Establish the Safeguard Knowledge Exchange Hub

Deliverable D7.3

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Safeguard
Safeguarding European wild pollinators

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Preface

One of the main objectives of **WP7: Communication, knowledge exchange and impact development** is to establish the Safeguard Knowledge Exchange Hub – Safe-Hub. It will unify all research data and tools on pollinator conservation from Safeguard and other relevant pollinator initiatives and integrate them into a web-based hub, acting as a core nexus for a wide range of users, such as citizens, scientists, farmers, protected area managers, beekeepers, businesses, and policy representatives. The platform will form a flagship output and will be made publicly available with data accessibility defined in user-friendly formats.

Summary

This deliverable outlines the establishment of the Safeguard Knowledge Exchange Hub (Safe-Hub). An introductory chapter explains the overall concept of the platform, as well as the purpose and need for such a tool. This section also outlines ideas about the management of the hub beyond Safeguard's lifetime. The following chapter goes into further detail regarding the website structure and contents (Homepage, About Safe-Hub, About pollinators, Knowledge library, Safeguard outputs, Relevant initiatives, Events, and Contact). The last chapter provides information about envisaged actions and future implementations on the hub.

List of abbreviations

EU	**European Union**
EAB	**External Advisory Board**
CDE	**Communication, dissemination and exploitation**
IAF	**Integrated Assessment Framework**
PCC	**Project Coordination Committee**
Safe-Hub	**Safeguard Knowledge Exchange Hub**
WP	**Work package**

1. Introduction

Globally, people are taking steps to address the dramatic decline of pollinators and ensure their conservation. One of the main objectives of Safeguard's **WP7: Communication, knowledge exchange and impact development** is to unify all research data and tools on pollinator conservation and integrate them into a web-based hub, acting as a core nexus for a wide range of users, such as citizens, scientists, farmers, protected area managers, beekeepers, businesses, and policy representatives.

Following this mission, the project developed an open-source knowledge exchange hub with the overall goal of co-creating knowledge and fostering capacity-building at national and

international levels. **Safeguard Knowledge Exchange Hub (Safe-Hub)** navigates harmonised and standardised data on pollinator health, monitoring, distribution, and conservation, along with newly developed and existing data and tools. It brings together Safeguard outputs and links to existing and/or external resources to provide an innovative tool to help different stakeholders access knowledge via one platform relevant to them and their decision-making. The hub offers a high-quality, user-driven interactive experience to facilitate pollinator data and knowledge sharing and support recommendations and the co-design of solutions to wild pollinator decline, shaped by the findings of Safeguard and connected to other nodes in the wider Pollinator information network. This establishes an integrative platform that facilitates access to currently fragmented knowledge on pollinators at national and European levels.

Safe-Hub consolidates and centralises many existing resources from previous projects and initiatives (e.g. B-GOOD, PoshBee, STEP, MUST-B, VOODOO, etc.) in a well-organised and user-friendly web format. These include policy briefs, graphical abstracts of key pollinator-related publications, links to relevant initiatives and pollinator species country checklists and distribution maps, crop coverage and pollinator dependencies, land cover, climate risks, pesticide and nitrogen deposition maps, etc. By sharing existing and successful implementation of current assessments of the status and trends of European pollinators, the platform provides examples of good practices for practitioners and the research community. Additionally, Safe-Hub allows policymakers to make decisions based on information connected with implementation at regional and national levels.

Safeguard itself will generate a substantial portfolio of new knowledge and outputs, such as the Integrated Assessment Framework (IAF), species distribution maps, thematic stakeholder discussion groups, stakeholder summaries and practice abstracts, publications and policy briefs, and new Wikipedia pages of EU main pollinators, all of which will be integrated and/or linked to Safe-Hub.

The frequent use of the hub by relevant stakeholders will be ensured by the Stakeholder mapping (Task 7.1) and multi-directional communication and exchange strategies developed in Task 7.4 and Task 7.5. The hub will provide a long-term centralised database for pollinator data and knowledge and its structure, use, and quality control are fully described in the Data Management Plan (Task 8.5).

