



EcoFemSkills Learning Course



Plastic waste processing

Complete document
regarding carrying out
grassroots plastic recycling
workshops based on the
Precious Plastic approach

*Developed by Precious
Plastic Canarias*

Developed by the EcoFemSkills Erasmus+ Partnership as follows

- **Plastic waste processing** - Asociación Ecologica Precious Plastic Canarias hacia una economía circular
- **Create a small business** – Asociación para la participación e integración social FACTORÍA SOCIAL
- **Addressing gender-based biases** – Erifyli Center
- **Developing an ecological mindset** – Dafni Kek

This document has been produced by its respective partner and is part of a 4-part series. You can access the other three documents or the complete publication through the [EcoFemSkills minisite](#).



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Introduction

This handbook has been developed within the EcoFemSkills project, which aims to provide an intersectional approach to women and femininities' empowerment and proactive stance in relation to climate change.

The project has identified women and femininities as the main target group, as a way to deal with gender-based stereotypes around green practices, especially those that are of a more technical nature. This choice has not been made as a way to limit the involvement on non-female identifying persons, but rather to support the mainstreaming of a gender-neutral approach towards technical and decision-making activities.

Our course has been developed around 4 individual units, for everyone using this handbook to be able to choose which one seems more interesting and follow it independently of the other units if they wish so. The 4 units are:

Plastic waste processing (Unit 1)

An experiential guide with practical workshops suggestions to allow for a comprehensive understanding and knowledge gaining around small-scale plastic recycling, from recollection to final products. Plastic recycling is the practical ecological practice we suggest in the EcoFemSkills project as it combines a tangible example of what recycling looks like in practice (not just collection), understanding the science behind plastic and becoming more conscious in its use. For the case of the EcoFemSkills project, the partners implemented a series of workshops where these activities were implemented for learners to actually learn the whole process.

Developing a small business (Unit 2)

Through this unit you get to know the structural elements that make a small business run, from initial idea and design to actual everyday challenges and realities. The small business can be a very helpful "tool" in combating climate change in a meaningful, sustainable and motivating way, especially when it is a conscious choice and an example of a paradigm shift driven by intersectionality. This part can be studied either in a group or by oneself. For the case of the EcoFemSkills project, the content of the unit was implemented in a group setting.

Addressing gender biases (Unit 3)

This unit, as its name suggests, aims to go deep into the issue of gender identity, address traditional perceptions and expectations from the traditional gender binary and challenge beliefs and mentalities that dictate who can/should do something and who cannot/should not do it. As learners you will be able to gain knowledge on terminology, ideas and philosophical “test” that allow you to become more inquisitive on biases and stereotypes and thus address them within yourselves and the people around you. The content has been implemented in group settings, as with all the previous units.

Developing an ecological mindset (Unit 4)

This final unit addresses the notion of ecology and environmentalism in relation to the individual, the collective and the wider societal levels. This chapter follows a holistic approach to ecological mentalities, meaning that it doesn’t analyse only individual responsibility and practices, but goes a step further into how it is at its core a rather intersectional issue that reflects on the natural environment. As a chapter it integrates elements from all previous ones in terms of mentality related to them, without repeating information that has already been addressed. As was the case with all previous units, this one was also implemented in a group setting which helped refine its content and overall approach.

In this document you can access the content related to “Plastic Waste Processing”. For the other 3 thematics, please visit the [minisite](#) to access the other 3 parts as individual publications or as part of the complete publication.

The handbook has been designed (as much as possible) to be used both in “classroom” setting, as well as for self-study.

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This course intentionally blends theoretical, practical, and case-based approaches to accommodate diverse learning styles. The document emerged from the expertise of four different organisations’ practitioners—we’ve preserved their unique voices to reflect the richness of the field.

Introduction

Here is an overview of the 7 different suggested workshops

-
- A top-down view of various plastic bottles and containers of different shapes, sizes, and colors (white, orange, black, yellow, blue) arranged in a circular pattern around a central green recycling symbol. The symbol consists of three chasing arrows forming a triangle. The background is a light green surface.

1.1 Identification of plastic waste and their physical properties

Objective: Equip women/femininities with the knowledge to identify and classify common types of plastic waste, understand their physical properties, and comprehend their environmental impact.

Duration: 1 hour

1. Introduction (10 minutes)

Welcome and Objectives

- Briefly introduce the workshop's goals.
- Explain the importance of identifying and understanding plastic waste.

Overview of the Agenda

- Types of common plastics and their physical characteristics.
- Methods for identifying and classifying plastics.
- Environmental impact of different types of plastics.

