REPper | Interreg Euro-MED

Co-funded by the European Union

Work package 2

Activity 2.2 REPper Factory setting up

D.2.2.1 Joint Needs Analysis

DOCUMENT AND PROJECT DETAILS

Programme	Interreg Euro_MED
Programme priority	Greener MED
Specific objective	2.6 Promoting the transition to a circular and resource efficient economy
Project title	REPair PERspective
Project acronym	REPper
Work Package	2 REPper FACTORY – CAPACITY BUILDING OF PROFESSIONALS
Activity	2.2 REPper Factory setting up
Deliverable Name	Joint Needs Analysis
Deliverable Type	Key; document
Responsible Partner	PP6 ANATOLIKI SA
Lead Partner	Metropolitan City of Bologna
Project start	1-1-2024
Due date of Deliverable	M 6
Status	Final
Submission date	30-6-2024

Contents

1. Introduction

For the implementation of the Activity 2.2 "REPper Factory setting up" of the Work Package 2, a 5-stage process will be carried out by each partner, and this will ultimately constitute a collective result. The first one of these stages is the "**Joint Needs Analysis**" deliverable, in which a joint analysis of existing repair entrepreneurship programs, market trends, enterprises training needs, professional profiles related to the repair economy will be studied. Then a data collection from each country of the partnership, that interacts with the stakeholders, will be produced. The professional profiles involved in the repair economy will first be identified and a needs analysis will be developed to highlight new skills and create new profiles that will be trained and integrated into the repair economy community. Studies have proved that in Europe over 50% of households have at least 1 electronic devise which is not used but was never repaired (Right to Repair movement). Therefore, the targeted enhancement of the repair sector is considered significant together with the consumers' awareness. In this framework the development of the current analysis is crucial.

2. Objectives

The objective of the Joint Needs Analysis report is to assess the training needs within the emerging Repair Economy. By evaluating current skills, knowledge gaps, and industry demands, this research aims to identify the specific educational requirements necessary for workforce development. Through surveys, interviews, and analysis of current trends, the study seeks to provide actionable insights that can inform the creation of targeted training programs. Ultimately, this assessment aspires to support the growth and sustainability of the Repair Economy by ensuring that professionals are equipped with the competencies needed to meet market demands and promote environmental sustainability. For this reason, some of the main objectives are the following:

- Identifying Technical Skills and/or Meta-competences Gap

By systematically assessing the level in technical expertise and knowledge between repair experts, current capabilities, identifying future needs, and implementing targeted training programs, organizations can ensure they are well-equipped to meet the demands of the industry.

- Ensuring Compliance with Manufacturer/Services Standards

It involves maintaining warranties and guaranteeing the quality of repairs. This heavily depends on the training of repair professionals to follow manufacturer standards and specifications when diagnosing and fixing equipment and it is crucial for maintaining quality, safety, and customer satisfaction.

- Improving Diagnostic Accuracy

Improving diagnostic accuracy in the repair sector involves technologies, and practices aimed at ensuring precise identification of faults and issues in equipment, machinery, or vehicles. Essential factor for reducing repair duration, minimizing costs, and improving customer satisfaction.

- Enhancing Safety Practices

Enhancing Safety Practices is related to identifying the safety standards and procedures, such as handling hazardous materials or operating heavy machinery, that require training, aiming to reduce the possibility of accidents or injuries during repair activities.

- Adapting to Technological Advancements

Adapting to Technological Advancements will make sure that repair technicians are prepared to work with new tools, equipment, and diagnostic technologies, evaluate how technological changes have affected repair processes and identify any training needs.

- Addressing Customer Service Skills

Addressing customer service skills involves improving the abilities and practices of staff to ensure they provide high-quality service and create a positive experience for customers. It determines what kind of training is needed for customer-centric culture, communication, and problem-solving so that repair personnel can engage with clients.

- Optimizing Repair Processes

An innovative curriculum tailored to each country's needs could help optimizing repair processes which will have the ability in finding ways to enhance productivity, decrease downtime, and reduce costs.

- Promoting Continuous Learning and Development

Encourage repair technicians to embrace a culture of lifelong learning by giving them regular opportunity to refresh their knowledge and keep up with industry developments.

- Ensuring Regulatory Compliance

In long term it can reduce risks, determine the training needs in relation to industry standards and regulatory requirements, such as environmental laws or standards for occupational health and safety.

- Business model improvement

A business model improvement involves refining various aspects of the business to enhance their competitiveness, profitability, and build lasting customer relationships. An initial SWOT analysis will help businesses identify internal and external factors that can influence their performance.

3. Methodology for Data Collection

In the process of collecting data for the existing situation on training needs of the repair sector, it is considered extremely important to create a methodology to achieve this purpose in a more organized and precise way. To become more accurate, **two main tools** to collect our data are chosen: **desk analysis and interviews**.

The first tool chosen is the **desk analysis**, which involves searching various literature reviews and existing sectoral studies to discover repair entrepreneurship programs, market trends, enterprise training needs, and the latest technological standards. Lastly, the research within the Professional Chambers will provide useful information in a more comprehensive data collection. Studies regarding the needs of customers, the knowledge that currently businesses have, and descriptions of already existing problems will make it easier for partners to understand the need of improvement of the training in the repair sector.

The **questionnaires/ interviews**, the second research tool, will help the creation of a larger database, the engagement of the targeted individuals/ stakeholders to be approached, the better understanding of the REP.PER thematic area. Moreover, the continuous business to business (B2B) discussions will lead to large volume of information regarding the professional profiles related to the repair economy by looking for ways to improve output, cut down on downtime, and expedite repair processes. A template questionnaire was created by ANATOLIKI SA with the assistance of the LP, and it was distributed between the partnership. The template is presented in the annex 1. According to the needs and special characteristics of each partner, the questionnaire was customized in some cases.

In summary, after gathering the aforementioned information, a needs analysis pertaining to new profiles or talents will be conducted, aiding in the project's advancement.

4. Data collection analysis

According to the methodology analysed above, the data collected per country of the partnership is listed below. The countries are listed in alphabetical order.

Albania

Following the guidelines distributed by PP6, Auleda's team conducted research at the national and local levels with the objective of both increasing the knowledge of the team concerning the sector also to provide information to the responsible partner in the framework of the Joint Needs Analysis.

The methodology for the completion of this was in-person interviews, following the template provided by PP6, also tailoring the template according to the needs of the research team.

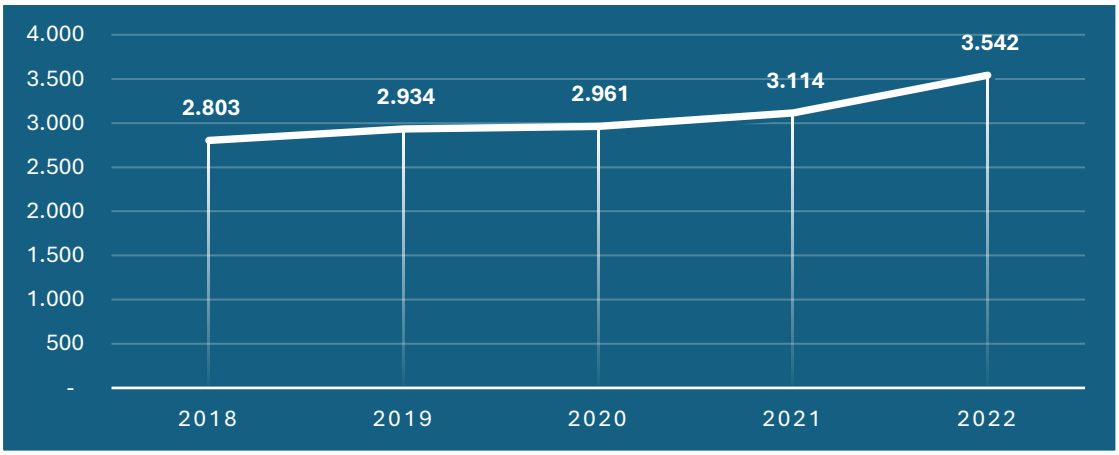
To understand the situation of the repair sector in Albania and as indicated by the responsible partner, Auleda conducted a need analysis of the repair sector in Albania, including desk research and a set of interviews with SMEs in the repair sector.

In total, 56 interviews were conducted, using a qualitative analysis, considering the undiscovered nature of the sector. The interviews took place in the region of Vlore from April to May 2024. The purpose of the questionnaire was to identify the needs of businesses operating in the repair sector in terms of technical skills and their improvement for the optimization of repair processes, business and marketing models, management skills and increasing access to financing. The interviewed SMEs encompassed different sectors, and they were priorly identified through the desk research, which took place during the period March – April 2024.

After completing the interviews, the information was classified into three large groups for the extracted data to be as accurate as possible:

a) Electronics sector
b) The textile sector
c) Other repairs

Information provided by INSTAT suggests that the number of active enterprises in the repair sector for the period 2018 – 2022 has been increasing constantly. This data can be considered an increasing interest in the sector, but at the same time might indicate the formalisation of the businesses in this sector. In 2022, the number of active enterprises in the Repair sector in Albania was 3,542.



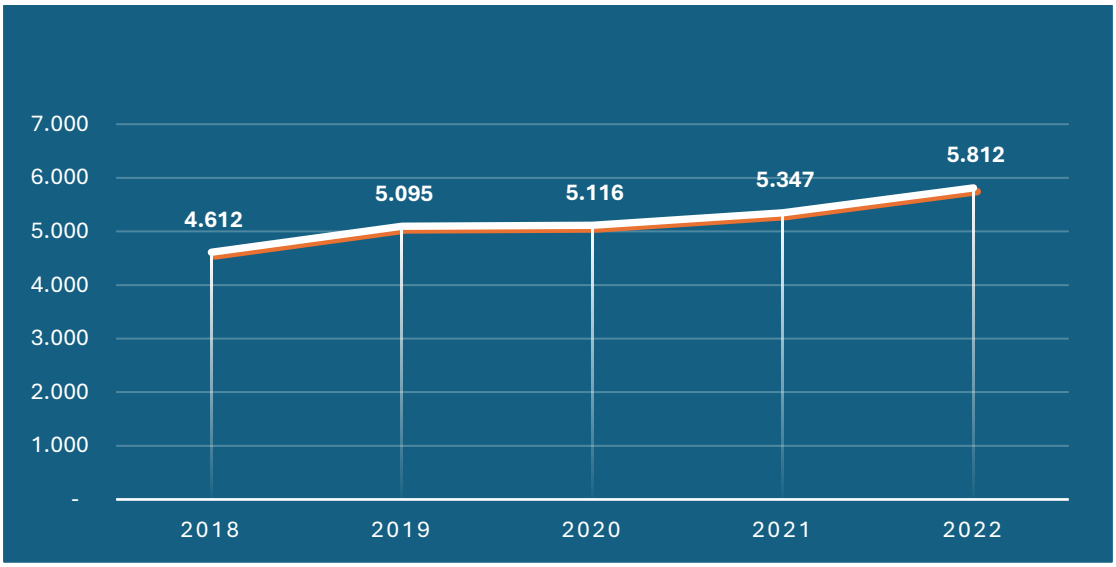
Graphic 1- Number of active enterprises in the repair sector.

