Grant Agreement No: 101037648
[H2020-LC-GD-2020-3]
Wearables and droneS fOr CIty Socio-Environmental Observations and Behavioral ChangE

Deliverable

D8.2. Communications and dissemination plan and activities - 2nd release

Work package No.	**WP8**	Work package Title	**Raising awareness and exploitation roadmap**
Task No.	**T8.1**	Task(s) Title(s)	**Communication dissemination strategy and activities**
Lead beneficiary	**ECSA**		
Dissemination level	*PU*		
Nature of Deliverable	*R*		
Delivery date	**31 March 2023**		
Status	**R**		
File Name:	**[SOCIO-BEE] D8.2 – Communications and dissemination plan and activities — 2nd release.pdf**		
Project start date, duration	**01 October 2021, 36 Months**		

Authors List

Leading Author (Editor)			
Surname	*Initials*	*Beneficiary Name*	*Contact email*
Sorrell	PS	ECSA	paul.sorrell@ecsa.ngo
Co-authors (in alphabetic order)			
#	*Surname*	*Initials*	*Beneficiary Name*	*Contact email*
1	Noriega Ortega	BNO	ECSA	beatriz.noriega.ortega@ecsa.ngo
2				
3				
4				
5				

Contributors (in alphabetic order)			
#	*Surname*	*Initials*	*Beneficiary Name*	*Contact email*
1	Grigoriadis	DG	HYP	d.grigoriadis@hypertech.gr
2	Kotziagianni	MK	MRSI	mkotzagianni@maroussi.gr
3	Roussos	AR	MRSI	aroussos@maroussi.gr
4	Tsiakoumi	MT	HYP	tsiakoumi@hypertech.gr
5				

Reviewers List

List of Reviewers (in alphabetic order)			
#	*Surname*	*Initials*	*Beneficiary Name*	*Contact email*
1	*Hernandez Jayo*	*UHJ*	*DEUSTO*	*unai.hernandez@deusto.es*
2	*Kopsacheilis*	*EVK*	*CERTH*	*ekops@iti.gr*

Document History

Date	Version	Author	Description
13.03.2023	0.1	Paul Sorrell (ECSA)	Update and reformatting of 1st release
20.03.2023	0.2	Unai Hernandez Jayo (DEUSTO)	DEUSTO contribution included and peer review
27.03.2023	0.3	Evangelos Kopsacheilis (CERTH)	CERTH contribution included and peer review
28.03.2023	0.4	Paul Sorrell (ECSA)	DEUSTO contribution added CERTH contribution added
29.03.2023	0.5	Dimitrios Grigoriadis (HYP) Martina Tsiakoumi (HYP)	Added branding guidelines
29.03.2023	0.6	Beatriz Noriega-Ortega (ECSA)	Proofreading and final editing
30.03.2023	0.7	Maria Kotziagianni (MRSI) Anagyros Roussos (MRSI)	Proofreading and final editing
30.03.2023	1.0	Beatriz Noriega-Ortega (ECSA)	Final version

List of definitions & abbreviations

Abbreviation	Description
BK	Bee keeper
CS	Citizen science
CSH	Citizen science hive
CPDP	Computers, Privacy and Data Protection conference
DB	Drone bee
ECS	EU-citizen.science
EEA	European Environmental Agency
EU	European Union
FB	Facebook
HB	Honey bear
ICT	Information communications technology
IEEE	Institute of Electrical and Electronics Engineers
IG	Instagram
IoT	Internet of things
KPI	Key performance indicator
LK	LinkedIn
PoC	Proof of concept
QB	Queen bee
RTO	Research and technology organisation
TW	Twitter
WB	Worker bee
WP	Work package
YT	YouTube

Executive Summary

Led by the European Citizen Science Association (ECSA), this document is the second version of the project communications and dissemination plan, and works towards reporting on and updating outreach activities. It presents a set of different actions that the project has developed for partners to promote air quality and facilitate behavioural change towards more sustainable practices in favour of the environment.

The purpose of this communication and dissemination plan is to create a roadmap for the successful empowerment of and engagement with the various parties that will make SOCIO-BEE possible. Modelled after the concept of a beehive, these parties are designated as beekeepers (BK), queen bees (QB), worker bees (WB), drone bees (DB), larvae and honey bears (HB). SOCIO-BEE builds on the metaphor of bee colonies to develop effective behavioural and engagement strategies with a wide range of stakeholders. Citizens (queens, workers, drone bees and larvae), interested stakeholders (honey bears) and citizen science hives will be tested in three different pilot sites.

In order for this plan to be a success, it has to possess a degree of flexibility in order to be adapted to different contexts. Different stakeholders should hear relevant information about the project at the right time so that it is clear how it connects to their aims and interests.

This deliverable presents the results achieved by the consortium in the frame of project communication and dissemination in period M4-M18.

Table of Contents

List of Figures

List of Tables

1 Introduction

According to the European Environmental Agency (EEA), air pollution is a major cause of premature death and disease, and the single largest environmental health risk in the European Union (EU) [1]. Shockingly, the majority of people pay very little attention to air pollution, are largely unaware of how it affects their quality of life, and therefore seldom take action. The SOCIO-BEE project aims to address this fact.

As reporting showed, the initial lock downs at the beginning of the COVID-19 pandemic drastically altered our patterns of energy consumption, resulting in a drop of emissions up to 17% [2]. This decrease was a direct cause of a reduction in the use of surface transportation, highlighting the potential that policy measures can have on reducing emissions. SOCIO-BEE wants to tap this potential by developing a dissemination strategy that is able to speak to different stakeholders and adapt to the project's needs at different points in time.

SOCIO-BEE has been designed taking into account the different interests, needs and potential of all participants. Flexibility and adaptability are at the core of this project and will also be reflected in the communications and dissemination strategy. With a robust roadmap, a conversation will be maintained between citizen scientists, air quality experts, policy makers and different relevant stakeholders (queen bees, worker bees, honey bears and larvae) throughout the duration of the project. Content will be produced to engage those that want to learn more about the topic, but not necessarily take action (drone bees), convert larvae into any of the types of bees, and all project partners will be kept engaged, active, and eager to continue working towards empowering others to assume ownership of their responsibility for clean, healthy air.

All the actions described in this deliverable have been determined to be necessary to the success of the communication and dissemination plan. These considerations will likely change throughout the project, and the plan will be adjusted accordingly.

1.1 Purpose of the document

SOCIO-BEE aims to empower individuals to change their behaviour to better protect the environment. In order to make that a reality, this deliverable aims to establish a communication and dissemination strategy that enables productive interactions between the project partners and the different stakeholders involved in the project. This document therefore sets out the following for the project:

- Four objectives to ensure communication and dissemination targets are met to maximise the reach of the project outcomes and associated policies.
- Tools and Communication guidelines for all partners to help them identify and take advantage of opportunities.
- Campaign strategy to disseminate and promote the project phases, results and policies to different target audiences.
- This plan is reviewed regularly to ensure it is relevant and fit for purpose, with the flexibility to modify it based on engagement needs in the different project phases.

As part of the development of this deliverable a consortium meeting was held where some of the project's key messages (a-f, below) were highlighted, followed by a brainstorming exercise focused on dissemination tools and their possible reach.

Projects key messages:

a. Reducing air pollution requires engagement of, and behavioural change by, all stakeholders;
b. Wider citizen engagement and awareness is necessary to ensure public acceptance of measures proposed;
c. Top down and bottom up approaches should be fused through co-creation, co-execution and co-exploitation;
d. The communication strategy should contribute towards making scientific findings more accessible to non-scientists, ensure research questions are seen in a societal context and openly encourage public participation;
e. It is necessary to find innovative ways of engagement such as artistic exhibitions, games, etc.;
f. Citizen science (CS) initiatives often lack the connection with their local and regional sponsors that could multiply impact. The project should work towards combating that.

Based on the above, the communication and dissemination strategy was planned according to four different main objectives outlined in Table 1 (Section 2).

1.2 Relationship with other deliverables

The communication and dissemination plan and its corresponding activities will change throughout the duration of the project according to the delivery and release of results from work packages (WP) and associated deliverables. An important input came from deliverable D2.1 (Profiling and instruments for CS Bees and Bears identification) and provided insight on the characteristics of the different stakeholders targeted for engagement. In addition, D2.3 (Target user behaviours and determinants for citizen science driven green behaviour) provided grounds for potential recruitment and supporting strategies to reach a wider audience of queen bees, worker bees, drone bees and larvae.

As we strive to be inclusive in all our initiatives, D6.6 & D6.7 (Framework for developing social inclusion participation in citizen engagement and behavioural change platforms - 1st & 2nd release respectively) will be paramount in guiding us in this journey towards creating spaces where everyone feels included. Finally, D3.1 (Report on Legal and Regulatory requirements) and D7.3 (Cost-benefit analysis guidelines) will provide the necessary information to enable a successful maximisation of the project's outputs.

1.3 The bee hive metaphor

No single individual, no matter how motivated or skilled, is able to enact widespread change on their own. Only through collective action and cooperation is such a feat possible. SOCIO-BEE seeks to provide the environment and tools available for individuals interested in making a positive impact.

Being a project that is reliant upon the engagement and activity of groups of people, the principle of the SOCIO-BEE project was modelled after a beehive. Bees are highly social creatures that are able to maintain a community and produce honey through their collective efforts. Unlike the majority of other insects, bees are able to perform specific tasks based upon their position in the social hierarchy of the hive. It is from this concept that the SOCIO-BEE project is modelled.

Inside a bee hive there exist four categories of bees: a queen, workers, drones and larvae. Queens are responsible for populating a hive, as well as maintaining the social cohesiveness of the hive [3]. Individuals who act as queen bees in the SOCIO-BEE projects serve a similar role. They are responsible for finding people to participate in the projects, as well as monitoring activity and keeping them engaged. Worker bees, like their name implies do the vast majority of the actual 'labour' within the hive. In the context of the project, worker bees are the participants utilising the tools and resources developed by SOCIO-BEE to collect the air quality data. In nature, drone bees play no active role in the day-to-day maintenance of a hive, but help to maintain the hive's population. Participants in the drone role also do not play an active role in the project, but are individuals who are aware of and interested in SOCIO-BEE and could be potentially converted into a worker or queen bee. In the same way that every larvae becomes a bee, the perspective of SOCIO-BEE is that every person not currently active in or aware of the project can become a participant.

