



## **Collection of awareness raising materials**

### **Deliverable D4.6**

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*Scienseed*

## **SHOWCASE**

**SHOWCASing synergies between agriculture, biodiversity and  
Ecosystem services to help farmers capitalising on native  
biodiversity**



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## Summary

The SHOWCASE **project's Task 4.6** has been successfully developed, producing a series of **multi-format educational materials** aimed at enhancing public understanding of agrobiodiversity and promoting sustainable agricultural practices across Europe. Within this task, comprehensive resources, including **motion graphics, infographics, and factsheets** have been created, covering essential topics from **ecosystem services** to **practical sustainable practices**. These materials will be effectively distributed through various platforms such as the **project website and social media** and strategic collaborations with our partners and other projects will be explored to **amplify our impact**. With the development and deployment of these educational resources, Task 4.6 plays a crucial role in educating the public and fostering sustainable agricultural practices, laying a foundational step towards more **informed and responsible farming** across Europe.

## List of abbreviations

UK	United Kingdom
FAO	Food and Agriculture Organization
WWF	World Wide Fund for Nature
UN	United Nations
IUCN	International Union for Conservation of Nature
EU	European Union

## 1 Introduction

Agrobiodiversity remains a relatively **unexplored term** and field outside academia. However, it holds **significant implications** across social, economic, and environmental spheres. Recognising this, **Task 4.6. aims to fill this knowledge gap**, ensuring that the general public understands and appreciates the enormous benefits of agrobiodiversity, thereby encouraging the implementation of more sustainable agrosystems and steering a paradigm shift towards integrating biodiversity within European farming practices.

Task 4.6 will thus focus on the creation of a series of **multi-format communication materials** targeted at a broad audience, aiming to **summarise and explain complex concepts related to agrobiodiversity**, and disseminate the actionable steps that individuals and communities can take to support it. This includes the production of concise explanatory **videos**, informative **factsheets** and comprehensive **infographics** on topics related to agroecology and the SHOWCASE project.

Therefore, **objectives of Task 4.6** include:

- **To raise awareness of the importance of agrobiodiversity** in agricultural systems and its influence on environmental, economic, and social sustainability.



- **To develop and distribute a series of educational materials** in multiple formats that clearly and accessibly explain agrobiodiversity-related concepts and practices.
- **To support the SHOWCASE project's overall objective** of making biodiversity and integral part of European agriculture by **engaging the general public** in the conversation about biodiversity's role in agriculture, empowering them with knowledge and actions they can take to **support sustainable practices in their daily lives**.

## 2 Methods

This section details the **efforts undertaken in Task 4.6** to develop and disseminate multi-format educational materials aimed at enhancing public understanding and appreciation of agrobiodiversity. It begins with a description of the **benchmark analysis** used to inform the selection of specific themes, highlighting how this analysis shaped our understanding of the current landscape of educational content. The section then outlines the rationale behind the **chosen themes** and describes the actual **production of the materials**.

### 2.1 Topic selection

The topic selection process was a step that followed a **structured approach** to ensure each educational material produced was not only informative but also aligned with the objectives of the SHOWCASE project. This process involved a review of the proposed themes based on **benchmark analysis**, alignment with **real-world interventions** in Experimental Biodiversity Areas (EBAs), and **feedback from project partners**.

#### 2.1.1. Benchmark analysis

An initial benchmarking analysis was conducted to **assess the existing landscape of agrobiodiversity education and awareness**. This analysis revealed a variety of topics and formats already used by other organisations but pointed out underexplored thematic areas and innovative formats and approaches not yet been widely adopted.

For instance, we observed that **more complex formats** such as infographics and motion graphic videos have not been extensively employed by many organisations. **Certain topics such as ecosystem services**, have also not been exhaustively explored. Additionally, while there is abundant information available on topics such as pollinators, **new approaches** to these subjects have yet to be addressed. It was also noted that much of the useful **information is specific to certain regions of Europe**, such as the UK, and may not be directly applicable to other areas.

Furthermore, the benchmarking exercise highlighted the **critical role of dissemination** in the impact of these materials. Consequently, a decision was made to develop a **dissemination kit**, aiming to maximize the reach and engagement of the produced materials.

Taking all these results into account, we decided that **task 4.6 will explore more innovative formats and delve into less explored thematic areas**, enriching the discourse on agrobiodiversity with **new perspectives** and **coverage** spanning the entire diverse ecological and agricultural landscape of Europe.

### 2.1.2. Review of the project intervention on EBAs

Leveraging the insights gained from the benchmarking analysis, a **review of the interventions conducted** across the Experimental Biodiversity Areas (EBAs) within Europe was carried out. This review aimed to closely **align the educational materials with the practical, on-ground actions** and objectives of the SHOWCASE project, such as enhancing biodiversity, reducing costs, improving soil health, optimizing water use, attracting pollinators, and biological pest control among others.

### 2.1.3. Development of thematic blocks and partner survey

With a clear understanding of the project's interventions and the benchmarking insights, **five thematic blocks were proposed**, encapsulating key aspects of agrobiodiversity crucial for public awareness and education:

- The **value of biodiversity** in farming
- **Pollinators** in Europe and their roles
- The implications and usage of **pesticides**
- The threat of biodiversity loss to **food security**
- Biodiversity-friendly **practices for citizens**

To validate and refine these thematic blocks, a **survey was conducted** among project partners. The survey solicited partners' ratings on the relevance of the proposed themes and sought additional suggestions on any critical topics that might have been overlooked.

The **survey results (Figure 1)** indicated an interest in addressing both fundamental and specific aspects of agrobiodiversity. The highest rating was given to themes emphasizing the practical applications of biodiversity in agriculture, such as **biodiversity-friendly practices for citizens** and the **critical role of biodiversity** in enhancing farm productivity and ecosystem health. There was a notable preference for exploring underrepresented areas like **ecosystem services** and innovative approaches to common topics like **pollinators and pesticides**. Additionally, suggestions received highlighted a desire to broaden the discourse to include a wider range of ecosystem services (not just pollinators) and the **socio-economic benefits of biodiversity**.

Here are some examples of topics that could be covered within this task. Please rate the relevance of the topic ideas in the following sections from 1 to 5 (1 = Should NOT be addressed, 5 = Should definitely be communicated).

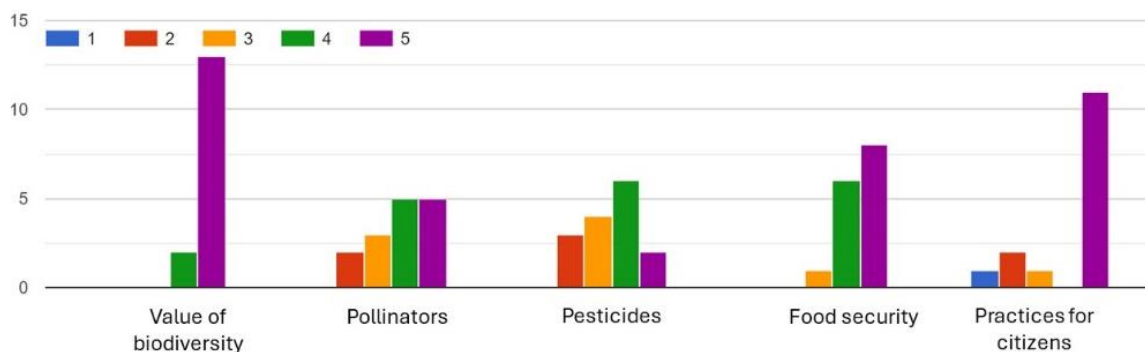


Figure 1. Survey results summary: partner prioritization of agrobiodiversity topics

### 2.1.4. Final themes proposal

Considering the results of the survey and suggestions from the respondent participants (12 responses received), **the following list of topics was proposed:**

- A. **Ecosystem services.** What are they, types, and relationship to agriculture.
  - a. **Pollinators.** Role, threats and how to protect them.
  - b. Biological **pest control**.
  - c. Biodiversity and **soil health**.
  - d. Biodiversity and **food security**.
- B. **Pesticides.** Harm, benefits and responsible use.
- C. **Citizen action.** The role of consumer in sustainable agriculture.
  - a. How to **read labels** to make informed decisions.
  - b. Plans to **attract pollinators** to your garden.
  - c. How to build an **insect hotel**.
  - d. How to build a **bird house**.
  - e. Home **composting**.
  - f. **Food waste**.

