



COROSECT

D11.2 1st Dissemination and Communication Report

corosect.eu



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PU	Public	X
PP	Restricted to other programme participants (including the EC Services)	
RE	Restricted to a group specified by the consortium (including the EC Services)	
CO	Confidential, only for members of the consortium (including the EC)	

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16	FIELD LAB ROBOTICS BV https://www.fieldlabrobotics.com/	FLR	NL
17	FoodScale Hub https://foodscalehub.com/	FSH	RS
18	AgriFood Lithuania DIH https://www.agrifood.lt/	AFL	LT
19	CENTRO INTERNAZIONALE DI ALTISTUDI AGRONOMICI MEDITERRANEI http://www.iamb.it/	CIHEAM	IT

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Executive Summary

This report provides a detailed summary of the dissemination, communication, and awareness-raising efforts that were carried out throughout the project's first twelve months, from January to December 2021.

This document complements the previously delivered Dissemination and Communication Plan (1) (D11.1, submitted in M3 of the project). The two documents are similar in structure and approach.

Here, the objective behind this document is to compare the activities planned with those carried out, conduct KPI benchmarking, and decide how to proceed in the next period.

Chapter 1 - Introduction elaborates on the context and objectives of CoRoSect dissemination, communication, and awareness-raising efforts. This chapter summarizes activities that occurred between M01 and M12 with the goal of improving, emphasizing, and reinforcing our communication-related efforts.

Chapter 2 - Dissemination and Communication Activities describes a range of activities that took place during the project's first twelve months in regard to the dissemination and communication tools and channels that were elaborated in D11.1 Dissemination and Communication Plan (1). Each activity is explained in detail, complemented with appropriate graphics and visuals.

Chapter 3 - Monitoring and Evaluation focuses on the ongoing evaluation and monitoring of our communication-related activities. We dwell on a control/oversight strategy for the coordination of CoRoSect communication activities in this chapter, as well as a summary of partner efforts. In addition, we assess our progress toward Key Performance Indicators (KPIs).

Chapter 4 - Action Points and Next Steps highlights plans for the project's dissemination and communication activities over the next 12 months.

Chapter 5 - Conclusion concludes the report.

1 Introduction

1.1. About CoRoSect

By using robots, AI, and big data, CoRoSect aims to reconnect the food system, reintroducing insects as the missing link in the modern food chain. Throughout the face of climate change, pressing food security issues, and a rising environmental crisis, insect farming promises to be a very viable and sustainable solution.

CoRoSect turns global challenges into opportunities to achieve sustainability, reduce food waste and scale-up insect farming with AI, automation and robotics:

- Insects, unlike other feedstock such as soybeans, require very little land or energy to produce and can be produced quickly and all year round.
- Insects use fewer resources to cultivate, such as land and water and may convert low-quality organic waste into protein-rich end products fit for animal or human consumption.
- Other uses of insect-derived products, besides aquaculture, are being investigated, such as fertilizer and biofuels.
- Food waste is a worldwide problem for which there are few feasible solutions. Insect farming is an attractive approach to the circular economy.
- One of the most significant challenges is the requirement for human intervention in insect farming. CoRoSect utilizes robotics to assist the insect throughout its life cycle.

The purpose of CoRoSect is to create a sophisticated human-robot working smart service-oriented environment that will materialize an insect farm's whole production pipeline. At the farm and cell levels, the goal is to deploy five service groups made up of various modules: Information Management System (IMS)/ Manufacturing Execution System (MES), AI-enabled perception methods, Robotic actions planning and control, Cognitive robots and smart mechatronics, Human-robot collaboration schemes.

As CoRoSect's automated farm works to maintain a safe working environment while maintaining robot productivity, the need for human-centred AI creates the perfect match between human and robotic "colleagues". In five European countries, CoRoSect will launch five large-scale pilots, each of which will focus on a different insect ecosystem. To gain valuable insights, a variety of use cases will be identified, and their viability will be analyzed by industrial partners, insect farms, and robotic providers.

The communication and dissemination efforts that CoRoSect will undertake over the project's lifespan are critical for the smooth market acceptance a digitalized, integrated robotic solution to support all insect life cycle phases.

1.2. Context

By introducing a new digitalized integrated robotic solution built on the Reference Architecture Model Industry 4.0 (RAMI4.0) and implemented as an Industrial Cyber-Physical System (ICPS) to support all stages of the insect life cycle within insect farms, CoRoSect will transform automated insect farming. With the aim of bringing significant innovation, the system's primary goal will be to provide repetitive but also cognitively and physically demanding tasks, such as transferring and handling of crates (de-

stacking and stacking), monitoring of environmental conditions, larvae separation/detection, insect feeding, that require increased manual effort or continuous human supervision, with correspondingly automatic robotic-based procedures, as service in an I40-compliant Information-Communication Infrastructure.

A real-life application case will be offered in insect farming. In the proposed system, multiple currently manual, expensive, dangerous, and time-consuming tasks are replaced with correspondingly automated robotic-based service-oriented procedures incorporated within an interdisciplinary human-robot collaboration framework, which increases farm productivity and quality of service. With this, it is envisioned that a universal solution for supporting rearing among the various insect species farmed in this sector will be provided. The novel infrastructure will be prototypically developed, tested, and validated in three of the most common species, *Tenebrio molitor* (Mealworm), *Hermetia illucens* (Black Soldier), and *Acheta Domesticus*, in response to user requirements (Crickets).

It is the ultimate goal to achieve the collaboration between humans and robots in an environment where activities of processing and manipulation can be shared and performed at the same time.

1.3. Objectives

The following table lists the main objectives of dissemination, communication, and awareness-raising activities. All activities undertaken during the last 11 months of the project have aimed to accomplish the objectives outlined in deliverable D11.1 Dissemination and Communication Plan. For better understanding, under each objective is a breakdown of how the activities are undertaken and address the project's communication and dissemination objectives.

O.1	<i>Attract a sufficient number of industry-leading innovators (insect farmers, robotic technology developers, Environmental scientists...) as well as Insect farm adopters from across the continent.</i>
O.2	<i>Present, to CoRoSect stakeholders, the importance of gaining access to novel, beyond the state-of-the-art robotic insect farming solutions and the supporting ecosystem.</i>
O.3	<i>Highlight the importance of piloting, testing and experimentation with novel robotic based technology and services and business models in an environment that is heavily dependent on collaboration.</i>
O.4	<i>Raise the awareness of a wide range of stakeholders, locally, regionally, and</i>

internationally, of the role of insect farming in increasing sustainability and resilience of our food systems but also additional business creation.

It is notable that although CoRoSect and the diverse benefits it would provide have received a considerable amount of attention, its impact on creating more sustainable, resilient food systems as well as potential business creation is yet to be emphasized in its communication efforts. During the project's implementation, this step will take place later.

O.5 *Ensure proper know-how exchange among CoRoSect partners.*

From the beginning of the project, consortium partners have had a priority of exchanging information. To date, this has been accomplished by informing partners about relevant and important events, publication status, newsletter features, and so on.

O.6 *Develop networks and liaison with innovation intermediaries, insect farmers, technology providers and environmental scientists to share resources and maximize impact.*

The focus of all previous communications activities has been on raising awareness of CoRoSect and the numerous benefits that its digitalized, an integrated robotic solution will bring to insect farming. The promotion strategy included everything from social media posts and newsletters to online events. CoRoSect has co-organized an event with other robotics projects under ICT-46, including Robs4Crops, Robotics4EU, and FlexiGroBots. We've also attended a major online event (The European Robotics Forum 2021 and INBOTS Conference 2021) that brought together the robotics community as a whole. As the project proceeds, the scope of the awareness-raising and ecosystem building activities will broaden.

O.7 *To support the development and maintenance of the official project's website throughout the project lifecycle.*

A project website was created, complete with a project description, vision, mission, principles, and objectives, as well as current news and events. It introduces the consortium while also explaining the concept and benefits of the project. This website is regularly updated with project-related news and outputs. As the primary information hub for newcomers, it responds to both general and specialized audiences.

2 Dissemination and Communication Activities

As described in D11.1, various tools and channels have been set up to facilitate CoRoSect communication-related activities. In the following sections, we highlight how each of these channels and techniques has been used to generate awareness in the past twelve months.