Outside of the hierarchical idea of the bee hive, other familiar roles come into play. The queen bee participant, though in charge monitoring and maintaining the worker bees in their hive, are not necessarily the hive's founder. Bee-keepers, envisioned as an organisation or institution with the structure and resources to operate a citizen science project of this nature, establish hives. Air quality data collected by worker bees falls under the 'honey' metaphor, and stakeholders interested in the honey are 'bears'.

2 Dissemination and communication plan

This section outlines the target audiences and the key messages of the communications and dissemination plan, the tools required to reach such audiences, as well as the roles each partner will play during the project lifetime. Also highlighted is the vision for the communications and dissemination efforts throughout the project.

Table 1. Table 1. Main objectives of the dissemination and communication activities.

Main objectives	Methods	Related tasks / deliverables	Additional actions
Overall enhancement of SOCIO-BEE's visibility	• Social media • Website • Newsletters • Publications • Conferences	• T2.1, profiling and hives creation • T2.2, engagement methodology • T6.3, Inclusive participation in SOCIO-BEE (D6.6 & 6.7)	• Offer consortium members opportunity to gain knowledge in tools and strategies of engagement
Promotion of the importance of air quality for our health and well-being	• Social media • Website	• T4.3, City pollution, citizen exposure and citizen behaviour analytics and profiling components. • T4.4, Wearable air quality module.	• Run an air quality crash course for the consortium, to be made available to the public through SOCIO-BEE's channels and the EU-Citizen.Science platform.
Stakeholder engagement throughout the project	• WP2 outcomes • Brochures/fliers • Workshops • Website • Newsletter • Networking	• T2.2 (engagement methodology • T4.1, Citizen engagement and co-creation services	• Lead co-creative workshops with the pilot leads to understand their needs. • Interviews and 1:1 discussions with the stakeholders are needed.
Maximisation of the projects results and policies	• Workshops • Courses • Publications • Press	• D3.1 - Report on Legal and Regulatory requirements • D7.3 - Cost-benefit analysis guidelines	• Upload all projects results in the EU-Citizen.Science (ECS) platform. • Scientific partners will deliver results to their research communities. • Eventual involvement of journalists.

2.1   Target Audiences

The goal of the communications and dissemination plan is to engage with individuals at all levels interest in the SOCIO-BEE project. Communications activities are not restricted to individuals, organisations or institutions with an active role in the project, but will attempt to reach stakeholders, interested parties and external contact points with the potential to increase visibility (journalists, editors, bloggers and media).

Members of the public, in their role as citizen scientists/worker bees, will come from different, but pre-defined, demographic groups. In the pilot phase of the project, the demographic characteristics of the participants sought for engagement will be dependent upon the pilot city: youths (Zaragoza), commuters (Marousi) and elderly communities (Ancona).

Stakeholders will comprise the role of the honey bears, coming largely from the realms of industry, government, academia, NGOs, etc.; scientists and other citizen science practitioners (BK), particularly in the field of air quality; policy makers and regulators at the European and national levels; outlets that will increase the reach and credibility of the project.

2.2   Key Messages

Most of the messages to be used for engagement will be informed by the outcomes of WP2 and other relevant scientific literature. Provided in this section are examples of the potential content to use to the different target audience.

General public

- Everyone can become part of the solution to air pollution
- Let's keep cities and neighbourhoods liveable and healthy
- Your contribution is necessary and incredibly valuable
- Act now

Industry stakeholders

- Industry needs to meet the world's ever-growing environmental needs. Stop being part of the problem and become part of the solution
- Clean air is one of the most basic human rights and currently, air pollution is one of the five main drivers of biodiversity loss and the cause of 400,000 premature deaths in the EU due to ambient air [4]
- CS projects are a reliable source of data with the added benefit of having engaged communities that want to help devise solutions to problems.

Scientific community

- Scientific literacy of citizens towards air quality topics will help them better understand their role in promoting a more sustainable future.

- Crowd sourced data with SOCIO-BEE provides untapped potential to observe air pollution in urban environments in relation to citizen behaviour patterns.

Deploying CS initiatives as part of their research will contribute to the democratisation of science and therefore will increase public trust in the scientific process.

Public organisations, governments and NGOs

- The SOCIO-BEE approach enables decision makers to tap into new sources of information, knowledge and perspectives on a larger scale about the pollution in urban and suburban environments at very low cost.
- SOCIO-BEE helps cities to develop pragmatic solutions to solve air pollution problems by integrating economic, social and environmental parameters.
- NGOs have incredible potential to enable the communication between CS practitioners and the general public. This connection is one of the cornerstones of CS and therefore paramount for the success of the project.

Policy makers and environmental agencies

- The active participation of citizens has the potential to renew the relationship between policy makers and citizens by improving openness and reliability of policy implementation.
- Policies must reflect what people need. Let us all work together towards reaching a consensus.

Journalists, editors, bloggers and media outlets

- SOCIO-BEE solutions will benefit each citizen and provide transparency on climate change policies.
- The media's role is crucial through endorsements and as amplifiers of the project's goals.

2.3   Dissemination tools

Dissemination will take place through various channels to account for the differentiated demographic digital and off-line presence, as well as the specific objectives. The multiple languages of the different pilot locations and countries involved in the project will also be taken into consideration, as well as accessibility and representation.

Both accessibility and representation will be at the core of all communications and dissemination activities. This means we are committed to taking all necessary measures to ensure an inclusive environment is being provided. We want to ensure that with SOCIO-BEE there is the opportunity for everyone to participate and for every voice to be heard.

Legal requirements will be considered during all dissemination activities according to the activities in WP1, WP3 and WP6. In particular emphasis will be put on the data protection requirements and will include a data protection statement as well as a legal notice whenever necessary.

Website

The project website is located at the https://socio-bee.eu/. Websites are an important avenue for establishing an identity and creating an online presence for public engagement. Additionally, the website serves the purpose of informing the general public about the current challenges of air quality, what affects it and what can be done to slow down and reverse to a certain degree the damage. The web page is designed to attract and engage participants across as broad a spectrum as possible, and has been showcased within the EU-Citizen.Science platform to maximise visibility to the citizen science community.

During the first year of the website's operation (2022), it served as an easy to navigate landing page providing an overview of the project in accessible terms. Basic information on the project's purpose and objectives, as well as a brief introduction to the pilot cities and an promotional video are all present on the main page. Consolidating all of the primary information necessary to raising awareness and interest on the home page reduces the chance that visitors will miss relevant information located on other areas of the website. This is especially important when attempting to attract participants at the foundational level, as often a website gives the first impression of the project to the public, and communicating information simple, straightforward manner provides potential participants with the idea that active participation in the project will not be complicated.

In 2023, as SOCIO-BEE engages more actively with the target populations, the website will be expanded with more detailed information. This includes such additions as individual pages for the pilot cities, an explanation of the project values and community, more air quality resources, increased accessibility functionality, and multiple topic-specific contact forms.

Accessibility and representation are being taken into consideration throughout the design process. The website is available in English, as well as all pilot languages — Spanish, Greek and Italian. All legal requirements will also be taken into account.

Social Media

The main social media objective across all channels is to engage with target audiences in order to promote the project and disseminate key messages. Each social media platform will be evaluated based on its features and messaging format and used to communicate specific content types with specific groups accordingly.

Project participants will be invited to be share content on the SOCIO-BEE social media accounts and website blog in order to show the real world applications of project activities. This will in turn help make the idea of participation less abstract and create a sense of community amongst the participants. Public recognition of the contributions of individuals through likes, re-shares, and comments also serves as a means of encouraging user-to-project engagement.

Social media campaigns consisting of a series of posts with images and/or videos that aim to keep target audiences engaged and interested in SOCIO-BEE are also planned. Topic-specific campaigns tend to be

effective outreach tools due to their ability to stand-out from the typical news items appearing in someone's social media feeds. The objective of the campaigns will depend on the project phase(s) and current needs. For example, during the stakeholder engagement phase campaigns will be focused on attracting the right stakeholders for each pilot and make sure they remain interested. For this a first phase of understanding the needs and wishes of the stakeholders is central, and will necessitate close collaboration with WP2. During the pilot phase and recruitment of citizen scientists, depending on the target group of each particular pilot (young adults, elderly, and commuters) campaigns will be launched on the appropriate platforms together with co-creative workshops in collaboration with the pilot leads.

Twitter

SOCIO-BEE's Twitter account (@socio_bee) serves as means of direct engagement with its followers. The dialogue-focused nature of Twitter makes it an ideal channel with which to communicate brief announcements, updates, real-time news and calls-to-action. Communications through this channel utilise very brief, one-to-two sentence announcements and ideally should be accompanied by an image or video. Those interested or participating in the project would use the SOCIO-BEE Twitter channel to keep track of what the project is up to on a regular basis.

All tweets containing images will include a description of the images to account for followers with visual impairments via the 'alt text' function. Tweets containing videos will be produced with subtitles or a closed captioning file will be attached to account for followers with hearing impairments.

The language of most of the original Twitter content will be English. The SOCIO-BEE main account can be used to amplify the activity of pilot Twitter accounts in the local languages, and thereby direct relevant multi-lingual posts and new users to its feed.

An additional strength of the Twitter platform is that the vast majority of users — 85 percent — use the platform on their mobile phones [5]. This increases likelihood and ease with which users will receive SOCIO-BEE news, given that they can receive notifications at work, at home or during their commute. Additionally, unlike LinkedIn, which is predominantly used for professional purposes, Twitter has heave 'casual' or non-professional usage, increasing the times in which users may come into contact with SOCIO-BEE activities on the platform.