The source code of the Safeguard Knowledge Exchange Hub can be made publicly available at the end of the project, allowing it to be easily migrated to an organisation that is willing to maintain it beyond the life of Safeguard. The developers of the Hub (Pensoft Publishers) will develop the platform until it is transferred to another organisation, or until the end of the EC legal requirements for maintenance of online structures (5 years after the conclusion of the project).

2. Website structure and contents

The official website of Safe-Hub (www.safeguard-pollinators.eu) serves as a one-stop-shop for pollinator-related data and tools, as well as Safeguard outputs. Maintained by Safeguard's CDE partner, Pensoft Publishers, the platform will be regularly updated to keep up with the needs of key stakeholders and ensure the continued interest of already attracted visitors. The website provides a user-friendly interface, including an easy-to-use navigation menu. The

footer contains links leading to Safeguard's social media accounts, a newsletter subscription form, and key website pages. The website has also been adjusted to be usable by mobile devices. The platform's structure and design are presented and thoroughly described below.

2.1.   Homepage

The landing page of Safe-Hub gives a brief introduction to the platform, along with the forthcoming events. In order to provide the user with a personalised experience, the homepage entails a custom welcome message for Safe-Hub's four target groups (Fig. 1).

Figure 1: Homepage of the Safe-Hub

2.1.1. Custom welcome messages

Safe-Hub aims to deliver the right content to the right user with information tailored to different actor types including policymakers, researchers, practitioners, and citizen groups (Fig. 2).
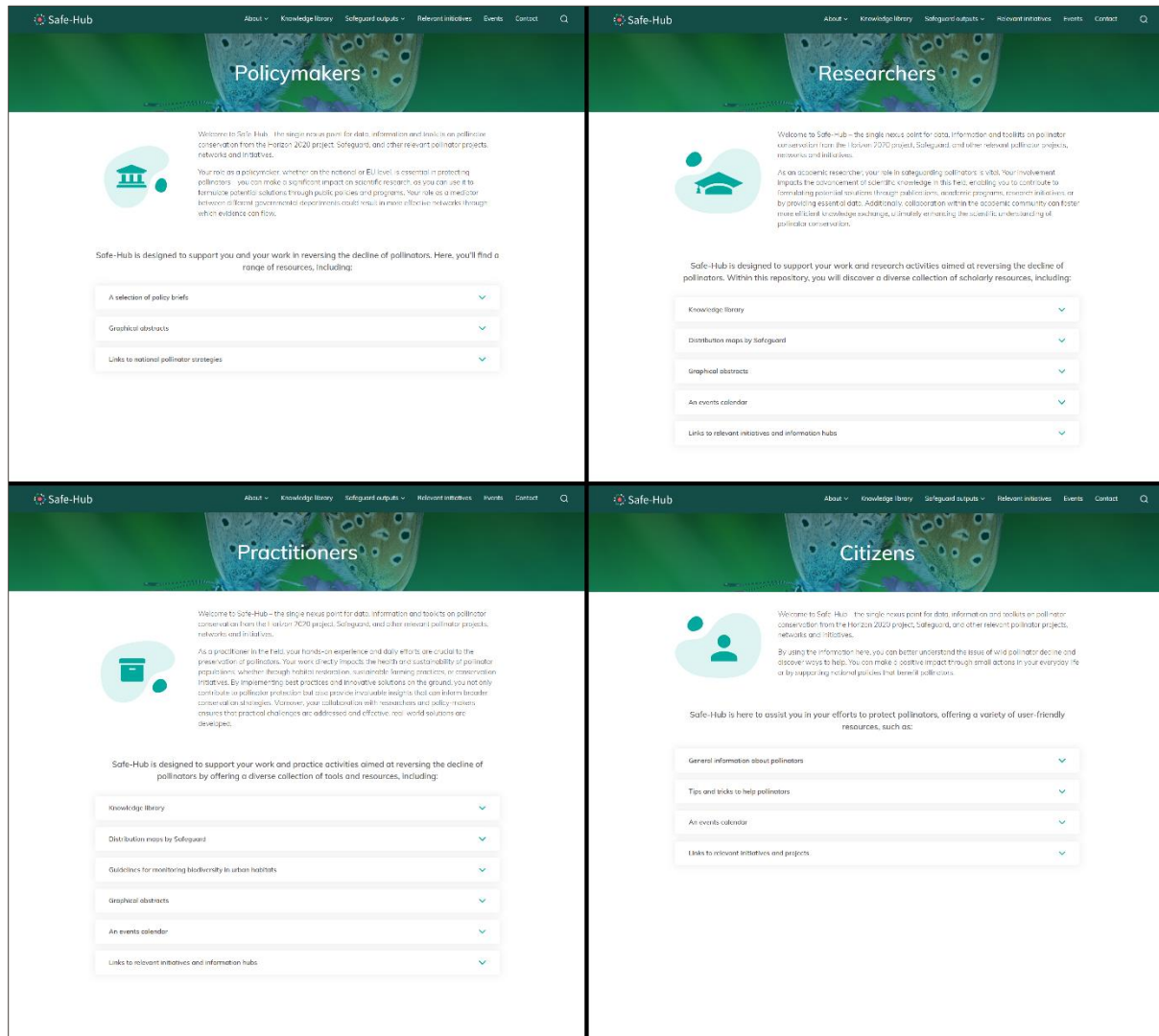
Figure 2: Pages with custom welcome messages for the target groups of Safe-Hub