2.1. Visual identity and promotional material

Through the project's Microsoft Teams, the CoRoSect visual identity and all of its components (logo, brand colors, funding information, poster, brochure, and branded templates – Word document template, Word deliverable template, and PowerPoint template) were created and shared with consortium partners (MSOX). In addition, these materials have been incorporated into all internal and external communication efforts and will continue to be used (and updated when necessary) in future communication initiatives until the project is completed.

We have also designed and made digitally available t-shirts, hoodies, caps, notebooks, cups, and other branded merchandise, which partners can print themselves (following eco-friendly sustainable practices). Partners have been guided to print only on eco-friendly paper and fabric as well as to reduce unnecessary printing when possible.

Some of the designed merchandise is presented below.



Figure 1 CoRoSect hoodie design



Figure 2 CoRoSect notebook design

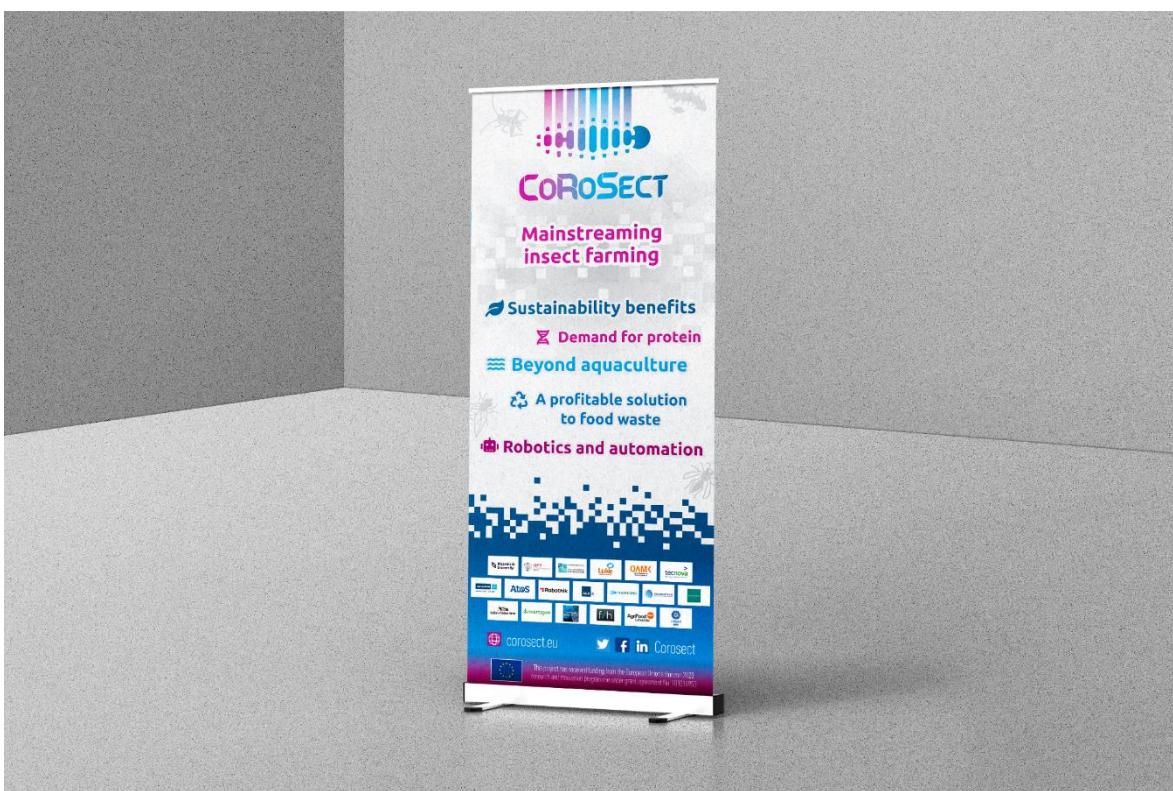


Figure 3 CoRoSect rollup banner design



Figure 4 CoRoSect leaflet

2.2. Digital Channel Promotion

2.2.1. Social Media Communication

CoRoSect has established project accounts on LinkedIn, Twitter, Facebook, and YouTube, as mentioned in D11.1 Dissemination and Communication Plan. Since the beginning, engagement rates for each of these accounts as well as other analytics parameters have been regularly tracked. Furthermore, engaging and informative campaigns, as well as suitable visuals, have been created to continually feed these pages with relevant and appealing content.

All of the efforts resulted in step-by-step reaching our set KPIs. The following are the specific activities that have been carried out with respect to social media are presented below.

2.2.1.1. Social Media Campaigns

Introducing CoRoSect – *Swarming towards the future with robotics*

The campaign Introduction to CoRoSect marked the start of a four-year project that intends to use robotics, AI, and big data to reconnect the food system, reintroducing insects as the missing link in the contemporary food chain.



Last month, European Food Safety Authority (EFSA) declared mealworms safe for human consumption. 🍗

Follow CoRoSect to learn more about #InsectFarming and how we use #robotics and #AI to fulfill the sustainable promise of supplying protein without the massive carbon and land footprint • <https://corosect.eu/>



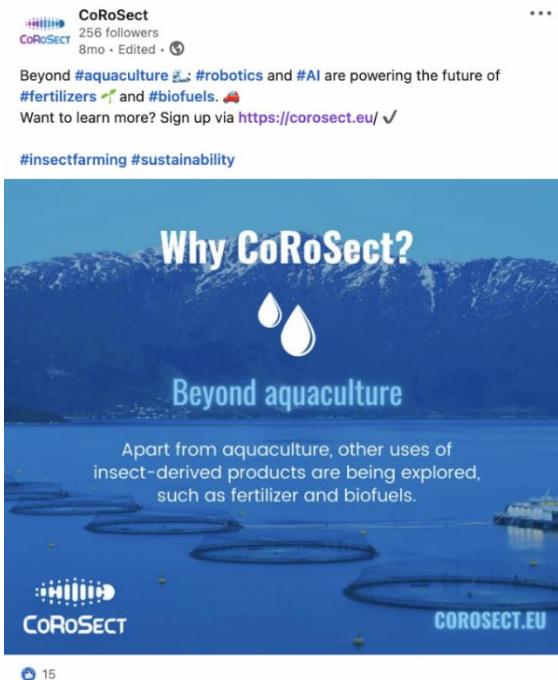
You and 16 others

Figure 5 Introducing CoRoSect

Campaign objectives: The campaign's fundamental objective was to attract target audiences on social media and encourage them to engage in the exciting path towards insect farming innovations. This campaign made use of eye-catching posts that conveyed CoRoSect's key messages.

Why CoRoSect - Mission, Vision and Objectives

The campaign Why CoRoSect intends to highlight global challenges which CoRoSect turns into opportunities to achieve sustainability, reduce food waste and scale-up insect farming with AI, automation and robotics and much more.



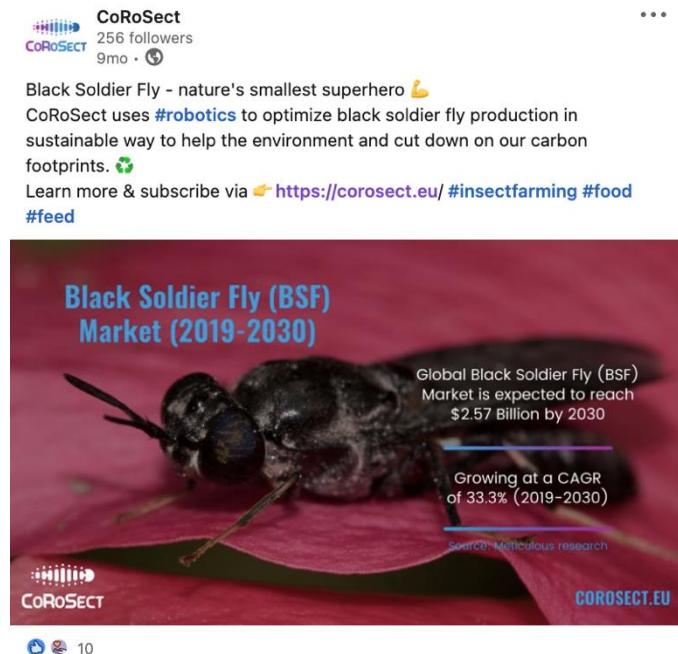
15

Figure 6 Why CoRoSect

Campaign objectives: The goal of this campaign is to raise awareness of the benefits of incorporating robotics and AI into insect farming and to introduce the specific problems that CoRoSect aims to address.