The expansion of the sector is shown also in the total number of people employed. Table 2 shows how the trend has come in terms of the average annual number of employees in this sector from 4,612 in 2018 to 5,812 in 2022. From these data, an upward trend can be observed in terms of the average annual number of employees. Also, as shown in Table 3, incomes also increased for the businesses. From 2018 to 2022 incomes almost doubled,

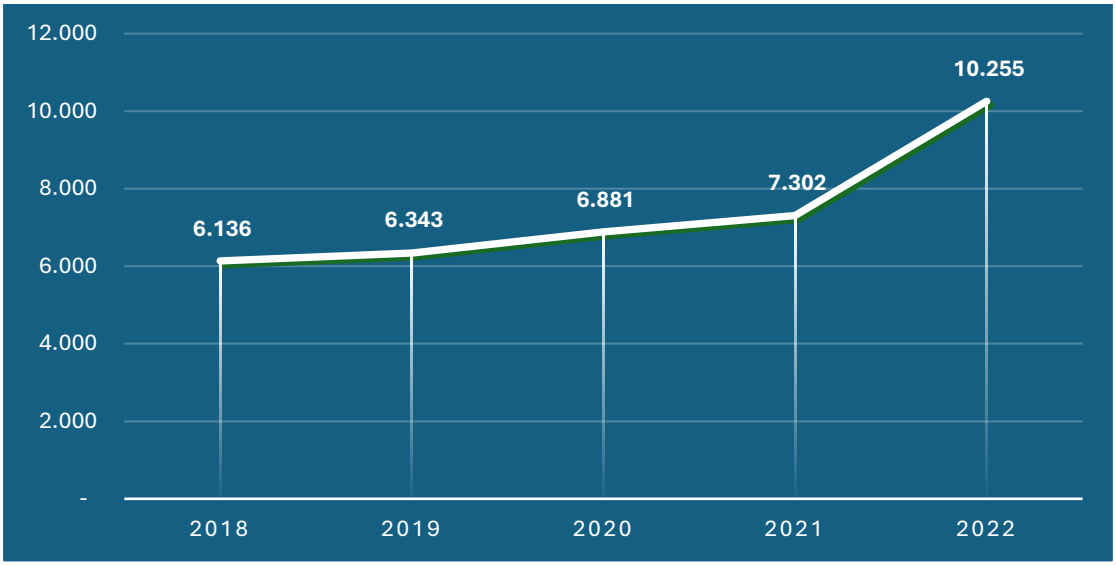
while the pace has been steadily positive. From 6,136 million ALL, incomes increased to 10,255 in 2022.

Even though incomes and the number of employees has increased in the past years, this is not the same as the investments that have constantly decreased from 2018 to 2022. In 2021 it recorded an increase compared to the previous year, but in 2022 the level reached the lowest point in the 5-year period.

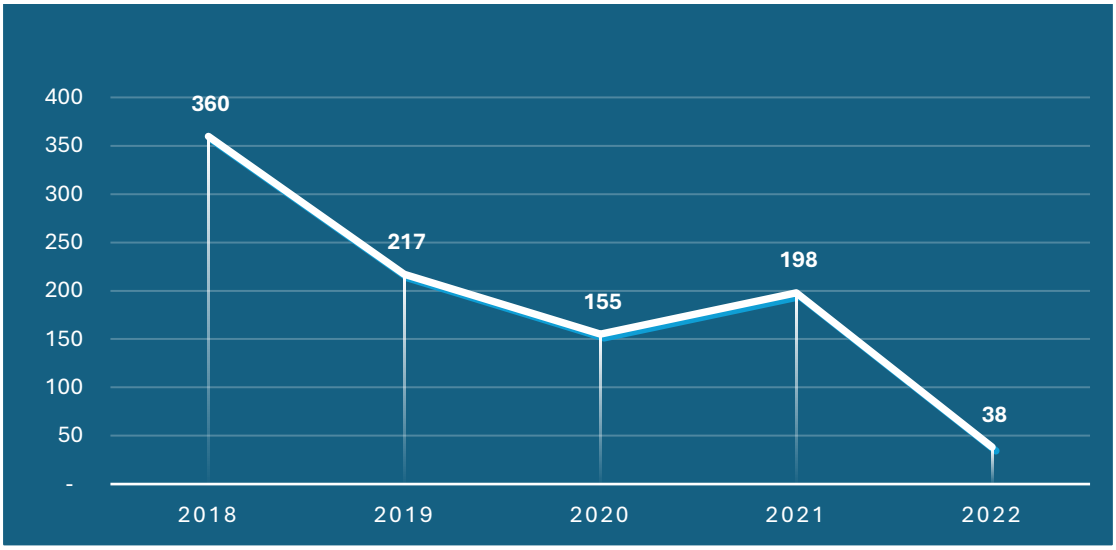
The decline is quite sharp, decreasing from 360 million in 2018 to 38 million in 2022. If investments are not continued in the coming years in the repair sector, it is very difficult to maintain the upward trends of these three components.



Graphic 2 - Number of employees, yearly average.



Graphic 3 - Incomes from net sales (millions ALL).



Graphic 4 - Overall investment (millions ALL).

Based on the analysis of the interviews, some key points for each sector were identified. The electronic sector is the most widespread sector of repairs in the territory. One can find such shops on the main streets of the city, but not only. 23 interviews were conducted with businesses in electronics and these interviews were conducted over a period of one week.

Based on the data collected from the interviews, the most important needs were identified. The training that businesses of this type have requested includes training for the construction of mobile phones, tablets, and PCs, as well as training for improving the skills needed to find new customers through digital marketing. In addition to the need for training, 39% of businesses in this field have also expressed the need for specific machines for the repair of technological parts or glass, as well as the need for microscopes that would help them in their work by increasing the effectiveness of repairs and shortening service times. Increasing knowledge on the topic of the circular economy was another need identified. 92% of the interviewees had no information on the concept of the circular economy, what it is, or what benefits the business can gain if it adopts this type of economy, although in practice they operate based on circular economy principles.

Also, 60% of businesses in the sector of electronics are ready to improve their business model and move towards a circular economy business model, by participating in the repair hub and in the trainings and workshops that the HUB is expected to carry out in the coming period trying to revitalize this sector of the economy.

The textile sector is also widespread in the territory of Albania and in the territory of Vlora. But unlike the electronics repair sector, this sector has fallen behind. From the interviews, it was noticed that these businesses are struggling with investments that were lacking both in machineries and in renovating or furnishing their shops. The needs recorded have been numerous but what stands out are the needs for specific training for day-to-day work such as cutting or design and in marketing goods online to capture a wider market. They also need equipment as the ones they use are old, inefficient and waste a lot of energy and time.

In addition to the two main sectors (electronics and textiles), interviews in SMEs of various fields such as watch repairs, repairs of motorcycles, bicycles, carpentry, etc were conducted. The problems have been almost the same as in the first two sectors, but in some of them, the needs are even bigger.

It has been noticed that in the clock fixing businesses the people who operated were of a relatively old age and expressed that the income was insufficient and young people did not prefer these types of businesses to work or receive training. In other problematic businesses, there was a lack of young workers.

Bosnia & Herzegovina

Perspectives and challenges

In Bosnia and Herzegovina (BiH), there is a growing need for initiatives that raise awareness about repair and reuse principles within the circular economy framework. Although some efforts have recently begun, they are still in the early stages and are insufficient to meet the urgent need for widespread understanding and adoption of sustainable practices. Given BiH's resource-intensive economy and relatively low resource productivity, the country stands to gain significant environmental, economic, and social benefits by embracing circular economic models. These benefits include mitigating health and environmental impacts, reducing greenhouse gas emissions, and enhancing resource efficiency, which would positively affect various levels, from regional waste management efficiency to local environmental quality, such as reducing air and water pollution. The "repair and reuse" approach, a core concept of the circular economy, would undoubtedly offer numerous advantages.

Firstly, a strong repair culture in BiH can potentially decrease the need for new products, leading to resource conservation and a reduction in environmental impact. The impact of climate change in BiH can already be seen in extreme weather events such as floods and droughts, which are becoming more frequent. Environmental degradation is also evident in air pollution, limited water and waste management capacities and uncontrolled construction. BiH has among the highest levels of fine particulate matter (PM2.5) pollution in Europe.

Secondly, widely adopted repair mindset can result in significant economic savings for individuals and communities, as repair services are often more affordable than purchasing new products. This holds particular significance in BiH where the population faces low purchasing power, with an average monthly net salary of 685.13 EUR, in the first quartal of 2024 and an average pension payment of 336.13 EUR in April 2024, among the very lowest in the region.

Thirdly, BiH has grappled with persistently high levels of unemployment. In 2023, the unemployment rate was 10.7% and 30.1% among youth. There is also a high share of informal employment (19.7%). Moreover, among, the unemployed, 69.0% persons have finished secondary education and specialization, followed by persons who have completed primary school or lower education 16.0%. Promoting a repair culture in BiH can open up avenues for effective vocational education and lifelong learning, fostering the development of new skills among individuals. This would not only promote self-sufficiency and resilience but also has the potential to spur the creation of new jobs and businesses in BiH.

Finally, repair culture values the preservation of craftmanship and traditional skills, contributing to the preservation of cultural heritage. Numerous traditional Bosnian crafts are facing the threat of extinction, but a thriving repair culture could provide them with renewed purpose, helping to safeguard these heritage practices from fading into past.

On the downside, according to the World Bank, half of Bosnia's population resides in rural areas, which often means limited access to repair services and resources. Additionally, repairing items typically requires considerable time, labor, and specialized tools and skills, which likely discourages individuals from opting for repair solutions.

Data availability

Another major challenge lays in the fact that official statistics on the circular economy, particularly in the repair sector, are scarce and fragmented, lacking a systematic approach to data collection at the state level. While EUROSTAT monitors circular economy trends in EU countries using various indicators, in BiH, comparative data are only available for indicators measuring per capita consumption of natural resources and resource productivity. On that note, in 2019, BiH consumed 11.5 tons of natural resources per capita, which was by 28.5% more than in 2010 and the BH resource productivity ratio of 0.9 is significantly below EU average (2.2).

There is a pressing need to improve the collection and analysis of data related to the circular economy in BiH, which is crucial for making informed strategic decisions. Information pertaining to the number of companies engaged in repair activities can be sourced from the Statistical Classification of Economic Activities in BiH, categorized as follows: (1) Wholesale and retail trade of motor vehicles and motorcycles; repair of motor vehicles and motorcycles (1,266 companies), (2) Repair and installation of machinery and equipment (Processing industry) (154 companies), and (3) Repair of computers and personal and household items (95 companies).

While several studies have been conducted on the state of the circular economy in the country, any relevant research specifically addressing the repair sector was not found. Also, in BiH, there is evidently very low level of media interest in circular economy topics.