2. Types of Common Plastics and Their Physical Characteristics (15 minutes)

 PET	 HDPE	 PVC	 LDPE	 PP	 PS	 OTHER
POLYETHYLENE TEREPHTHALATE	HIGH-DENSITY POLYETHYLENE	POLYVINYL CHLORIDE	LOW-DENSITY POLYETHYLENE	POLYPROPYLENE	POLYSTYRENE	OTHER
WATER BOTTLES; JARS; CAPS	SHAMPOO BOTTLES; GROCEY BAGS	CLEANING PRODUCTS; SHEETINGS	BREAD BAGS; PLASTIC FILMS	YOGURT CUPS; STRAWS; HANGERS	TAKE-AWAY AND HARD PACKAGING; TOYS	BABY BOTTLES; NYLON; CDS
						

Polyethylene Terephthalate (1 - PET): Clear, strong, lightweight. Commonly used in bottles and packaging.

High-Density Polyethylene (2 - HDPE): Stiff, strong, resistant to chemicals. Found in milk jugs and detergent bottles.

Polyvinyl Chloride (3 - PVC): Versatile, can be rigid or flexible. Used in pipes, window frames, and medical equipment.

Low-Density Polyethylene (4 - LDPE): Flexible, durable. Used in plastic bags, wraps, and squeeze bottles.

Polypropylene (5 - PP): Tough, resistant to heat. Common in food containers, automotive parts, and textiles.

Polystyrene (6 - PS): Rigid or foam. Found in disposable cups, food containers, and insulation materials.

Other Plastics (7 - O): Includes acrylic, nylon, and polycarbonate, used in a variety of specialized applications.

Hands-On Activity

- Show physical samples of each type of plastic.
- Allow participants to touch and examine the samples.
- Discuss the visual and tactile characteristics that help identify each type.

3. Methods for Identifying and Classifying Plastics (15 minutes)

Visual Identification:

- Teach participants to look for recycling codes (1-7) on plastic items.
- Explain the significance of each code.

Physical Tests:

- **Density Test:** Demonstrate how different plastics float or sink in water.
- **Flexibility Test:** Show how to bend and flex plastics to determine type.

- **Burn Test (Safety First):** Explain how to conduct a burn test safely to identify plastics by the color and smell of the flame and smoke.

Chemical Tests:

- Briefly introduce chemical testing methods used in laboratories (for advanced understanding).

Hands-On Activity

Separate plastic for 10 minutes

- Start with visual identification
- Run density and flexibility tests if needed
- Avoid burn and chemical tests at this stage

4. Environmental Impact of Different Types of Plastics (15 minutes)

Discuss the decomposition rates of different plastics.

Highlight the environmental consequences of plastic waste:

- **PET and HDPE:** Often recycled but can still contribute to landfill and ocean pollution.
- **PVC:** Difficult to recycle, can release harmful chemicals.
- **LDPE and PP:** Less commonly recycled, contribute to microplastic pollution.
- **PS:** Non-biodegradable, often found in ocean debris.
- **Other Plastics:** Variable environmental impacts based on composition and usage.

Interactive Discussion

- Engage participants in a discussion about local recycling programs and their effectiveness.
- Share tips on reducing plastic waste and choosing sustainable alternatives.

5. Q&A and Wrap-Up (5 minutes)

Open Floor for Questions: Encourage participants to ask questions and share their experiences.

Summary:

- Recap the key points discussed in the workshop.
- Provide additional resources for further learning.

Thank Participants: Thank everyone for their participation and encourage them to apply their new knowledge in daily life.

Additional Resources

- Handouts with a summary of plastic types and identification methods.
- Links to online resources and local recycling programs.
- Contact information for further assistance and questions.

Session summary

 **Knowledge:** We learned to identify and classify plastics using visual, physical, and chemical tests, understood the physical properties of common plastic types, and explored their environmental impacts.

 **Reflection:** How can the knowledge of plastic classification and environmental impact influence my approach to recycling and reducing plastic waste?

 **Keywords:** Plastic identification, recycling codes, physical properties, environmental impact, PET, HDPE, PVC, LDPE, PP, PS, microplastics.

1.2 Understanding Precious Plastic Processing Machines

Objective: Empower learners with the knowledge to operate and maintain Precious Plastic machines effectively and safely, focusing on the shredder, injection machine, and extrusion machine.

Duration: 1 hour

1. Introduction (10 minutes)

Welcome and Objectives

- Introduce the workshop's goals: understanding the operation, safe use, and maintenance of Precious Plastic machines.
- Stress the importance of safety and efficiency in machine operation.