CoRoSect Market Trends

This campaign is envisioned to showcase all the market trends that are shaping today's insect farming landscape.



10

Figure 7 CoRoSect Market Trends

Campaign objectives: The objective of this campaign is to ensure that CoRoSect stakeholders are adequately informed about the trends that are moving the insect farming market.

CoRoSect Technologies

The aim of this campaign is to call attention to a novel perspective to automated insect farming which CoRoSect will introduce.



Figure 8 CoRoSect Technologies

Campaign objectives: This campaign is set to deliver to CoRoSect stakeholders insightful information about the digitalized, integrated robotic solution which will CoRoSect incorporate into insect farming.

CoRoSect Newsletter

The campaign called CoRoSect Newsletter aimed to present a series of posts urging our audience to subscribe and follow up our newsletter editions. This served to ensure our target audiences are adequately and timely informed about the latest developments of the project.

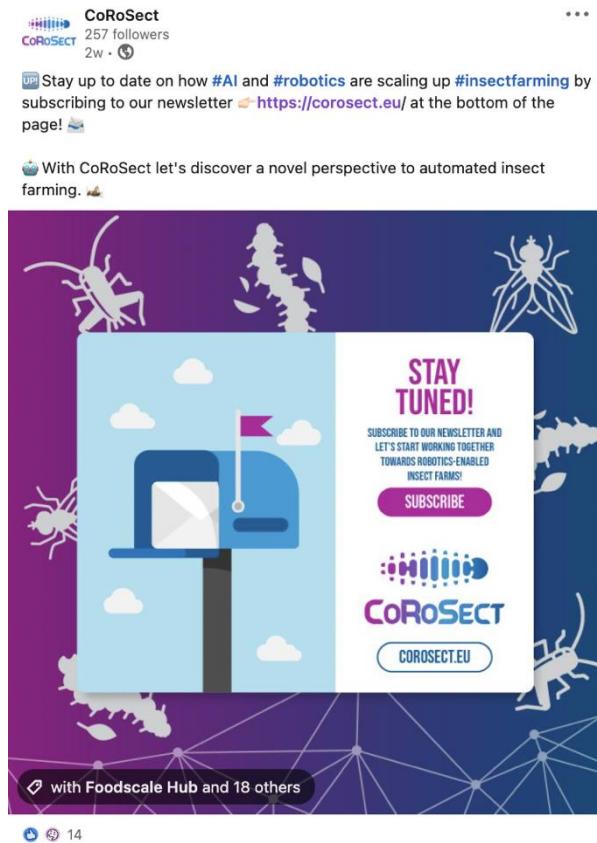


Figure 9 CoRoSect Newsletter

Campaign objectives: The objectives of this campaign are to create awareness among CoRoSect stakeholders and provide valuable sources of information on the topic of robotics and AI in insect farming.

CoRoSect at events

This campaign is an ongoing effort focused on disseminating information and highlighting the participation of CoRoSect at industry-relevant events.



Figure 10 CoRoSect at events

Campaign objectives: Promote the project's strong event presence among its stakeholders and provide valuable sources of information on the topic of robotics in insect farming.

2.2.1.2. CoRoSect Social Media Content Planner

Previously mentioned campaigns have been comprehensively planned. An excel sheet for scheduling posts (shown below) has been created, and it contains all relevant information about each social media post, such as the dates on which the posts were published, the campaign to which each of the posts belongs, a short yet captivating social media message to be published, the space to indicate if there is a visual to accompany the message and call to action. A separate folder on the project's internal shared drive was created for storing ready-to-share visuals.

CoRoSect - Content Planner						
	File	Edit	View	Insert	Format	Data Tools Add-ons Help
J2	15/1/2021	12:00	Intro to CoRoSect	We're pleased to announce the launch of CoRoSect, a new EU H2020 project. CoRoSect brings together leading-edge robotics, AI, and some of the best industry experts - to help scale up insect farming. Stay in the loop https://corosect.eu/	Y	https://corosect.eu/
3	19/2/2021	13:30	Intro to CoRoSect	Last month, European Food Safety Authority (EFSA) declared mealworms safe for human consumption. Follow CoRoSect to learn more about #insectfarming and how we use #robotics and #AI to fulfill the sustainable promise of supplying protein without the massive carbon and land footprint. https://corosect.eu/	Y	https://corosect.eu/
4	1/3/2021	16:30	Market Trends	Black Soldier Fly - nature's smallest superhero. CoRoSect uses #robotics to optimize black soldier fly production in sustainable way to help the environment and cut down on our carbon footprints. https://corosect.eu/#insectfarming #food #feed	Y	https://corosect.eu/
5	8/3/2021	17:05	Social Responsibility	This #IWDF2021 and every day, CoRoSect is committed to bringing more women to #insectfarming and highlighting the vital roles women play in #Ag and #Food. https://corosect.eu/	Y	https://corosect.eu/
6	9/3/2021	17:09	Intro to CoRoSect	Could insects be the wonder food of the future? With beyond state-of-the-art #digitalized #robotic solutions, CoRoSect will forever transform how we see #insects and their role in human #nutrition. Take a look at https://corosect.eu/ and subscribe! #futureoffood	Y	https://corosect.eu/
7	15/3/2021	15:11	Market Trends	What is frowned upon in one part of the world, it is a commonality in other. With the help of #robotics CoRoSect aims to break the stigma around utilisation of insects in #humannutrition and beyond. Go to https://corosect.eu/ to learn more. https://corosect.eu/	Y	https://corosect.eu/
8	17/3/2021	11:19	Market Trends	If #mealworm makes you go "ick", you are not alone. However, mealworms have a large potential to become the next sustainable food source for humans due to their favourable nutrient profile and low environmental impact. Find out more at https://corosect.eu/#mealworm #insectfarming #breakingthestigma	Y	https://corosect.eu/
9	22/3/2021	17:19	Why CoRoSect?	Let's talk #sustainability! Being low maintenance and easy to produce, #insects make a very #sustainable food choice. Visit us at https://corosect.eu/ to know more. #futureoffood #insectfarming	Y	https://corosect.eu/
10	23/3/2021	15:26	Why CoRoSect?	Meat, eggs and dairy are not the only sources of #protein! Although unconventional, #insects make an excellent protein-rich food. Click here https://corosect.eu/ and stay in the loop! #breakingthestigma	Y	https://corosect.eu/

Figure 11 CoRoSect Social Media Content Planner

2.2.1.3. Social Media Channels

LinkedIn

Figure 12 CoRoSect LinkedIn

LinkedIn is quite essential to CoRoSect since it is a prominent network that connects professionals, experts, educators, and researchers. The CoRoSect LinkedIn account was established during the first month of the project and has been active ever since. As part of its communications and dissemination activities, CoRoSect has consistently provided tailored content on a bi-weekly basis, with additional content as needed. In addition to a colourful and dynamic graphic to convey a key message and/or a call to action, each post also has an appropriate post description explaining in more detail what the graphic represents. During the past twelve months, we achieved nearly 18K impressions.

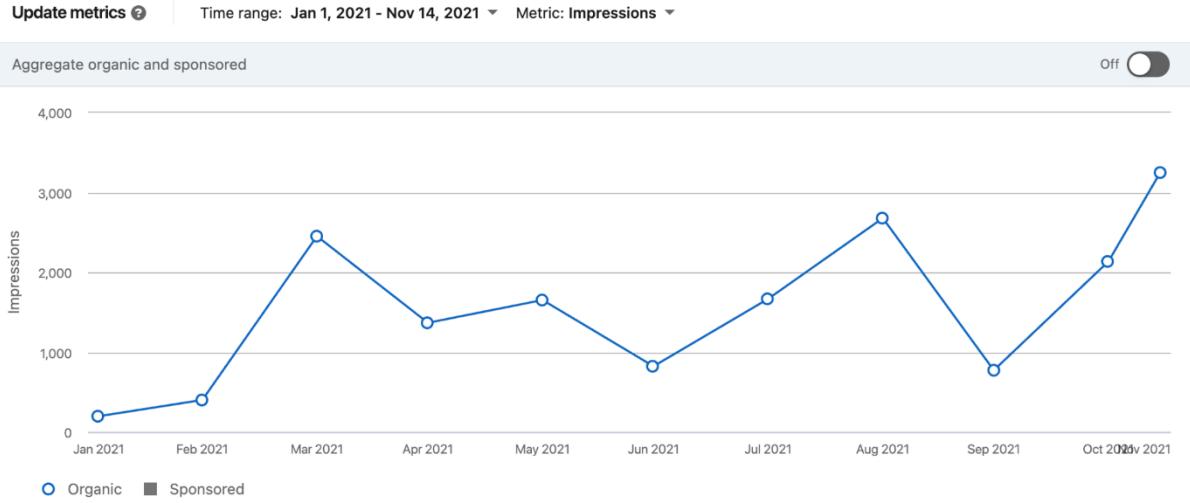


Figure 13 CoRoSect LinkedIn - No. of organic impressions

The CoRoSect LinkedIn as a social network is set to engage its target audience and create a community of professionals in the field of robotics, agriculture, insect farming, and robotics in insect farming, as well as academics and young researchers.