Regulatory Framework

In terms of its administrative organization, BiH is divided into two Entities – the Federation of BiH and the Republic of Srpska, which are politically autonomous to an extent, as well as the Brcko District, which is jointly administered by both. Hence, the legal framework in the country is quite complex due to the combination of different government systems. The distribution of responsibilities for environmental policies, broadly defined, is outlined in the Law on Ministries and Other Administrative Bodies of BiH. However, the entities, Brcko District, and cantons are primarily responsible for formulating and executing these policies, encompassing both legal and strategic dimensions. In practice, this division of responsibilities often leads to inertia in decision-making processes, resulting in slow and sometimes inadequate implementation of existing legal and strategic measures in the environmental domain.

BiH does not have a general legislative act on environment protection that would serve as a basis for development of other relevant legislation. While there is a lack of a systematic approach to the circular economy, recent developments, particularly in response to the EU Green Deal and the Green Agenda for the Western Balkans, have seen a noticeable uptick in initiatives and support for circular economy in the country. This includes efforts to establish strategic and regulatory frameworks related to sustainable development, many of which incorporate elements of the circular economy to varying degrees. These documents include the Integrated Energy and Climate Plan for 2021-2030, the Environmental Strategy and Action Plan until 2030+, and Climate Change Adaptation and Low-Emission Development Strategy of BiH 2020-2030 (currently a draft). Efforts are also underway to draft a Road Map for the Circular Economy in BiH. In October 2021, the Regional Cooperation Council unveiled the Action Plan for implementing the Sofia Declaration, intended to offer guidance to decision-makers throughout the implementation process of the Declaration.

So far, the Federation, as well as the Brcko District, have utilized the legal framework for consumer protection contained in the Law on Consumer Protection of BiH, while the Republic of Srpska applies its own entity law in this area. The current state level BH Law was adopted in 2006, and since then, consumer protection legislation has not been changed, except for minor amendments in 2015. In the European Commission's Opinion on BiH's 2019 EU membership application, it was assessed that BiH is in the early stage of readiness in the field of consumer protection, and special attention should be paid to harmonizing consumer protection legislation at all levels with the acquis and ensuring its proper implementation. Due to the impossibility of reaching a political agreement to amend or draft a new law at the state level that aligns with the legal framework of the EU, the Federation of BiH Ministry of Trade, aided by the EU4CS (EU4CivilSociety) initiative, has opted for a brand-new law at the Federation entity level, which will be fully aligned with the EU legal framework.

To ensure alignment with the EU legal framework and the concept of the circular economy, BiH must prioritize the adoption or amendment of key legal acts governing resource efficiency, reuse, component separation, and specialized treatment of waste for reuse. Coordination and alignment of approaches at the national and entity levels are essential to integrate the circular economy concept as the foundation for sustainable development in BiH which will be contingent upon legislative frameworks, property rights, and the preparedness of local and regional governing bodies to drive green initiatives.

Training and education

The education sector in BiH is also shaped by the country's constitution, which includes the BiH Constitution, the constitutions of its entities, cantons, and the Statute of the Brčko District of BiH, all of which outline legal competencies in education. In line with this framework, there are thirteen key institutions responsible for education in BiH: two in Republic of Srpska, ten in Federation BiH's cantons and one in Brcko District. Additionally, there are two ministries with coordinating roles: The Federal Ministry of Education and Science (responsible for coordinating activities within the Federation of BiH and among its ten cantons) and the Ministry of Civil Affairs of BiH (MoCA) (tasked with coordinating activities across all education institutions in BiH).

At the state level, there are further institutions, including: the Agency for Development of Higher Education and Quality Assurance, the Center for Information and Recognition of

Qualifications in Higher Education, and the Agency for Preschool, Primary, and Secondary Education.

Principles and standards for adult education in BiH were established as a comprehensive document at the national level, serving as a guiding framework for aligning legislation and policies at regional levels. Adult education encompasses professional development, skill enhancement, retraining, and other endeavors aimed at fostering continuous learning. The Framework Law on Vocational Education and Training in BiH stipulates that "Educational institutions may offer adult training programs within their approved scope, subject to authorization from relevant educational authorities. The curriculum for adult education and training is established by the competent minister." Furthermore, the same law specifies that "Adult learners may be subject to training fees, the amount of which is determined and ratified by the school's board in collaboration with the relevant ministry of education."

Due to its significant decentralization and fragmentation, achieving coordinated efforts to implement joint initiatives is an exceedingly challenging endeavor. This is of particular importance for initiating any changes in the existing curricula that may include circular economy principles. At the moment, specific knowledge, skills and competences employable in the repair and reuse sector can be acquired through programs offered by vocational and art schools. Examples include: high schools of mechanical engineering; high schools for textiles, leather, and design; high schools of electrical engineering, and high schools for art. At the level of university education, several faculties, mostly public, offer programs in mechanical engineering, electrical engineering and fine arts.

Also, those who are already engaged in the repair sector often mention professional certifications from different brands and industry bodies that guarantee standardized skills and knowledge.

A lack of formal and informal education and training in the fields relevant for the circular economy is evident. Additionally, circular economy topics are insufficiently included in educational programs across all levels of schooling. Employer surveys continuously report significant difficulties in hiring due to skills gaps, ranging from technical to meta-cognitive skills. A number of BH companies have implemented, to a larger or smaller degree, certain elements of circularity which suggests that preconditions for progress in this area exist. Also, a recent study that investigated companies that do apply circularity elements in their operations are in need of technical assistance for resource efficiency analysis, process or service innovation, and training and development opportunities. Promoting a repair culture in BiH can open up avenues for effective vocational education and lifelong learning, fostering the development of new skills among individuals, aligned with the real labor market needs. This is of great potential importance for BiH which has coped with persistently high levels of unemployment.

Interviews' summary

Representatives from five companies in the repair sector in Bosnia and Herzegovina (BiH) participated in the interviews. Two of these companies focus on recycling and reusing electronic waste. Another company leads in the distribution and repair of mobile devices. The fourth company specializes in the distribution and repair of IT and consumer

electronics. The fifth company is dedicated to printing and copy services, with a particular focus on the renovation and repair of printers and printing cartridges. All companies market their repair services through their webpages.

Two companies involved in the recycling and reuse of electronic waste expressed their confidence in traditional repair skills, where their workers have the most experience. The representative of the first company highlighted welding and turning, while the representative of the second emphasized skills necessary for repairing household appliances. The company engaged in the distribution and repair of mobile devices pointed to their software repair skills as their strongest area of expertise. The company engaged in printing business said they feel confident in all skills needed for toner renovation and repair.

Regarding the challenges they face, the first company involved in recycling and reusing electronic waste struggles to find skilled experts in electrical engineering, hydraulics, and heavy machinery repairs. The other company in the same sector has difficulties finding IT equipment repairers who can also engage in training and educational activities. The company engaged in the distribution and repair of mobile devices struggles with the hardware repairs (brazing) while the company engaged in printing business said they face major challenges in their printer repair activities.

None of the participants have conducted market research on the repair sector. However, based on their experience, almost all agree that there is a significant need for repair-related skills in the country. On the other hand, the representatives of the company involved in the distribution and repair of mobile devices and distribution and repair of IT and consumer electronics reported a decreasing demand for repair services. This decline is attributed to the growing affordability of purchasing new mobile devices compared to repairing existing ones.

Participants mentioned the training provided by equipment manufacturers or distributors, referred to as "brands." These trainings are held when new equipment is procured or when their offerings expand with new types of devices. The company engaged in printing business emphasized that they are “left to themselves” meaning that for their printer repair activities they have no other option but to obtain knowledge from online sources (e.g. YouTube). Additionally, companies organize in-house training sessions conducted by more senior employees. All participants stated that they update their equipment in accordance with industry and brand standards.

Participants emphasized the following obstacles in their repair activities: lack of public awareness and understanding of repair and reuse principles and importance, an insufficient pool of trained repair professionals, lack of equipment and spare parts on domestic market (spare parts are imported) and an inadequate and discouraging regulatory framework.

Participants identified topics relevant to their businesses. One company mentioned the need for training in smaller repairs of IT equipment, while another stressed the importance of training in printer repairs. Additionally, one company highlighted the need

for BGA training for chip replacement. Interestingly, one participant noted that their repairers lack basic work protocol skills and expressed a desire for training that would enhance professionalism among repairers. Finally, one participant shared that their repairers lack communication skills needed for effective communication with the clients.

Two participants stated that they would be exclusively interested in practical workshops that would provide them with hands on experience (participants coming from companies needing the BGA training and basic work protocol skills). Remaining three participants said that all types of delivery would be acceptable (participants needing training in IT and printer repairs).

Participants agree that BH repair sector has the potential for expansion given the existing demand for the repair services. However, there is still much to be done in terms of providing adequate trainings and promoting the repair and reuse among public. Also, a comment has been made that the only way to keep the workforce engaged in the repair sector is to increase the salaries so they can at least be comparable with standard in the more developed countries.

France

To the present day in France, there are no training courses entirely dedicated to learning repair techniques. They are generally integrated into more general vocational training courses, or even non-existent in certain sectors. However, organizations such as the Chambre des Métiers et de l'Artisanat (CMA) and the Réseau National des Ressourceries et Recycleries (RNRR) are working on the recognition of repair professions and the development of appropriate training courses to preserve know-how and develop (new) services, in order to contribute to the ecological transition. Although there are still many obstacles to training, there are some interesting ideas to explore.

For this report, 4 interviews were conducted, in addition to a desk study: three interviews were held during online meeting and one participant provided us with written answers. Representatives from the CMA France (Chambre Métiers et de l'Artisanat, Chamber of Trades and Crafts), the ARRPACA (Association Régionale des Ressourceries PACA), and from the RNRR (Réseau National des Ressourceries et Recycleries) were interviewed.

An overview of the existing professions and vocational training offer in France is provided. The immediate training needs of professionals of the repair sector is identified. Some food for thought regarding emerging skills and the new training formats is provided as a conclusion.

Overview of existing professions and vocational training offer

Most of the workers of the repair sector are craftsmen. The CMA identified 36 professions to be linked with the repair sector (see annex 1). However, the offered repair services are mostly just an addition to their main business activities, as this activity is not financially profitable alone. Furthermore, non-profit recycling centers and repair cafés

(Ressourceries) are also key stakeholders of the repair sector in France. Throughout the desk study and the interviews, the following professions were identified:

- Valorization agents (or multi-skilled recycling agent) with technical recycling and repairing skills. They collect, wash, repair re-sell or re-purpose the objects and/or the materials. Most agents develop very specialized repair skills related to one industry. Mult-skilled recycling agents are hard to find.
- Technical supervisors, training apprentices. They have/need particular social skills as they train people coming from complex socio-economical background and who entered professional rehabilitation programs. (BONJEAN Anne-Charlotte et. Al, 2022).

Within its network, the CMA has CFAs (Centre de formation et d'apprentissage, training and Apprenticeship Centers) offering initial vocational training, with a repair training module, as well as short-term courses on business management to help companies grow. The CMA also helps craftsmen design repairable objects. This is a real challenge for repair in terms of waste reduction: many objects that were repairable yesterday are no longer so today, due to changes in their design.