## 2.2. Material production

Following the selection of themes, the next step was determining the most appropriate **format for each topic**. Infographics and factsheets were prioritised over videos, considering both the resource efficiency and the versatility of these formats. **Infographics and factsheets** not only allow for **easy printing** by users but also offer an excellent **effort-to-benefit ratio**, enabling a greater number and variety of topics to be addressed. However, it was also decided to make a **motion graphic** for the “ecosystem services” theme, which was much broader than the others and also served to present the rest of the materials.

Initially, the possibility of creating **Wikipedia articles** for some topics was explored; however, this idea was discarded due to **several disadvantages**. Wikipedia articles can be edited by any user, which compromises the **permanence and accuracy of the content**. Additionally, many of the topics were already adequately covered in English, reducing the necessity for new contributions.

For the development of the content, a **search for information** was conducted, drawing on **authoritative sources** such as the FAO, WWF, UN and IUCN as well as academic papers and publications specialised in biodiversity and sustainable agriculture. Any uncertainties that arose during this process were resolved through **consultations with scientists** involved in the project, thus ensuring the accuracy of the content.

The design of the materials focused on creating a **coherent and recognisable visual identity** for materials, choosing an illustration style and color palette similar to that of the showcase project that included greens, oranges, yellows, and browns. Adobe software, specifically InDesign and Premiere, was used to design the materials with an attractive and professional aesthetic. Additionally, it was considered that although the primary consumption of these materials would be online, they should also be **suitable for printing**.

Finally, once the materials were completed, a **review process** was undertaken. Other team members with expertise in biology reviewed the content to verify its scientific accuracy, while

native English reviewers polished the language, ensuring that the texts were clear, precise, and accessible to a broad audience.

### 3. Results and discussion

Following the development and execution process described above, we have successfully produced a range of educational materials aimed at enhancing public understanding and appreciation of agrobiodiversity. Below, we outline the different types of **materials created**, their **specific objectives**, and **main content**, and we discuss **deviations from the initial plan** and explain the reasons behind these changes.

#### 3.1. Motion graphic videos

##### Motion graphic 1: ecosystem services

We have produced a **single motion graphic** video focused on understanding **ecosystems services**. This video provides a foundational introduction to the topic, explaining **what they are, why they are essential**, and outlining **the various types**. Given the broad scope of the topic, which acts as an umbrella for some other materials, the motion graphic format was chosen for its effectiveness in conveying **extensive and complex information** in an engaging and visually appealing manner. The combination of **dynamic visuals and a clear narrative** helps to captivate viewers, enhancing their understanding and appreciation of the interconnected roles that nature's services play in our daily lives and the global ecosystem.

#### 3.2. Infographics

Infographics were chosen for their ability to convey **detailed and complex information** in a digestible and **visually appealing manner**. By utilising visual data, charts, and lists, these graphics facilitate quick comprehension and retention of information. They are particularly valuable for illustrating specific aspects of agrobiodiversity, enabling users to visualise intricate relationships and processes in a straightforward format that can be easily shared and understood.

##### Infographic 1: Explore the unknown pollinators

"Explore the unknown pollinators" seeks to **expand public knowledge** beyond the well-known pollinators (such as bees) highlighting the critical role in ecosystems of **lesser-known species** such as beetles, flies, and butterflies and exploring the threats they face.

##### Infographic 2: Farmers natural allies

"Farmer natural allies" focuses on demonstrating how biodiversity itself can be a great tool against **agricultural pests** by highlighting the roles of various native species in agricultural ecosystems. Particularly, the infographic is centered around **natural predation** aiming to shift the perception of these animals from nuisances to beneficial partners in agriculture.

##### Infographic 3: Restoring the soil

"Restoring the soil" showcases specific **families of organisms**— insects, fungi, and nematodes—and explains the roles each plays in **maintaining and enhancing soil quality**.

Furthermore, it highlights **practical actions** that can be taken to protect and improve soil health in order to inform society which practices can help the environment.

#### Infographic 4: Biodiversity and global food security

“Biodiversity and global food security” connects the **four dimensions of food security** with the essential **components of biodiversity**. By, integrating **examples** that link biodiversity directly with each food security dimension, this material educates on the necessity of preserving biodiversity as a fundamental strategy for achieving sustainable food security.

#### Infographic 5: What a loss

“What a loss” looks at the **often-unnoticed relationship** between **food waste and biodiversity**, illustrating how this phenomenon means not just a loss of food but also squanders all the resources involved in its production. Furthermore, it provides practical advice on how individuals and communities can reduce food waste, featuring **actionable steps**.

#### Infographic 6: Taming the pesticide cloud

“Taming the Pesticide Cloud” offers a critical view on the **dual role of pesticides** in modern agriculture, illustrating their **benefits** and addressing the **risks** associated with their use. The infographic deliberately adopts a nuanced approach, as most existing materials tend to solely demonize pesticides, even though they are widely used by farmers in Europe. It advocates for **responsible use** and introduces **greener alternatives** like biocontrol, agroecology, and integrated farming.

### **3.3. Factsheets**

Factsheets were specifically designed to provide **actionable tips** and **straightforward guidelines** on how individuals can engage with and impact agrobiodiversity positively. This format is employed for topics where direct public action and involvement are encouraged.

#### Factsheet 1: Get your garden buzzing

“Get your garden buzzing” makes it easy for any citizen across Europe to contribute to biodiversity conservation right in their backyard. By providing **guidance** on selecting a variety of **plants suitable for growth across different European climate**, we are bringing the crucial role of pollinators and the importance of their conservation into everyday life.

#### Factsheet 2: To be or not to be sustainable

“To be or not to be sustainable” explore the world of **eco-labels**, offering valuable insights into understanding product labeling and its **implications for sustainability**. It educates readers on how to interpret various sustainability labels found on products, helping them make **informed choices** that contribute to environmental conservation.

#### Factsheet 3: How to build an insect hotel

“How to build an insect hotel” offers **step-by-step instructions** on creating refuges for beneficial insects, **encouraging citizens** to adopt practices that enhance biodiversity conservation.

#### Factsheet 4: Homegrown compost

“Homegrown compost” highlights composting as a key activity for **reducing household waste, enriching the soil**, and supporting a healthy garden ecosystem. It guides readers through the process of starting and maintaining a compost bin and gives some perspectives about the **importance of this practice**.

#### Factsheet 5: Help birds to find a new home

Although building nestboxes is a common practice in some Northwestern Europe countries, it is less common among citizens in other European regions. Recognising this, “Help Birds Find a New Home” aims to broaden the adoption of this beneficial practice across the continent. The factsheet provides detailed instructions on **how to build and place birdhouses** to support local avian populations, includes guidelines on the **types of birdhouses** suitable for different bird species, and advises on the **best seasons to install** these infrastructures.