All partners contributed to the LinkedIn distribution of essential CoRoSect information.



Figure 14 Italian Cricket Farm about their involvement in CoRoSect

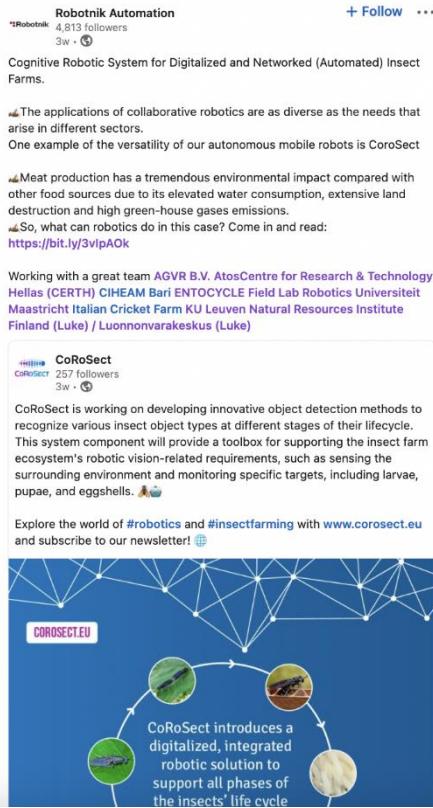


Figure 15 Robotnik Automation CoRoSects' automated insect farms

CoRoSect has been actively engaging its LinkedIn community since the communication channel establishment by reacting to stakeholders posts about technology, digitization, robotics, AI, robotics in insect farming, innovation and other hot topics in the related industry.

Burcu Yaşar · 3rd+
Research Associate at KU Leuven Centre for IT & IP Law (CITIP)
2mo · Edited · 3

Some #insect species can be consumed as food and feed in the European Union, and are even perceived as a #sustainable solution for food security challenges. You may not have (directly) tried them out yourself yet but many animals cultivated for your consumption already have!

The market is still emerging but what if we use #robotics and #AI in the insect rearing processes? What are the legal and ethical implications of the automation of insect farms?

I wrote about our CoRoSect project at the blog of the Center for IT & IP Law (CITIP) @KU Leuven .



Figure 16 Blog post about ethics challenges CoRoSect addresses

Twitter



Figure 17 CoRoSect Twitter

We created a CoRoSect Twitter account to stay on top of the latest industry developments, communicate with key industry players, and engage in other relevant projects and initiatives. The account was created at the very beginning of the project. Team members of the project's communication and dissemination team have been tweeting regularly from the account, as well as retweeting posts from consortium partners and other projects connected to the project. Like the posts on the project's social media channels, the posts on Twitter have a similar visual style and structure.



Figure 18 Robotnik's post about CoRoSect

In addition to engaging with other EU projects, there is a strong focus on international RTOs and DIHs, robotics and AI influencers, and EC bodies and initiatives through the CoRoSect Twitter account.

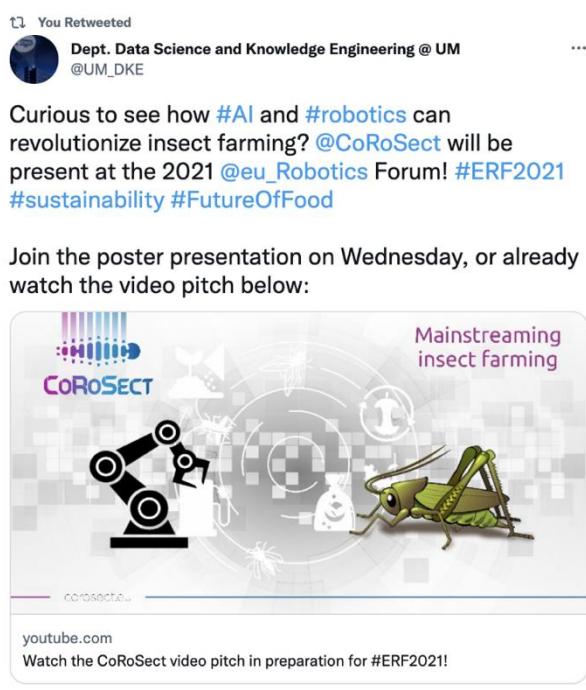


Figure 19 Maastricht University promoting CoRoSect event participation



Figure 20 A discussion sparked among the industry-relevant audience

Facebook

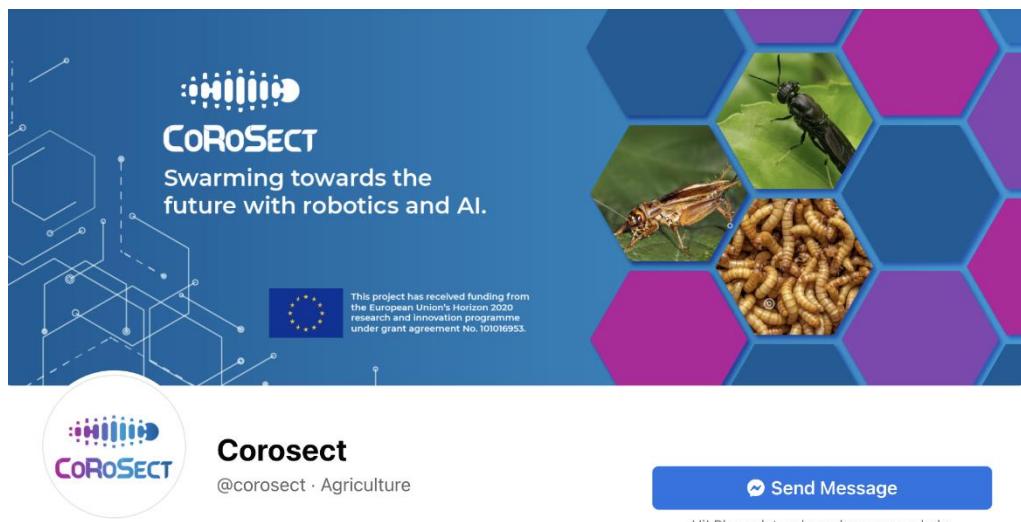


Figure 21 CoRoSect Facebook

The CoRoSect Facebook page was created with the goal of reaching a greater range of stakeholders, primarily insect farmers and other end-users, who are essential to the ecosystem's sustainability. The CoRoSect Facebook account, like the other two, officially launched in the first month of the project's implementation. It generated content that was similar to those in the other two project accounts.



Corosect

Published by Teodora Šišaković · September 9 ·

...

When considering the overall process, CoRoSect strives to identify factors crucial to the success of the #insectrearing process, combining these factors with the potential of #sensors available on the market, as well as decision support and #robotics to manage the insect rearing process. The focus is on bringing together important partners to co-create the necessary criteria for #technology adoption in insect rearing processes, sensor application in the manufacturing process, and #robotization and #automatedcontrol of the process. 🐞

Check out what CoRoSect is all about → [www.corosect.eu!](http://www.corosect.eu)



Figure 22 CoRoSect on automated insect rearing processes

2.2.2. CoRoSect website

As the initial step in the direction of the establishment of the projects' online presence, raising awareness of its brand identity and striving for recognition, a landing web page for the CoRoSect website was created at the very first moment of the project implementation. From that point forward, this page has served as an essential source of data for anybody keen on acquiring an early understanding of the project and its fundamental goals.

The full version of the website is available at corosect.eu. Our goal is to continually update the website and individual pages, especially the Insights page, with new information from the CoRoSect ecosystem.

