned, motorway, an airport or an industrial zone. How this matter will be dealt?**

It has been taken care that the threshold, under which a farmer should lower the emissions of his field, would be different for every field. For the first two years after the installation of the device, the farmer will use every farming practice he was using before, paying no attention to emissions. During these two years, emissions will be registered by the system. In these emissions, every emission outside the field is also registered. These two years registration is the specific, for every field, threshold we mentioned above.

- 8. Applying manure and other types of compost influence the carbon footprint. When applied to the ground, carbon dioxide, methane and nitrous oxide emissions, are increasing rapidly. However, carbon storing in the ground leads to lower GHG emissions as a whole. Unfortunately, the device only measures emissions and not storage in the ground. Consequently, the GHG registered emissions will increase after applying manure and composts. The same thing happens when incorporating cultivations residues in the soil. How this matter will be dealt?**

When any type of organic fertilizer is applied, the farmer has to register it in the system. The system algorithm will calculate and subtract from the registered emissions those who originate from the fertilizer decomposition in the ground. That would finally have a positive influence in the carbon footprint of the farm.

- 9. The GHG registration system has been tested in pistacia fields, olive fields and vineyards, cereal and vegetables fields. Will other kind of crops can be included in the system or some kind of preliminary tests are necessary?**

The system is suitable for any kind of crops. The steps to be followed-meaning the first two years measurements of GHG to determine the specific threshold of the specific field - will apply to every crop. When this is determined, the next steps are identical for every crop.

- 10. Intensive methods of handling certain crops take place in greenhouses resulting to huge emissions of GHG. The greenhouse environment is a contained environment thus making it easier to handle. The greenhouse owners would surely be interested in this method. Is it possible to apply it on them?**

A greenhouse is a special case. While the GHG are produced day and night, they remain contained in the greenhouse till they are massively

released through open windows or via a ventilation system. From the way the greenhouses operate, it would be impossible for a LIDAR device to take reliable measurements. They perform one in the morning and one at night. If, on the moment the device takes a measurement, the GHG are massively out, the measurement will be extremely high. If they are still contained in the greenhouse, there will be a zero emissions measurement. That gives the owner of the greenhouse the possibility to manipulate the system by cheating on it. That is why we believe we cannot use this system in a greenhouse. For such contained environments, there are other measurement methods for GHG, some of them cheap and some of them more expensive than this system.

11. Animal husbandry installations produce massive quantities of GHG, especially methane. A better waste management could seriously lower these emissions. Is it possible to apply this method in this kind of installations?

This system could register the GHG emissions of animal husbandry installations. For an appropriate system algorithm to create and use however, additional parameters than those used in the farming installations should be taken into account. So, the system is not yet ready to be used in this kind of installations.

12. There are numerous measurement methods to verify GHG emissions in the market. In which ways this system differs from them?

All the systems currently in the market, estimate the emissions relying on the type of crops, the farming practices, the use of fertilizers and the crop itself. Many of these information and data are not collected by the organization providing the verification. They are only made known to the organization by a statement from the farmer. The LIDAR system, on the other hand, actually registers automatically in situ the emissions by the use of the LIDAR device. The certificate that the system provides is based on real and exact measurements not statements or assessments.

13. You are mentioning the possibility that a farmer has to use the certificate as a label on his product. Can you be more specific?

As mentioned above, the system provides the farmer with a certificate for his emissions bearing a QR code for its authenticity. This certificate is an official statement by the Ministry of Rural Development of its monitored emissions

and thus it is the Ministry that verifies that this product is a low carbon footprint product. The QR code will be on the labeled product for every consumer to scan its authenticity.

14. The agro-environmental program concerning this registration system will pay per hectare of land or per kilo of product?

This system is able to calculate lower emissions in both cases. So will the certificate. The program will give the farmer the possibility of choice between the two. After thorough discussions, the compensation per hectare would be the best choice due to technical formalities in payments otherwise. EU always pays per hectare of cultivated land.

15. Will there be specific instructions on how to minimize the carbon footprint?

MINAGRIC will suggest certain practices to lower the emissions. This was, after all, a major requirement for the conclusion of the ClimaMed project

4.4. Issues discussed at the round table events in the three other countries

In addition to the questions and objections expressed at the Greek events, there were some additional observations expressed at the events in Italy, Cyprus and Spain.

The greenhouse gas emissions monitoring system has been tested in Greece but not in other countries. Can it be considered reliable for use in other countries or does it need to be tested first?

We believe that it will be applicable in any country. If it is used in the way we suggest, that is, for two years measurements are taken while conventional cultivation methods are applied and in the following years comparison is made with these measurements, then it is certain that it can be used as it is without any calibration.

In Greece, the operational center created by the FORTH is to be used. How the emissions monitoring system can be used in other countries with no operational center?

The operational center that already operates in Greece and will continue to operate at MINAGRIC, has the ability to serve devices installed in other countries. Of course, each country that decides to establish the greenhouse gas monitoring system will have to acquire its own operational center. This can be done by purchasing it from FORTH. In any case, MINAGRIC is willing to help in the early stages of implementing the recording system by monitoring the devices of other countries with its own operational center.

Should private companies bear the responsibility to make and maintain the devices in every country?