Policymakers are among the main target groups, as they play a crucial role in pollinator conservation. Their decisions can influence and form the future of biodiversity and nature's well-being. The platform provides valuable pollinator data and links to external resources, all useful for **researchers** in their work and research activities on pollinator conservation. Safe-Hub also supports **practitioners** with various tools like Safeguard's distribution maps, guidelines for monitoring biodiversity in urban habitats, graphical summaries of key project publications, etc. Lastly, the hub ensures knowledge exchange, regardless of the level of expertise of the website visitors. Therefore, specific content is provided for **citizens** – general information about pollinators, tips and ideas on how to help them and an events calendar.

2.2.   About

The About page on the website is separated into two parts: **About Safe-Hub** and **About pollinators**. The first one provides an overview of Safe-Hub's main aim and scope and encourages visitors to choose the group they belong to (policymakers, researchers, practitioners and citizens) so they can easily find relevant content for their needs (Fig. 3).
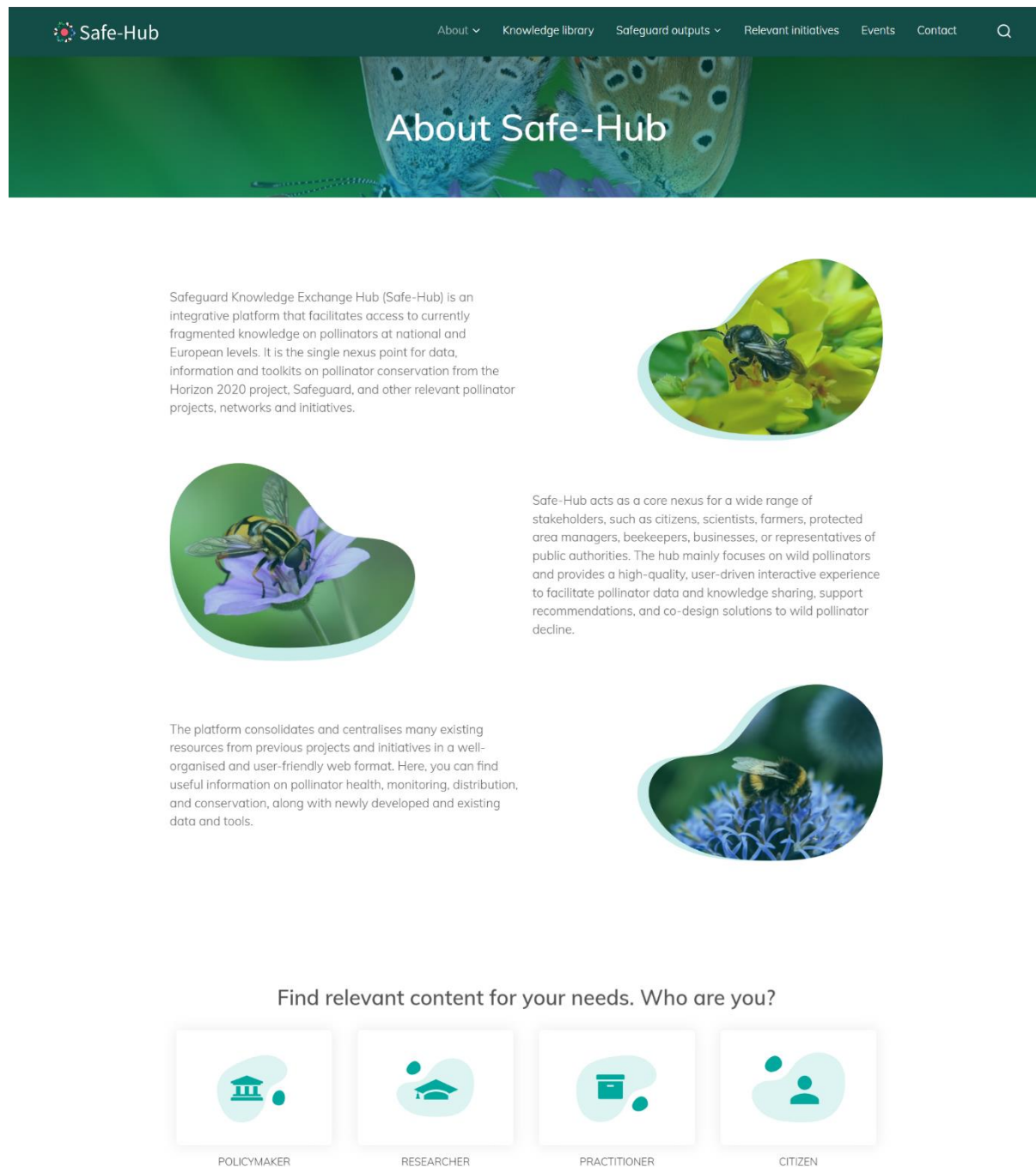
Figure 3: About Safe-Hub page