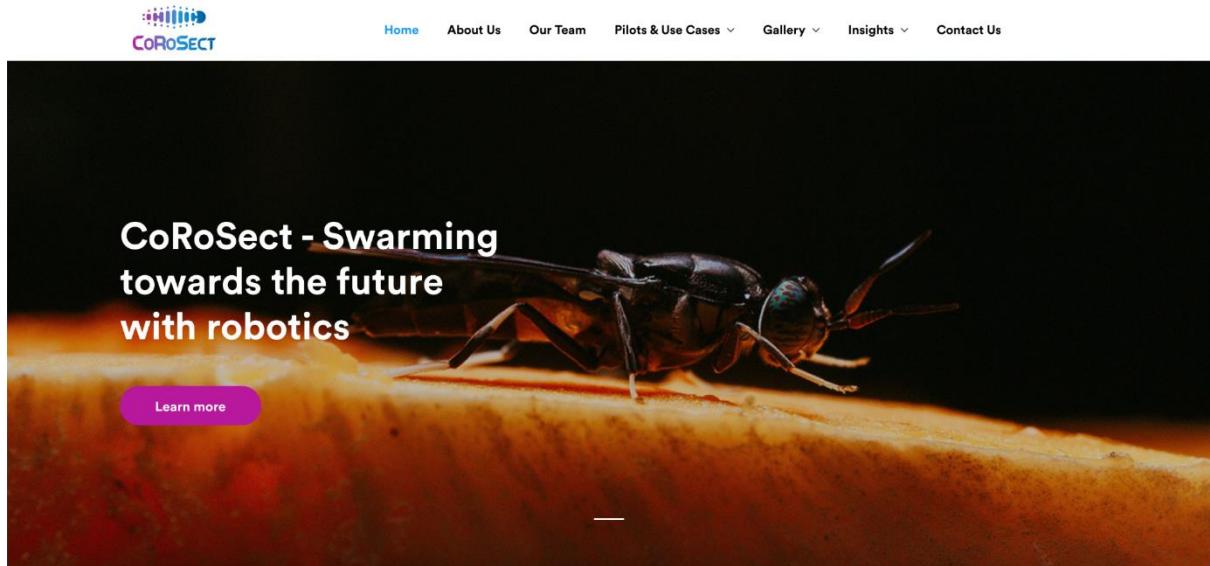


Figure 23 CoRoSect landing page - corosect.eu

The CoRoSect landing page, which has been available since the beginning of the project, has been expanded into a more comprehensive CoRoSect website. The website also introduces the project's primary goals, the consortium partners, the pilots and use cases, a gallery, and a distinctive insights page where engaged visitors can follow the news featuring CoRoSect and stay up-to-date on the latest developments within the robotics in insect farming field, whereas the landing page only provided the most essential information. The website will be constantly monitored and regularly updated as our activities progress, and this practice will continue throughout the project.

[Home](#)

The Home page provides general information about the project and emphasizes the benefits that CoRoSect offers. This page briefly describes the project's main goals and the use cases that will be defined and assessed.

[About us](#)

The CoRoSect About Us page offers a more in-depth description of the novel robotic insect farming technologies and their potential impact on the industry.

[Our Team](#)

The CoRoSect consortium is presented on this page, a remarkable group of professionals with vastly different areas of expertise from across Europe who have joined forces to forever transform the insect farming industry in Europe.

[Pilots & Use Cases](#)

The Pilots & Use Cases page introduces the four large-scale pilots, i.e., the diverse insect production environments, whose feasibility between industrial partners, insect farms, and robotic providers will be assessed.

[Gallery](#)

This page aims to showcase in a vivid manner all essentials that make CoRoSect a project, from its technologies and species to partners' teams working on the project development.

Insights

The CoRoSect website puts its focus on the Insights page, where relevant data of the CoRoSect ecosystem and insect farming industry are provided through informative and up-to-date blog posts.

Contact us

Lastly, the project's contact page invites those from the AgriFood robotics domain to contact the project's Communication Team and discuss a potential partnership, cooperation, or showcasing at events within the CoRoSects' ecosystem.

2.3. In-person & events-based outreach

With the purpose to spread the CoRoSect message and create synergies with other related projects and key industry stakeholders, CoRoSect plans on participating in all relevant online events and webinars throughout the project. CoRoSect will put efforts into ensuring a comprehensive presentation of its solution to a greater number of stakeholders and expand its potential user base while the COVID-19 issue is still in progress and events are still either online and/or hybrid (a combination of online and offline).

During the first twelve months, CoRoSect attended two major online events and co-organized a panel discussion inside the largest Agrifood event in Eastern Europe. CoRoSect's involvement and influence in these events are described below. Participating in such events and promoting the project is vital since it brings the project closer to our key stakeholders for post project exploitation.

The European Robotics Forum 2021 (ERF2021)

13-15 April 2021

The European Robotics Forum 2021 is the most influential meeting of the robotics community in Europe, covering all aspects and current themes related to the field of robotics. Researchers, engineers, managers, and a growing number of entrepreneurs, business people, and public funding officers from all over Europe will come together to discuss technology push and market pull and how innovation in robotics and robotics-related AI can be accelerated.

CoRoSect involvement in the event

Dr. Rico Möckel, the CoRoSect project coordinator, gave a presentation on the CoRoSect project and its anticipated impact on robotics in the insect farming community. Having a vision of accelerating the adoption of robotics, artificial intelligence, and big data in the insect farming industry, the event was a perfect opportunity to introduce the overall mission and vision CoRoSect in the robotics community, especially since it was organized so early in the project.

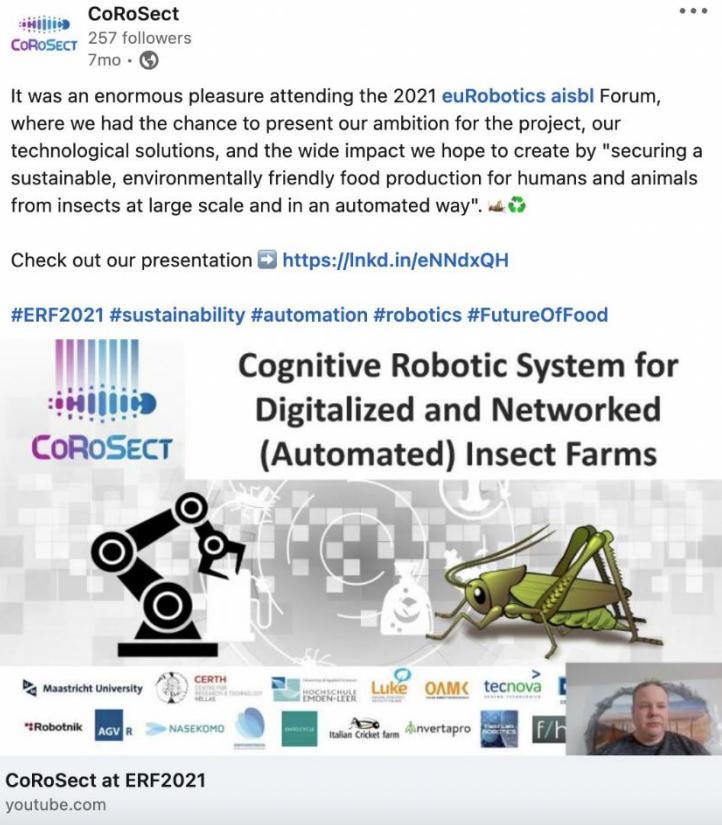


Figure 24 Promotion of CoRoSect's participation at the ERF2021

INBOTS CSA Annual Conference 2021

18-20 May 2021

CoRoSect participated at INBOTS Conference 2021, the annual event organised by the INBOTS project aiming to bring together relevant stakeholders in the field of robotics.

Experts from academia, industry, policymakers and EC representatives participated as speakers to promote the acceptance of robotics in society. The three-day conference focused on: Inclusive Robotics for a better Society, Interactive Robotics, legal, ethics & socio-economic aspects of interactive robotics.

CoRoSect involvement in the event

In the Session "Showcasing H2020 European projects in Robotics," CoRoSect was featured in a 10-minute pre-recorded presentation. By addressing project requirements, results, and future funding opportunities, the session aimed to share knowledge among EU projects and participants.

On May 20th, participants were able to visit CoRoSect's Virtual Booth to learn more about the project and interact with our partners from Maastricht University, CERTH, and Foodscale Hub.



Figure 25

Promotion of CoRoSect's participation at the INBOTS Conference 2021



Figure 26 CoRoSect Dissemination Team at INBOTS CSA Virtual Booth

In addition to attending events, CoRoSect also co-organised an event alongside Robs4Crops, FlexiGroBots, and Robotics4EU, all funded under ICT-46-2020 and in the frame with the AgriFood Forum 2021.