### **3.4. Dissemination strategy**

The successful dissemination of these awareness raising materials is essential to ensure they reach their intended audience. Without a **proactive approach to dissemination**, even the most well-crafted materials risk remaining unseen and underutilised. Therefore, we have devised **strategic actions** to effectively distribute these resources to the general public.

Firstly, all materials will be hosted on the **project's website** and on the newly developed education section of the **Living Fields platform**, designed specifically for this purpose within Task 4.4. Hosting the materials on dual platforms enables us to reach varied audiences, significantly expanding their impact. This scope will become more evident during the year 2025, during which different actions will be carried out to disseminate the Living Fields platform once it has been completed. In this way, we will promote both the platform and these materials.

In addition, once the materials are available online, a dissemination campaign will be launched across the **project's social media channels**. Platforms such as Facebook, Twitter, and Instagram are instrumental in reaching diverse audiences due to their broad usage. With **over 2200 followers** on these platforms, our project is well-positioned to engage a significant **online community**. To facilitate this, we have prepared a **dissemination kit** that includes banners and custom copies for each material (**see Annex 1**). This kit will also be **shared with project partners**, enabling them to distribute the materials through both personal and institutional accounts, thereby greatly enhancing their reach, especially with the support of influential partners such as WWF or LEAF.

Moreover, we are exploring **potential synergies with other projects** that focus on similar themes, such as the Framework project, to further the usage and impact of our materials. Partners from Showcase involved in other EU projects could help facilitate this sharing, fostering cross-project collaboration.

We also plan to encourage project researchers to use these materials at **public fairs and dissemination** events like the European Researchers' Night or Science Week. Materials that include practical activities are particularly suited for these settings, providing engaging and interactive educational experiences.

Finally, we remain committed to actively seeking and leveraging **opportunities for collaboration** over the coming months, ensuring that these educational resources achieve **maximum visibility and impact**.

## 4. Conclusions

Throughout Task 4.6, different efforts have been made to develop a collection of various awareness-raising materials on biodiversity and agriculture, which aim to inform the general public about SHOWCASE Project related topics and tend to encourage different sustainable actions within the general community.

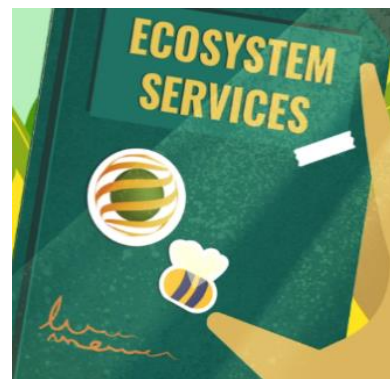
After reviewing all the work done, we can highlight the following conclusions:

1. A total of **12 materials have been created**, including videos, infographics, and factsheets, covering a wide range of topics related to agrobiodiversity. These materials have been designed to be accessible and actionable, facilitating understanding and action by the public.
2. Adjustments made to the initial plan, partners feedback, and different analysis have ensured that the content is **relevant and useful** to the end recipients.
3. The **dissemination strategy** will be crucial in reaching our audiences. **Collaboration with partners** and other projects will significantly extend the impact of the materials, ensuring that valuable information about biodiversity and sustainable agriculture reaches a wide public.
4. Looking ahead, the SHOWCASE project remains committed to **adapting and expanding these awareness-raising efforts**. Collaborative opportunities that continue to emerge will be explored to maximise the impact and relevance of the materials, and new materials may be created if necessary.




## Annex 1



### Dissemination kit for partners























This table shows the content of the dissemination kit that will be provided to SHOWCASE project partners, aimed at facilitating the spread of educational materials across various platforms. It outlines tailored copies for each material, adapted for different social media channels, alongside the corresponding banners. The content of the kit will be organized into a downloadable folder, which will be sent to partners.



Material	Twitter/Instagram copy	LinkedIn Copy	Banner
Ecosystem services	<p>📊 Population growth has brought #farming challenges. The solution? Bringing #nature back to agricultural picture 🌱 Learn essential sustainable farming practices for a healthier #environment for the future 🔄</p> <p>📊 As our population grows, so do the challenges in farming. The solution? Bringing nature back into the agricultural picture is the solution! Learn essential #sustainablefarming practices for a healthier #environment for the future</p>	<p>📊 With global population growth, agriculture faces increasing challenges. The solution? Bringing nature back into the picture. A healthy environment can grant us immeasurable benefits which we recognize today as ecosystem services. 🌱</p> <p>Discover essential practices in sustainable farming solutions for us and our environment. 🔄</p>	
Explore the unknown pollinators	<p>While flies seem to exist merely to be bothersome, they actually contribute to the pollination of plants 🔄 and keep biodiversity thriving! 🐝 Discover other flying insect 🔄 s you didn't know were pollinators! 🐝</p>	<p>🐝 While they may seem like mere nuisances, flies actually play a crucial role in pollinating plants and keeping our biodiversity thriving.</p>	





	<p>Think flies are just bothersome insects? These tiny buzzers actually pollinate plants and boost biodiversity. 🐝 🐛 Check out other surprising pollinator insects! 🦋</p>	<p>🦋 But that's not all –butterflies are also key players in the pollination game. Their delicate flights from flower-to-flower help ensure the reproduction of countless plant species. Discover more about these surprising pollinators and other flying insects that contribute to our ecosystem's health! 🦋</p>	
<p>Farmers natural allies</p>	<p>Discover eco-friendly pest control with nature's own helpers: ladybugs 🐞 eating aphids, 🐛 nematodes tackling grubs, and birds and spiders 🕸 keeping balance. Discover #sustainablefarming solutions for us and our environment.</p>	<p>🕸 In search for #sustainablefarming, it's time to rethink pest control. Instead of relying on harsh chemicals, we can rely on nature's own helpers:</p> <ul style="list-style-type: none"> <li>🐞 ladybugs diligently feasting on aphids,</li> <li>🐛 nematodes methodically tackling grubs,</li> <li>🕸 birds and spiders maintaining the delicate balance of our ecosystems.</li> </ul> <p>By applying these eco-friendly solutions, we not only protect our crops but also secure our biodiversity and promote healthier ecosystems. 💡 Discover sustainable farming solutions for us and our environment.</p>	
<p>Restoring the soil</p>	<p>Did you know the earth's soil is home to 25% of the planet's #biodiversity and grows 95% of our food? 🌱 🦋 Let's keep these numbers steady! Explore how. Dive into sustainable farming solutions for us and our environment now!</p>	<p>Did you know that the earth's soil is home to 25% of the planet's biodiversity and produces 95% of our food? 🌱 🦋 These vital statistics highlight the importance of preserving our soil's #health. To keep these numbers steady, we can take several important actions:</p> <ul style="list-style-type: none"> <li>🌱 Encourage constant monitoring by farmers</li> <li>🌱 Reduce the use of chemical products</li> <li>🌱 Stop deforestation</li> <li>🌱 Implement crop rotations</li> <li>🌱 Minimize soil compaction by machinery and livestock</li> </ul>	