Overview of the Agenda

- Operation and safe use of machines (shredder, injection machine, extrusion machine).
 - Basic setup and adjustments.
 - Preventive maintenance and common troubleshooting.
-

2. Operation and Safe Use of Precious Plastic Machines (20 minutes)

Shredder:

- Explain the role of a shredder in plastic recycling.
- Demonstrate safe loading of materials and operation.
- Discuss safety protocols, emergency stops, and protective gear.

Injection Machine:

- Describe the injection molding process using Precious Plastic's injection machine.
- Show how to safely load materials, set parameters, and operate the machine.
- Emphasize temperature control and mold preparation for quality output.

Extrusion Machine:

- Explain the process of extruding plastic using Precious Plastic's extrusion machine.
- Demonstrate safe feeding of materials, temperature settings, and operation.
- Discuss different applications of extruded plastic and safety considerations.



Hands-On Activity

- Showcase the shredder in operation (if available).
- Discuss potential hazards and safety precautions.

3. Basic Setup and Adjustments (15 minutes)

Step-by-Step Guide:

- Provide a visual guide on **setting up** each Precious Plastic machine.
 - Explain each model as is available to your workshop OR use the basic models described in the precious plastic academy
 - Check annexes and other language versions for guides to inspire you in your process

- Cover adjustments such as speed, temperature, and pressure settings.

Interactive Discussion

Encourage participants to ask questions about specific setup scenarios.

4. Preventive Maintenance and Common Troubleshooting (15 minutes)

Regular maintenance is significant for machine longevity and efficiency

Maintenance Tasks: Outline basic maintenance tasks for Precious Plastic machines:

- Lubrication of moving parts.
- Cleaning and inspection of filters and components.
- Calibration of sensors and settings.

Troubleshooting: Discuss common issues and their solutions:

- Jamming in the shredder.
- Cooling problems with injection molds.
- Nozzle blockages in the extrusion machine.

5. Q&A and Wrap-Up (5 minutes)

Open Floor for Questions: Address any remaining questions or concerns from participants.

Summary:

- Recap the key points covered in the workshop.
- Reinforce the importance of safety practices and regular maintenance.

Thank Participants: Express gratitude for participants' active engagement and interest.

Additional Resources

- Handouts summarizing machine operation and maintenance tips.
- Links to online resources, tutorials, and manuals for further learning.
- Contact information for technical support and additional assistance.

Session summary

 **Knowledge:** In this sessions we focused on the safe operation and maintenance of Precious Plastic processing machines, including shredders, injection machines, and extrusion machines. We emphasized safety protocols, preventive maintenance, and troubleshooting to ensure efficiency and longevity of the equipment. Finally, we concluded with a Q&A and wrap-up to address collective concerns and reinforce takeaways.

 **Reflection:** How can the implementation of regular maintenance protocols minimize downtime and improve the efficiency of Precious Plastic machines in recycling operations?

 **Keywords:** Safety protocols, Preventive maintenance, Troubleshooting, Shredder, Injection machine, Extrusion machine

1.3 Safety and Health Considerations

Objective: Educate learners on essential safety protocols and health considerations when operating plastic recycling machines, focusing on safe handling of materials and tools, personal protective measures, and risk prevention.

Duration: 1 hour

1. Introduction (10 minutes)

Welcome and Objectives

- Introduce the workshop's goals: promoting safety and health in plastic recycling operations.
- Emphasize the importance of adhering to safety protocols to prevent accidents and ensure well-being.

Overview of the Agenda

- Safety protocols when operating plastic recycling machines.
 - Safe handling of materials and tools.
 - Personal protective measures and risk prevention.
-

2. Safety Protocols When Operating Plastic Recycling Machines (20 minutes)

General Safety Guidelines:

- Explain the importance of reading and understanding machine manuals and safety instructions.
- Discuss the significance of training and supervision for all operators.
- Highlight the need for emergency procedures and equipment (e.g., first aid kits, fire extinguishers).

Specific Machine Safety:

- Shredder, Injection Machine, and Extrusion Machine:

- Identify machine-specific hazards and safety features.
 - Demonstrate safe operation practices, including startup, shutdown, and emergency stops.
 - Discuss proper machine maintenance to prevent malfunctions.
-

3. Safe Handling of Materials and Tools (15 minutes)

Guidelines for Handling Materials:

- Explain how to safely handle different types of plastics, including sharp or heavy materials.
- Emphasize the importance of wearing gloves and using appropriate tools for handling and sorting.