The second part of the About page, About pollinators, is tailored specifically to the citizen group. In an accessible and understandable manner, the page provides basic information and terminology regarding pollinators, including a dictionary, types of pollinators, threats to pollinators, tips on how to help pollinators and useful external resources (Fig. 4).
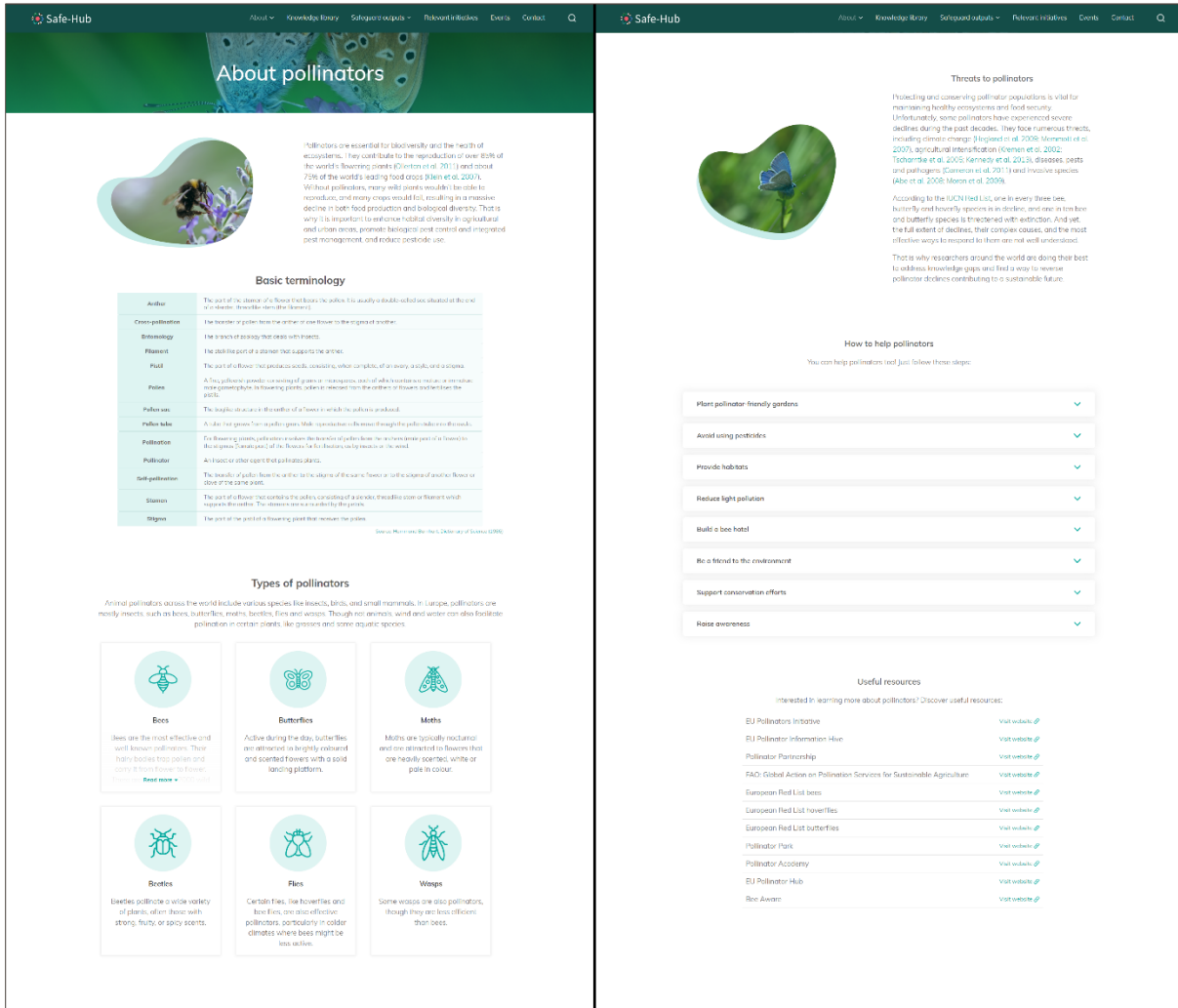
Figure 4: About pollinators page

2.3.   Knowledge library

In order to boost knowledge exchange and information sharing, a dedicated page has been created (Fig. 5). The knowledge library provides links to existing resources from previous projects and initiatives, but also integrates new knowledge and outputs generated by Safeguard, and input from several past and ongoing pollinator projects besides Safeguard (e.g., PoshBee, B-GOOD, STEP, WildPosh, PollinERA, etc.). The search can be filtered by format (journal articles, policy briefs, graphical abstracts, practice abstracts, etc.), project, date and keywords.

Figure 5: Knowledge library (filtered results)

2.4. Safeguard outputs

The leading subpage of the page, **About Safeguard**, introduces the project's vision, along with Safeguard's seven objectives and partnering institutions (Fig. 6). To present the project more interactively, Safeguard's introductory video has been embedded as well. This subpage also provides details of the project coordinator (Prof. Dr. Ingolf Steffan-Dewenter), duration, funding information and social media links, along with a call-to-action button leading to the subscription form of Safeguard's newsletter and Safeguard's topical collection in the open-access *Research Ideas and Outcomes* journal.