The RNRR also offers training courses. Training is carried out in-house: trainers are employees of the Ressourceries (they do not call on external service providers). The trainers themselves play a role in identifying skills to meet needs.

Overall, the existence of qualified training and diplomas depends on the listing and legislation of professions: if a profession is recognized by institutions, the equivalent training exists. Therefore, the ARRPACA has initiated cooperation with Maisons Familiales Rurales (MFR), structures that offer training programs based on the principles of popular education. It is in the process of responding to a call for projects with an MFR to become a Level III certifier. ARRPACA is thus seeking to develop qualifying training, i.e. to obtain training with a recognized diploma.

Immediate training needs and barriers

There are no training courses dedicated solely to repair techniques (with the exception of the EEE sector). Some repair techniques are learned during initial training. However, these modules are still underdeveloped and not sufficiently in tune with the evolution of the objects and materials to be repaired.

Today's recycling centers have to collect increasing quantities of materials and objects to be recycled/repurposed, as a result of new legislation on waste management setting quotas for the reuse and recycling of materials (AGEC law). Ressourcerie professionals thus need to improve their logistical and commercial skills, especially to ensure the remarketing of repaired/recycled objects/materials, for instance to bid for a public procurement contract.

Furthermore, managers of repair facilities and SMEs in this sector need to be made aware of the training on offer. The main obstacles to accessing training are lack of information on the subject, and lack of time to attend it. Most of these structures are economically precarious and cannot afford to have an employee absent for several days at a time. For

these same reasons, it is also important for a craftsman to act as a trainer and share his skills.

Last but not least, the vocational training offer for repair skills needs to be fully developed for some sectors such as the furnishing sector and the toy industry.

Emerging skills & training formats: some food for thought

In the process, PP8 also mentioned possible courses of action / developments in training opportunities. ARRPACA mentioned the economic potential of the economy of functionality in the reuse and repair sector. On a small scale, some organizations are already offering goods rental services for short periods ("crockery" for events, for example), but this is not really economically profitable. The development and harmonization of this kind of service on a larger scale represents a real opportunity for the sector.

Moreover, there are several training schemes that would be interesting to exploit and develop for the repair sector. AFEST (Action de formation en situation de travail - on-the-job training) offers a field of integration through economic activity. AFEST makes it possible to integrate learning that used to take place informally "on the job" into the framework of intentional, planned and organized continuing vocational training. It mobilizes a trainer - internal or external to the company - and an employee to be trained on the job and in the course of activity. The main teaching material is provided by the work itself. In this way, AFEST enables the breakdown of a field of activity into skills (validation of professional kit, portfolio of acquired skills). With this in mind, most of the people PP8 spoke to mentioned the need to mutualize both facilities and skilled trainers.

Finally, the CMA France has developed the idea of introducing introductory repair courses into the standard school curriculum, as a way of potentially awakening vocations, passing on knowledge and simply raising awareness among the younger generation. The new compulsory internship in the 2nd year of secondary school could be a way for young people to discover the repair trades through the eyes of craftsmen – however craftsmen welcoming students onto their facilities must be duly accompanied.

Greece

Training Needs for Repair Technicians in Greece encompass several critical areas to ensure competence and excellence in their roles. Technical skills form the foundation, requiring a solid understanding of electrical and mechanical systems, including circuits, wiring, and mechanical components. Diagnostic and troubleshooting methods are essential for accurately and swiftly identifying issues, complemented by hands-on training with the tools and equipment used in repair work. Specialized knowledge tailored

to specific industries, such as automobile, appliance, or IT hardware repair, is vital, along with staying current on emerging technologies and advancements in the field.

Soft skills are equally important; customer service involves managing expectations, effectively communicating with clients, and providing appropriate support, while problem-solving skills help manage unforeseen difficulties through analytical thinking. Effective time management ensures multiple repair tasks are handled efficiently. Finally, adherence to safety and compliance standards is crucial, requiring awareness and implementation of health and safety regulations to prevent accidents and understanding environmental regulations to properly dispose of hazardous waste.

Domestic circular economy industries related to repair and reuse in Greece include the repair of metal products, machinery, equipment and various consumer goods, as well as the repair and maintenance of means of transport. From this group of activities, the most developed in Greece are those of maintenance and repair of motor vehicles and motorcycles, ship repair and maintenance and machinery repair.

One of the indicative actions of the Action Plan for the circular economy in Greece includes encouraging the creation, at local level, of centers for exchange, repair, reuse and repair training (Centers for Creative Reuse of Materials).

Skills and the labor market in Greece

The employment rate of the active population in Greece is one of the lowest between the Member States of the EU-27. In 2020 the employment rate of the active population (aged 15-64) was 53.70%. In 2021 the employment rate increased to 57.20% (up 6.52% in 2021), which is still significantly below the average term at EU-27 level (68.40% with an increase of 2.09% in 2021). According to CEDEFOP (2018), modern labor markets are characterized by characteristics such as: increased unemployment, difficulties in recruitment, obsolete skills and people who don't exhaust the limits of their capabilities. Greece lags behind most Eurozone countries in terms of their ratio high-skilled jobs. In Greece in 2020, 32.39% of jobs were positions that involved high-skilled occupations while the average of its countries Eurozone was 44.65%.

Climate change, energy challenges and environmental degradation

European Green Deal's initiatives concern all sectors of economic activity and have the potential to significantly reshape the European economy and labor market. According to Cedefop, employment in polluting activities is expected to decrease, while employment in more environmentally friendly activities will likely increase. This will have implications for the demand for occupations and skills. Although society as a whole will benefit from EGD, those currently employed in polluting activities may need to shift to green professions and/or sectors. Without upgrading or retraining, the threat of unemployment is faced. Greek Skills Strategy promotes circular economy and energy saving through promotion of knowledge of abilities and skills related to repairs and reuse.

Vocational training examples

The process of identifying and modifying essential skills and abilities in Greece's repair industry include acknowledging industry norms, legal obligations, and consumer preferences. Technical proficiency, problem-solving talents, regulatory awareness, customer service acumen, meticulousness, and technical communication are all necessary qualities. Vocational training at several vocational training institutes in Greece, cooperation with industry groups, and ongoing professional development through workshops and certificates can all improve these. While compliance training guarantees adherence to laws, apprenticeship programs and mentorship offer practical experience. Modern diagnostic tools and e-learning platforms can aid with technological adaption, while customer feedback systems and performance metrics are examples of quality assurance measures that can help sustain service excellence. Some specialties in vocational training institutes available for students in Greece are:

- Agricultural machinery maintenance and repair technician
- Handmade Jewelry and Jewelry Design Technician
- Renewable energy installation technician
- Refrigeration, ventilation and air conditioning installation technician
- IT application technician (multimedia / web designer-developer / video games)
- Thermal installation technician and oil and gas technology engineer
- Vehicle mechatronics technician
- Computer systems technician

Exploring emerging trends, practices and policies in the field of green economy

To further enhance the repair economy businesses and strengthen the circular economy, there is a clear need that the following actions should be highlight in future initiatives:

- Incentives for Small Businesses: Offering financial and regulatory support to businesses involved in repair and reuse.
- Education and Training: Training Programs: Developing and providing programs to improve the skills of industry professionals
- Public Awareness: Consumer Information Campaigns: Educating consumers on the benefits of repairing and reusing products

Interviews summary

The interviews' session was completed by the total number of six questionnaires collected. Below is a summary of the key characteristics of the topics discussed.

Profession activities:

- 2 questionnaires related to the Electrical and Electronic devices repairing.
- 3 questionnaires related to the textiles/clothing repairing/reusing.
- 1 questionnaire related to the furniture repairing.

Legal Form:

- small businesses
- groups (amateur repairers)
- social Cooperative Enterprise
- sole proprietorship private capital company
- self-employed

Most of the interviewees use their website, social media channels, word-of-mouth communication, campaigns/events in municipalities, furniture buying guides and professional and business guides (directories) that are distributed in physical and electronic form.

Most of them feel confident about their expertise in the subject they deal with as well as the techniques they follow, especially for the interviewees who deal with clothing. The challenges they face are: the source of supplies when they need raw materials and expensive spare parts especially for those who repair electrical and electronic devices. For the furniture sector, the biggest challenge is its mechanical parts, which have worn out and need spare parts that are often not available on the market at present time.

The interviewees haven't done any market research, but they've all done some online research to find out about their potential.

Most of the interviewees do not renew their equipment or their techniques so often. Regarding clothing, only techniques on consumables, such as threads, buttons, etc., are updated. Regarding furniture, the update of equipment and techniques is determined by the materials. The interviewed company that manages the textile waste stream updates often the equipment and follows developments in their field of expertise.

The key obstacles in the interviewees' role as repairers are:

- The repair methods are not up to date and new materials must be inserted in the interviewees' specialization. Older materials are no longer available in the market as they are often in short supply.
- Competitors who do not comply with the rules set by the law.
- The tax system that is not adapted and make the repairing unsustainable.
- The way electrical appliances are manufactured, and their planned obsolescence creates serious problems in repair.
- There are no certified training programs.
- There are no certified repairers for each specialized sector.

- There are no professional licenses. In addition to declaring the activity code number, technical knowledge, education and training should also be required.
- As far as furniture is concerned, many of its parts cannot be replaced (they are integrated into the piece of furniture). As a result, there is no capability of repairing and the entire piece of furniture must be replaced.

In general, they consider that the lack of education at a technical, legal, economic level is significant, and most of them are forced to self-educate themselves, without an institutionalized educational framework.

The topics they would be interested to be trained are:

- Technical expertise in techniques and new materials.
- Certification of the trainers and recording of the methodologies, so that knowledge and experience are not lost when professionals leave the activity.
- Communication and promotion of services, as the modern perception in communication and promotion is changing at a rapid pace.
- The Circular Economy, which is a dynamic process and is constantly evolving and adapting to new technologies and policies.
- Legal and accounting issues.

Most of the interviewees prefer workshops and practice as their type of training but some find a blended model best for their needs.

Changing consumer mindsets, available education, branding tools and social media are opportunities for most of them. Additionally, an important opportunity is that the repair industry is a sector of the economy that will exist and evolve in the upcoming years. The main reason is that as construction constantly evolves and products are produced, new needs for repair will be created, at least in the sector.

Consumers should be informed where they can deliver the items they want to be repaired. Lists of repairers by category, region, and type should be created and be available online. The creation of a Help Desk that will direct and assist interested parties in legal, accounting and communication matters would especially help those who would like to operate as new businesses, but also become a point of support for existing ones. An institutional framework will promote and support the repair sector by creating the corresponding culture.

The reduction of tax and VAT is important for repair professionals, along with the possibility to give financial incentives to young professionals.

Another point raised, related to materials and legislation, is that the need for repairs has often arisen not to normal wear and tear, but due to material failure and construction failure.

Italy

In 2023, only 7.2% of the global economy is circular, down from 9.1% five years ago. Global consumption stands at 100 billion tons of materials per year, a quantity that is estimated to double by 2050 compared to 2015 levels. In this concerning context, accelerating the transition to a circular economy could significantly improve the planet's conditions.