Tool Safety:

- Provide guidance on using tools such as knives, shears, and clamps safely.
 - Demonstrate proper tool handling techniques to minimize injury risks.
-

4. Personal Protective Measures and Risk Prevention (15 minutes)

Personal Protective Equipment (PPE): Discuss essential PPE for plastic recycling operations:

- Safety goggles or face shields to protect against splashes and debris.
- Gloves to shield hands from sharp edges and chemicals.
- Protective clothing and footwear to prevent injuries.

Risk Prevention Strategies: Address common risks in plastic recycling:

- Exposure to dust and fumes.
 - Slips, trips, and falls.
 - Ergonomic hazards from repetitive tasks.
-

5. Q&A and Wrap-Up (5 minutes)

Open Floor for Questions: Encourage participants to ask questions about safety procedures and concerns.

Summary:

- Recap the key safety protocols and measures discussed during the workshop.
- Stress the importance of prioritizing safety in every aspect of plastic recycling.

Thank participants: Appreciate participants for their engagement and commitment to safety practices.

Additional Resources

- Handouts summarizing safety guidelines and protocols.
- Links to resources on machine-specific safety and health considerations.
- Contact information for safety professionals and support services

Session summary

 **Knowledge:** In this workshop we focused on developing skills in troubleshooting and problem-solving for plastic recycling machines, emphasizing the importance of safety protocols and operational efficiency. Key topics included common machine issues such as jamming, cooling problems, and nozzle blockages, as well as safety measures like proper use of personal protective equipment and safe handling of materials. Practical guidance on machine adjustments, maintenance, and risk prevention was also provided to ensure smooth and safe operations.

 **Reflection:** How can the implementation of safety measures and regular maintenance improve both the efficiency and longevity of plastic recycling machines?

 **Keywords:** Troubleshooting, Plastic recycling machines, Safety protocols, Maintenance, Personal protective equipment (PPE), Machine adjustments, Risk prevention, Operational efficiency

1.4 Machine Problem Solving

Objective: Enable learners to effectively identify and resolve technical issues encountered during the plastic recycling process. Focus on basic troubleshooting techniques, machine adjustments, and practical case studies of common problems.

Duration: 1 hour

1. Introduction (10 minutes)

Welcome and Objectives

- Introduce the workshop's goals: developing skills in troubleshooting and problem-solving for plastic recycling machines.
- Emphasize the importance of addressing technical issues promptly to ensure operational efficiency.

Overview of the Agenda

- Identification and resolution of technical issues during the recycling process.
 - Basic troubleshooting techniques and machine adjustment.
 - Practical cases and case studies of common problems.
-

2. Identification and Resolution of Technical Issues (20 minutes)

Shredder:

- Discuss issues such as jamming, motor overheating, or blade dullness.
- Explain how to identify these issues during operation.

Injection Machine:

- Address problems like mold cooling issues, inconsistent product quality, or machine calibration errors.
- Demonstrate methods to diagnose and resolve these issues effectively.

Extrusion Machine:

- Highlight issues such as nozzle blockages, uneven extrusion, or temperature fluctuations.
 - Discuss troubleshooting steps to mitigate these problems during operation.
-

3. Basic Troubleshooting Techniques and Machine Adjustment (20 minutes)

Step-by-Step Troubleshooting: Provide a structured approach to troubleshooting machine problems:

- Observation and assessment of symptoms.
- Isolation of possible causes.
- Testing and verification of solutions.

Machine Adjustment:

- Demonstrate basic adjustments such as speed settings, temperature control, and pressure regulation.
 - Discuss the impact of these adjustments on machine performance and product quality.
-

4. Practical Cases and Case Studies (20 minutes)

Real-life Scenarios:

- Present practical case studies of common machine problems encountered in plastic recycling operations.
- Engage participants in analyzing these scenarios and proposing solutions.

Interactive Discussion:

- Encourage participants to share their own experiences and challenges.
 - Facilitate peer-to-peer learning through discussion of different approaches to problem-solving.
-

5. Q&A and Wrap-Up (5 minutes)

Open Floor for Questions: Address any remaining questions or concerns from participants.

Summary:

- Recap the key troubleshooting techniques and case studies discussed during the workshop.
- Highlight the importance of continuous learning and adaptation in machine operations.

Thank participants: Appreciate participants for their active participation and contribution to the workshop.

Additional Resources

- Handouts summarizing troubleshooting steps and adjustment techniques.
- Links to online resources and case studies for further study.
- Contact information for technical support and expert advice.