Below, Figure 1 and Figure 2 illustrate the reach (number of people who may have viewed a post) and engagement (interactions with a post), respectively, of the SOCIO-BEE Twitter audience. The numbers shown in both figures are within a good range for the number of followers on the SOCIO-BEE Twitter channel, though there are noticeable peaks and valleys. This wave or mountain-like structure is not unusual, as not all social media content is equally interesting to every individual. However, the pronounced difference between the high and low points on the graphs are something that is currently being addressed. Planning is under way to revise the frequency of posting, which includes exploring new content types. This reorientation will be applied wholesale to the SOCIO-BEE social media strategy, as the analytics for the Facebook and LinkedIn accounts (Figures 3-6) show a similar structure.
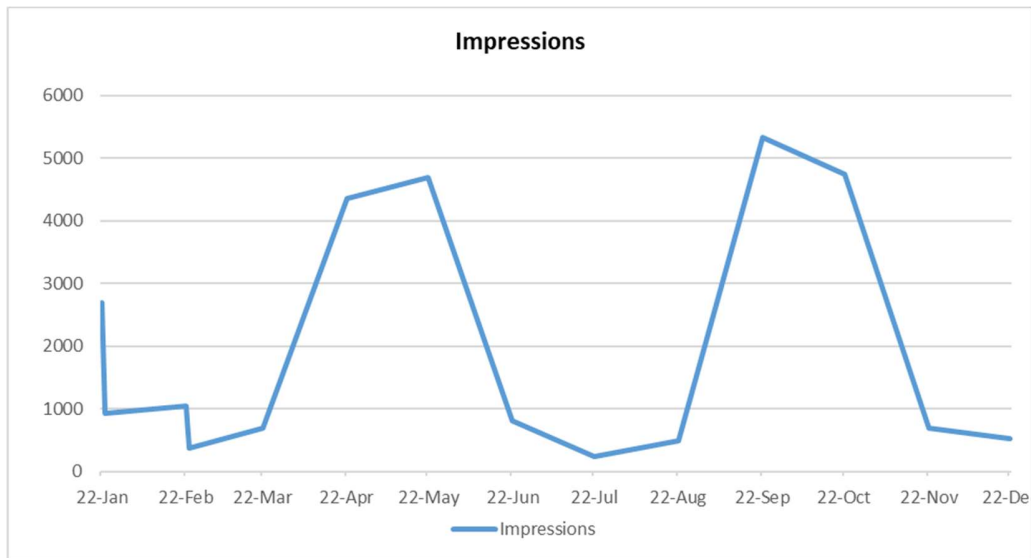
Figure 1. Twitter impressions
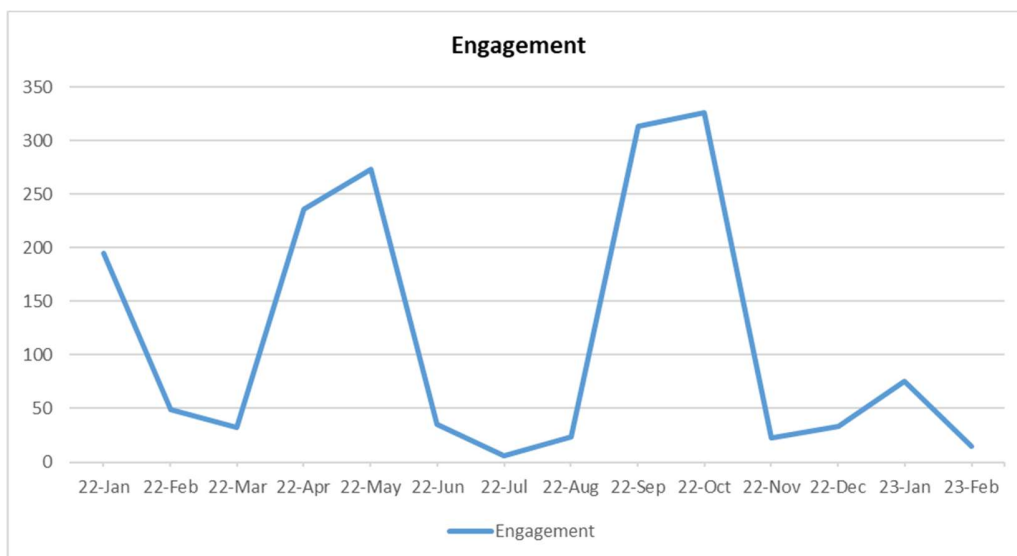
Figure 2. Twitter Engagement

Facebook

The project Facebook page (@SOCIO-BEE) is predominantly used to promote project organised and related events and update followers on the dissemination activities (e.g., conferences, trade shows, webinars, presentations, etc.) of consortium members.

One benefit of Facebook over Twitter is the ability to write longer posts. This way SOCIO-BEE can provide more in-depth information about the project to a broad audience in a single or small number of posts.

However, though Facebook is globally one of the most used social media platforms, it now tends to be used by older users (40+ years-old), and is not alone suitable for engagement with the entire SOCIO-BEE community, and there is evidence that younger users are actively choosing not to join the platform [6]. Content created for the Facebook page will be predominantly in English, however there will be events created in the local languages of the pilot cities. As the project shifts into the pilots phase, the value of creating individual Facebook pages for the pilot cities to better serve the local communities will be evaluated.

Figure 3. Facebook Page Reach
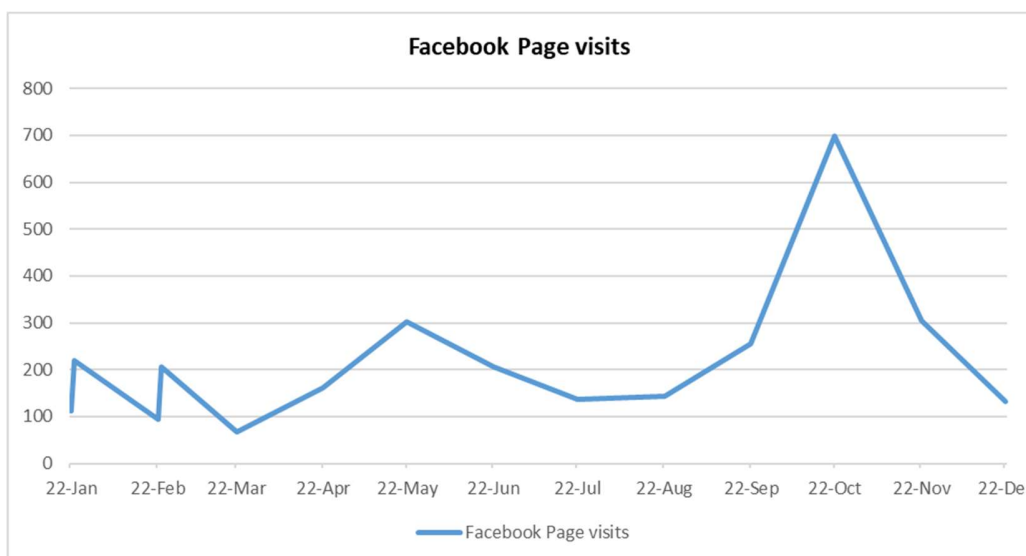
Figure 4. Facebook Page Visits

LinkedIn

As a professional networking platform, SOCIO-BEE's presence on LinkedIn will be to attract the attention of individuals and organisations operating in similar fields and topics, as well as to stay up-to-date with the citizen science, technical and air quality landscape. Activities and workshops will also be announced through this channel, and press attention is also expected to be gained here.

Figure 5. LinkedIn Profile Visits

Figure 6. LinkedIn impressions

Additional dissemination tools

Newsletter

Newsletters have the ability of reaching individuals who do not use or are not active on social media platforms. This could be older people, those who choose to not use smart phones or who do not have access to one for any number of reasons or people have opted to forgo social media entirely.

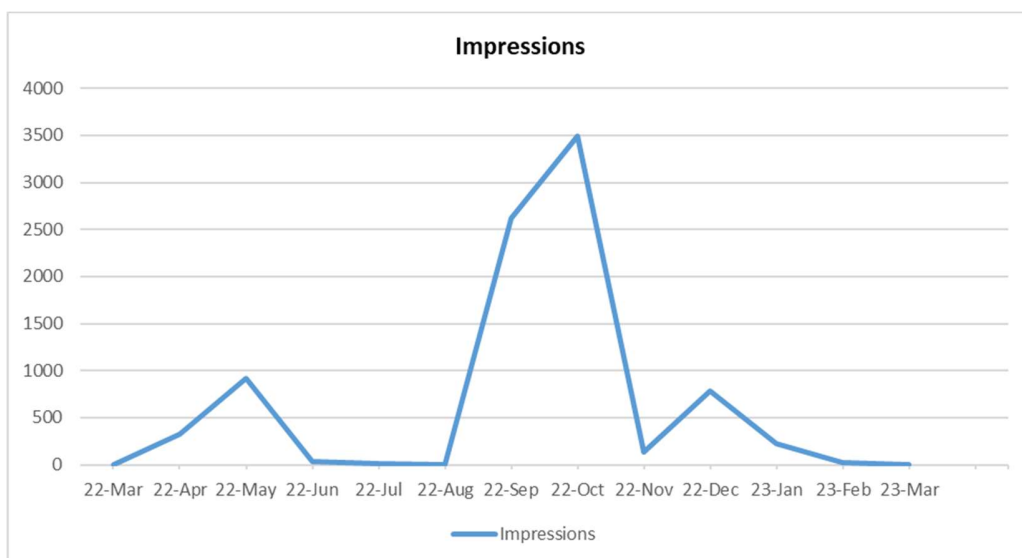However, there are drawbacks to newsletters. Newsletters are more time and labour intensive to create; people must find and subscribe to them; judging their success is more difficult than social media; there is limited or no direct engagement between the publisher and reader (e.g., no 'likes' or 'comments'); there is the possibility that a typo in the sign-up process can prevent someone from receiving a newsletter; and the newsletter can land in the spam folder of a person's email account.

To address the above issues, SOCIO-BEE has opted to utilise the monthly ECSA newsletter. With nearly 2,500 subscribers, the ECSA newsletter has a solid readership within the professional science and citizen science communities. Through this avenue it is also more likely that relevant individuals and organisations will take notice of SOCIO-BEE activities. Between November 2021 and March 2023, the SOCIO-BEE project was mentioned seventeen times in eight separate newsletters.

As the project shifts into different phases, whether or not to produce and original SOCIO-BEE newsletter will be evaluated.

Press releases and journalistic media

Press releases and journalistic media (Table 4, Annex I) will be used throughout the project to gain media attention and inform the public about activities, milestones and results. The aim is to get attention at different levels: European, national, regional and local. Partner institutions are also encouraged to write press releases to promote and communicate about relevant events at a local level as well as to consider translating other partners' press releases. Larger project press releases will be coordinated by the consortium collectively.

Events

Consortium members will attend European conferences, exhibitions, workshops, seminars and other external events on topics related to the project (e.g. GovTech, regulations, environment, wearables, IoT, citizen science, participatory approaches), where they will promote SOCIO-BEE and its objectives/outcomes. SOCIO-BEE aims to be present at a minimum of three relevant multidisciplinary events per project year. For this purpose, a dissemination package, found in the shared drive, has been prepared consisting of a set of branded materials that the consortium partners are encouraged to use when presenting the project. Table 3, Annex I details the twenty-three dissemination events consortium members took part in from October 2021 to February 2023.