A frequently underestimated issue concerns consumption patterns, which are fundamental for the development of a circular economy. Consumer choices and habits influence the production of goods and services, their use, and end-of-life disposal. In the past three years, only a minority has used services like renting (26%), sharing (15%), and leasing (15%). However, there is a growing inclination towards more circular consumption models: 82% plan to buy used products, 64% to rent, 52% to share, and 55% to lease.

Despite seven out of ten Italians recognizing the environmental benefits of buying refurbished or regenerated products, there are still many prejudices. Thirty-one percent find them hard to find, 36% consider them less reliable, and 46% see them as less durable. Additionally, many people prefer to have the latest model (28%) and are not accustomed to reuse (32%). Some associate buying used products with low social status (24%).

When a product no longer works, 50% of Italians try to repair cars and motorcycles, 43% large household appliances, and 41% bicycles and scooters. Lower percentages are seen for tech products (39%), furniture (33%), and clothing (27%). If the product is not repairable, 69% opt for recycling, and 52% would send it for reuse.

A concrete example of promoting reuse and repair is Repair Cafés. These places, established to reduce waste, promote sustainability, and share skills. People with various abilities help repair a wide range of items, from electronic devices to bicycles, from computers to clothes. Repair Cafés not only reduce waste and extend the life of objects but also promote economic savings, skill sharing, and social cohesion. Additionally, they raise awareness about the importance of environmental sustainability.

The Repair Café offers numerous benefits for both clients and society as a whole. Firstly, it significantly helps reduce resource waste. Many people tend to discard still-functional or easily repairable items, increasing waste production and resource depletion. Repairing items instead of replacing them helps extend their useful life and reduce the amount of waste produced.

Furthermore, repair at a Repair Café allows people to save money. Often, a small repair can avoid the need to purchase an expensive new item. The Repair Café also promotes the sharing and improvement of skills among volunteers and participants. People learn to repair their own items or collaborate with experts who teach them repair techniques, boosting their confidence in their abilities and encouraging problem-solving.

Repairing items instead of replacing them promotes a more sustainable approach to consumption, helping to reduce the demand for new products and slow down excessive consumption. Additionally, the Repair Café creates a community environment where

people meet, share experiences, and work together towards a common goal. This fosters social cohesion and can help create stronger bonds among community members.

Participating in the Repair Café raises awareness about the importance of environmental sustainability and responsible resource use. This awareness can positively influence people's consumption choices in the long term, promoting a more mindful and sustainable attitude towards the environment.

A more specific example is bicycle workshops: non-profit spaces dedicated to repairing bicycles and recovering scrap materials. Besides encouraging reuse, bicycle workshops promote creativity and the experimentation of new vehicles and, above all, foster social relationships through knowledge exchange. The economy of these workshops is based on the use of time to build, recover, or repair objects, thus promoting a more sustainable and supportive economy.

Summary of the interviews

The interviews were carried out with three different types of organisations: a local association, a specialised training centre and a cycle workshop. Their business model is therefore very different and the topic of training is always at the centre. CIOFS Bologna is a vocational training centre with a strong focus on the ecological transition process, also within the organisation. Rusko is a non-profit organization founded with the goal of promoting the culture of repair and reuse and countering the waste of non-renewable resources. Finally, the bike workshop that is run on a voluntary basis and with the intention not to generate profit, but rather to change people's attitudes towards cycling, learning together. The goal is also to promote cycling as a means of transportation and not just as recreation. In all three cases investigated, the target audience is young people and citizens and their strength is sharing experiences and creating a place of community.

The training services were developed according to the needs of the surrounding context. Repairs are carried out by the owners of the items with the help of the association's tutors, as it depends on the people participating in events. In general, it can be said that the areas of greatest interest are electronics and mechanics as they are easily connected to the functionality of small electronic objects.
The biggest challenge is that each situation is different and often trainers are not trained to respond to all requests. This often leads trainers to search for information and videos online.

No market research was done by any of the respondents, the need comes from the consumer. All realities are open to receive any kind of need and if they do not have the right training, they use different tools such as Internet. In the case of the cycle workshop, knowledge is transmitted and shared between trainers and consumers.

In all cases, financial resources are very limited and equipment often comes from contributions from other projects or from consumers themselves.

Among the main obstacles, not being professional repairers is certainly a limitation. It would be very useful to have the support of professionals to improve intervention

techniques and also to choose the most suitable equipment. In addition, updating and professionalism on new repair methods has a limitation due to the difficult availability of spare parts.

They would be interested in receiving training on repairing common small household appliances (disassembly techniques, identification of components that are most prone to failure, methods for conducting checks and repairs, at least the simplest ones, on electronic boards). They would prefer direct experience or online (videos).

The development of the repair sector should see collaboration between the public and private sectors. Companies should develop more interest in the sector as there is an unfulfilled segment of the market, and to raise awareness among young people, action could be taken directly within schools.

The repair events are not only interesting from a technical point of view but also provide a great socialization opportunity. People often return because they find it more enjoyable and stimulating to carry out repairs in a social context rather than being closed off in their own basements.

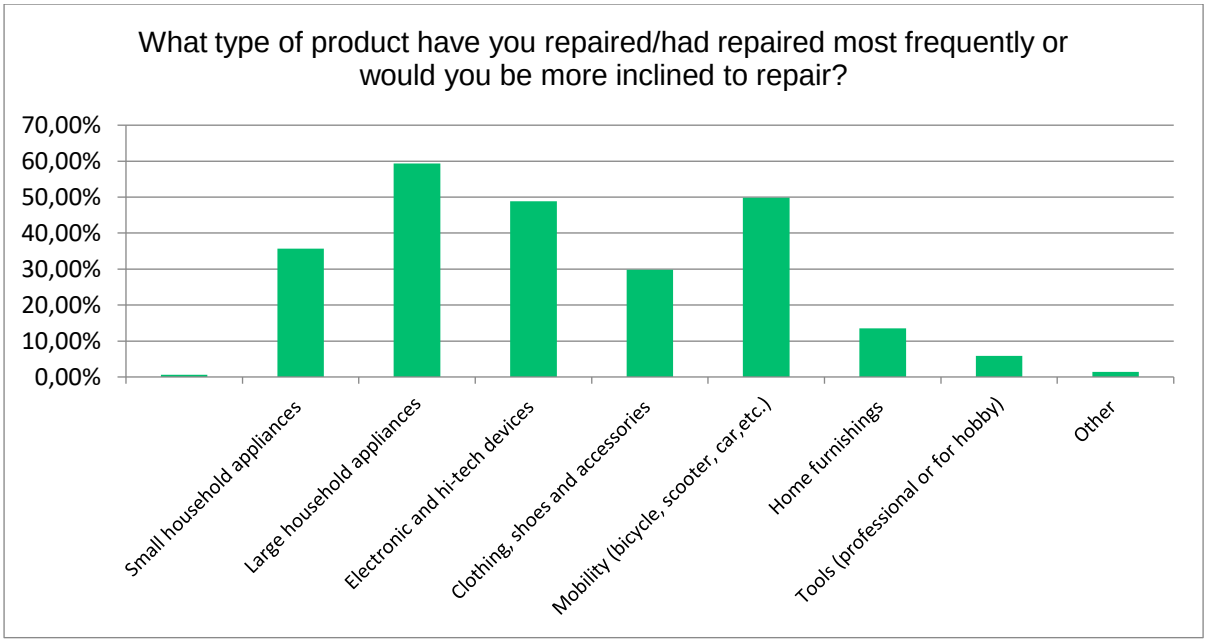
Along with the interviews conducted by the LP, Altroconsumo (PP3), which is a consumer organisation, has engaged consumers through its collaborative platform *AC makers* interviewing them on needs of information and traning about reparability.

AC makers is a community of more than 20.000 people with whom Altroconsumo dialogue on a regular basis launching queries, testing products and services together and collecting experiences that consumers are willing to share on specific topics.

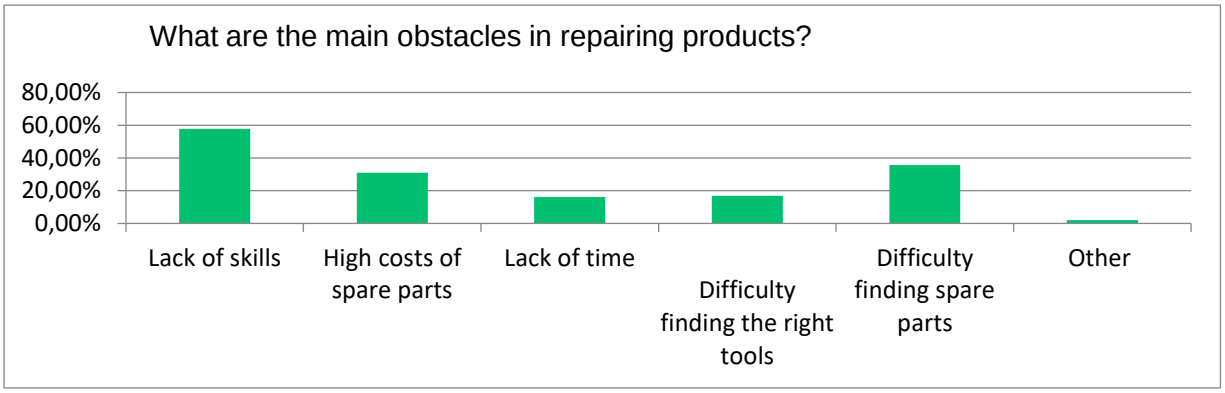
We received about 1.000 answers on the specific questions about reparability both from man 58% and women (42%) and mainly by the age range from 36 -55 years (52%).

Many are the type of products that consumers interviewed would be more inclined to repair and/or have repaired, mainly household appliances, large household appliances (59%) and small household appliances (36%).

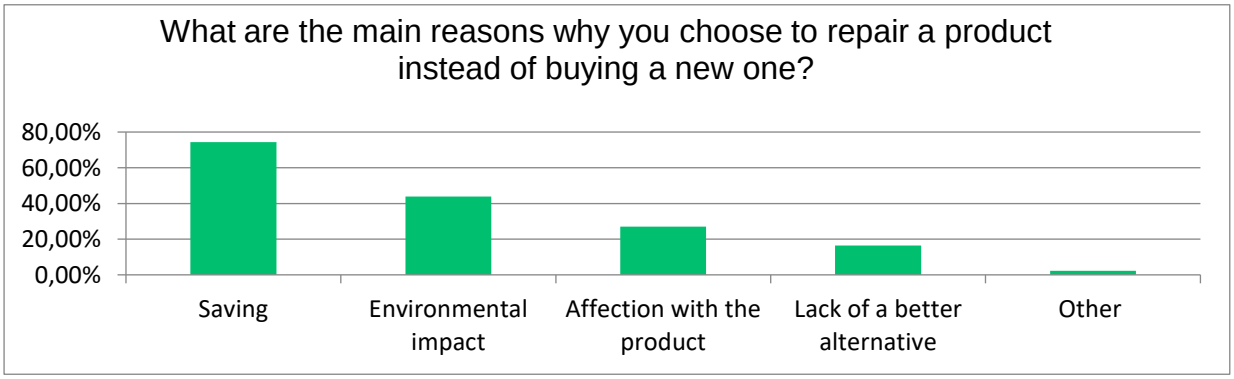
Products related to the mobility such as bicycles, scooters, cars, etc. as well are among the more repaired ones (50%) together with electronic and hi-tech devices (49%).