		By adopting these practices, we can save our soils and ensure a #sustainable future. Explore how sustainable farming solutions can benefit both our #environment and our communities. 📖	
Biodiversity and global food security	The secret to securing #foodsupply? Biodiversity! Believe it or not, a series of living creatures are the key to resilient crops 🌱 and secure food supplies 🍌. Dive into #sustainablefarming solutions now! 📖	Ever wondered what ensures that our #foodsupply remains resilient and reliable? Look no further, it's biodiversity! 🌱 The diverse range of living organisms plays a crucial role in #sustainable agriculture, preserving our ability to produce food in the face of challenges. From pollinators to soil microorganisms, each part of our ecosystem contributes to healthy crops and #sustainablefarming practices. By embracing and supporting biodiversity, we pave the way for a more secure and sustainable food future. 🍌 Discover sustainable farming solutions for us and our environment now! 📖	
	Ever wondered what keeps our food supply resilient and reliable? It's biodiversity! 🌱 Living organisms are essential for #sustainable agriculture and ensuring food security. Dive into #sustainablefarming solutions now! 📖		
From farm to fork	Did you know? 20% of food produced in the EU ends up wasted, amounting to 130 Mt per year. 🗑️ This not only reduces resources but also threatens biodiversity. 🌱 Let's tackle food waste together for a more sustainable future!	In the EU, 20% of food produced goes to waste each year, amounting to 130 million tonnes. 🗑️ This not only waste valuable resources but also poses a significant threat to biodiversity. 🌱 Food residues are more than just discarded meals—it represents lost water, energy, and labor. By reducing food waste, we can make substantial improvements towards a more sustainable future, preserving our resources and protecting our planet's biodiversity. 🌱 🌱 Let's work together to tackle food waste and create a more resilient and eco-conscious food system.	
	Uncomfortable truth: 20% of food produced in the EU is wasted yearly, totaling 130 Mt. 🗑️ This not only wastes valuable resources but also poses a threat to biodiversity. 🌱 Join us in combating food waste for a greener, more sustainable future.		
Taming the pesticide cloud	#Pesticides might have a toxic reputation ⚠️, but they're crucial for keeping our food supply steady. Check out these smart pesticide tips to protect our	⚠️ While #pesticides may have a toxic reputation, but their crucial role in ensuring food security outweighs many of the misconceptions we might have about them.	

	<p>planet. <input checked="" type="checkbox"/> Dive into #sustainablefarming solutions for us and our environment now! </p> <p>Despite their bad reputation, #pesticides are crucial in food production. . Explore eco-friendly alternatives and effective pesticide practices. <input checked="" type="checkbox"/> Dive into #sustainablefarming solutions for us and our environment now! </p>	<p><input checked="" type="checkbox"/> By exploring eco-friendly alternatives and implementing effective pesticide practices, we can safeguard #biodiversity, eliminate pests and protect our planet.</p> <p> In Showcase we believe adopting #sustainablefarming solutions is essential for a healthier future, for us and our environment.</p> <p>Discover #sustainablefarming solutions for us and our environment now! </p>	
Get your garden buzzing	<p>Get your garden buzzing with life!   </p> <p> Find out in 4 easy steps how to provide a cozy environment for pollinators. Discover this and other #sustainablefarming solutions for us and our environment now!</p> <p>Create a thriving habitat for bees, wasps, butterflies,    and other pollinators in just 4 simple steps!  Discover how to cultivate a welcoming environment and explore other #sustainablefarming solutions for us and our environment.</p>	<p>   Transform your garden into a haven for bees, wasps, butterflies, and other vital pollinators with our easy 4-step guide:</p> <p> Letting the grass grow: Allow parts of your lawn to grow wild, providing essential habitats for pollinators.</p> <p> Stopping the use of #pesticides: Embrace natural pest control methods to protect pollinators and ecosystem health.</p> <p> Embracing decay: Leave some garden debris to decompose naturally, providing food and shelter for insects.</p> <p> Choosing the right flowers: Plant native and pollinator-friendly flowers to attract and nourish bees and butterflies. Discover these essential practices and explore more #sustainablefarming solutions for us and our environment.</p>	

To be or not to be sustainable	<p>Labels can help us shop smarter and support #sustainable businesses. 📱🛒 Discover how with 5 tips for sustainable label reading! 👉</p>	<p>Labels can help us shop smarter and support #sustainable businesses. 📱🛒 Discover how with these tips for #sustainable label reading:</p> <ul style="list-style-type: none"> <li>🌱 Look for eco-friendly labels and be careful with greenwashing</li> <li>📦 Follow instructions for safely using, processing, or storing products</li> <li>🍷 Buy locally grown food</li> <li>🔍 Compare product labels.</li> <li>📱 Use apps to scan labels for bio-based or biodegradable products.</li> </ul> <p>Explore #sustainablefarming solutions to benefit both our planet and our future! Together, we can make a difference! 👉</p>	 <p>SHOWCASE</p> <p><b>To be or not to be sustainable</b></p> <p>All you need to know about labels while shopping</p>
How to build an insect hotel	<p>📖 Tutorial time! Let's build a cozy space for insects to preserve #biodiversity and boost well-being. This can prevent the loss of biodiversity and increase our overall well-being. About #sustainablefarming solutions 👉</p> <hr/> <p>Let's work together to preserve our insect population! How? 🛠️ Building a safe space for insects to live can prevent the loss of #biodiversity and increase our overall well-being. Discover how! 👉</p>	<p>Did you know that we are losing 50% of the insect population due to...</p> <ul style="list-style-type: none"> <li>💧 climate change</li> <li>🐛 Intensive agricultural farming</li> <li>🗑️ pollution</li> <li>🏙️ urban expansion,</li> <li>☢️ misuse of pesticides</li> </ul> <p>📱 This decline in insect populations is alarming and poses a significant threat to our biodiversity and overall well-being.</p> <p>🌱 By creating welcoming habitats for insects, we can help prevent further #biodiversity loss and enhance our environmental #health.</p>	 <p>SHOWCASE</p> <p><b>How to build an insect hotel</b></p> <p>Providing shelter for nature's little beasts</p>

		Explore #sustainablefarming solutions to benefit both our planet and our future! Together, we can make a difference! 🤝	
Homegrown compost	One person's waste is another garden's treasure! 🌱 Here's your #DIY composting. It's cost effective, eco-friendly and will improve the quality of your soil. 📖 More about #sustainablefarming solutions here 🤝	One person's waste can be another garden's treasure! Learn how to create nutrient-rich compost with our step-by-step guide. 🌱 DIY composting is not only cost-effective and eco-friendly but also improves soil quality, reducing the need for chemical fertilizers. 📖 Discover this #sustainablefarming solution and explore how composting can benefit both your garden and the environment. 🌱 Explore this and other sustainable farming solutions for us and our environment, now. 🤝	
	Turn waste into wealth for your garden! 🌱 Learn how to #DIY compost with our tutorial. It's cost-effective, eco-friendly, and enhances soil quality. Explore this and other #sustainablefarming solutions for us and our environment, now! 🤝		
Help birds to find a new home	⚠️ Urban expansion, industrialization, and deforestation are jeopardizing bird habitats in Europe. 🌱 Let's give our feather friends a new home with this #DIY birdhouse tips. Discover #sustainablefarming solutions for us and our environment. 🤝	<p>⚠️ Urban expansion, industrialization, and deforestation are posing threats to bird habitats in Europe.</p> <p>🏠 Providing safe havens can make a significant impact on conserving #biodiversity and nurturing our local bird ecosystems.</p> <p>🤝 Let's take action to support our bird population by creating new homes with these #DIY birdhouse tips.</p> <p>Discover essential practices in #sustainablefarming solutions for us and our environment. 🤝</p>	

## Annex 2

### Collection of awareness raising materials

This annex contains the complete set of educational materials produced under Task 4.6. It includes [direct link to the motion graphic video](#) and PDFs of all other created materials.





# Discover the unknown pollinators

And learn more about the known ones!



## Busy workers

Bees, wasps, and bumblebees (Hymenopterans)

Bees are vital for the **reproduction of many plants**, but while honeybees get most of the attention, bumblebees and wasps also play key roles. **Bumblebees** are especially effective due to their ability to **buzz pollinate**, and **wasps**, although **less efficient** because they have fewer body hairs, still contribute significantly to pollination.