Clustering events

We aim to take advantage of being part of the Horizon 2020 scheme to build bridges between projects with similar aims. Such a process has already started with CompAir and Citimeasure, a sister project from

the same call who is currently also working towards profiling different stakeholders for their pilots. Over the course of 2022 four such clustering instances have already occurred (Table 3, Annex I).

These bridges bring added value to all projects involved. We will strive throughout the project to fuel these partnerships and foster a relationship of mutual learning where resource and knowledge sharing is present together with the opportunity to co-create dissemination activities together.

Publications and book chapters

Peer-reviewed journal publications and book chapters (Table 5, Annex I) are envisioned in order to engage with the scientific community. It is not clear at this point, which journals or specific topics will be covered, as this will depend on the findings and conclusions as the project advances. Publications will be considered during the second and third year.

Courses, workshops and webinars

The idea of creating a crash course about air quality became obvious, as not all partners involved are 'air quality experts'. Held in February 2022, the first Air Quality Crash Course provided an overview of the fundamental concepts of air quality; explored challenges facing air quality; and covered how to measure the air quality and its impacts. Members of the consortium lead the crash course, which is publicly accessible on the ECSA YouTube channel (https://www.youtube.com/watch?v=ib1tMHEJ09c). Additional educational programs have been provided within the SOCIO-BEE consortium, though a third, public-facing crash course is a possibility.

Furthermore, as the idea keeps developing, we considered using the EU-Citizen.Science platform as a tool to disseminate this and other courses and training resulting from our project, taking the advantage of the effort to not only inform the consortium partners, but also anyone interested in air quality. Using this platform, we will be able to reach other CS practitioners, stakeholders and even citizen scientists (QB).

Promotional material

Videos

Videos are a great way to communicate project news and details and require minimal effort on behalf of the viewer. Currently, at least two videos are planned for release over the duration of the project: a promotional video and an outcomes video. All videos will be disseminated on ECSA's social media channels, as well as the SOCIO-BEE website.

The first promotional video was published 27 June 2022 on the SOCIO-BEE website and hosted on the ECSA YouTube channel (https://www.youtube.com/watch?v=5uo9QLS5uKY). At roughly 2.5minutes, the video explains the basic SOCIO-BEE concept using animated and real world footage.

As the end of the project approaches, a second video will be produced highlighting the outcomes of SOCIO-BEE. The exact for and content of the video have yet to be determined and will have to be decided upon via internal consultation with consortium members.

Brochures and physical materials

Brochures will be created to reach the local public and seek the engagement of locals. The distribution will be supported by the local stakeholders. Physical materials will contain general information about SOCIO-BEE and how people can get involved. These will be available in English and/or the local language.

During the first project year, a promotional pamphlet (Figure. 7 and Figure. 8, Annex I) was designed and produced laying out general information about SOCIO-BEE. This was used as a hand-out at events.

Call-to-action fliers were designed in the first months of 2023 for the pilot cities. These fliers (Figure. 9-12, Annex I) were produced in English and the pilot languages and can be used for recruiting purposes.

Any other physical materials can be taken into consideration based on the needs of project and pilot activities.

2.4 Partners main actions

Project partners play a key role in increasing the reach of the communication and dissemination activities via their own networks and tools, and record interactions and successes in a shared document.

As the lead beneficiary of this deliverable and corresponding work package (WP8), ECSA offers information, training and guidelines to all project partners on how to best use the communications and dissemination resources. A summary of communication and dissemination activities so far (M18) is given in Annex A.

Partner social media accounts and guidelines

Any social media posts on partner accounts related to SOCIO-BEE channels should be brief and use clear and concise language. A good tool for checking language is the Hemingway App [7], as recommended by the Simple English Wikipedia project [8]. The use of relevant photos or videos is more likely to increase interactions and engagement, so is strongly recommended. All posts should include alt text for images or videos:

- Instagram help [9]
- Facebook help [10]
- Twitter help [11]

When posting about SOCIO-BEE:

- All relevant partners (individuals, projects, organisations, institutions, etc.) should be tagged — the associated accounts are named in Table 2, Annex 1.
- Use relevant hash tags to help spread the work further, but do not limit the text of the message to include more hash tags.

- Tag (@) SOCIO-BEE when using professional (business, organisational, institutional) or personal account. Use of a personal social media account for SOCIO-BEE activities is NOT mandatory.
- Share press articles published on the project in local media.
- Share the project's press releases, e-newsletters, videos, tool kit and policy recommendations on your professional accounts.

Press releases

Partners should send out press releases to their contacts and make sure that the relevant local, national and international press receives the message in collaboration with their institutional press department.

Events

Each partner is encouraged to use branding that was created by the project (find branding guidelines in Annex II). Partners will ensure they have permission to share photos or videos on social media or with other partners. All events should be announced on the website and social media as well as partners websites and social media. Participation in events should be announced on social meeting before, during and after the event in order to generate maximum attention. If a partner is announcing activities from a personal or professional social media account, be sure to tag SOCIO-BEE.

If possible, take high quality pictures during the event, and share with all partners. Details related to event attendance should be entered into the co-creative document in the WP8 folder of the shared drive.

Individual dissemination

CERTH

As a leading European Research Institute in the ICT domain and its contribution to the dissemination strategy for SOCIO-BEE project results and advances will focus on a multi-scale approach with the central axes being academia, research and the services industry. CERTH will deploy its SOCIO-BEE dissemination activities through:

- Presentations in major European and international conferences.
- Publications in high-impact scientific journals.
- Its extensive European network of Research and Technology Organisations (RTOs), and its business network of innovative companies around Europe.

HYP

Hypertech (HYP) will inform its clients regarding project developments within communication campaigns through its corporate social media accounts, website and blog post. Several posts are to be generated at regular intervals to disseminate project progress. Additionally, once the SOCIO-BEE platform is running, HYP will contact its clients that are Municipalities to investigate their interest for proof-of-concept demonstrations. Furthermore, HYP will disseminate the project outcomes to partners in other H2020 projects in which it also participates. Finally, during the first year of the project HYP contributed to the development of an initial short video that summarizes the general concept, the objectives and expected

results of the project in a simple and non-technical way and comprehensible way for reaching the general audience.

VUB

VUB will put particular emphasis on the dissemination and communication of on the one hand the legal research carried out during the SOCIO-BEE project in relation to data protection and privacy and its cross-disciplinary aspects, and the research on engagement and behavioural change strategies on the other hand. VUB will participate in and/or lead the drafting of scientific publications and vulgarizing blog posts, to make research outcomes as visible and accessible as possible. The work on engagement will also be valorised and disseminated through the different CS and Living Lab networks (SCIVIL, ENoLL, etc.). VUB will also promote selected SOCIO-BEE-related activities through VUB research groups (LSTS & SMIT) press office and social media and website.

Conferences / events

VUB, on behalf of SOCIO-BEE, will organise a panel at its annual Computers, Privacy and Data Protection Conference (CPDP), one of the largest events in the field of privacy and data protection law worldwide. The panel will discuss the progress achieved by the SOCIO-BEE project to tackle legal and ethical challenges and open questions to accelerate the uptake of citizen and open science. The panel will include distinguished and highly experienced representatives from the EU institutions, academia, the civil society and local government. This dissemination and communication activity is planned for 2023.

Knowledge Powerhouse

The Knowledge Powerhouse for Citizen Science on Law and Ethics aims to communicate the project's work in relation to law and ethics, its cross-disciplinary impact assessment and subsequent lessons learnt to the general public, encouraging the uptake of citizen science by creating a publicly available knowledge hub hosted on the project's website. The Knowledge Powerhouse will attract stakeholders with guidelines, useful resources, and best practice, focusing on law and ethics and compacting and expanding the existing knowledge basis.

Currently, resources hosted on the Knowledge Powerhouse page are categorized under three main categories (Ethics, Law and Additional Resources) and ten sub categories. In each category a visitor can find references and resources useful for gaining insight and knowledge on the different aspects governing SOCIO-BEE.

This dissemination and communication activity was launched on the SOCIO-BEE website in 2022. Whether a launch event will take place is under consideration.

Articles and blog posts

VUB will participate in and/or lead the drafting of scientific publications and vulgarising blog posts, to make research outcomes as visible and accessible as possible. There will be at least two journal articles or book chapters.

Press office / social media / website

Selected SOCIO-BEE-related activities will be promoted through VUB research groups (LSTS & SMIT) press office, social media and websites. These posts can include (re)posts of news/events on the LSTS website/ LSTS twitter account when for example VUB-LSTS gives a SOCIO-BEE related talk.

Extra

Other communication or dissemination activities include presenting VUB-LSTS work on legal and ethical topics in the SOCIO-BEE project during events. Furthermore, the research group will also support activities organised by other partners. These can be events or publications.

UDEUSTO

This project represents a good opportunity for enhancing DEUSTO expertise on research and innovation in tools to foster Open Governance and Citizen Science. Bigger scientific impact in the form of publications and transfer to society through assets that can be adopted by PAs or private companies will be produced. UDEUSTO will contribute to the dissemination strategy of SOCIO-BEE by publishing research articles in the areas of citizen engagement, co-creation, behaviour change, tailored interaction, data analysis, and persuasive strategies. DEUSTO will attend to major European and international conferences (2 per year), e.g., Internet of Things conference which we have already organised in the 2019 edition in UDEUSTO (https://iot-conference.org/iot2019), plus organisation of special issues in impact journals (at least 1 per year) addressing the challenges of progressing towards human-centric computing, engaging Citizen Science and Internet of People (IoP).

HKU

HKU has extensive experience in coordinating and participating in pan-European and international projects and fully understands the need for coherent dissemination and branding for project communication. HKU will engage with several of its main European networks, including the European Association of Institutes of the Arts ELIA (role: board member), ERRIN (Design & Creativity Group), European Network of Living Labs ENoLL, OECD Working Group Creativity & Critical Thinking, European Forum for Advanced Practices EFAP Cost Action, European Creative Business Network (ECBN) and many others. HKU will assist in the creation and dissemination of targeted materials.

UNIPD

UNIPD will focus on disseminating the findings of the project among the scientific community, especially pointing to the changes that ICT and the participatory approaches have on public policies and on public decision processes. This kind of dissemination will be carried out through participation in conferences, publication of scientific articles and of UNIPD press releases. Furthermore, information and updates on the project will also be published on the CRIEP (Interuniversity Research Centre on Public Economics) website. UNIPD will also disseminate the SOCIO-BEE findings towards local institutions. This aspect will be addressed through the organisation of dedicated workshops.