AgriFood Forum 2021

AgriFood Forum 2021 was an event organized by Agrifood DIH Lithuania and the European Parliament (Liaison Office in Lithuania) with the aim to introduce innovative new activities, solutions, and strategies to accomplish the Green Deal goals, all of which are based on healthier, more sustainable, and more equitable food systems. The Forum's goal was to educate the community about the importance of collaborating to improve how to produce, consume, and think about food. This is one of the largest agrifood events in Europe.

CoRoSect involvement in the event

CoRoSect, Robs4Crops, Robotics4EU CSA, and FlexiGroBots projects co-hosted a robotics panel discussion – Working side by side with agrifood robots – opportunities and challenges.

On the 25th of November (starting from 11:20 CET), our experts discussed how these projects are addressing today's food challenges.

The keynote speakers for the panel were:

Dr. Rico Mockel | Associate Professor of Cognitive Robotics and Intelligent Systems at Maastricht University (CoRoSect Coordinator)

Daniel Calvo Alonso | Head of the Artificial Intelligence, Data and Robotics unit at Atos Research and Innovation (FlexiGroBots Coordinator)

Anneli Roose | Project Manager at Civitta Estonia (Robotics4EU Coordinator)

Our experts highlighted and exchanged insights about:

- Intelligent automation and flexible robots of precision agriculture operations;
- AI-based robots in agri-food, healthcare, inspection and maintenance of infrastructures and agile production;
- Fully autonomous farming systems, farming controllers and smart implements in agriculture;
- Rethinking ethical, legal and societal dimensions in AI-enabled automation;
- Leading-edge robotics, AI, and automation in replacement of monotonous and mundane tasks.

Partners



EIT Food



Co-funded by the European Union



FLEXIGROBOTS



Robotics4EU
Boosting Wider Adoption of Robotics in Europe



Figure 27 AgriFood Forum 2021 website - Partners section

The recorded panel discussion are available on CoRoSect YouTube channel (CoRoSect at AgriFood Forum 21 “Working side by side with agrifood robots—opportunities & challenges”- [link](#)) whereas the highlights are available on our Insights section ([link](#)).

 **CoRoSect**
@CoRoSect ...

 Robots are not the future anymore, they are our reality!

 Are you curious to find out what happened during our discussion about the future of **#agrifood #robotics** & beyond under AgriFood Forum 2021?

 Check out the conclusions from the session:
corosect.eu/robotics-discu...!



 FlexiGroBots and 9 others

Figure 28 Agrifood Forum 2021 - Highlights from the robotics discussion

3 Monitoring and Evaluation

All dissemination and communication activities are regularly followed-up on and monitored weekly in order to maximize its effectiveness and outreach.

CoRoSect's dissemination and communication team consists of three members who are planning all the activities ahead of time, ensuring focus on creating content designed specifically to help realize communication, growth hacking, ecosystem building goals. Among the three members, one develops content and social media strategy, while the other two focus on implementing that strategy and monitoring results.

With the result of monitoring tools, a team can assess whether the Communication and Dissemination Strategy is progressing as originally planned and scheduled, and follow its effectiveness to determine the need for a new framework in order to ensure success in reaching target objectives.

3.1. Monitoring and Evaluation tools

The following tools have been utilized to monitor and evaluate our performance on the CoRoSect growth channels on a regular basis:

- Email Campaign Tracking & Reporting (Mailchimp)
- Google Analytics reporting dashboards
- Social Media Metrics Spreadsheet
- Google Forms cloud-based Questionnaire

Most of these tools/spreadsheets have been uploaded to the CoRoSect Google Drive and are updated weekly. In addition, each consortium partner needs to submit concise report on their own outreach efforts. This data is collected using a brief and interactive Google Form Questionnaire. The Social Media Metrics spreadsheet is used to track the outreach of previously determined KPIs, and assess the dissemination and communication efforts' success. For Social Media tracking, each platform has its own sheet with defined metrics to follow on a weekly and monthly basis. After each month the we compare valuable insights we collected and determine where we will put our focus in the next month with the aim to drive our audience engagement.

October 2021									
	Following ↗	Profile visits ↗	Followers ↗	Followers growth ↗	Engagement rate % ↗	Link clicks ↗	Retweets w/o comments ↗	Likes ↗	Impressions ↗
Twitter	194	293	92	6	1.4	3	2	24	1.9K
	Page Likes ↗	Page likes growth ↗	Page Followers ↗	Page followers growth ↗	Page visits ↗	Post reach ↗	Post engagement ↗		
Facebook	83	14	88	12	30	198	21		
	Followers ↗	Followers growth ↗	Unique visitors ↗	Post impressions ↗	Custom button clicks ↗				
LinkedIn	216	36	23	2.1K	3				

November 2021									
	Following ↗	Profile visits ↗	Followers ↗	Followers growth ↗	Engagement rate % ↗	Link clicks ↗	Retweets w/o comments ↗	Likes ↗	Impressions ↗
Twitter	353	2022	135	43	3.3	12	16	52	3.3K
	Page Likes ↗	Page likes growth ↗	Page Followers ↗	Page followers growth ↗	Page visits ↗	Post reach ↗	Post engagement ↗		
Facebook	137	54	144	56	164	770	86		
	Followers ↗	Followers growth ↗	Unique visitors ↗	Post impressions ↗	Custom button clicks ↗				
LinkedIn	276	60	77	6.2K	5				

Figure 27 CoRoSect Social Media Metric Spreadsheet

Besides the support from analytic tools of each social media platform, to track and report website traffic we use Google Analytics. We use these analytics insights to reach the target audience. Google Analytics provides us with the tools to get a deeper understanding of our audience and to even better evaluate the performance of our dissemination and communication efforts. By gaining extended insight into how our users engage with CoRoSect website, we are able to provide more value to them by delivering more engaging and interactive website content.

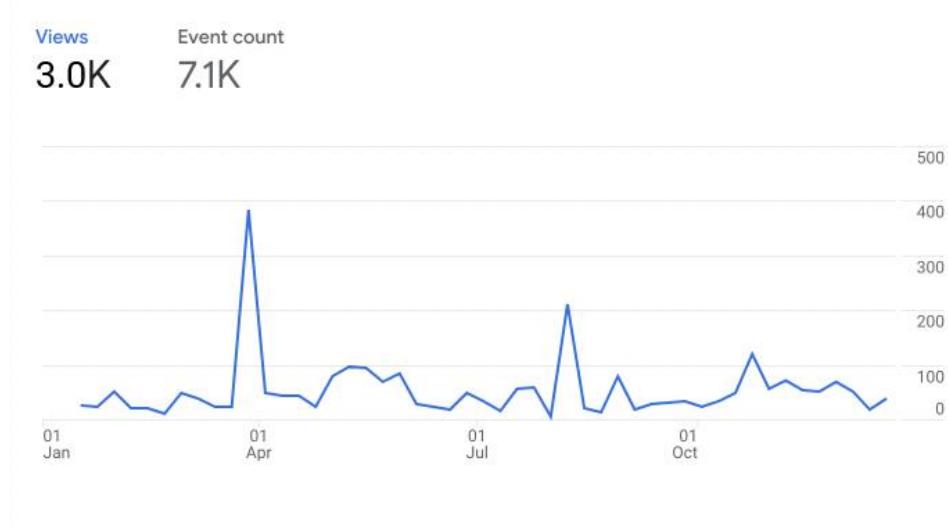


Figure 29 Google Analytics Report Engagement overview



Figure 30 29 Google Analytics Report Demographics overview

The KPIs described in the table below are accompanied by a realistic illustration of the KPIs achieved thus far in relation to the KPIs to be achieved by the end of the project implementation.