Figure 6: About Safeguard

Following the Knowledge library structure, the **Resources** page offers a set of Safeguard materials, including journal articles, policy briefs, stakeholder summaries, practice abstracts and guidance for monitoring biodiversity in urban habitats. This page also allows visitors to filter their search by format, date and keywords.
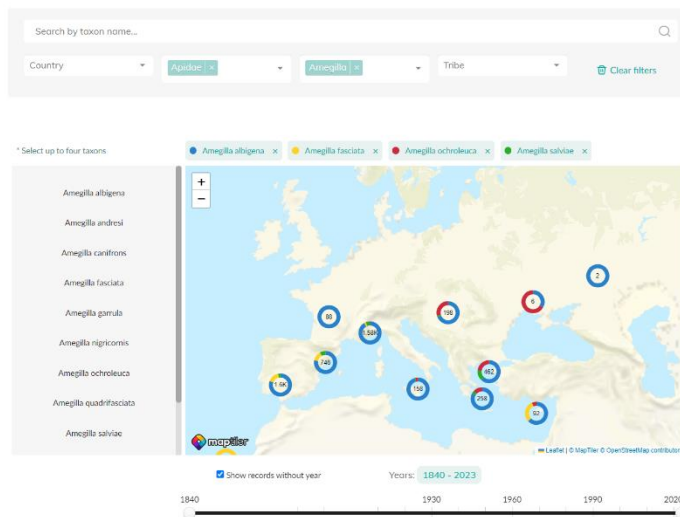
One of the first Safeguard outputs that the hub hosts is a dynamic and interactive species **Distribution map** (Fig. 7). The map presents the distributional information on European pollinators compiled, complemented and organised by Safeguard partners. The map depicts EU wild pollinator spatial information and the years when the species have been recorded. As a start, the multiscale maps depict only the geographical distribution of a number of pollinating insects, along with the year of recording. The page provides brief instructions on how to use the maps, along with references.

Figure 7: Safeguard's species distribution map on Safe-Hub

2.5.   Relevant initiatives

Safe-Hub provides links to external projects and initiatives, closely connected with anthecology, which are categorised into seven subpages: (1) Information hubs; (2) Wild bee health; (3) Agriculture and health; (4) International organisations; (5) Pollinator monitoring and identification; (6) National pollinator strategies; and (7) European Red Lists Assessments. Each project or initiative is presented with a brief description and a button linking to the original source (Fig. 8).
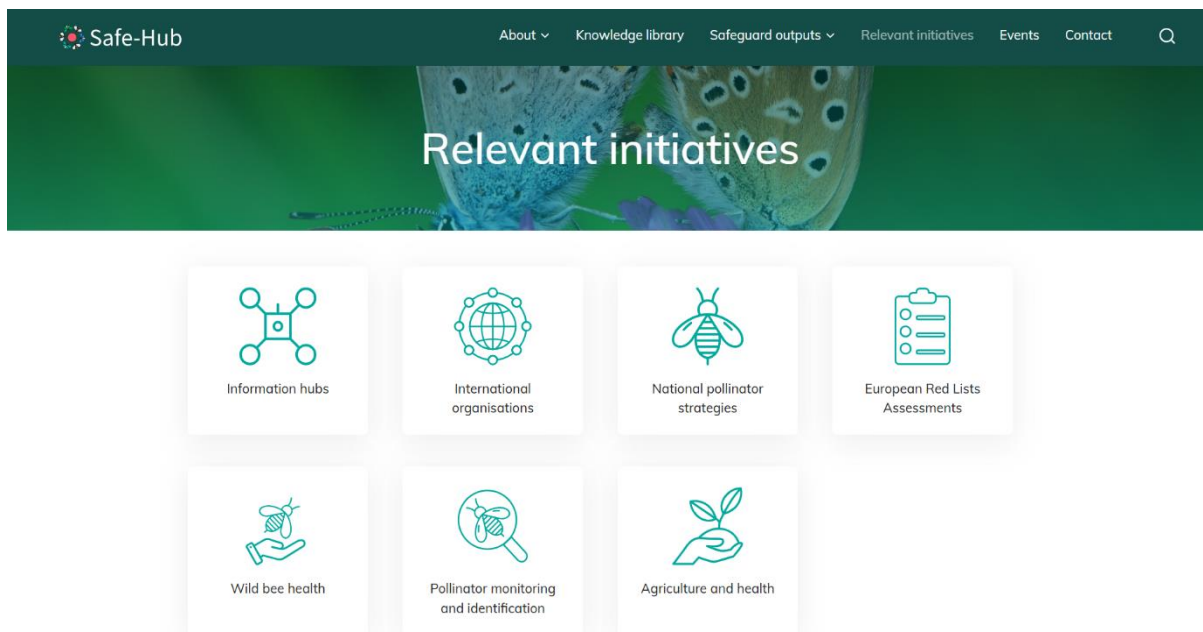
Figure 8: Subpage 'Wild bee health' within the 'Relevant initiatives' page of Safe-Hub