ECSA

ECSA will focus on promoting the project to the citizen science community through the established channels: social media accounts, and our European citizen science events, e.g. the biennial conference. Initially, the focus was on highlighting opportunities for citizen scientists to get involved (phase 1). As the project progresses, ECSA will communicate the outputs to the citizen science community and other citizen observatories (phases 3 and 4).

BETTAIR

As an opportunity to broaden the presence of Bettair in environmental and air-quality-aware efforts, Bettair will contribute to the dissemination of SOCIO-BEE activities by means of its usual communication and social media channels (e.g. linkedin). Moreover, Bettair usually attends major national and international conferences within the fields of Smart Cities, IoT, mobility and air quality and will actively distribute any available dissemination materials such as flyers, brochures, etc.

ZKF

The Zaragoza City of Knowledge Foundation will use its regular communication channels (online and offline) for the dissemination of the project and activities.

In addition, the foundation will focus on the dissemination and communication of the Zaragoza's pilot, in cooperation and coordination with the Zaragoza City Council and the Ibercivis Foundation.

Through the communication plan, the foundation intends to promote the project at local, regional, national and European scope. In addition, the plan aims to raise awareness among the population, particularly teenagers, about the importance of air quality.

IBERCIVIS

The Ibercivis Foundation will use its usual communication channels (online and off-line) to contribute effectively to the dissemination of the project activities, aligning its strategy with the communication objectives of SOCIO-BEE. In order to achieve these objectives, Ibercivis will propose its own communication actions and will disseminate the general actions of the project, contributing to its dissemination in Spain by translating its contents into Spanish.

In addition, Ibercivis will have a special interest in the dissemination of the Zaragoza pilot, of which it is the organising entity together with Zaragoza City Council and Zaragoza City of Knowledge Foundation.

The communication objectives to be achieved will be the following:

- To make the project known among the consolidated community around the foundation (local, regional, national and European)
- To help disseminate the project in Spain
- To raise awareness about air pollution problem in the city of Zaragoza and the ways SOCIO-BEE proposes to tackle this problem
- Articulate, together with FZCC and the city council, the communications of the Zaragoza pilot.

- Participate in the recruitment of the target audience for the realisation of the pilot in Zaragoza
- Contribute to the dissemination of the project results.

Besides maintaining an online presence, reporting on the Zaragoza pilot activities is expected in traditional media sources, such as radio, newspapers and television.

ZGZ

The Zaragoza team will act as a common task force to disseminate and communicate the activities carried out within the SOCIO-BEE pilot. Acting as a cluster we intend to leverage the strengths of each of the institutions (ZGZ, ZKF, IBERCIBIS) to maximise the impacts and reach the maximum number of participants possible and to achieve a high level of commitment from the involved people.

Zaragoza's communication and dissemination activities will be implemented in close partnership with ZKF and IBERCIVIS. The activities carried out will be showcased and disseminated through the City Hall channels and through the Etopia center new media possibilities. A combination of traditional (press releases, radio, media, etc.) and innovative dissemination tools as its digital façade will be used.

Finally, ZGZ will deliver the SOCIO-BEE project as a best practice to be replicated in other cities. In order to do so we will promote it in the European networks where they are taking part (Eurocities, CC4DR, RECI, etc.)

Zaragoza (Pilot Case)

The challenge for the city of Zaragoza is to attract the younger public (8 to 16 years-old) to the SOCIO-BEE project, so that they can take part in caring for their air quality. With the innovations presented by SOCIO-BEE, this pilot will obtain positive engagement among the student communities that regularly participate in initiatives that are promoted to improve the quality of life of the people of Zaragoza through the conservation of its environment.

For this challenge in mind, the organising entities of the pilot in Zaragoza will align their communication strategy with the general strategy of the project and will use their channels and tools to achieve the following objectives:

- The dissemination of the project in the city of Zaragoza among the identified stakeholders: young people, air pollution researchers, local administration and private initiatives involved in the maintenance of the city's air quality.
- To raise awareness about air pollution problem in the city of Zaragoza and the ways SOCIO-BEE proposes to tackle this problem.
- Recruitment of the target audience to participate in the pilot: young people aged 8 to 16 years-old.
- The dissemination of the workshops and activities carried out during the pilot case.
- Dissemination of the results obtained.

For the realisation of the proposed objectives, each of the members has its own communication channels and tools:

Ibercivis Foundation

- Ibercivis Foundation website (35,400 page views/year)
- Facebook: 2,035 followers
- Twitter: 4,352 followers
- Instagram: 745 followers
- LinkedIn: 510 followers
- YouTube: 370 followers
- Ibercivis Newsletter (more than 2,000 contacts reach)
- The Observatory of Citizen Science in Spain website (67,291 page views/year). The observatory's social media channels:
  - Facebook: 598 followers
  - Twitter: 3,518

Zaragoza City Council

- Facebook (@ayuntamientodezaragoza): 40,000 followers
- Twitter (@zaragoza_es): 98,8000 followers
- LinkedIn (Ayuntamiento de Zaragoza): 5,609 followers
- YouTube (@ayuntamiento_zaragoza): 5,240 followers

Zaragoza City of knowledge Foundation (*Fundación Zaragoza Ciudad del Conocimiento*)

- Website (https://fundacionzcc.org/): 16,050 page views/year)
- Instagram (fundacionzcc): 155 followers
- LinkedIn (Fundación Zaragoza Ciudad del Conocimiento): 421
- Twitter (@FundacionZCC): 1,448

Etopia_Kids
- Facebook (@Etopia.Kids): 1,464 followers
- Twitter (@etopia_kids): 2,278 followers

Etopia Foundation
- Website (14,410 visitors)
- Facebook (@etopia.zgz): 6,846 followers
- Instagram (etopia_zgz): 6,454
- Twitter (@etiopia_): 7,651 followers
- YouTube (@etopia_zgz): 853 followers
- Etopia News and Etopia Kids Newsletter (3,539 contacts reach)

Zaragoza Communication action plan

- Press releases: one at the beginning of the pilot case, one at the end of its activities to help the dissemination of results.

- Besides the constant online presence, the project activities through the Zaragoza pilot case will be expected in traditional media — such as local and regional radio stations, newspapers and regional television — to help the dissemination of activities and results.
- The visual identity of the project will be used in all kinds of dissemination materials needed in the communications strategy, such as the design of brochures, posters, infographic, website and social media images, etc.
- The Etopia Art and Technology Center has a 600 square meter double façade that encompasses both the west and south façade of the building complex. It works as a communication support with the city and its citizens.

MRSI

MRSI, as a public organisation, will disseminate the project results to city and municipality networks. In collaboration with scientific partners the research results will be disseminated in scientific journals and presented in academic and professional conferences.

- Website (https://maroussi.gr/): 60,200 visitors
- Facebook (https://www.facebook.com/dhmos.amarousiou/):4,000 followers
- Instagram (https://www.instagram.com/dimosamarousiou/): 368 followers

NILU

NILU will communicate the project goals and outputs through our social media channels. Scientific dissemination of the project will be also conducted by participating in conferences as well as by writing scientific papers in open science journals. NILU is working with municipalities and will use these contacts to promote the project in Nordic countries.

AUTH

AUTH as an experienced partner in digital media will disseminate and popularise the project results through different channels available to the organisation as well as through scientific publications. SOCIO-BEE will be promoted in AUTH communication channels. Furthermore, AUTH has strong networks with Greek policy-makers (ministries and government agencies), private sector and civil society allowing promotion of the SOCIO-BEE to the most relevant societal actors.

ANCONA

Ancona planned the following dissemination activities:

- Press conference for local project start-ups to present SOCIO-BEE to citizens and to introduce who are the partners involved.
- Meetings with associations: meetings before and during the course of the project of the local project, for recruitment, progress monitoring and evaluation.
- Publication on institutional websites: These too at variable intervals, for further dissemination of interesting aspects and the work in progress, they could be the same contents of social, formatted ad hoc for different platforms.

- Facebook: 36,710 followers
- Instagram: 8,959 followers
- Telegram: 5,047 followers
- Twitter: 3,977 followers
- Website (www.comuneancona.it): 3,104,902 page views/2022
- YouTube: 243 subscribers

UNIVPM

UNIVPM planned the following dissemination activities for sharing and spreading knowledge about SOCIO-BEE:

Use of social media channels

UNIVPM posts SOCIO-BEE related contents using official UNIVPM channels, i.e. Facebook, Twitter, https://www.univpm.it/Entra/Horizon_2020_-_Projects. Moreover, the Department of Industrial Engineering and Mathematical Sciences (DIISM) of UNIVPM will also share contents about SOCIO-BEE on Twitter, LinkedIn and using the official Department https://www.diism.univpm.it/progetti-e-convenzioni.

Publications on research journals

The achieved results within the SOCIO-BEE project will be published in peer-reviewed journals such as *Building and Environment*, *Sensors*, *IEEE Sensors*, and other journals related to smart cities, air quality, and CS.

Presentations during conferences, fairs, and public events

UNIVPM disseminates the project during conferences, webinars and round tables. One event could be Ecomondo (http://www.ecomondo.com/), which is the largest EU green technology Expo.

Press conference

Organised in collaboration with the Ancona municipality for recruiting people and disseminating the project among citizens.

HOPU

HOPU as a specialist in Smart Cities business sector supports the dissemination via different media, events, and fairs and via key associations, which HOPU has a key role as FIWARE Foundation (Chair of the Smart Cities Mission Committee and part of the Board of Directors).

HOPU will also support the dissemination with blogs, posts, and invited articles in key reference media such as OECD, UNESCO and ITU-T.

In detail, some activities are attendance and organisation of conferences and workshops under the umbrella of IEEE (where CEO from HOP Ubiquitous is vice-chair of IEEE ComSoc IoT).

Publication of the results and innovations in the platform around IoT in relevant (ranked and high impact factor) Open Access Journals.

IEEE conferences such as IEEE AINA, IEEE IMIS, IEEE CISIS, IEEE CCNC, IEEE WF-IoT, IEEE INFOCOM, IEEE Globecom, IEEE ICC etc.

Journal publications in Gold Open access (free access) such as MDPI Sustainability, IEEE Access (Associated Editorial from HOP Ubiquitous staff), Springer Personal and Ubiquitous Computing

ID2Move

ID2Move hosts the test phase linked to drones. Pictures and videos regarding the preparation phase and flights will be done. This will offer engaging and attractive content for social media.