The lack of skills is the main obstacle in repairing products (58%). There is the need to increase one's repair skills and the wish to repair products, in fact, the difficulty of finding spare parts (36%) outweighs "too high costs" when it comes to do-it-yourself repairs (31%).

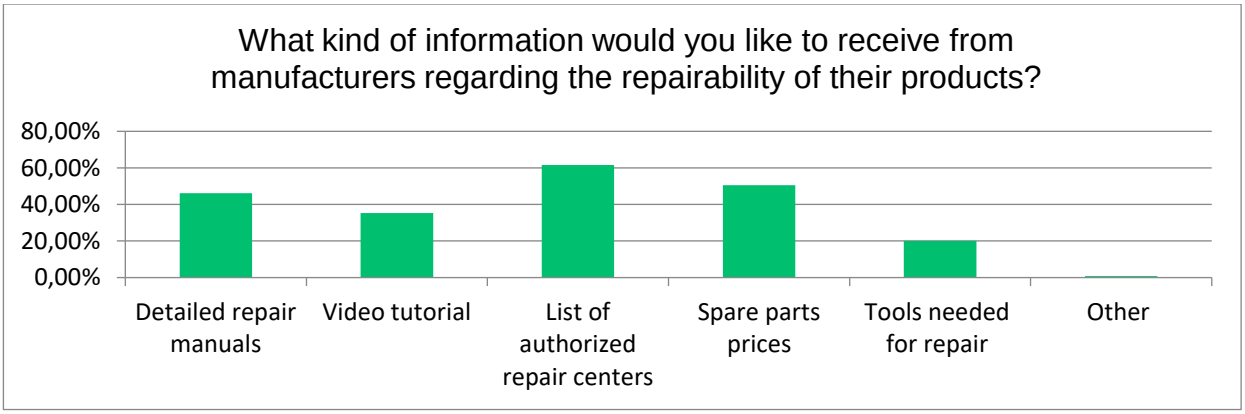


Among the reasons of the choice of repairing products, the economic one is the most relevant (74%). The attention to the environment is also an important reason for many consumers interviewed (44%). The one's repair may be a solution.

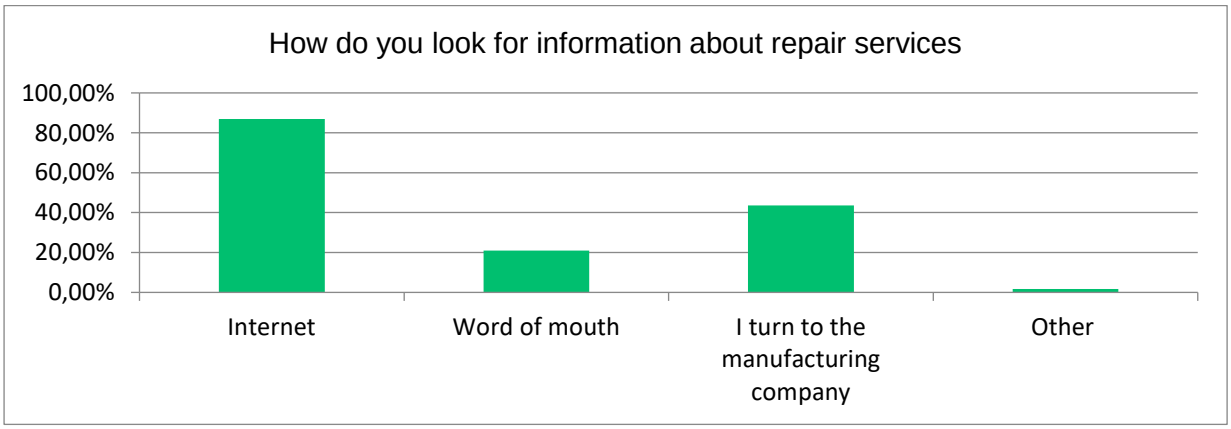


The answers to the question on information to receive from manufacturers regarding the repairability of their products show an interest of consumers interviewed on one's repair skills.

In fact, detailed repair manuals (46%) and video tutorial are the type of information and training more asked by consumers interviewed.



Internet is the main source of information about repair services (87%). In a lot of cases, consumers interviewed turn to the manufacturing company directly (44%).



Portugal

The Portuguese analysis examines the training needs in the repair sector within the context of Portugal, considering the current state of the sector, relevant skills, and potential gaps in training.

- **Current State of the Repair Sector in Portugal**

Market Demand and Growth

The repair sector in Portugal has been growing, driven by increasing consumer awareness of sustainability and EU regulations promoting circular economy practices and key areas

include Electrical and Electronic Equipment (EEE) (the focus of the HUB from DECOP) with a significant demand for skilled technicians.

Regulatory Framework

Portugal aligns with EU directives on waste management and circular economy and regulations such as the EU Right to Repair and the Waste Electrical and Electronic Equipment (WEEE) Directive influence the repair sector.

Also, national initiatives, like the Estratégia Nacional para a Gestão dos Resíduos (ENGR) and the Plano Nacional de Gestão de Resíduos (PNGR 2030), support waste reduction and resource efficiency.

- **Training Needs Analysis**

Skills and Competencies Required

Technical Skills: Expertise in diagnosing and repairing electric and electronic devices. Knowledge of new technologies and sustainable materials is crucial.

Digital Skills: Proficiency in using diagnostic tools, software for repair processes, and online platforms for sourcing parts and customer interactions. Also, use of platforms that encourage DIY repairs.

Customer Service Skills: Ability to communicate effectively with customers, manage expectations, and provide excellent service.

Sustainability Knowledge: Understanding of circular economy principles, environmental impact, and sustainable practices in the repair sector.

- **Existing Training Programs**

Vocational Training: Institutes like IEFP (Instituto do Emprego e Formação Profissional) offer vocational courses in various repair-related fields.

Higher Education: Universities and polytechnic institutes provide technical courses and degrees that include modules on repair and maintenance.

Industry Certifications: Professional certifications from industry bodies ensure standardized skills and knowledge.

- **Gaps in Training**

Advanced Technical Skills: Need for more specialized training in advanced electronics and electric, and emerging technologies.

Digital Literacy: Increased focus on digital tools and platforms for efficient repair processes and customer engagement.

Sustainability Practices: Incorporating comprehensive modules on circular economy and sustainable repair practices in existing curricula.

- **Stakeholder Involvement**

Collaboration between government agencies, educational institutions, industry associations, and repair businesses is essential to address training needs and skill gaps. Initiatives like promotional Hubs, on-the-job training, and continuous professional development can enhance the skills of the workforce and for DYI initiatives.

- **Overview Repair Sector in Portugal**

Regarding the environmental benefits, the repair sector could help reduce waste and resource consumption, contributing to sustainability goals; it helps job creation and growth of SMEs (Small and Medium Enterprises) in the repair sector; and provides cost-effective alternatives to purchasing new products.

Simultaneously, this is a sector that has limited availability of skilled technicians in certain areas; is susceptible to EU and national regulations that can be complex and costly; and mainly depends on market perception – DECOP aims to help shift consumer perceptions towards the value of repaired products over new purchases.

Regarding local opportunities we understand the importance of developing and create awareness about local repair hubs and networks to facilitate access to repair services and promote training programs and infrastructure and digital platforms to support the growth of the sector.

Communications Hubs like DECOP project represents a crucial point to promote awareness about the benefits of repair and sustainability. Also, leveraging online platforms and social media to reach a broader audience and last but not least collaborating with manufacturers and retailers to offer repair services.

Examples of national initiatives:

In 2018, the CREW project was born, at Lipor - Association of Municipalities for Sustainable Waste Management in Greater Porto. Developed together with the European Recycling Platform (ERP), the CREW network is made up of a group of repairers. These are entities that Lipor brought together around the objective of giving new life to equipment. Several entities with availability in terms of employees and space were contacted, with training and tools provided by Lipor. An extensive network of partners such as Parish Councils, social centers and the Red Cross of Póvoa de Varzim also came together for the repair process. Despite being a small-scale project, in 2021 CREW recovered 4033 kg of equipment and provided 272 hours of training. It also promoted 21 events, including training, campaigns, workshops and “Repair Cafes”.

On International Repair Day, which was celebrated on October 15, 2022, the Repair Cafe Lisboa and the Repair Cafe Porto took place. In the case of Porto, the event that has been taking place since 2017, this time took place as part of Troca-me Isto!, a meeting dedicated to the circular economy. At OPO-LAB, a coworking space in the city, stalls came together to exchange books, clothes, recycle toys and repair small appliances. Microwaves, irons, and coffee machines were passing through the Repair Cafe space. In this case, Repair Cafes do not have replacement parts, nor can they offer guarantees, but

they do find solutions that allow the products to work and strategies to extend the life of the equipment.

- **Studies, surveys and data on repairability**

Circthread project (2022)

In May 2022, as part of the Circthread project, Euroconsumers conducted a survey in four countries (Spain, Italy, Portugal, and Belgium) where we asked users if they had experienced any breakdowns and repairs. With answers from consumers it would be possible to identify their needs regarding repair sector and how to design a Communication Hub in order to fulfill the gaps identified.

- 38% of the respondents have faced major breakdown in the last 5 years in large household appliances being the most affected, and 33% in small household appliances in Portugal
- Most people hadn't had the opportunity to repair yet. However, those who had already done so - for small household appliances - tried to fix them by themselves (21%), with the second preferred channel being authorized repair services (20%).
- On the other hand, repair of major household appliances is mainly done through authorized repair services (26%), followed by independent repairers (21%).
- For small household appliances the main reason is the preference to buy a new one and for large household the high cost of repair. Other factor mentioned is the age of the product.

Large Household Appliances – Reliability and Satisfaction (2023)

The survey was carried out in four different countries: Belgium, Italy, Portugal and Spain. Data were collected through online questionnaires addressed to product magazine subscribers during April 2023. These data have been used for the descriptive tables. For problems, satisfaction and reliability results, data were merged with data from the previous survey (April 2022), which was also including France.

Three different large household appliances were the subject of the survey: Tumble dryers, Dishwashers and Combined refrigerators.

Tumble dryers: At the time only 34% of Portuguese owned a tumble dryer, 94% had free installation and 43% used the product less than once a week. The most common problem in the product for all countries is drying.

Dishwashers: in 2023, 77% of Portuguese owned a dishwasher, 58% had free installation and 24% used the product once a day. The most common problem in the product for all countries is circulation pump & evacuation pump.

Combined refrigerators: 77% of Portuguese owned a combined refrigerator, 88% had free installation and 44% used the Fridge door between 5 and 9 times per day and the

freezer door only 1-2 times per day (41%). The most common problem in the product for all countries is defrosting.

Considering the reasons for replacing previous equipment's Portuguese said trumble dryer and dishwasher were completely out of use (25% and 22%) and the refrigerated was not working well anymore (and didn't want to repair it) – 25%.