Session summary

 **Knowledge:** In this workshop we explored risk prevention strategies in plastic recycling, focusing on addressing common hazards such as exposure to fumes, ergonomic risks, and slips. We also covered troubleshooting techniques for recycling machinery, including diagnosing issues with shredders, injection machines, and extrusion machines. Practical case studies were presented to enhance participant problem-solving skills, while the importance of molds in shaping recycled products was emphasized in the creative process session.

 **Reflection:** How can the troubleshooting techniques discussed during the workshop be applied to improve efficiency and sustainability in plastic recycling operations?

 **Keywords:** Risk prevention, Plastic recycling, Machine troubleshooting, Mold design, Operational efficiency, Sustainability, Case studies

1.5 Creative Process - Molds

Objective: Empower learners with the knowledge and skills to design and manufacture molds for recycled products, focusing on modeling techniques, custom mold design, and practical applications in production.

Duration: 1 hour

1. Introduction (10 minutes)

Welcome and Objectives

- Introduce the workshop's goals: exploring the creative process of mold design for recycled products.
- Highlight the importance of molds in shaping the final product's form and functionality.

Overview of the Agenda

- Design and manufacture of molds for recycled products.
 - Modeling techniques and custom mold design.
 - Practical application of molds in recycled product production.
-

2. Design and Manufacture of Molds (20 minutes)

Understanding Mold Design:

- Explain the role of molds in plastic recycling and product manufacturing.
- Discuss key considerations in mold design, such as material choice, complexity, and scalability.

Modeling Techniques: Introduce modeling techniques for mold design:

- Computer-Aided Design (CAD): Overview of CAD software for creating precise mold designs.
 - Physical Modeling: Techniques for creating prototype molds using materials like clay or 3D printing.
-

3. Custom Mold Design (20 minutes)

Principles of Customization: Discuss the process of customizing molds for specific recycled products:

- Tailoring mold dimensions and features to meet product requirements.
- Incorporating design elements for aesthetic appeal and functionality.

Case Studies and Examples:

- Present case studies of successful custom mold designs in recycled product production.
- Analyze examples of molds used in various industries and their impact on product quality and efficiency.

4. Practical Application of Molds in Production (20 minutes)

Hands-On Demonstration: Demonstrate the practical application of molds in recycled product production:

- **Injection Molding:** Showcase the process of injecting recycled plastic into molds to create final products.
- **Extrusion Molding:** Illustrate how extrusion molds shape recycled plastic into desired forms.

Quality Control and Iterative Improvement:

- Discuss the importance of quality control measures during mold production and product manufacturing.
- Highlight the iterative process of mold adjustment and refinement based on production feedback.

5. Q&A and Wrap-Up (5 minutes)

Open Floor for Questions: Address any remaining questions or inquiries from participants about mold design and production.

Summary:

- Recap the key concepts and techniques covered in the workshop.
- Reinforce the importance of creativity, precision, and practical application in mold design for recycled products.

Thank participants: Express appreciation to participants for their active engagement and enthusiasm in learning about mold design and production.

Additional Resources

- Handouts with summarized mold design principles and case study examples.
- Links to online tutorials and resources on CAD software and mold manufacturing.
- Contact information for further assistance and collaboration opportunities.

Session summary

🧠 Knowledge: The discussion focused on the creative process of designing and manufacturing molds for recycled products. Key insights included understanding mold design principles, the customization process to meet product-specific needs, and practical applications such as injection and extrusion molding. The importance of quality control, feedback implementation, and iterative improvement in enhancing mold functionality was highlighted.

💡 Reflection: How can the customization of molds contribute to innovation and sustainability in recycled product manufacturing?

🔑 Keywords: Mold Design, Recycled Products, Customization, Injection Molding, Extrusion Molding, Quality Control, Iterative Improvement, Sustainability

1.6 Testing of Creations

Objective: Equip learners with the knowledge and skills to effectively test and evaluate recycled products, understand quality standards and success criteria, and implement feedback for continuous improvement.

Duration: 1.5 hours

1. Introduction (10 minutes)

Welcome and Objectives

- Introduce the workshop's goals: exploring methods for testing and evaluating recycled products.
- Emphasize the importance of quality assurance and continuous improvement in product development.

Overview of the Agenda

- Methods for testing and evaluating recycled products.
 - Understanding quality standards and success criteria.
 - Implementing feedback and continuous improvement.
-

2. Methods for Testing and Evaluating Recycled Products (20 minutes)

Testing Procedures: Discuss various methods for testing recycled products:

- Physical Testing: Assessing strength, durability, and flexibility.
- Chemical Testing: Analyzing material composition and stability.
- Performance Testing: Evaluating functionality and usability.