On a more general point of view ID2Move will speak about SOCIO-BEE on its social networks (Facebook, LinkedIn, Twitter, TikTok, Instagram) where autonomous systems, related companies and citizens are in contact.

ID2Move being part of a Business Innovation Center (CAP Innove) will also use their 5,000 contact persons to disseminate information about SOCIO-BEE when needed. CAP Innove social networks will also be used. They target a much broader audience.

Local and regional press may be invited, if security is guaranteed and confidentiality rules are followed.

ID2Move can also host events, demonstrations and proof of concept.

3 Summary and roadmap

The continued application and adjustment of this plan helps to ensure the success of the SOCIO-BEE project. The collaborative and co-creative nature of communications activities will need to continue, and in fact all partners will need to take a more active role in broadcasting the existence and activities of SOCIO-BEE. Now that the project is moving into a more active phase, generating interest is more crucial than ever, as it is during this phase that the a following and identity can be built that ensures the future of what the project is setting out to achieve goes beyond 2024.

The first effort focused on creating our presence and establishing solid communication channels with relevant stakeholders. Several co-creative meetings and workshops were held with relevant members of the consortium to fine-tune both the key messages for the different target audiences and how we can best deliver these messages with the proposed communication tools. The social media channels currently in use are Twitter, Facebook and LinkedIn, though the possibility for expanding to other platforms is possible if deemed appropriate. The varied nature of the pilot groups can warrant adjusting outreach strategies and tools as the hives commence and maintain operation. Initial outreach to relevant individuals and organisations have proved fruitful, though in order for communications activities to be a success we need to continue to expand our audience across these platforms.

With the commencement of the pilot phase, increased cooperation with the pilot cities will be necessary. This process has already begun with sessions held to coordinate some communications strategies as well as the design of physical media. An expansion of SOCIO-BEE's digital infrastructure is also likely. As referenced above, the website will require additional pages and contact options for individuals interested in participation, and additional air quality resources are also being considered. Giving pilot cities more independence in social media activities is also in consideration. Pilot-specific SOCIO-BEE aligned social media channels may prove to be more effective at maintaining contact with local communities, though message and tone harmonisation will need to be maintained with the main SOCIO-BEE channels.

As the project progresses and the focus shifts to different target audiences, we will continue to adjust our strategy.

4 Monitoring

Information is registered using practical templates located at our Nextcloud WP8 folder, where all partners can log their activities. KPIs have been defined through a co-creative exercise in 2022 and will be used to motivate and track the communication and dissemination activities carried out by the consortium during the lifetime of the project. These KPIs (Table 6, Annex I) focus on targets we want to reach taking into account the specific strengths of each consortium member and therefore each will have a specific set of contributions as a way towards achieving those KPIs. The progress being made toward reaching the KPIs is under constant review. This information has been considered in conjunction with the stakeholder engagement of WP2.

The website social media analytics (see Section 2.4 Analytics) are reviewed periodically and reported in the WP meetings. Quantitative data, such as the number of followers, likes, post reach, page views, session duration, post performance, geographical reach and impressions are all analysed are part of the periodic review process. Any data trends determined as having a positive or negative impact on communications activities will be explored further.

The events log will be used to track and report on information about events SOCIO-BEE partners have participated in or organised. This will be considered in combination with the number of publications and networking outputs and partners will regularly update these documents throughout the project. Reports on the reach of any media reports about the project will also be included.

5 Conclusions

Throughout the different stages of the project, we have different aims in terms of communication and dissemination. Initially engaged a variety of different stakeholders and created our presence in all relevant channels.

In the pilot phase part of the focus will shift to supporting the pilot cities and raising awareness in order to maximise reach and engagement with their intended target groups. This will include not only support with materials development, but also with strategising and providing the necessary digital infrastructure for communicating with their target groups.

5.1 Future work

One immediate and long term focus is the broadening of our online community and generation of original content. The current number of followers on the SOCIO-BEE social media channels is adequate, but needs to be improved. Planning on how to extend the base of SOCIO-BEE beyond its current form will need to take place. The same is true of content for social media activities. As the project shifts into more publicly active phases, it will be necessary to disseminate more original content on project activities in order to garner more attention and retain followers.

Active participation from all partners will be fostered throughout the project. We will continually work towards having strong communication channels and open discussions with everyone throughout the project.

The main communications and dissemination challenges are as such:

1. Connecting with hard to reach groups
2. Keeping all the channels topical and active
3. Ensuring the SOCIO-BEE social media channels are safe and inclusive spaces
4. Maintaining constant growth of the SOCIO-BEE social media community

We truly believe a flexible and inclusive approach will help us overcome these challenges together with our commitment to keep an open mind to learn and adapt our actions as we move forward.

References

[1] https://www.eea.europa.eu//publications/air-quality-in-europe-2022

[2] Impact of COVID-19 on CO2 emissions (unfccc.int)

[3] https://canr.udel.edu/maarec/honey-bee-biology/the-colony-and-its-organization/

[4] https://www.eea.europa.eu/highlights/premature-deaths-due-to-air

[5] https://twitter.com/WSJTech/status/451886622788055040

[6] https://www.adobe.com/express/learn/blog/top-social-media-sites

[7] https://hemingwayapp.com/

[8] https://simple.wikipedia.org/wiki/Main_Page

[9] https://help.instagram.com/

[10] https://www.facebook.com/help

[11] https://help.twitter.com/en

Annex I

Figure 7. Promotional flier, front

SOCIO-BEE

Promotes the wider use of citizen science to

complement environmental reporting and supports:

The development of technologies that allow citizens to participate throughout the research project.

Encouraging and disseminating best practices.

The coordination between existing action.

SOCIO-BEE provides a citizen science web platform for air quality monitoring:

Allows citizens to observe air pollution and join or lead monitoring campaigns with a wearable sensor, attachable to bracelets & drones.

Provides educational resources about air quality related topics aimed at all levels of expertise.

Furthermore

We will empower volunteer groups to adopt more environmentally friendly behaviours by inviting them to engage in co-creative practices.

SOCIO-BEE

Our mission

Reduce air pollution with the engagement & behavioral change of all stakeholders: Academics, decision makers, communities and citizens, business and SMEs.

Pilots

These citizen science hives are tested in three different pilot sites in Europe: Zaragoza, Ancona, Marousi.

Join us!

in socio-bee

🐦 @socio_bee

🌐 https://socio-bee.eu/

Figure 8. Promotional flier, back

Figure 9. Pilot flier, English

Figure 10. Pilot flier, Greek

Figure 11. Pilot flier, Italian

¿ Qué es SOCIO-BEE?

Es una iniciativa sobre la calidad del aire a través de la cual podrás:

· Formar parte de una comunidad, que como tú, está concienciada con el medio ambiente

· Participar en experimentos de ciencia ciudadana haciendo mediciones para saber cómo es la calidad del aire de tu barrio

· Descubrir qué hay detrás de los datos que recogerás durante el experimento

· Adoptar nuevos hábitos que pueden mejorar tu entorno

¿Cómo PUEDES COLABORAR?

SOCIO-BEE emula una colmena en la que la contribución y el trabajo de todos, cuenta. Podrás encontrar:

Abejas reinas: diseñan las campañas en las que podrás participar

Abejas obreras: hacen mediciones para recoger datos en diferentes zonas utilizando un móvil y un sensor

Apicultores: cuidan de la colmena y se encargan de que crezca

Osos: Analizan los datos recogidos con los sensores y el móvil para hacer mejores políticas

SOCIO-BEE
Community for Change

¿Dónde?

Sé el primero en unirte a las colmenas!!!

Nos encontrarás en
Maroussi (Grecia) |Ancona (Italia) |Zaragoza (España)

Contacto: zaragoza@socio-bee.eu

Únete!

in socio-bee

  @socio_bee

  https://socio-bee.eu/

Financiado por la Unión Europea,
Acuerdo Nº. 101037648

Figure 12. Pilot flier, Spanish

Table 2. List of social media channels and website links of all consortium partners

Partner	Twitter	Facebook	Instagram	Linkedin	Website
CERTH	@certhellas	@CERTHellas		Information Technologies Institute (ITI)	www.iti.gr/
HYP	@hypertechsa			HYPERTECH SA	https://www.hypertech.gr/
VUB (LSTS & SMIT)	@LSTSBlog @imec_smit	@imecsmitvub @VUBrussel		imec-SMIT, Vrije Universiteit Brussel	VUB-LSTS Hall (subgroup) VUB-SMIT
UDEUSTO	@deusto @IngDeusto @desutotech @desutoresearch	@UDeusto @DeustoIngenieria	@udeusto	University of Deusto	www.deusto.es www.ingenieria.deusto.es
HKU	@HKUtrecht	@hku.utrecht			https://www.hku.nl/en/home
UNIPD	@UniPadova @Economit_Unipd	@universitapadova	@unipd @economit_unipd	CRIEP - Interuniversity Research Centre on Public Economics	https://www.criep.eu/
ECSA	@EuCitSci	www.facebook.com/ECSAcommunity/		eucitsci	https://ecsa.ngo
BETTAIR				Bettair Cities	https://bettaircities.com/
ZKF	@etopia_kids @FundacionZCC	@Etopia.Kids	@etopia_zgz	Fundación Zaragoza Ciudad del Conocimiento	https://www.fundacionzcc.org
IBER	@ibercivis	@ibercivis	@ibercivis	ibercivis	ibercivis.es

ZGZ	@zaragoza_es	@ayuntamientodezaragoza		Ayuntamiento de Zaragoza	https://etopia.es
MRSI	@dimosamarousiou	www.facebook.com/dhmos.amarousiou	@dimosamarousiou	municipality-of-amaroussion	https://maroussi.gr/
NILU	@NILU_now	@NILUNorskinstituttforluftforskning		NILU – Norwegian Institute for Air Research	nilu.no
AUTH	@Auth_University	@Auth_University		Aristotle University of Thessaloniki (AUTH)	https://www.auth.gr/en/
ANCONA	@ComuneAncona	@ComuneDiAncona			https://www.comuneancona.it
UNIVPM	@UnivPoliMarche @DIISM_UNIVPM	@UNIVPM	@univpm	Università Politecnica delle Marche DIISM - UNIVPM	www.univpm.it https://www.diism.univpm.it/
HOPU	@HOPUbiquitous	@hopubiquitous			hopu.eu
ID2M	@id2move_eu	www.facebook.com/ID2MOVE/ https://www.facebook.com/CAPInnove	@id2move	www.linkedin.com/company/20534072 www.linkedin.com/company/cap-innove	www.id2move.eu www.capinnove.be

Table 3. Consortium communications activities

Event	Location	Date	Presenter		Participation type	Presentation title
TIME4CS Workshop Embedding Citizen Science in Learning, Teaching and Research	Online	28 October 2021	Dego Casado Mansilla (DEUSTO)	https://www.time4cs.eu/events	talk	SOCIO-BEE project overview
2021 International Conference on Future Healthcare and Economic Development	Online	25 November 21	Sara Casaccia (Università politenica delle Marche)	https://2021fhed-2.mystrikingly.com/	invited speaker	The role of measurements in precision healthcare
Common challenges in citizen science	Online	30 November 21	Dorottya Varga (VUB-SMIT)	https://www.scivil.be/en/event/workshop-series-common-challenges-citizen-science	participant - introducing socio-bee	N/A
Eutopia Train webinar: "How to engage citizens in your research?"	Online	15 February 2022	Olga Gkotsopoulou (VUB-LSTS), Dorottya Varga (VUB-SMIT)	https://www.unica-network.eu/event/unica-eutopia-train-webinar-workshop-how-to-engage-citizens-in-your-research-15-february-2022/	participant - introducing socio-bee	N/A
8th European Conference of Health Law	Ghent, BE	20-22 April 2022	Olga Gkotsopoulou (VUB-LSTS), Luka van der Veer (VUB-LSTS)	https://healthlaw2022.eu/programme/#friday-22-April-2022	presentation in panel (synergy between FASTER and SOCIO-BEE)	Citizen Science for Improved Healthcare: Where does the Law Stand?