## Nature's tiny titans

Beetles (Coleopterans)

Some beetles are excellent pollinators, gathering **pollen while feeding** on flowers. They are part of a highly abundant group, with around **375,000 known species**, and their activity is vital for the **reproduction of many plants**, especially those with flowers that produce large quantities of pollen.

## The buzzworthy group

Flies (Dipterans)

Despite their reputation, many flies play a crucial **role in pollination**. Some species, for example, are known to visit at least **72% of global crop species** and over **70% of animal-pollinated wildflower species** to obtain nectar and pollen for food.

## Much more than beautiful wings

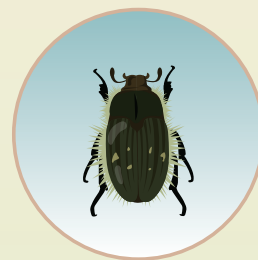
Butterflies and moths (Lepidopterans)

Although less specialised than other insects, the abundance of butterflies and moths in wildflower meadows makes them important **daytime pollinators**. Nocturnal moths, on the other hand, prefer pale, tubular flowers, pollinating them while **seeking nectar at night**.



### *Apis mellifera*

The European honey bees are the **most common** of the 7–12 species of honey bees **worldwide**. However, habitat loss....and pesticides have drastically **reduced their populations** in recent decades.



### *Tropinota squalida*

Found primarily in **France, Italy, Greece, Portugal, and North Africa**, these beetles are attracted to flowers by their **sweet aroma** and **vibrant colors**. They are important pollinators in their habitats but face threats from **pesticide use** and **habitat loss**.



### *Bombylius linnaeus*

Commonly known as bee flies, these species are **found worldwide**. They develop by parasitising the nests of solitary bees, where their larvae feed on stored food. Despite this **parasitic behaviour**, adult bee flies are **important pollinators**, visiting a variety of flowers for nectar.



### *Vanessa cardui*

The painted lady butterfly annually **recolonises Europe from Africa**, with many individuals flying back to Africa each autumn to reproduce. They are **generalist pollinators** and are crucial for maintaining the health of various ecosystems along their **migratory routes**.



### *Bombus terrestris*

One of the **most common bumblebees in Europe**. They are excellent pollinators, essential for crops like **tomatoes and berries**. However, they face threats from extreme weather, pesticides and urbanization.



### *Clytus arietis*

The wasp beetle plays a crucial role **in forest ecosystems**, inhabiting areas rich in oak, chestnut, and beech trees. They **mimic wasps** in appearance, which helps deter predators, but their populations are at risk from **deforestation** and **habitat fragmentation**.



### *Mesembrina meridiana*

These flies are active from late April to late October and are commonly found in **cattle-rearing areas**, especially in cattle dung. While they may seem unpleasant, they play a role in **pollinating flowers** in their habitats.



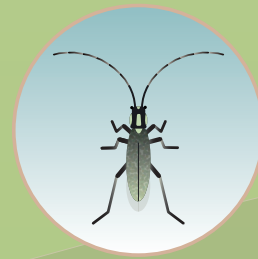
### *Vanessa atalanta*

Known as the red admirals, they are seen arriving in **Southern Europe** from central and Northern parts of the continent, especially in autumn. They are vital pollinators for many **wildflowers and garden plants**.



### *Xylocopa violacea*

Common in **southern Europe** and known for pollinating **fruit trees** in spring, they thrive in dry, warm areas with ample wood. While they are effective pollinators, **habitat loss** and **competition for nesting sites** pose significant threats to their populations.



### *Agapanthia asphodeli*

This species is part of a group that includes some of the most **striking beetles**, often targeted by collectors. They are typically found in **Mediterranean regions** and are attracted to **asphodel plants**, which they pollinate. The **collection** and **habitat destruction** are major threats to their survival.



### *Eristalis tenax*

Also known as the drone fly, *Eristalis tenax* is **native to Europe** but has spread to North America. They are often **mistaken for honeybees** due to their resemblance. These flies are **excellent pollinators**, frequenting flowers for nectar and contributing to the pollination process.



### *Macroglossum stellatarum*

The hummingbird hawkmoth prefers **nectar-rich flowers with long, long narrow flowers**, which reduces competition from other insects. They are remarkable for their **hovering flight**, similar to that of hummingbirds, and play a important role in pollinating various plant species.



# Farmers' natural allies

## Free and effective pest control solutions

Pest control is vital for protecting crops and preventing disease transmission. Promoting natural predation by animals helps regulate pest populations effectively, making it a **simple, cost-effective solution** that supports **environmental sustainability** in agriculture.

### Leyend

- Insectivore birds
- Reptiles
- Birds of prey
- Mammals
- Arachnids
- Insects

#### Ladybugs - Coccinellidae

Able to eat **up to 60 aphids** daily, which is a major pest harmful to crops.



#### Common frog - Rana temporaria

It can consume insects **exceeding its body weight** daily, and its permeable skin allows it to indicate habitat quality and pollution levels.



#### Orb-weaver spider - Araneidae

Feeds on **insect pests** and eliminates them within its territory, making it a highly effective **biological control agent** in agriculture.



#### Barn swallow - Hirundo rustica

Excellent hunting skills enable it to catch insects in **flight with precision**, effectively controlling significant pest populations.



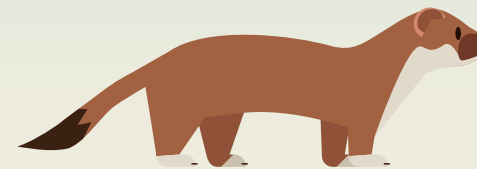
#### Barn owls - Tyto alba

An owl's ability to consume up to **1,000 rodents annually** makes it highly effective for pest control.



#### Weasel / Stoat - Mustela

Helps **naturally** regulate pest populations, which **prevent** agricultural **damage** and reduce the spread of **diseases** carried by rodents.



#### Bats - Pipistrellus pipistrellus

**Consumes** vast quantities of **insects**, helping to naturally regulate agricultural pests.



#### Common lizard - Zootoca vivipara

Feeds on insects that often carry **diseases**, contributing to mitigate **health risks** for humans and other animals.



#### Grass snake - Natrix natrix

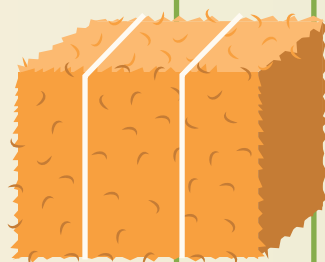
Generally non-venomous and **harmless to humans**, it feasts on **small vertebrates** and helps maintain an **essential balance** in the ecosystem.



### How to attract them

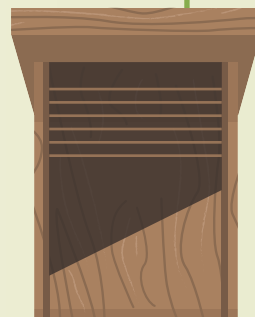
#### Rural structures

Restoring structures such as **sheds, barns**, and stacks of **straw bales** provides essential shelters and nesting sites during the **breeding season**.



#### Bat boxes

These artificial shelters can replace **natural roosting sites** for resting, hibernating, or raising young, **providing protection** from predators and harsh weather.