Hi-Tech Devices – Reliability and Satisfaction (2024)

The survey was carried out in five different countries: Belgium, France, Italy, Portugal, and Spain. Data referring to 2023 were collected through online questionnaires addressed to product magazine subscribers during September 2023. For problems, satisfaction and reliability results, data were merged with data from the previous survey (2022, collected in September 2022).

In Portugal 89% own a smartphone, 91% own a flat screen TV, 82% own a PC, 50% own a tablet, 70% own a printer, 31% own a smartwatch and a fitness wristband (13%).

Respondents assume to replace their smartphone (17%), PCs (18%), tablets (15%), printers (25%), smartwatches (12%) and fitness wristband (17%) because they were not working well anymore (and didn't want to repair it); regarding TVs 11% replace it because they didn't repair it or the repair costs were too high.

- **Brand's perspectives**

In 2024 DECO PROteste had several meetings / interviews with some big players/brands of household appliances in order to better know the gaps existing in the after-sales/repair services in Portugal from "official" brands service point of view.

Some general conclusions that could help in the design thinking of the Communication Hub to be developed in Portugal:

- In general, they expressed the importance of DECOP invest/create more content about the repair/after-sales services and showed potential interest in try to explore future collaboration/partnerships in this area (example, links to their websites to provide their technical assistance contacts, tips to solve problems, etc).
- Direct links to official brands technical assistance is very important for them to avoid bad repair experiences - done outside the brand official network - that could give to consumers a poor/temporary repair solution with a big impact in the brand image.
- Cost of repair services are increasing (also due the lack of qualified technicians and higher spare parts costs), the margins are extremely low, so partnerships that could allow discounts in technical assistance are very difficult to establish.
- High repair costs (and trend to have cheaper products launch in the market) raise the question to consumer: repair or buy new? Big dilemma: pay €250 in a repair (payable in advance and with the risk of future repair needed due the

equipment age) or buy new equipment that could be paid in 24 months and with 3-year warranty?

- The sale of “extended warranties” (in the moment of product purchase) is not yet very expressive in our market but growing (mainly used by consumers with higher purchasing power and for products with a higher price). Eventually an area where future partnerships/discounts could be evaluated (discounts or free extra years).

Slovenia

Slovenia is located in Central Europe, where four major European geographical units meet: the Alps, the Pannonian Plain, the Dinaric Mountains and the Mediterranean. It is the most developed transition country with a former mining-industrial tradition and chemical industry (pharmacy, glass industry, zinc and cement plant, etc.). The Slovenian economy is heavily dependent on foreign trade. In 2022, Slovenian imports totalled 91.9% of gross domestic product (GDP), while exports exceeded the EU average at 94.1% of GDP. Successful local companies such as Gorenje, BSH, Eurel, and Domel have small and large household appliance production facilities.

In Slovenia, professionals involved in the repair sector are called "servicians." These individuals are pioneers of the circular economy, skilled technicians who specialize in maintaining and restoring various products, ranging from household appliances and electronics to clothing and furniture. The role of a servician is multifaceted, requiring a blend of technical expertise, problem-solving skills, and a commitment to sustainability.

Servicians typically undertake the following responsibilities: diagnosing issues (identifying the root cause of malfunctions in products and determining the most efficient way to repair them); repairing products using specialized tools and techniques to fix broken or worn-out items, ensuring they are restored to optimal functionality; communicating with customers to explain repair processes, provide cost estimates, and offer advice on maintaining their products; procuring necessary components, often from recycled or repurposed sources, to complete repairs; testing repaired items to ensure they meet safety and performance standards before returning them to customers.

Slovenia has developed robust training and educational programs to support the growing demand for skilled servicians. These programs are offered through a combination of multiple vocational schools, technical institutes, and on-the-job training opportunities. Levels of education after primary school are not compulsory but accessible (tuition-free if applying to that level for the first time) to all national and international students. All these institutions educate potential service technicians and entrepreneurship students who can, based on their interests, establish a sustainable enterprise based on a circular business model. Key elements of the educational model include **technical training** (comprehensive courses covering electronics, mechanics, and materials science to equip students with the necessary technical skills), **sustainability education** (emphasis on sustainable practices, such as using eco-friendly materials and minimizing waste during repairs), **apprenticeships** (hands-on experience gained through apprenticeships with established repair businesses, providing real-world exposure and mentorship) and **certification programs** (nationally recognized certifications that validate the skills and competencies of servicians, enhancing their employability).

In December 2023, the Slovenian Ministry of Labour confirmed the occupational standard and the national vocational qualification for an electrical household appliance repairer, which is a sign of progress in the further development of the repair sector.

There are also some supportive educational institutions. Employment Service of Slovenia has a programme that allows you to test your knowledge, skills and abilities in a specific workplace. This helps you integrate into the work environment, get to know your employer, and increase your chances of getting a job. NSME – International Network for SMEs in Slovenia has an academy that educates on business model innovation, entrepreneurial skills, innovation for SMEs, new product development, circular economy, green economy, etc. Slovenian business point **-** The national SPOT system, which consists of institutions providing assistance, information, and advice to business entities, offers a comprehensive support system and free state services for business entities. SPOT prepared a Handbook for start-ups and future entrepreneurs.

The future of the repair sector in Slovenia is shaped by national ambitions and European Union directives. Several trends are emerging:

1. **Digitalization and Smart Repair**: Integrating digital tools and technologies like AI and IoT to diagnose and repair products more efficiently. Business support organizations such as DATA.SI consults on business migration, taxes, accounting, legislation, marketing, and EU funds.
2. **Repair Cafés and Community Workshops**: Initiatives that encourage community participation in repair activities, fostering a culture of reuse and collaboration. Repair Cafés were established in a few bigger cities all around Slovenia. An environment consisting of different professionals (electricians, sewists, carpenters) and volunteers working together in a reuse centre is also a part of the educational programmes, which finds fun, practical ways to present priority aspects of waste management to schools and kindergartens. Here, young people can see the importance of creativity, innovation, social entrepreneurship, green jobs and the inclusion of vulnerable groups.
3. **Policy Support and Incentives**: Government policies that incentivize repair over replacement, such as tax breaks for repair businesses and subsidies for consumers who opt to repair rather than buy new. One of the critical achievements of the Textile Section of the Chamber of Commerce and Industry is the reduced VAT rate for the repair of textile products (minor repairs of clothing and household linen, including mending and processing of textiles).
4. **Extended Producer Responsibility (EPR)**: Regulations that require manufacturers to take responsibility for the entire lifecycle of their products, including end-of-life repair and recycling.

A number of EU programmes and initiatives that apply to Slovenia offer solutions for job seekers and unemployed people who face many challenges when entering the labour market, often lacking the skills they need and information on how to start a successful career. **The Youth Guarantee** opens the door to the first steps in your career path. The main aim of the initiative is to ensure that young people aged 15-29 get the chance to get a job, further education, an apprenticeship or a traineeship after leaving education or when they lose their job. Young people aged 18-29 can also develop their potential through a paid work placement and mentoring support through the **ALMA** initiative. Traineeships occur in another EU country and last between two and six months. If you want to expand your network of international contacts and increase your chances of finding a job in a global environment, in addition to the skills you learn, you can apply for **Erasmus+**. The **Pact for Skills** can also be a key to career success, offering tailor-made training in the skills most in demand and valued by employers today. Large-scale skills

partnerships (LSPs) are sector-led initiatives that bring together employers, education and training providers, social partners, and public authorities to increase the upskilling and reskilling activities across the sector (Digital, Micro-electronics, Textiles Tourism). The European Union's Circular **Economy Action Plan** supports new trends by setting ambitious targets for waste reduction and resource efficiency. Aligning with these goals, Slovenia is committed to advancing its repair sector as a cornerstone of a sustainable, circular economy.

Slovenia does not yet have a systematic approach to preparing for reusing electrical and electronic equipment. This segment will probably develop more and provide legal support for existing initiatives. Based on data received from stakeholders representing three helixes from a 5-helix approach (education, economic and environment system) Slovenian Hub's Factory needs:

- to include individuals and business, also high-profile service providers such a s ICT professional repairer and smart textile technologists,
- to raise public awareness through digital channels, including stakeholders' channels (e.g., on lack of spare parts, the irreparability of products, standardising and improving professionalism in the repair sector, need to include repairing in the curriculum in primary and vocational secondary schools etc.),
- support SMEs with proposals and help initiatives with funding and co-financing (e.g., vouchers),
- provide tips for quick repairs and techniques for hard-to-employ people with disabilities (social impacts) – via videos, voice records or short manuals
- to provide specialised online courses and hands-on trainings to improve techniques and up-skill individuals (ICT, smart textile, meta-competences, etc.),
- to include important media, and communication experts that will effectively communicate with consumers and promote repair, also DIY
- to present a financially sustainable business model that includes training and the employment of one full-time technician,
- to provide courses for digital literacy, since majority of craftsmen doesn't use manuals or internet to learn, communicate and expand the network, but they tend to stick with routine procedures and existing on-call contacts.

Spain

Training Needs for Repair Technicians in Spain:

1. Context and Sector Demand:

The repair culture is very low in Spain. For cheap products it is completely missed, while for more expensive products, consumers are keen on repairing items only as long as it makes financial sense. **Cost of repair services** are high due to the lack of qualified technicians and high spare parts costs.

The culture of repair is more prevalent in other countries like France and Belgium, where **consumers are more inclined to do DIY repairs** and their first intention is to see if they can fix things themselves. This is promising, as it's a matter of culture.

Spain adheres to **EU directives** on waste management and circular economy, with future regulations like the EU Right to Repair and the Waste Electrical and Electronic Equipment (WEEE) Directive significantly impacting the repair sector.

As we **move towards a more circular economy**, this shift is opening up **new job opportunities** in product repair and reuse sectors. The scarcity of repair shops and the expanding circular economy market are driving this trend.

The **demand for skilled technicians is growing**, particularly in repairing appliances and electronic products, leading to a **shortage of experts** in the field, with some regions of Spain lacking sufficient coverage of field technicians, as noted in interviews.

In Spain, the "Repair of machinery and equipment" sector employs 147,900 individuals, but with a notably low female representation—only one in four workers are women.

Vocational schools argue that there are **opportunities for training** for students, but companies' expectations can be too high initially. During internships, companies must remember they are still training environments and should assume their responsibility in providing proper guidance. An intern is not a cheap worker but someone who requires attention and time.

Major manufacturers often provide training to their Technical Assistance Service (TAS) repair technicians, who undergo **mentorship** by senior technicians until they are proficient.

2. Lack of Qualified Personnel:

There is a **shortage of skilled personnel for product repair**, particularly in the appliance and electronics sectors, due to **unattractive job** prospects and insufficient promotion. Typical TAS (Service Assistance Technician) workers earn around 1300-1500 euros, an amount close to the professional minimum wage in Spain. Efforts are needed to make this profession appealing and highlight its promising career prospects.

One major challenge is the **absence of specific vocational training** for appliance repair.