Engaging Citizen Science Conference	Aarhus University, DK	26-27 April 2022	Carolina Doran (ECSA), Beatriz Ortega (ECSA)	https://conferences.au.dk/citsci2022	A round table discussion	Engagement Strategies For Vulnerable Social Groups
Crash course on air quality	Online	28 April 22	Eduardo Illueca (HOPU), Nuria Castell (NILU), Francisco Ramírez (Bettair), Sergi Urdina (Bettair), Carolina Doran (ECSA)	https://www.youtube.com/watch?v=ib1tMHEJ09c	webinar / crash course	Crash course on air quality
Audio engineering convention	Hague, NL	7-8 May 2022	Nikolaos Vryzas (AUTH)	https://aes2.org/events-calendar/aes-europe-spring-2022/	poster session	A citizen science approach to support joint air quality and noise monitoring in urban areas
Pint of Science Festival	Brussels, BE	9-11 May 2022	Olga Gkotsopoulou (VUB-LSTS)	https://www.pintofscience.be/Event/Our-society-in-the-age-of-data	opening speech	The Mythical Mr. Average: a tale of personal data and information accessibility
Sesnsor + Test Nuremburg	Nürnberg, DE	9-12 May 2022	Sergi Udina (Bettair), Francisco Ramírez (Bettair)	https://www.sensor-test.de/en/	information booth	N/A
ISOEN 2022	Aveiro, PT	29 May-01 June 2022	Sergi Udina (Bettair), Pablo Ferrando (Bettair)	https://www.olfactionsociety.org/event/isoen-2022/	information booth	N/A
Data Power Conference 2022 - Dialogues in Data Power	Online	22-24 June 2022	Luka van der Veer (VUB-LSTS), Olga Gkotsopoulou (VUB-LSTS)	http://datapowerconference.org/data-power-2022/about/	presentation in panel	Citizen Science and Research Data Management: Can You Fight Air Pollution with Data?

Living kowledge conference	Groningen, NL	29 June-01 July 2022	Carolina Doran (ECSA), Beatriz Ortega (ECSA)	https://livingknowledge.org/lk9/	workshop, clustering (CompAir)	DILEMMA SESSION: How do we identify vulnerable people and engage them in Citizen science without causing them unintended harm?
Identidades Comunes II	Zaragoza, ES	20 September 22	Mabel Segu Odriozola (DEUSTO)	https://ibercivis.es/identidades-comunes-ii/	project presentation	SOCIO-BEE
ECSA2022 conference	Berlin, DE	5-8 October 2022	Nuria Castell (NILU), Diego Casado (DEUSTO)	https://2022.ecsa-conference.eu/startseite.html	workshop, clustering (CompAir)	How to measure engagement and behavioral change in a citizen science project?
SER Podcast	Bilboa, ES	10 October 2022	Diego Casado (DEUSTO)	SER Podcast: Escucha los episodios de De las Ondas a la Red: El proyecto europeo SOCIO-BEE en Bizkaia (cadenaser.com)	Podcast	De las Ondas a la Red: El proyecto europeo SOCIO-BEE en Bizkaia
European Week of Regions and Cities	Online	12 October 2022	Carolina Doran (ECSA), Beatriz Ortega (ECSA), Diego Casado (DEUSTO)	https://eu.app.swapcard.com/event/euregionsweek-2022	workshop, clustering (CompAir, CitiMeasure)	Achieving a Green and Just Transition with Citizen Science: The case of air quality
	Thessaloniki, GR	14-16 October 2022	Marina Stamatiadou (AUTH)		presentation	Identifying sources of air pollution from their audio footprints
Startups accelerator VeniSIA	Venice, IT	25-26 October 2022	Sebastiano Meneghello (Bettair)		meetings	Wearable air quality technology

					meetings	N/A
Ecomondo	Ravenna, IT	8-9 November 2022	Sebastiano Meneghello (Bettair)		meetings	N/A
Key Energy	Rimini, IT	9 November 22	Beatriz Ortega (ECSA)	Citizen Science: engaging citizens in the sustainable transition of Cities (keyenergy.it)	presentation	Citizen Science: engaging citizens in the sustainable transition of Cities
Eurogeo Workshop 2022	Athens, GR	7-9 December 2022	Maria Kotzagianni (MRSI)	https://www.greekgeo.noa.gr/egw2022/index.php	Presentation	Raising citizen awareness and engagement towards greener daily mobility habits - The SOCIO-BEE use case at Maroussi
Critical Approaches to Social Issues	Bilboa, ES	13 February 2023	Diego Casado (DEUSTO)	https://twitter.com/dieguich/status/1625140549853364224?s=20	Presentation	

Table 4. Press mentions

Title	Publication	Date	Type of media	Link	Mentions
Correre dove l'aria è pulita, un braccialetto rileva lo smog	*la Repubblica*	7 November 2022	newspaper	Correre dove l'aria è pulita, un braccialetto rileva lo smog - la Repubblica.it	SOCIO-BEE
Review of EuroGEO Workshop	MRSI's website	26 January 2023	website	https://maroussi.gr/category/grafeio-typoy-anakoinoseis-deltia-typoy/page/7/	SOCIO-BEE
Municipality of Amarousiou participated in the three-day european workshop EuroGEO	Enypografa	26 January 2023	digital newspaper	https://bit.ly/3ZDJM2j	SOCIO-BEE
Municipality of Amarousiou participated in the three-day european workshop EuroGEO	iNews	26 January 2023	digital newspaper	https://www.inewsgr.com/388/sto-triimero-evropaiko-synedrioseminario-EuroGEO-Workshop-symmeteiche-o-dimos-amarousiou.htm	SOCIO-BEE
Review of EuroGEO Workshop	Maroussi24	26 January 2023	digital newspaper	https://marousi24.gr/marousiotika/apologismos-eurogeo-workshop/	SOCIO-BEE

Table 5. Publications

Title	DOI	Authors	Journal name	Publisher	Year
"Design and implementation of an open-source urban mobility web service based on environmental quality and bicycle mobility data"	10.23919/SpliTech55088.2022.9854330	A. Eguiluz, U. Hernandez-Jayo, D. Casado-Mansilla, D. Lopez-de-Ipina and A. E. Moran	7th International Conference on Smart and Sustainable Technologies	IEEE	2022

Table 6. Key performance indicators (KPIs)

KPI	Description	Objective	Monitoring responsibility
KPI9.2	Mass communication campaigns per pilot	≥ 2	ECSA
KPI9.4	Meeting with European Institutions regarding the management of citizen initiatives	2	ECSA
KPI9.5	Proof of Value outside consortium uses of SOCIO-BEE artefacts	≥ 2	HYP
KPI9.11	Impact on employment		HYP
KPI13.1	Total number of workshops/webinars by end of project	≥ 5	ECSA
KPI13.2	Number of Attendees per workshop	≥ 30	ECSA
KPI13.3	Number of events by end of project	1	ECSA
KPI13.4	Number of attendees for the final event	≥ 50	ECSA
KPI13.5	Total number of project presence in events (national & international)	≥ 15	ECSA
KPI13.6	Total number of publications (conferences & journals)	≥ 8	ECSA
KPI13.7	Articles in local newspapers	≥ 6	ECSA
KPI13.8	Access to project website	≥ 100	ECSA
KPI13.9	Numbers of participant visits to project Web sites	≥ 5000	ECSA
KPI13.10	Total number of visits (sessions) by end of project	≥ 10000	ECSA
KPI13.11	Average duration (time spent) per session	≥ 3	ECSA
KPI13.12	Total number of followers (Facebook, Twitter, LinkedIn) by end of project	≥ 1800	ECSA
KPI13.13	Total number of newsletters by end of project	≥ 6	ECSA
KPI13.14	Number of readers per newsletter	≥ 80	ECSA
KPI13.15	Total number of brochures by end of project	≥ 2	ECSA
KPI13.16	Total number of videos produced for project purposes	≥ 2	ECSA

Annex II: Branding Guidelines for the SOCIO-BEE project

This document governs the composition, design, and general look-and-feel of a company's branding. Consistency is key when it comes to branding, which is why these guidelines have been created to ensure that all elements of our brand are used in a cohesive and uniform way across all platforms. By following these guidelines, we can maintain a strong and recognizable brand identity that will help us stand out in a crowded marketplace. This document covers all aspects of our brand including our logo, colour palette, typography, imagery, and use of images.

SOCIO-BEE's mission, values, and vision

SOCIO-BEE Mission: Reduce air pollution with the engagement of, and behavioral change by, all stakeholders

SOCIO-BEE Vision: Combine community engagement and social innovation with Citizen Science (CS) through emerging technologies and playful interaction to bridge the gap between:

1) the capacity of communities to adopt more sustainable behaviours,

2) the citizen intentions and the real behaviour to act in favour of the environment

Message: Community engagement can raise other citizens' awareness of climate change and their own responses to it, through experimentation, better monitoring, and observation of the environment.

SOCIO-BEE values:

Quality: We are expert at what we do and we do it well.