Quality Assurance Principles:

- Explain the importance of establishing quality benchmarks and testing protocols.
 - Highlight the role of testing in ensuring product reliability and customer satisfaction.
-

3. Understanding Quality Standards and Success Criteria

(20 minutes)

Quality Standards:

- Introduce common quality standards applicable to recycled products (e.g., ISO standards).
- Discuss how adherence to standards enhances product credibility and market acceptance.

Success Criteria: Define success criteria specific to recycled products:

- Meeting performance expectations.
 - Compliance with environmental regulations.
 - Customer satisfaction and feedback.
-

4. Feedback and Continuous Improvement

(20 minutes)

Importance of Feedback:

- Discuss the value of customer feedback and stakeholder input in product development.
- Explain strategies for collecting and analyzing feedback effectively.

Iterative Improvement Process: Outline steps for implementing continuous improvement based on test results and feedback:

- Identifying areas for enhancement.
 - Modifying design or production processes.
 - Re-testing and validating improvements.
-

5. Q&A and Wrap-Up (10 minutes)

Open Floor for Questions: Address any remaining questions or concerns from participants about testing and product evaluation.

Summary:

- Recap the key concepts and methodologies discussed in the workshop.

- Emphasize the importance of rigorous testing, adherence to quality standards, and continuous improvement in recycled product development.

Thank participants: Express gratitude to participants for their active participation and commitment to learning about testing and quality assurance.

Additional Resources

- Handouts summarizing testing methods and quality standards for recycled products.
- Links to resources on product testing protocols and quality management systems.
- Contact information for further assistance and collaboration opportunities.

Session summary

🧠 Knowledge: In this workshop we emphasized the importance of testing and quality assurance in the development of recycled products. Participants explored physical, chemical, and performance testing methods, learned about quality standards and success criteria, and discussed how to incorporate feedback for continuous improvement. These processes ensure reliability, market acceptance, and customer satisfaction.

💡 Reflection: How can feedback from customers and stakeholders be effectively utilized to drive innovation and improvement in recycled product development?

🔑 Keywords: Recycled Products, Quality Assurance, Physical Testing, Chemical Testing, Performance Testing, Quality Standards, Customer Feedback, Continuous Improvement

1.7 Addressing the Community

Objective: Empower learners in rural areas to raise community awareness about plastic pollution, collaborate with local groups and NGOs, and understand the social and environmental impacts of plastic recycling and reuse projects.

Duration: 1.5 hours

1. Introduction (10 minutes)

Welcome and Objectives

- Introduce the workshop's goals: raising community awareness about plastic pollution, fostering collaboration with local groups and NGOs, and understanding the impact of recycling projects.
- Emphasize the role of community engagement in addressing environmental issues.

Overview of the Agenda

- Community awareness strategies on plastic pollution.
 - Collaboration with local groups and NGOs for environmental initiatives.
 - Social and environmental impact of plastic recycling and reuse projects.
-

2. Community Awareness Strategies on Plastic Pollution (20 minutes)

Understanding Plastic Pollution:

- Explain the sources and effects of plastic pollution on the environment and human health.
- Use visual aids and statistics to highlight the severity of the issue.

Educational Campaigns: Discuss methods for creating effective educational campaigns:

- Community meetings and workshops.

- Use of posters, flyers, and social media.
- Involving schools and local leaders to spread the message.

Interactive activity

Organize a role-playing session where participants practice presenting the issue of plastic pollution to different community groups (e.g., schools, local councils, farmers).

3. Collaboration with Local Groups and NGOs for Environmental Initiatives (20 minutes)

Identifying Potential Partners:

- Explain how to identify and approach local groups, environmental organizations, and NGOs.
- Discuss the benefits of collaboration, such as resource sharing, increased outreach, and stronger impact.

Building Partnerships: Provide tips on building effective partnerships:

- Establish clear goals and mutual benefits.
- Regular communication and meetings.
- Joint planning and implementation of projects.

Case Study:

Present a successful case study where community collaboration with an NGO led to significant environmental improvements. Highlight the steps taken and the outcomes achieved.

4. Social and Environmental Impact of Plastic Recycling and Reuse Projects (20 minutes)

Social Impact: Discuss how recycling projects can improve community well-being:

- Creating jobs and economic opportunities.
- Enhancing community pride and cohesion.
- Providing educational opportunities and raising environmental awareness.

Environmental Impact: Explain the positive environmental outcomes:

- Reduction in plastic waste and pollution.
- Conservation of natural resources.
- Mitigation of climate change effects.