2.6.   Events

Visitors can also get informed on upcoming events on the respective page of the hub. It provides links to the original websites of pollinator-related webinars, workshops, conferences, congresses, seminars, etc. These can be accessed in a calendar or list view (Fig. 9).
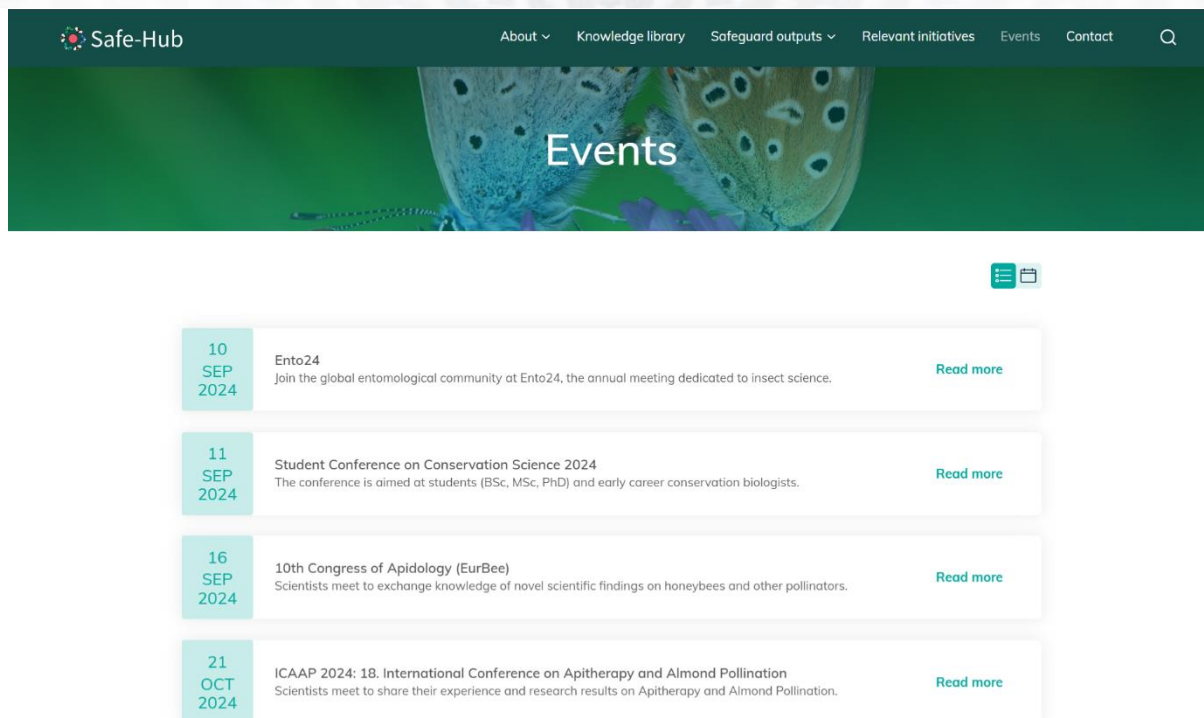
Figure 9: Safe-Hub's Events page (list view)

2.7.   Contact

As the hub will be hosted by Pensoft Publishers for up to five years after the conclusion of Safeguard, the Contact page (Fig. 10) contains the contact information of the main responsible actors of the maintenance of Safe-Hub: Teodor Metodiev (Chief Communications Officer) and Carla Stoyanova (Science Communication Expert).