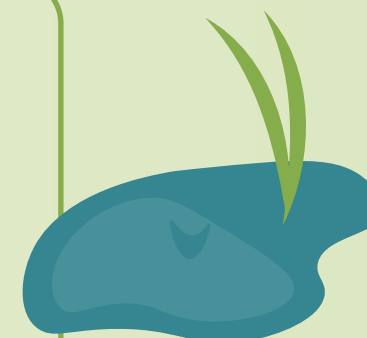
#### Insect Hotel

A space for beneficial insects, **incentivize natural pest control** by encouraging predatory species to thrive and regulate pest populations



#### Ponds

They serve as **vital shelters** for amphibians, insects, birds, and mammals, offering stable environments that support biodiversity.





# Restoring the soil

## A vital element for biodiversity

The soil is a **living and complex system** that hosts approximately 25% of the planet's biodiversity. It directly or indirectly provides 95% of the food we eat.

### Organic matter

Fungi help to **break down** organic matter in soil, balancing carbon and nutrients.

### Healthy crops

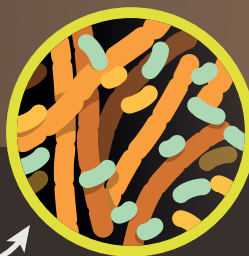
Some insects are essential **pollinators for crops**, while others also act as **natural composters** and **recycle nutrients** in soil.

### Nutrients

Some nematodes are beneficial as they **interact with plants**, contribute to **nutrient cycles**, and control harmful **pests**, ultimately promoting soil biodiversity and improving crop productivity.

### Soil structure

Microorganisms improve this structure by **creating channels** for air and water **flow**. They also provide nutrients the plants need to **grow** and reduce the need for synthetic pesticides and chemicals.



### How can we help our soils?

- 1 Encouraging farmers to **monitor soil health** on their farms.
- 2 Reducing **chemical** product **usage**.

- 3 **Stopping deforestation** and planting more trees.
- 4 Implementing **crop rotations**.
- 5 **Minimizing soil compaction** from livestock and machinery.



# What a loss

## Tracing food waste's impact on biodiversity

20% of food produced in the EU is discarded, generating up to **130 Mt of food waste** per year. When food is wasted, all the resources required to produce it are wasted. Food waste is therefore **directly linked to the loss of biodiversity** and **exceeding the limits of natural resources**:

20%

### Land use

Overexploitation of land leads to **deforestation and habitat destruction**.



### Pollinators

Pollinator species are vital for food availability but are **endangered by chemicals and habitat destruction**.



### Pollution

Food waste in landfills emits methane, polluting water and **harming aquatic life**.



### Overfishing

Food waste exacerbates the **depletion of marine biodiversity** (over 35% of caught fish is wasted).

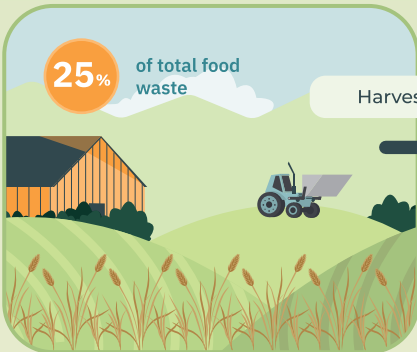


## Food waste occurs at every stage of the supply chain

### Primary production

**25%** of total food waste

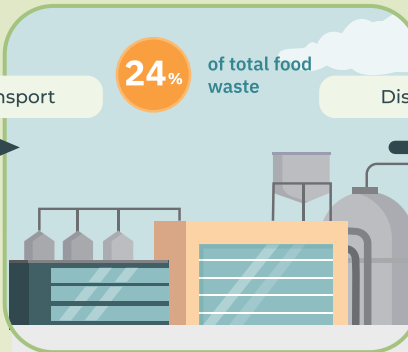
Harvesting & Transport



### Processing & manufacturing

**24%** of total food waste

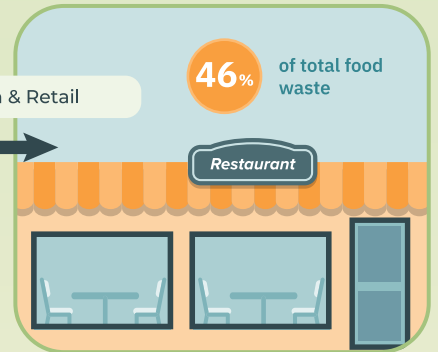
Distribution & Retail



### Consumption

**46%** of total food waste

Restaurant

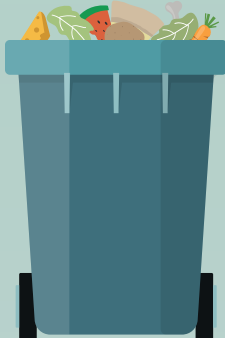


## How do we tackle food waste?

### 1 Prevent

The primary focus

**Minimizing surplus food and reducing waste** at every stage of the food supply chain.



### 2 Re-use

The second line of defense

Using surplus food meant for humans where possible and **repurposing food** as animal feed.



### 3 Recycle

The last resource

**Transforming** food waste into **high-value products** such as chemicals, materials and fuels.



# Biodiversity and global food security

## A symbiotic relationship

Either directly providing **food products**, granting the **conditions to produce** them, sustaining a **means of living** or ensuring a resilient food supply system through **genetic diversity**, biodiversity plays a transversal role in all aspects related to food security.

## Biodiversity

It is defined as the “**variability among living organisms**”, in terms of ecosystems, species and genetic diversity.

## Food security

The **adequate access to food** by all people at all times for an active and healthy life.



### Genetic diversity

Increases **adaptability** of food-production systems in the face of **emerging challenges** and provides opportunities to overcome shocks and **prevent food shortages**. Currently:

**66%**  
of total crop production  
= 9 species

**50%**  
of total aquaculture production  
= 10 species

**95%**  
of total food from livestock  
= 8 species

### Economic and physical supply

Biodiversity plays a direct role in the ability of individuals to **acquire the foods** they need and the **economic sources** to obtain them.

Remote areas rely on domesticated animals for **transport**.

Urban areas rely on traders and supermarkets, and their ability to provide sufficient and **diverse supplies**.

Wild-harvested products (e.g. wood and medicinal herbs) provide a **source of income** for many households.

### Diversity on the plate

Balanced diets are a result of a **diverse range of foods** and access to **native micro-nutrient rich varieties**.

For instance, **Polignano carrots**, a traditional variety from Puglia (Italy), contain **four times** the amount of **nutrients** and **less sugar** content compared to domesticated carrot species.

### Production safeguarding

Food production hugely depends on **natural resources** and **wild species** provided by diverse ecosystems.

**Pollinator-dependent** crops account for **30%** of global increase in food production since the 60s.

### Increasing resilience

### Sustaining livelihoods

### Providing food

### Nurturing the system

### Stability

### Access

### Utilization

### Availability

**Food production needs to increase to meet the needs of a population that is expected to exceed 9 billion by 2050**

Understanding the **self-perpetuating connection** between biodiversity and food security is crucial to implement **protective measures**.

Food production systems and humans thrive in **healthy biodiverse ecosystems** and farmland, and in turn, biodiversity is enhanced by a **wise usage of land and species**.

# Taming the pesticide cloud:

## Balancing productivity and sustainability in farming

The word gives us a clue: pesticides are substances used to **control any pest**, mainly in agriculture. Without them today's **food system** would have much less productivity, but they also pose some risks. That's why it is advisable to do a **conscious use** and combine them with **greener alternatives**.



### How common is to apply pesticides?

Very. Nowadays, about **one-third of crops in the world** rely on the application of pesticides for their production.



### More and more demanded

A continuous increase in the **demand for food** pushes **agriculture productivity** and increases the **use of pesticides**.

### Target organisms classify pesticides



Herbicides



Insecticides



Fungicides



Percentage use by type



### The bright side

They contribute significantly to the **growth of food production**, especially in the agricultural sector.