Interactive Discussion

Community Impact Mapping: Engage participants in mapping out potential social and environmental impacts of proposed recycling projects in their communities. Discuss practical steps to achieve these impacts.

5. Q&A and Wrap-Up (10 minutes)

Open Floor for Questions: Encourage participants to ask questions and share their thoughts on community engagement strategies and collaboration.

Summary:

- Recap the key points discussed: the importance of raising awareness, collaborating with local groups and NGOs, and understanding the impact of recycling projects.
- Emphasize the role of each participant in driving positive change in their community.

Thank participants: Express gratitude for their participation and commitment to addressing plastic pollution.

Additional Resources

- Handouts with summarized strategies for community awareness and collaboration tips.
- Do together a SWOT (Strength, Weakness, Opportunities and Threats).
- Links to resources and organizations that support environmental initiatives.
- Contact information for follow-up assistance and support.

Session summary

 **Knowledge:** In this final session we gained insights into community engagement strategies for environmental awareness, collaboration with local groups and NGOs, and the social and environmental impacts of plastic recycling projects. We emphasized the importance of education on plastic pollution, building partnerships for impactful initiatives, and fostering sustainable practices to benefit both society and the environment.

 **Reflection:** How can you personally contribute to raising awareness and fostering collaboration within your community to address plastic pollution and promote recycling?

 **Keywords:** Plastic Pollution, Community Engagement, Collaboration, Environmental Impact, Recycling Projects, Sustainability

Practical issues and pedagogical considerations

Formalities

- **Content covered:** outline the foundational elements that ensure the structure and effectiveness of the program. This includes clear definitions of the content to be covered, such as the specific modules or topics addressing plastic pollution and sustainable practices.
- **Objectives:** be explicitly stated, aligning with the broader aim of equipping participants with actionable strategies for driving positive change within their communities.
- **Learning outcomes - Relation to EQF levels:** emphasizing both knowledge acquisition and practical application. For instance, participants should demonstrate the ability to identify key environmental challenges, propose innovative solutions, and collaborate effectively within diverse groups. The EQF alignment strengthens the program's credibility and facilitates recognition across educational and professional settings.
- **Transferability aspect (if applicable):** allow participants to adapt and implement concepts in various cultural or regional contexts. This could include offering case studies or real-world examples tailored to different environments, enhancing both relevance and usability.
- **Promoting cooperative learning:** Activities such as group projects, peer-review sessions, and collaborative problem-solving tasks can enhance participants' engagement and interpersonal skills.
- **Related literacies (and/or life skills):** as critical thinking, digital literacy, and effective communication. These skills are instrumental in empowering participants to advocate for sustainable practices and influence change at both local and global levels.

Implementation

- **Trainer requirements:** possess not only experience in the subject matter but also strong facilitation and communication skills. Have the ability to adapt the teaching style to suit diverse groups of learners, demonstrate cultural sensitivity and inclusiveness. Be familiar with digital tools and assistive technologies, as well as adult education pedagogies.
- **Infrastructure requirements:** The physical and digital spaces where learning takes place should first and foremost foster a welcoming environment that prioritizes access and inclusivity. While many affordable options for setting up a workshop may not fully meet formal accessibility standards, small yet essential interventions can make a significant difference. This includes creating open environments that accommodate diverse needs, arranging bilateral solutions with individuals concerned about accessibility, and making affordable adjustments where possible. Collaboration with the community can also play a key role—whether through shared resources, volunteer efforts, or creative problem-solving—to ensure that everyone can fully engage and experience the learning process.
- **Base vs ideal number of sessions/hours:** The number of sessions and hours should be tailored to the complexity of the content and the learners' capacity. A base structure might include shorter, focused sessions (e.g., 1-2 hours) for foundational understanding, while an ideal setup would extend to 3-4 hours per session with breaks, providing time for in-depth discussions, hands-on activities, and reflection. Flexibility in scheduling also allows learners to juggle personal or professional commitments effectively.
- **Considerations about learners based on their specific needs/context:** Since the workshops are already designed at a basic level, prior knowledge is not required for participation. However, providing easy-to-follow definitions for specific terminology—whether in written, spoken, or visual formats—can help trainers communicate effectively with diverse learners. This approach is particularly beneficial for individuals with no prior knowledge, those that are not familiar with English terms, those from migrant backgrounds who may not be familiar with the local language, and persons with disabilities. Encouraging open communication allows learners to express their needs, ensuring the program remains inclusive and adaptive.
- **Tips for self-study:** Introducing participants to the Precious Plastic approach and movement can inspire hands-on experimentation and resourcefulness, fostering an understanding of sustainable practices and community-driven

solutions. Small projects based on this approach can encourage learners to apply standard knowledge while integrating insights from workshop experiences. For instance, participants could be tasked with identifying potential challenges in project execution, predicting what might not work and why, and brainstorming necessary adaptations or improvements. Such reflective practices, combined with experimentation, can deepen understanding, enhance problem-solving skills, and promote collaborative innovation. Encouraging reflective practices, such as journaling or peer-sharing sessions, can further solidify these learning outcomes and foster independent, critical thinking habits.