Environmental inspiration: We Inspire people to do something for climate change and air pollution

Co-agency: We are taking ownership on individual and collective level to achieve common goals

Inclusion & diversity: Everybody matters, Science is for everyone and it takes people with different backgrounds to make our project succeed

Every action count: We believe that even the small things can make a difference

Serving communities: We engage community members and staff to impact society.

SOCIO-BEE's emotional affinity: We aim to aspire joy, confidence and fascination to our participants. We plan to do this by fostering:

Acceptance: Sense of belonging in a community with a goal to protect the environment

Fulfilment: Sense that Europe is united in fighting climate change

Honor: Sense of duty to shift behavior to protect the environment

Responsibility: Sense of ownership regarding the environment

Awareness: Increase citizens emotional affinity with the environment and environmental issues

SOCIO-BEE's Standard Logo

The consortium partners are encouraged to use the standard logo of SOCIO-BEE for all communication activities, during and after the project.

The logo is a visual representation of a bee due to the beehive concept of the project for citizen engagement.

The hexagon is representing the cells of a beehive and is used to frame the bee symbol. This graphic device may have many applications, from designing a leaflet consisting of hexagon shaped sections, using it as a framing device for photographs or other images, hexagon-shaped stickers or medals for the participants. Furthermore, the hexagon framing of the bee can give the impression of a pressing button (suitable visualization for a mobile app icon as well). Furthermore, the three hexagons symbolize the number of the pilots that will be developed during the project in the municipalities of Ancona, Amaroussion and Zaragoza.

The typography of the logo is chosen to inspire confidence, honesty and trust, calling out loudly the project's name using capital letters. The dash is used to separate the words "SOCIO" and "BEE", so that it emphasizes that the project is about the society, while defining the role of the bee (following the example of the characterizations as Queen-bee, Worker-bee etc.).

Figure 13: Standard logo of the SOCIO-BEE project

SOCIO-BEE's Standard Logo Variations

Greyscale variations:

A logo with colours is not always suitable for all uses. For this reason, two monochromatic logo variations were produced. These variations are available to use in cases where coloured version is not an option, when the background colours do not provide enough contrast for the logo to be distinctive and when there is a conflict with the surrounding colours. These variations were deliberate for usage on top of solid, light, and dark, backgrounds. In cases where they are on photograph backgrounds, the variation with the greatest contrast shall be used. Concerning the usage rules, these are the same as the rules for the standard logo design.

Figure 14: Greyscale logo variation (positive)

Figure 15: Greyscale logo variation (Negative)

SOCIO-BEE
Community for Change

Deliverable D8.2 – Communications and dissemination plan and
activities — 2nd release

ECSA

GA No: 101037648

Guidelines of SOCIO-BEE's Logo Usage.

There should be sufficient clear space around the logo. The clearance area around the SOCIO-BEE logo
must always be proportional to the size of the hexagon shape that is used. This area should be measured
from the external lines of the full logo shape from all sides and their projections, shaping a rectangle
around the standard logo.

Figure 16: Guidelines for sufficient clear space around the logo

Never Stray from the Colour Palette.

Figure 17: Example of misused color pallete of the logo

Never Switch the Colours.

Figure 18: Example of misused colour palette of the logo

Never use the design on similarly colored backgrounds. Ideally the logo should be placed on white background, in other cases one can chose between #5A0C1C - Dark Brown or Hex color #474747 - Very Dark Gray from the palette. Avoid using Hex color #E09900 - Generic Orange, or similar yellow colors as background.

Never Rearrange Elements of the Design. Do not change spacing, alignment, or relative locations of the design elements.

Never Stretch or Distort the Logo. Do not change the proportions of any of the design elements or the design itself. You may resize as needed but must retain all proportions.
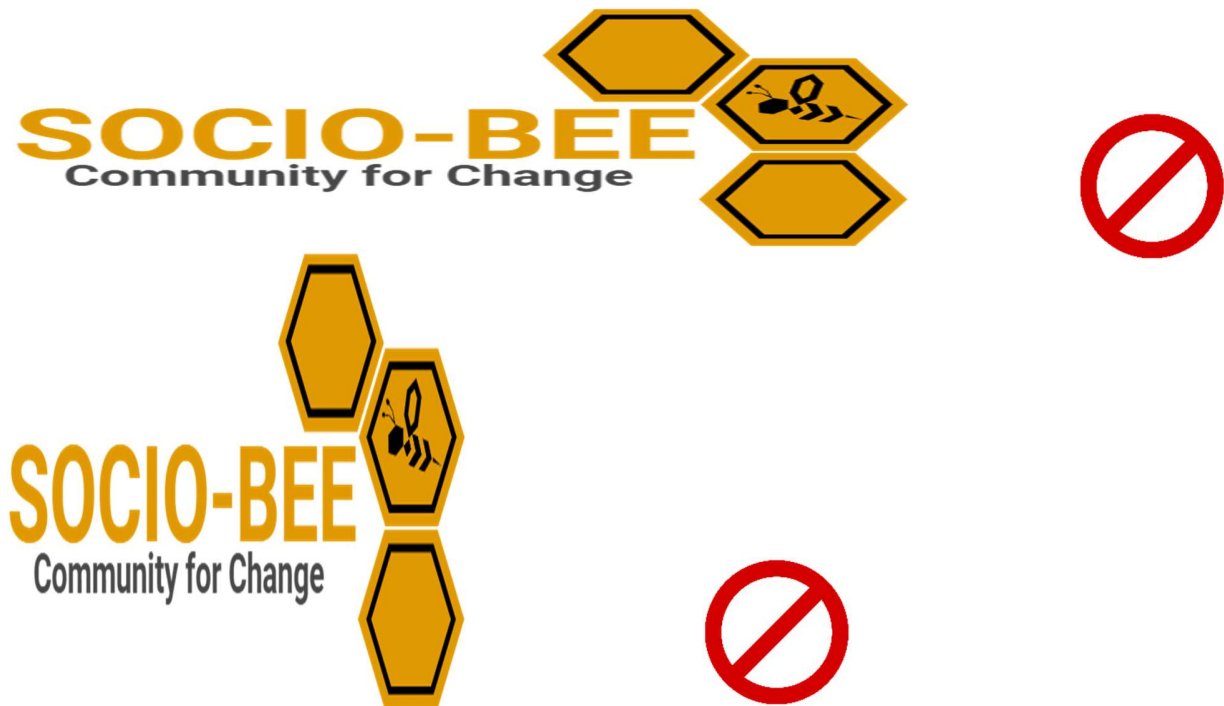

Figure 19: Examples of wrong use of the logo

Never Alter or Add Elements to the Logo. Do not add graphics, insert words, or modify the design elements or the logo/design itself.

Graphic Guidelines

Usage of the Bee icon

The bee icon circled around with the hexagon is considered a single unit and it is the only part from the primary logo to be used as a derivative icon of SOCIO-BEE. It may be used for sticker and medal designs, as well as icon for a mobile application. The usage of this icon aims at making the brand recognizable with the SOCIO-BEE project and its main concept.

Figure 20: The bee icon design used in the SOCIO-BEE logo

Usage of hexagon for framing

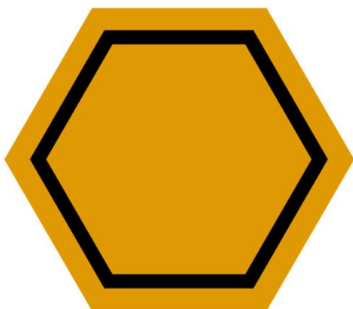The hexagon may be used as a framing device either for icons, text, or pictures.

Figure 21: Design of the hexagon used in the logo

In the case of framing other icons the inner icon should be displayed with the same colour as the inner hexagon (Black: Hex colour #000000).

SOCIO-BEE
Community for Change

Deliverable D8.2 – Communications and dissemination plan and
activities — 2nd release

ECSA

GA No: 101037648

Figure 22: Examples of other icons using the hexagon of the logo

In the case of text framing the main text colour should be white and the title in black and bold text. In case white text is not appropriate for a specific purpose other bright colours that make contrast with Hex colour #E09900 may be used. The body text should be centred with regards to the inner hexagon and be limited as shown by the dashed black lines in the image below:

The hexagon may be used as a framing device for images and pictures, as the example below.

Figure 23: Example of the utilization of the hexagon as a framing device

General use of images

Photographs

A jpg or jpeg file is a raster-based image meant for web or print use. These files are best used for photographs. A jpg file does not support transparent backgrounds. Similar to png, jpg files must be created with the correct size and resolution for the end usage. They can be used for your website and on social media and opened with any computer software.

Tagline

Community for change.

File Formats

We recommend using the svg file format (Scalable Vector Graphic) for web usage. A svg file is ideal for logos, basic graphics, and icons. It is a vector-based image and can be used on a website, while allowing the image to enlarge and maintain quality. These files have transparent backgrounds and can be opened in Illustrator or a web browser. For web illustrations, svg files deliver an overall sharper crispness relatively to png or jpg files. In general, svg files are used online and eps files are used in print.

Typography

The fonts used in both the project name and the tagline are Roboto in bold. Unlike other grotesque fonts, Roboto allows letters to take up as much space as it needs and ultimately, making for an improved experience for the reader.

We recommend using the Helvetica for printed material. The font also manages to convey honesty and invite trust.

Primary Logo Palette

The primary logo palette consists of three colors:

1. Hex color #000000 (Black)
2. Hex color #474747 (Very Dark Grey)
3. Hex color #E09900 (Generic Orange)

Hex color #000000 - Black	Hex color #474747 - Very Dark Gray	Hex color #E09900 - Generic Orange

Figure 24: Primary logo pallete of SOCIO-BEE

The hexadecimal color, #000000, black is the colour of power and sophistication. It is often described as an incredibly strong and intimidating colour that exudes authority and makes us feel **secure** and **protected**.

Hex colour #474747 is related to "Outer Space" because of their close resemblance. It's labelled as "very dark Gray". When people from western culture see this colour, Outer Space (#474747), used in branding, they might associate it with **being simplistic**, **modern or futuristic**, **elegant**, **travel**, **and middle-ground**. This colour isn't popular for *health care*. CNN, Walmart, and Boise State University have ties to this colour.

Hex colour #e09900 looks similar to "Harvest gold" because of their close resemblance. It's labelled as "generic orange". When people from western culture see this colour, Harvest gold (#e09900), used in marketing and promotions, they might associate it with **warmth**, **having confidence**, **pleasure**, **technology**, **and health care**.