- Decrease crop losses in a 30%-70% range
- Extend shelf life of agricultural goods
- Increase livestock yields
- Reduce insect-borne diseases

### Responsible use

Still, it is recommended to apply several **measures to minimise risks**.

- Use of the right equipment
- Use of precise application technology
- Reduce the use in sensitive areas
- Raise awareness about pesticide risks



### A warning

Since they are used to kill or control certain pests, they can be **toxic to non-target organisms** or humans, pollute the environment and affect biodiversity. Also, they can make undesirable species resistant to them.

### Biocontrol

There are **biological products** or technologies that can work as pesticides but pose less risks.

- Auxiliary insects
- Micro-organisms
- Natural substances
- Biostimulants

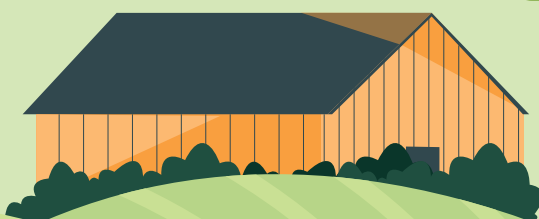
### Greener alternatives

To protect and ensure agricultural production pesticides are necessary but they are not the only way. In a **balanced ecosystem**, natural resources help **reduce the necessity of chemical products**.

### Agroecology

Redesigning farming systems to **make the most of biodiversity** and improve soil health.

- Poly-cropping
- Use of local varieties
- Integrated crop-livestock systems
- Agroforestry





# Get your garden buzzing

## How to attract and support pollinators



### 4 steps to creating an ideal home

Bees, wasps, beetles, moths, and butterflies are only some of the insect **pollinators** helping flowers turn into fruits and seeds. Lately, these species have been **facing challenges to sustain themselves**, but simple **changes to your garden can help them survive**.



#### 1. Let the grass grow

**Stop mowing** so often, let some patches of grass grow longer, the **weeds undisturbed**, and you'll provide a variety of **food and shelter**. Caterpillars will flourish eating the green leaves and will later turn into gorgeous butterflies.



#### 2. Embrace decay

Decay returns nutrients to the soil, but that's not all dead branches, logs, or piles of leaves have to offer. These valuable **habitats** are safe havens for **insects and their larvae**.



#### 3. Give up pesticides

Even if pesticides are designed to eliminate a particular weed or plague, these products end up **harming billions of insects**. Fight plagues by having predators, like ladybugs, around, and turn weeds into allies.



#### 4. Choose the right flowers

**Native flowers** are better at nourishing local pollinators. Find plants that flower at **different times of the year**, mixing different scents, shapes, and colours, to attract the most species.

### Keeping a selection of favourite sources of food

Nutritious blooms can either be deliberately planted or self-sown. You can add new species to your garden with pollinators in mind, but do not underestimate weeds. Many species boast remarkable flowers adapted to your native insect community.



#### Plant new species

Mint



This low-maintenance plant is perfect for those who don't want much commitment to the garden. Use the **mint** to make yourself some tea - and let pollinators enjoy the flowers!

-Mentha spp-

Spring Summer Autumn Winter  
□ □ □ □ □ □ □ □

Blackberries



Deep purplish **blackberries**. These thorny bushes can be used on fences, providing food and shelter for insects, birds and small mammals. Wash your hands after picking the berries! Their juice stains.

-Rubus fruticosus-

Spring Summer Autumn Winter  
□ □ □ □ □ □ □ □

Dandelion



**Dandelions** have a bad rep, but they help endangered bees by blooming early when food is scarce. A garden full of golden flowers can be a gorgeous sight, that will then turn into a field of white puffballs. And who doesn't love to blow those?

-Taraxacum officinale-

Spring Summer Autumn Winter  
□ □ □ □ □ □ □ □

White clover



Why would you mow the **white clover**? This plant's clusters of round white flowers are a magnet for pollinators. Plus, who knows, stumbling upon a four-leaf clover might just bring you some luck!

- Trifolium repens-

Spring Summer Autumn Winter  
□ □ □ □ □ □ □ □

Rosemary



Bees love purple flowers with fresh scents, such as **rosemary**. This plant comes in many different varieties. You'll likely find one that fits your garden!

-Rosmarinus officinalis-

Spring Summer Autumn Winter  
□ □ □ □ □ □ □ □

Dahlias



Coming in all sizes and many, many colours, single flower **dahlias** create enchanting beds of delicate flowers beloved by people and insects alike. They are bumblebee favourites attracting these fluffy winged visitors.

-Dahlia variabilis-

Spring Summer Autumn Winter  
□ □ □ □ □ □ □ □

Docks



**Docks** don't have pretty flowers. What they do have is plenty of food, for both caterpillars and humans. Watch as the future winged beauties gorge on green leaves, and follow their lead. Dock's sour taste can be enjoyed raw or cooked.

-Rumex spp-

Spring Summer Autumn Winter  
□ □ □ □ □ □ □ □

Thistles



Tall, thorny and difficult to get rid of, **thistles** can be a nuisance. But do you know they produce high protein pollen? Let these plants grow where they won't prick anyone, and you'll surely have a chance to observe timid wild bees.

-Cirsium spp-

Spring Summer Autumn Winter  
□ □ □ □ □ □ □ □

# To be or not to be sustainable

## All you need to know about labels while shopping

Ever wondered whether **labels** can make a big difference in saving the planet? From "Fair Trade" to "Organic," they help us **shop smarter and support businesses** that care about the environment.



### 5 tips for sustainable label reading

1 Look for **eco-labels** as they often indicate **sustainable production** and a dedication to **transparency** and **ethics**. However, watch out for **greenwashing**, as some companies use these labels mainly for **marketing** purposes.

2 Labels offer crucial information for **safely using, processing, or storing products**, preventing contamination with pathogens or chemicals.



3 Buy locally grown food to support **local farmers** and ensure **fresher, tastier** products, and choose **seasonal** items. These actions also help reduce the carbon footprint associated with **refrigeration** and **transportation**.

4 **Compare product labels** to choose those from companies prioritizing environmental and social responsibility.

5 Short on time to compare? Use apps to **scan labels** for bio-based or biodegradable products, including those certified by the EU.

### Logos you need to know



#### EU Organic Logo

An **European standard** for consumers and farmers verifies that products are made of at least **95% organic ingredients**. This means production excludes synthetic pesticides or fertilizers, GMOs, or irradiation.



#### Food Alliance Certified:

Certifies sustainable and ethical **agricultural practices**, including environmental **stewardship**, animal **welfare**, and fair **labour**.



#### Blue Angel

This label **verifies** that a product has been produced using **sustainable materials** and **processes**, effectively reducing its impact on the environment.



#### Marine Stewardship Council:

Certifies sustainable **fishing practices**, ensuring **seafood** comes from well-managed fisheries.



#### Forest Stewardship Council (FSC)

FSC labels guarantee **sustainable forest management**, **fair labor**, and **wildlife protection**.



#### Rainforest Alliance Certified:

Verifies that products have been **sourced** sustainably, promoting environmental **conservation**, social **responsibility**, and economic **viability**.



#### Fairtrade Mark

Ensures fair **prices**, decent **working conditions**, and sustainable **livelihoods** for farmers and workers in **developing** countries.



#### Nordic 'Swan' Ecolabel:

It promotes **resource** efficiency, reduces **climate impact**, a non-toxic **circular economy**, and encourages **biodiversity** conservation.