- **Additional considerations:** each context is different, which will probably bring to the surface issues that are not reflected here. For the case of Greece for example, there was a significant issue with engaging people with the process despite offering free courses and the ability for participants to work directly with the machines. In that case the implementing team decided to continue operating the

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Annexes

Accessibility review - note

For each unit's content, ensure the following accessibility considerations are addressed:

- Provide materials in multiple formats (e.g., text, audio, video, braille, and large print) to accommodate various needs.
- Utilize high-contrast visuals and accessible color schemes for presentations, slides, and documents.
- Include closed captions and transcripts for all video and audio content.
- Ensure all digital resources are compatible with screen readers and other assistive technologies.
- Offer alternative assignments or exercises for learners with sensory or physical limitations.
- Ensure physical spaces for in-person sessions are wheelchair accessible and equipped with assistive listening devices.

For the course as a whole:

- Incorporate flexibility in deadlines and participation requirements to accommodate learners with varying schedules and abilities.
- Provide clear navigational guidance for course platforms and tools, ensuring ease of use for all learners.
- Regularly audit materials and tools for compliance with accessibility standards such as WCAG (Web Content Accessibility Guidelines).
- Include ongoing feedback mechanisms for learners to share accessibility challenges and to adapt the course accordingly.
- Train educators and facilitators on best practices for inclusive teaching and accessibility support.

Notes and Considerations Based on Specific Units

For technical units with diagrams or charts:

- Provide textual descriptions or audio explanations of visual elements to support learners with visual impairments.
- Ensure diagrams are labeled clearly and use accessible fonts and sizes.

For collaborative or interactive sessions:

- Offer alternative formats for participation (e.g., virtual discussions or asynchronous forums) to accommodate different learner needs.
- Provide clear instructions and expectations for group activities to minimize confusion.

Code of conduct

Code of Conduct for Learners

Engage actively with learning materials and exercises, striving to apply terms in practical contexts such as examples or case studies.

Respect the accessibility measures provided, utilizing glossaries, textual descriptions, audio explanations, and alternative formats as needed.

Participate in forums, discussions, or group activities with an open mind and respect for diverse perspectives and needs.

Follow clear instructions for collaborative sessions, ensuring equitable contribution and understanding.

Adhere to respectful communication practices, fostering a positive environment for all learners and educators.

Code of Conduct for Educators

Design learning materials that are accessible and inclusive, offering simplified explanations, glossaries, and accommodations for visual or other impairments.

Ensure all diagrams and charts are clearly labeled and utilize accessible fonts and sizes.

Provide alternative participation formats for collaborative or interactive sessions to accommodate diverse learner needs.

Set clear expectations and instructions for activities to reduce confusion and enhance learning outcomes.

Promote an environment of patience, respect, and encouragement, recognizing the varying needs and capabilities of each learner.

Code of Conduct for Collaboration Between Learners and Educators

Maintain a mutual respect for each other's roles, contributions, and perspectives in the learning process.

Communicate clearly and constructively, ensuring that all participants feel heard and valued.

Work collaboratively to address and accommodate diverse needs, utilizing available resources and alternative formats effectively.

Encourage curiosity and feedback to refine and improve learning materials and methods.

Prioritize inclusivity and accessibility, striving to create an equitable and engaging learning environment.



This document is part of the EcoFemSkills Learning Course, a set of thematic units for addressing issues of ecological transition from an intersectional perspective. The publication has been developed in the context of the Erasmus+ project EcoFemSkills: Rural Women Pioneering Sustainability, whose working team consists of the following organisations:

- Asociación Ecologica Precious Plastic Canarias hacia una economía circular (Spain) [[website](#)]
- Asociación para la participación e integración social - FACTORÍA SOCIAL (Spain) [[website](#)]
- Erifyli Center (Greece) [[website](#)]
- Dafni Kek (Greece) [[website](#)]

Available at: <https://erasmus-plus.ec.europa.eu/projects/search/details/2023-2-ES01-KA210-ADU-000181192>

Alternative sources: [EcoFemSkills minisite](#) + partners websites



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