Figure 10: Safe-Hub's Contact page

3. Future developments

The page **IAF** (Integrated Assessment Framework) will contain key outputs from the IAF toolkit developed in WP5. IAF incorporates multiple types of evidence to assess and address pollinator declines through direct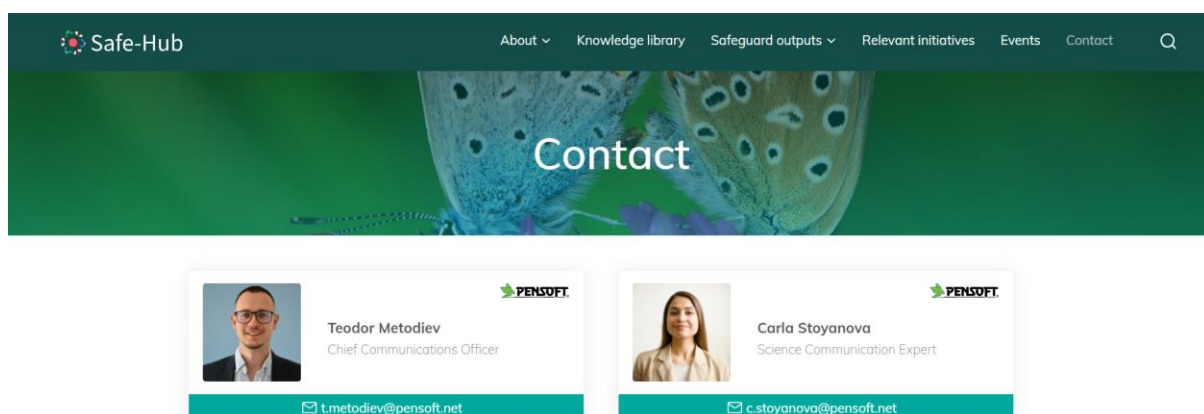 mitigation strategies at the local, national, and EU levels. Within this framework, a multi-actor approach will be used to co-develop tools for monitoring, assessing, valuing, and predicting pollinator changes and resulting impacts to inform management decisions and policy development. The IAF will be co-developed with stakeholders to capitalise on their expertise and ensure the relevance and usability of knowledge synthesis and toolkits.

The **Buzzing Tables** subpage aims to present the results of dialogues and collaboration among the major interest groups identified during the stakeholder mapping exercise (corresponding to Task 7.4). These discussion groups provide a forum to (1) identify and fill in evidence gaps from different knowledge sources, including local knowledge, to complement Safeguard's scientific knowledge base; and (2) provide guidance and share best practices on topics such as monitoring and managing wild pollinators, their habitats and pressures. The subpage will also provide an opportunity to foster co-creation and attract new stakeholders.

The collection of harmonised data on bees and pollinators from across Europe will be central to the success of the Safe-Hub. Therefore, when available, the subpage **Databases** will be enriched with datasets from Safeguard and other existing relevant projects and public databases.

Safeguard will provide stakeholder-relevant standardised methods for assessing the values and co-benefits of enhancing pollinators in terms of ecosystem services representing private benefits (e.g. pollination, pest control, crop yield) and public goods (e.g. water holding capacity, biodiversity, aesthetics). When developed, these **Standardised methodologies** will also be integrated into the hub.

As envisioned in WP1, Safeguard will develop new **Wikipedia pages** of EU main pollinators. Once available, links to these pages will be added to the hub in the Safeguard output page.