# How to build an insect hotel

## Providing shelter for nature's little beasts

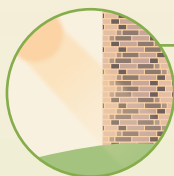
Insects are essential to sustain **ecosystems, agriculture** and future **food security**. However, due to climate change, intensive agriculture, pollution, urban expansion, and pesticide misuse, **insect populations have declined by nearly 50%**.

### A buzzing house in 5 simple steps



#### 1. Gather materials

Better to use **recycled and natural materials** available on a garden or farm (preferably with holes through them). **Do not treat the wood, keep it natural.** The use of chemicals will repel insects.



#### 2. Choose a spot

Find a **sheltered spot**, and install the walls facing south in cooler climates and north in warmer ones. Elevate it at least **1 meter off the ground** to keep ants away.



#### 3. Build the structure

Ensure the **depth** ranges between **30-40 cm**. Fill it with collected materials and drill **varied-sized holes** at slight angles to prevent water retention. Never **drill all the way**.



#### 4. Sit and wait, monitor

Check for **signs of occupancy** like fresh leaves or materials brought by insects. Some might even personalise their spaces with clay, stone, or sand.



#### 5. Mantain the hotel

Monitor for **excessive moisture** to prevent fungal growth, and be attentive to potential **wood pests**. Replace any compromised sections promptly.



# Homegrown compost:

## Turning waste into black gold!

Making compost at home is a great way to **recycle organic waste** and **create nutrient-rich soil** for your garden. And it's also very easy due to its simplicity and minimal requirements. Have you tried it at home already?



### Here's your step-by-step guide to DIY composting



**1 Gather organic materials** such as leaves, twigs (yard waste) and fruit and vegetable scraps, coffee grounds, or eggshells (kitchen waste).



**2 Create a compost pile** or get a compost bin. Alternate layers of collected organic materials: start with a base of coarse items like twigs, then **add green** (nitrogen-rich) **and brown** (carbon-rich) materials in a **2:1 ratio** for optimal composting.



**3 Keep your compost pile moist** but not soggy. If it's too dry, add water; if it's too wet, add more brown materials. **Turn** the compost pile **regularly** to provide oxygen to the microorganisms responsible for breaking down the organic matter.



**4 Wait for compost to mature.** It could be a few months or a year, depending on the materials. Once the compost is **dark** and **rich** in texture and has an earthy smell, it's ready to use in your garden.

### Why composting matters

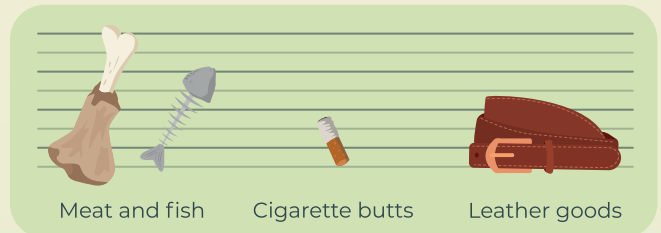


Composting is an **eco-friendly** practice that reduces landfill waste.

It's a **cost-effective** way to enrich soil, replacing the need for store-bought alternatives like peat moss and fertilizer.

It **improves soil quality**, suppresses diseases, and provides a fun, educational activity for the whole family to enjoy.

#### Avoid these in your pile



Meat and fish

Cigarette butts

Leather goods



#### Extra tip

Short on organic waste? **Give vermicomposting a go!** Worms work their magic, breaking down material into nutrient-rich vermicompost. Healthier than cow manure, it's a microorganism-packed boost for soil and plants!





# Help birds to find a new home

## How to build a birdhouse

In Europe, **urbanization**, **industrialization**, **extensive agriculture**, and the **loss of mature forests** have diminished habitats suitable for nesting, impacting bird and bat populations.



### 1. Choose a wood type and cut the panels

Use **untreated** and **unpainted** wood, preferably **cedar**, **pine**, or **cypress** wood.

#### Cut the Panels

1x Back

1x Front

1x Roof

2x Side

1x Floor



### 3. Install the roof

You want a **hinged** roof so that you can lift the "lid" and clean out your birdhouse.

**TIP:** A strip of **flexible rubber** or **roofing felt** works better than actual hinges for this because it's **waterproof** and provides an extra bit of **insulation**.

### 2. Assemble the walls

Assemble your birdhouse from the bottom.

**Screw the side panels to the base**, leaving 2 cm on either side to compensate for the thickness of the front and back panels. To prevent chicks from **overheating**, drill four holes near each corner of the floor panel for ventilation. Then, drill two holes near the roof edge of each side panel.

### 4. Add wood chips

Adding a thin layer of **wood chips** to the bottom of your birdhouse creates the feel of a **freshly dug cavity**. It will help draw birds to your nesting box and make them more **comfortable**.

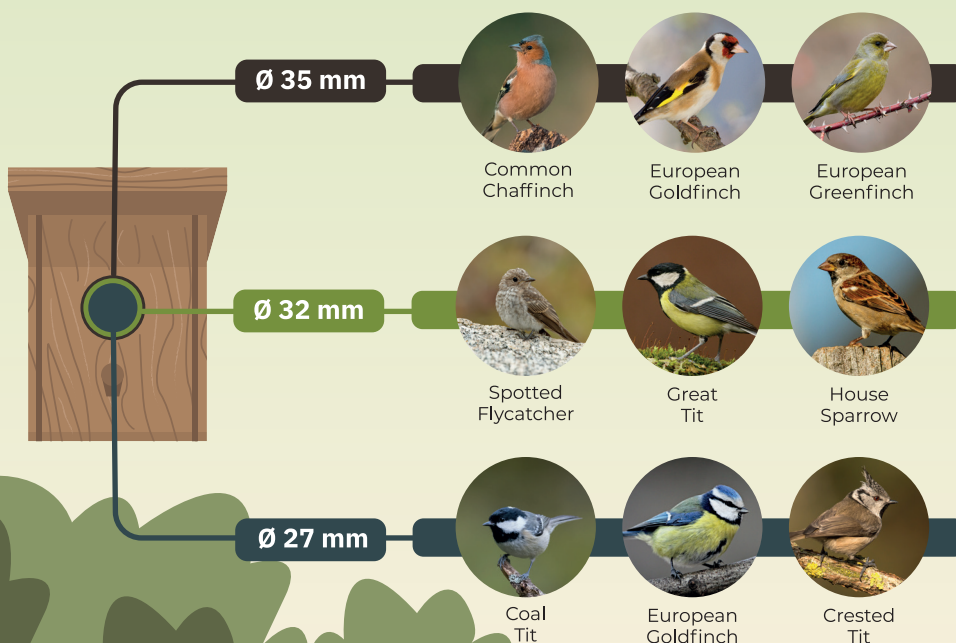


## Set up your birdhouse before breeding season

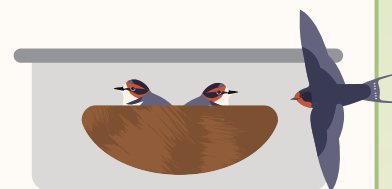
The **breeding season** is the most critical time and requires utmost care. It's best to leave the boxes undisturbed. These should be placed **by February** in the **south** and **by mid to late March** in the **north**. During the resting period **from September to February-March**, boxes need to be **clean** and conserved to prevent parasites and prepare for the next season.



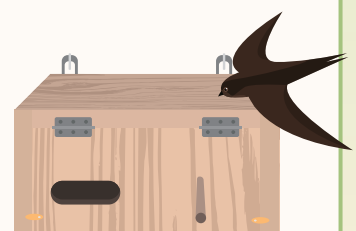
## Attract different bird species with different birdhouse designs



### Less common birdhouses



Swallow nest house



Swift nest box