The greenhouse gas emission monitoring system is based on the installation and operation of devices that measure the concentration of greenhouse gases in the atmosphere above the canopy of the plantation. These devices require maintenance and in the event of a breakdown they must be repaired immediately. A prerequisite for this is that the technical service is located near the installation area of the device. It is not possible for a device installation and

maintenance company to be based in Greece and install and maintain devices in Spain. This was also observed during the implementation of LIFE ClimaMED project, when FORTH, based in Crete, was asked to install devices in Genoa and later carry out maintenance work on them. It proved to be extremely expensive and uneconomical and ultimately it was not possible to operate the devices. For this reason, it is certain that in order for the emission monitoring system to operate in an area, the technician who will install and maintain the devices must definitely be based in the area.

Cyprus has a different approach in measuring GHG emissions.

It's about two different situations. Cyprus' target is to measure actual emissions per acre so as to calculate the total agricultural emissions of the country. Our primary objective is to measure in situ every field's actual emissions and may be, in the long run, the total emissions of the country which for the moment isn't our primary target. The Cyprus system, like all systems implemented in other countries, aims to estimate emissions as accurately as possible. In contrast, the emissions monitoring system created by the LIFE ClimaMED project, does not estimate but measures the emissions of specific fields. These are two different approaches that can operate in parallel.

5. Notes

The following were highlighted In the discussions held at the round table events the following were highlighted:

1. There needs to be a financial incentive for farmers to install devices in their fields. This incentive should be related to subsidies paid to farmers to reduce their emissions, a reduction that will be certified by the measurements of the devices. This will result in farmers making an effort to reduce their emissions by adopting low-carbon farming practices.
2. The purchase of the device must be 100% financed. The cost of the device is high and cannot be covered by farmers.
3. A farmer should be able to join the agri-environmental measure even if he does not have his own device. The devices have the ability to take measurements for more than one field. Therefore, it is possible for a farmer who does not have a device, to be served by a device that another farmer has in an adjacent field. In this way, it will be possible to make better use of the devices. It will also act as an incentive to acquire a device, since the owner of a device will be able to collect rent for the use of his device by other farmers, thus enjoying additional income.
4. Particular attention should be paid to the construction of the planned agri-environmental measure. The measure should provide a reward for farmers who achieve emission reduction targets, without at the same time punishing farmers who have not managed to achieve the expected emission reduction. Reduced emission agriculture includes practices that are new to farmers. It is logical that there will also be unsuccessful attempts by some farmers. These farmers should not be penalized for failing in an unknown field.
5. There must be assurance of the accuracy of measurements. The fact that a device is installed to take measurements from a field does not automatically mean that the measurements are actually taken from that particular field. In fact, the farmer using the device could turn the device to measure the emissions of an adjacent area, which is uncultivated land or possibly forest. In this way, he ensures that the device will send to the system's operational center not the emissions of his field, which are high, but of an adjacent field with low emissions, thus deceiving the user of the operational center, in this case the Ministry of Rural Development and Food.



6. The device must be protected from vandalism. It has been observed in many cases that devices and machinery installed in fields are vandalized by individuals who are either hostile to the new technology or motivated by envy. Such an innovative and newly emerging device is very likely to be vandalized by individuals who will consider it harmful to health or the environment, or that it is a covert surveillance system that threatens personal freedoms, or possibly a system that monitors emissions from all fields in order to impose sanctions on non-compliant farmers. Vandalism may also be motivated by envy towards the owner of the device who enjoys income thanks to it that they cannot have since they do not have such a device.

6. Conclusions

The following conclusions were drawn from the round table events

1. The system is an innovative tool that is intended to answer positively the question: “Can we measure the emissions of a field on site and in real time? Can we have a picture of the variation of emissions?”. It does not aspire to replace existing tools and certification methods. The aim is, by using the system, to have a complete picture of the change in emissions over time and in this way to have a decision-making tool.
2. The system has the ability to certify the level of emissions in a field. This certification does not concern the certification system applied in the EU. However, it constitutes a certification system that is accepted for specific uses that concern the relationship between the farmer and the public authority that is the user of the system.
3. A draft law must be submitted to Parliament that:
 - a. It shall establish the adoption of the greenhouse gas emissions monitoring system by the Ministry of Rural Development and Food.
 - b. It shall decide on the establishment and operation of the operational center at the Ministry of Rural Development and Food.
 - c. It shall authorize the Minister of Rural Development and Food to issue a ministerial decision that shall determine
 - each term, condition and procedure required for the operation of the system and the certification of emissions,
 - it shall describe the bodies involved, the role of each of them and the interaction between them to ensure its successful operation.
4. The above ministerial decision of the Minister of Rural Development and Food must be issued, which shall determine:
 - a. How the devices will be installed in the fields, who the users of the devices are, what is their role in the system
 - b. Which bodies are responsible for the supply, installation and maintenance of the devices and the remote transmission of the measurements to the operational center.
 - c. Determination of the measurement, recording and data processing procedure.



- d. What will be the use of the measurements and what conclusions will be drawn from them
 - e. How will be the certification of emissions carried out by the Ministry, what will be the uses of the certificate and what is the procedure for obtaining it.
5. An agri-environmental measure should be designed with the following characteristics:
- a. To provide aid to farmers who reduce greenhouse gas emissions from their fields and this reduction is verified by the emissions recording system
 - b. It should not be a prerequisite for the farmer to be included in the measure to own a device, but that he can use a device installed in a neighboring field.
 - c. The aid that the farmer will receive should be proportional to the reduction he achieved.
 - d. The actions he took to achieve emission reduction will not be important, it is only required that this reduction will be certified by the greenhouse gas emissions monitoring system.
6. A draft law should be drawn up for each country of Spain, Italy and Cyprus on the model of the draft law of Greece, which will be ready for passage by the local parliaments and will allow the system to be adopted in these countries when the conditions are ripe.