KPIs progress

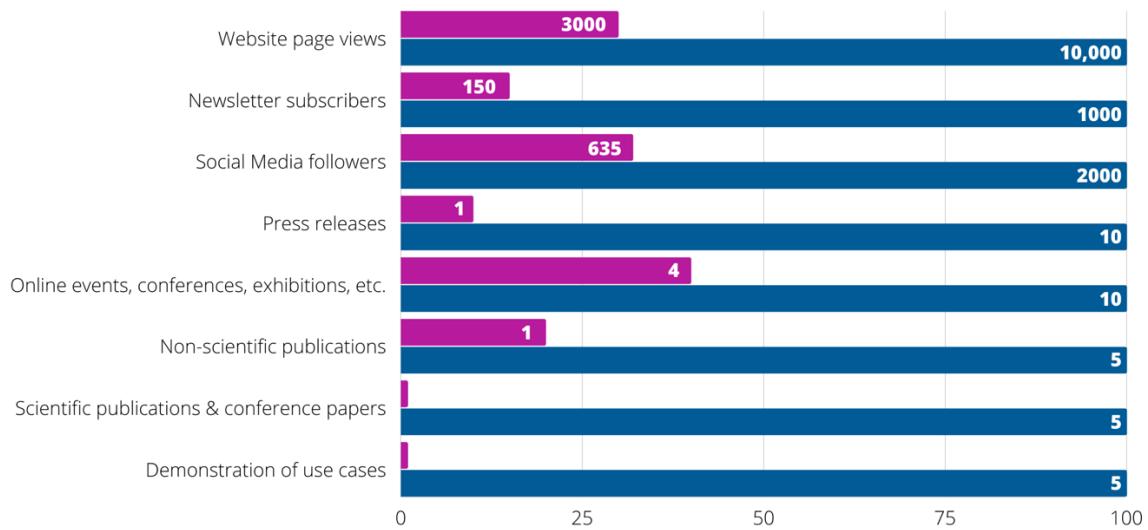


Figure 31 CoRoSect KPIs

4 Action Points and Next Steps

The next project's dissemination and communication report, D11.3: 2nd Dissemination and Communication Report, is scheduled for M24. As the project enters its second year, a number of initiatives will be implemented to sustain the momentum established in the first year.

We will prioritize updating the CoRoSect Insights page with fresh and relevant information from our ecosystem, ***the focus being on pilot preparation activities and in-person communication as well as interactive, immersive experiences (demo days, video material)***. In upcoming quarterly newsletters, our partners' project progress updates, relevant robotics and AI topics, and related projects will be featured.

In the following table are the topics that we plan to cover on CoRoSect Insights in the coming year.

Topic/ Theme	The aim of the topic
Sustainable Insect Farming: the role of robotics in Feeding the Future	<p>With a rising global population, more demanding consumers, and a limited amount of agricultural land, finding alternatives to conventional meat products is essential.</p> <p>As a mitigation measure, a more sustainable diets with reduced meat consumption or the utilization of alternative protein sources are required. Insects are presented as human and animal feed worldwide. Showcasing benefits of insect farming and CoRoSect will be tackled.</p>
Environmental Advantages of Robotic Insect Production	<p>The environmental impact of farming insects as mini-livestock will be compared with that of raising common production animals in terms of greenhouse gas emissions, energy, land and water use, and feed conversion efficiency. The ability of insects to convert low-value organic side-streams into high-value protein products will be discussed.</p> <p>Compared to livestock production insect farming has many benefits: (1) less land and water is required; (2) greenhouse gas emissions are lower; (3) insects have high feed conversion efficiencies;</p> <p>The advantages of insect farming and CoRoSect will be covered.</p>
Robot-Filled Future of Sustainable Insect Farming	<p>The focus of this topic is to put workers in the insect farming industry at the centre of the story, discussing the specific obstacles they are encountering in their everyday work and the ones imposed by the changing global requirements. We will include how implementation of robotics is easing the hardships of the industry workers.</p>
Insect-rearing technologies and methods: farming automation	<p>Insect rearing technologies and methods offer a unique opportunity to contribute to a sustainable development of modern societies, thus they are extremely advantageous. Through this topic insect rearing will be promoted and encouraged as an enabler to a virtuous circular economy.</p>

Waste management with support of robotics through insect bioconversion	When insects are mass produced under controlled conditions (with the help of robotics), they can break down significant quantities of food waste. Further, as the insects consume this waste, they produce multiple valuable commodities, such as insect biomass (proteins, lipids), pharmaceuticals, biofuels, lubricants, and fertilizer from their excrement. This process is called bioconversion and will be a serious contender among food waste treatment options in the coming decades. The role of CoRoSect in waste management will be addressed.
Early adopters of digitalized, integrated robotic solution (CoRoSect Use Cases)	This topic will introduce each of CoRoSect's use cases, each bringing a diverse insect production environment to our project. We will showcase these use cases and highlight their extremely important role in the widespread adoption of robotics and AI in insect farming adapted to the challenges of end-users.
Why automate insect production?	Insect breeders and producers need greater automation to achieve the level of performance, accuracy and efficiency needed to be profitable and produce the volumes required to meet customer demand. Their main challenge is to automate control operations that were previously performed manually by human operators. How CoRoSect fulfills the need to accelerate production processes and improve quality control will be explained.
Insect Farming with Robotics and AI To Alleviate Global Food Insecurity	The aim of this topic is to demonstrate how understanding the importance and applicability of robotics and AI in insect farming could be vital in the journey towards achieving global food security. We will put our focus on the immense potential of these novel technologies and their applications in relation to four pillars of food security (food availability, food accessibility, food utilization and stability) and how they should be exploited with the aim of reaching global food security.
What you should know about the CoRoSect digitalized, integrated robotic solution	This topic will seek to explain CoRoSect's digitalized, integrated robotic solution in a simple way possible. It will describe how CoRoSect leverages robotics, AI and big data to address the broken food system, as well as their significance to the project.
Human-robot collaboration in insect farming	This topic will focus on the future of robotics and how it will impact our daily lives, with an emphasis on the collaborative connection that humans and robots should establish. The post's ultimate aim is to expand knowledge and acceptance of innovative technologies among a variety of target audiences.

Figure 32 CoRoSect - Tentative topics to be covered

4.1. Events in which CoRoSect plans to participate

There is a number of relevant events in which we plan to participate:

<i>Conference</i>	<i>Location</i>	<i>Date</i>
European Robotics Forum	Rotterdam, The Netherlands	March 22-24, 2022
Robotics Expo 2022	Rome, Italy	March 24-25, 2022
International Conference and Expo On Robotics and Artificial Intelligence	London, UK	TDB
IPIFF Annual Conference	Brussels, Belgium	
VIVA TECH	Paris, France & online	June 15-18, 2022
ICINCO 2022	Lisbon, Portugal	July 14-16, 2022
INSECTA 2022	Giessen, Germany	September, 2022
EFIB 2022	Vilnius, Lithuania	October, 2022

Figure 33 CoRoSect - Relevant events

5 Conclusion

Communication and Dissemination with its comprehensive approach, were implemented for building CoRoSect's visibility. In deliverable D11.1 Dissemination and Communication Plan, a detailed distribution and communication plan was outlined, with significant results.

Several activities were undertaken by the partners including social media campaigns, liaisons with other projects, presence at virtual events, and newsletters. CoRoSect has been successfully marketed and has formed a strong connection with key stakeholders as a result of these activities.

Through consolidation across the consortium, the objective is to maintain and, ideally, advance the current growth curve.

Utilizing use cases will create novel scientific findings that can be shared with key target groups within CoRoSect as the latest insights.

CoRoSect will strive to stay aligned with the objectives set out in D11.1 Dissemination and Communication Plan and increase its presence and visibility in relevant networks to achieve its dissemination and communication goals going forward.

6 Annexes

Highlights from robotics discussion “Working side by side with agrifood robots – opportunities and challenges”

Robotics Panel Discussion was organized and held on the 25th of November, as part of one of the largest agrifood events in Europe – [AgriFood Forum 2021](#). The experts from this field gathered in one place to share their knowledge and exchange their in-depth expertise among the next projects: [CoRoSect](#), [Robs4Crops](#), [Robotics4EU CSA](#), and [FlexiGroBots](#).

A few industry-leading names were featured in this panel: Dr. Rico Mockel – Associate Professor of Cognitive Robotics and Intelligent Systems at Maastricht University (CoRoSect Coordinator), Daniel Calvo Alonso – Head of the Artificial Intelligence, Data and Robotics unit at Atos Research and Innovation (FlexiGroBots Coordinator), and Anneli Roose – Project Manager at Civitta Estonia (Robotics4EU Coordinator). During the discussion, they have exchanged insights about autonomous robotics, smart implements, AI-based robots in the agri-food sector and many more. It was our pleasure to co-host this panel during which they have exchanged insights about autonomous robotics, smart implements, AI-based robots in the agri-food sector and many more.

Rico took the floor to share his experience with CoRoSect robots. He noted that CoRoSect robots are widely used in agriculture where they take care of a wide range of processes in insect farms. An example he gave was how an autonomous guided vehicle that can drive inside the insect farms can also be used and implemented in other agrifood sectors with only some modifications. He stated that these robots really show their abilities once they are integrated into the ecosystems.

What he pointed out is that many other EU projects, alongside CoRoSect, work on generating the whole framework around robots, where people will be put in charge and thus help them to keep track of the operations these robots are conducting. In this way, the processes of the insect farms, and agriculture in general, can be optimized, allowing the different experts in these fields to share the knowledge among themselves.

The following is an edited and condensed summary of the panel discussion where the speakers provided the audience with their conclusion on the subject.

Annalie spoke about how technology should be developed with and for society. She believes that many of the challenges can be tackled only if they work together with the end-users of their products. She encouraged everyone to work together with colleagues from other areas and with end-users of their products in order to actually gain benefits and really shift the future of the agrifood sector.

In Rico's view, there are already some developments that are pushing forward. First, he commented that there is a strong push for robotization in many domains, specifically in the agrifood sector. Then he mentioned that there is also a need for cognitive robots that can gain a better understanding of the environment and also about the plants and animals that they take care of. He states that the focal point should be on the robots that make it out in the field and closely collaborate with humans, and not on the robots that are “hidden somewhere in the factory”. He noted that he is satisfied with ethical concerns being addressed because they have to integrate the projects successfully into the society and “work actually for the humans, not just for technology”.

Continuing, Daniel showed his agreement with Annalie and Rico, adding that they need to create new AI and robotic systems that are humancentric, made together with end-users and the rest of the stakeholders in the agrifood sector.

[CoRoSect] Working together towards robotics-enabled insect farms



Welcome to CoRoSect's October 2021 Newsletter – Working together towards robotics-enabled insect farms

Inside Insect Farming: CoRoSect in a Nutshell

CoRoSect brings a novel perspective to automated insect farming. We introduce a digitalized, integrated robotic solution to support all insect life cycle phases. The goal here is to create a collaborative environment where humans and robots harmoniously share and undertake various cognitively and physically demanding tasks, such as transferring and handling crates (de-stacking and stacking), monitoring environmental conditions, larvae separation/detection, insect feeding, and more.

This infrastructure will be implemented, tested, and validated based on end-user needs and requirements in diverse insect production environments, namely Mealworm, Black Soldier Fly and Crickets.

[Learn more](#)

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Inclusive Robotics for a better Society – INBOTS CSA Annual Conference

The INBOTS Conference 2021 brought key experts in the robotics domain together. Learning from the sessions is great, but the biggest value in every conference lies outside of the session rooms, in networking with the peers, being able to discuss requirements and results, and even the content from the sessions, with other projects. We attended and even participated as a virtual exhibitor, so let us share our highlights with you.

CoRoSect had a virtual booth at INBOTS 2021. See what it looked like!

Crickets live from the table: “This is a solution for the future of the Earth”

Tenebrio Molitor, a common beetle, is used as the major ingredient in biscuits, pasta, and powders in general. The European Commission approved the use of a specific insect, the so-called "flour moth," in human nutrition for the first time in its history.

Meanwhile, an Italian company, [Italian Cricket Farm](#), based in Scalenghe, in the province of Turin, is waiting for approval to utilize common cricket. "We have been running since 2017 and at the time we bred moths and crickets for livestock use or as a pet food only", explains Ivan Albano, CEO of the company.

Insects as Food: Would You Eat This?

CoRoSect for Trustworthy AI

The use of AI & robotics across different tasks, such as identifying and sorting insects for food and animal feed, calls for careful legal, ethical, and societal considerations early on in the process. CoRoSect applies the “by-design” principle to incorporate legal and ethical values to the technology throughout a system’s lifecycle—from research and development phases to deployment. - Article by Burcu Yasar from [KU Leuven](#)

AI-powered Insect Farm: Where Values And Engineering Meet

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Research-Industry Collaboration to Fuel Growth in Insect Farming

The insect economy is booming over the world, with a bright future ahead. In recent years, there has been a significant investment in insect economic research and development.

"Insect economy research and development work has been done in a company-driven manner. The largest companies have received hundreds of millions in investments. All successful insect companies have strong research partners", says Susanne Heiska, a specialist researcher at the [Natural Resources Center \(Luke\)](#).

Industrialization of Edible Insects—Get the Inside Scoop

Why CoRoSect and why now?



CoRoSect is developing a novel integrated robotic solution that will allow for optimization and upscaling of insect production facilities. Now the question is why now? Get to know our end-users and check out what they have to say!

"CoRoSect's cutting-edge robotic technologies and AI solutions enable traceability and improved control across key stages of insect production. The real-time orchestration solution could be applied at any scale while operating at the highest environmental efficiency." - **Nasekomo**

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*"There are a few large insect producers in the world; yet, they are inward-looking—keeping technologies and processes internally. A unique advantage of the CoRoSect system is that it offers tailored automation solutions for insect farms, both small and large-scale." - **Invertapro***

*"Right now, resources for technology development and industrialization in Italy are limited. CoRoSect provides the backbone for an automated insect factory, offering opportunities not only for development but also for expansion and internationalisation." - **Italian Cricket Farm***

*"The insect farming market is not very balanced as there are only a few companies and products available. As the market matures, it will be more difficult to succeed, all of which makes for perfect timing for an AI solution to the challenge of the optimization of insect production." - **ENTOCYCLE***

The robotic system does it all, get an inside look!

Meet our partners

*"Sustaining both the environment and the growing demand for food is a tough balance to strike. Insects are rich in protein and other essential nutrients and can be reared **at an industrial scale with minimal environmental impact.***

*We have a variety of applications and use cases with incredibly powerful market potential. By leveraging cutting edge technology and excellent tools, we have the chance to explore new avenues for **sustainable food production** and relieve some of the pressure on agrifood supply chains.*

*CoRoSect is an ideal playground where **artificial intelligence and robotics** come together. We are on a mission to accelerate the acceptance of robots and fuel true and effective **human-robot interaction**, both within insect farming and well beyond."*

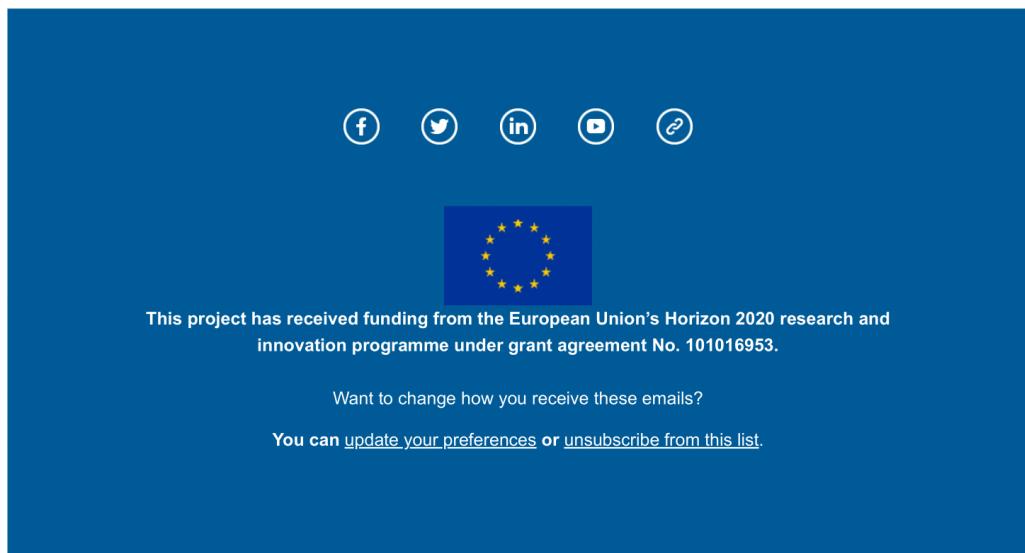
Dr. Rico Möckel, Maastricht University, Department of Data Science and Knowledge Engineering (DKE), CoRoSect Project Coordinator

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Led by [Maastricht University](#), the international consortium consists of nineteen partners that together form a diverse and dynamic group that involves key players in edible insect technology, farming automation, ethical AI, industrial robotics, sustainable innovation, and Robot-As-A-Service business models.

[Get to know us more](#)



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CoRoSECT



CERTH
CENTRE FOR RESEARCH & TECHNOLOGY HELLAS



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