Some sources also note a scarcity of practical training opportunities for aspiring repair technicians, often because official service centers hesitate to offer internships. However, businesses and organizations interviewed claim they are eager to provide internships to repair students.

Moreover, educators with **expertise both in environmental and repair** fields play a crucial role in promoting self-repair practices among citizens. Integrating environmental awareness into vocational training curricula is important for addressing this issue effectively.

3. Training Needs:

Technical skills are crucial for appliance repair technicians to ensure quality repairs and user safety. Soft skills, such as effective communication with customers, are also important for a satisfactory repair experience.

Current vocational training programs lack specificity in **appliance repair**, with the closest being vocational training in machinery and tools. However, **additional knowledge in areas like hydraulic plumbing, mechanics, refrigeration, and electronics** is necessary for comprehensive appliance repair.

For **electronic devices**, there are more focused vocational training options available, such as Higher Technician in Electronic Maintenance, Electricity and Electronics and Electronic equipments

Training needs identified by the Public Employee Service (SEPE) include areas like **circular economy, sustainability, energy efficiency, and repair-focused education** within professional families like Information and Communications Technology, Installation and Maintenance, and Security and Environment.

Industry demands emphasize the need for continuous training to meet the high demand for repairs, the emergence of new professional profiles, and the necessity for versatile professionals with both technical expertise and soft skills.

Manufacturers are encouraged to take responsibility for training repairers and contribute to society by fostering professionals with cross-cutting skills.

Profiles that **combine environmental education with technical repair knowledge** are also needed to promote self-repair among citizens and boost the repair culture. Workshops and civic spaces like those in O Rosal (Galicia), Arréglatelas in Berriozar (Navarra), and the Repair Café network combine environmental education with the circular economy, promoting self-repair of products by citizens.

Regarding **DIY repairs done by consumers**, there is a **lack of skills** on technical knowledge in areas such as electrical safety, electronics or use of tools. However, some minor repairs or maintenance tasks are very simple and can be performed by consumers without any training, as long as they have **the appropriate instructions** and guides.

4. Policies and Strategies:

The Ministry for the Ecological Transition (MITECO) identifies repair as a strategic line within the circular economy plan in the sustainable consumption section.

It promotes innovative models of sustainable and responsible consumption, encouraging transparency about product repairability and energy efficiency.

5. Local partner/s identify the focus of their local hub

According to the needs described above, each country chooses to develop a HUB between the 3 categories: Sectorial, Horizontal, Awareness. That means that after the analysis, the partners will either decide to work on a specific repair sector within their HUB, i.e. Sectorial HUB, or to work on a horizontal scope HUB addressing all repair sectors in B2B approach. Finally, they might address the consumers awareness on the repair sector through their HUB, i.e. Awareness Hub. Eight HUBS will be resulted in total. After the justification of the focus, the partners will describe the main characteristics of their focus, some relevant job descriptions, existing training models, if any, and future trends that may come of the market trends. The focus identification per country/HUB is analysed below.

Albania

Auleda is focused on two repair sectors, the electronics and the textile sector. The horizontal hub type is chosen and the focus is on collective knowledge and inclusion targeting business to business relations and consumers and trying to provide different trainings on working skills and digital marketing skills. The objective is to establish and operate a Repair HUB that promotes sustainable practices in the textiles and electronics sectors by offering repair services, thus extending product lifecycles, reducing waste, and fostering a culture of reuse and recycle. Increasing public awareness of repair practices and services and improve consumer behaviour towards the circular economy, is another objective of the hub. Two sectors of repair economy are chosen, based on the data derived from the desk search and live interviews made in the territory of Vlore region.

As stated above, during the interviews, PP9 focused mainly in two sectors which are:

a. Electronics sector

The main characteristic of the electronics sector identified during the process of data analysis and interviews are as follows:

- 56% of businesses are focused on the repair of mobile phones and tablets,
- 92% of the interviewees have only their physical store as the basis for providing the service.
- 96% of the interviewees' customers are businesses or individuals who go to their stores to get the services you may need.
- In this sector PP9 notice that 92% of the interviewees use used parts in their daily repair work. They take necessary parts from discarded mobile phones, tablets and PCs and put them back into use for the repairs they carry out.

b. The textile sector

The main characteristic of the textile sector identified during the process of data analysis and interviews are as follows:

- Most of the interviewees, or 77%, are tailors and their services are focused on patterning, designing, cutting and sewing of pieces or clothes that customers can take to them.
- All the businesses PP9 interviewed provided their services exclusively in their physical stores, and only to individuals or businesses seeking their services. They did not operate under service contracts nor offered their services at different locations upon customer request.
- 73% of the interviewees state that they use recycled parts in their repairs, while the rest operated only with new parts. The recycled parts were mainly obtained from pieces or old clothes which they selected for the parts they needed.

-**Justification for the Focus / Selected Sectors**

Electronics Repair Sector:

Environmental Impact: Electronics are a major contributor to e-waste. Establishing a hub focused on electronics repair can reduce the amount of electronic waste, promoting environmental sustainability.

Economic Benefits: Repairing electronics is often more cost-effective than purchasing new items. This can provide economic relief to both consumers and SMEs, allowing them to extend the lifespan of their devices and reduce operational costs.

Technological Advancements: With the rapid pace of technological change, the demand for skilled technicians who can repair and maintain electronic devices is growing. This sector offers opportunities for job creation and skill development.

Textile Repair Sector:

Sustainability: By focusing on textile repair, the hub can help reduce waste and promote a circular economy.

Cultural Relevance: Albania has a rich tradition in textiles and craftsmanship. Leveraging this cultural heritage can enhance community engagement and support local businesses.

Economic Opportunities: Repairing textiles can create new economic opportunities, especially for women and disadvantaged groups, contributing to social inclusion and economic development.

-**Characteristics of the Focus / Selected Sectors – HUB**

Electronics Repair HUB:

Equipped with repair tools for various electronic devices, including smartphones, computers, and household appliances they offer services like diagnostics, repairs, software updates, data recovery, and refurbishing of electronic devices. Their target Audience is individual consumers and local businesses.

Textile Repair HUB:

Textile workshops are equipped with sewing machines and fabric supplies they offer services like clothing repairs, custom tailoring, alterations etc. Their target audience is local consumers and businesses.

-**Job Descriptions**

Electronics Repair HUB:

Technicians: Perform diagnostics and repairs on a variety of electronic devices. Requires technical certification and hands-on experience. They also handle customer inquiries, manage service orders, and provide updates on repair status.

Textile Repair HUB:

Tailors: Perform repairs, alterations, and upcycling tasks. Requires sewing skills and experience. They also manage customer orders, handle inquiries, and provide updates on repair projects.

-**Existing Training Models**

Examples of existing training model are technical schools where you go and study for a specific profession and trainings made by work office in these sectors of repair economy. There are also businesses which offer trainings in different sectors in exchange for a fee.

-**Future Trends**

Sustainable Practices: Emphasis on eco-friendly repair methods, recycling of components, and reducing the environmental impact of different goods.

Circular Economy: Adoption of circular economy principles in the industry, promoting repair, reuse and recycling to reduce waste and environmental impact.

Bosnia & Herzegovina

The University of Sarajevo's School of Economics and Business Sarajevo (UNSA-SEBS), REPper's PP10, is in the process of establishing an awareness-raising Hub. As agreed as project level, awareness hubs will be devoted to „co-design, design thinking and participatory process", and it will „target citizens and NGOs".

The rationale for establishing this specific type of hub in Bosnia and Herzegovina (BiH) is twofold.

- Firstly, there is a growing demand for initiatives that raise awareness about repair and reuse principles within the circular economy framework, highlighting the urgent need for such a hub. Public awareness of circular economy topics in BiH is generally low. In 2022, the first "BH Circular Economy White Paper" was published, revealing the following: "Considering that BiH is in a very early stage of transition towards a circular economy, significant efforts are required to develop the capacities of all interested parties, establish networks, promote good

practices and international exchange, and raise awareness among both the business community and consumers".

- Moreover, the official statistics on the circular economy in BiH, particularly in the repair sector, are scarce and fragmented, lacking a systematic approach to data collection at the state level. While EUROSTAT monitors circular economy trends in EU countries using various indicators, in BiH, comparative data are only available for indicators measuring per capita consumption of natural resources and resource productivity. There is a pressing need to improve the availability of data related to the circular economy in the country, which is crucial for making informed strategic decisions. While several studies have been conducted on the state of the circular economy in the country, PP10 were unable to find any relevant research specifically addressing the repair sector.
- Also, in BiH, there is evidently very low level of media interest in circular economy topics. This lack of coverage means that crucial discussions about sustainable practices, such as repair and reuse, are not reaching the public as effectively as they should. Media plays a vital role in shaping public opinion and raising awareness about important issues. Without adequate media attention, the principles of the circular economy remain obscure to the general population. The limited media engagement can be attributed to several factors. Firstly, there may be a lack of understanding or knowledge about the circular economy among journalists and media professionals. This knowledge gap results in fewer articles, reports, and discussions dedicated to the subject. Lastly, there may be insufficient collaboration between media organizations and entities advocating for the circular economy, leading to missed opportunities for impactful stories and campaigns.
- Moreover, while there is a lack of a systematic approach to the circular economy in BiH, recent developments, particularly in response to the EU Green Deal and the Green Agenda for the Western Balkans, have seen a noticeable uptick in initiatives and support for circular economy in the country. This includes efforts to establish strategic and regulatory frameworks related to sustainable development, many of which incorporate elements of the circular economy to varying degrees. These documents include the Integrated Energy and Climate Plan for 2021-2030, the Environmental Strategy and Action Plan until 2030+, and Climate Change Adaptation and Low-Emission Development Strategy of BiH 2020-2030 (currently a draft). Efforts are also underway to draft a Road Map for the Circular Economy in BiH. Also, a new Law on Consumer Protection in Federation BiH, harmonized with the acquis is in the adoption phase and new Law on Waste Management in Republic of Srpska was recently passed. Having in mind the ongoing regulatory changes covering the issues of sustainability and consumer protection, raising awareness on these issues among BH public may be considered timely and beneficial.
- Finally, UNSA-SEBS possesses the capacity to oversee the establishment and implementation of the awareness hub. Apart from maintaining strong relationships with significant institutional stakeholders such as development agencies and various levels of government, UNSA-SEBS also has ties with key national donors like USAID, UNDP, and the EU Delegation. Furthermore, the SEBS collaborates closely with other faculties within the University of Sarajevo and public universities across the country, fostering interdisciplinary cooperation and

diverse expertise essential for the success of the Hub. Finally, UNSA-SEBS maintains robust connections with the business community through project engagement and the activities of its Business Advisory Board and Alumni Association all which are of great importance for establishment of the awareness hub.

Characteristics and activities of the Hub

The core activities of the Hub will revolve around raising awareness and promoting the circular economy, with a particular emphasis on repair and reuse practices. Based on the available information, similar hub does not exist in the country. In addition to the educational workshops and training sessions, the Hub will also primarily focus on information campaigns and outreach programs in accordance with the defined REPper's deliverables. Leveraging the expertise and know-how of UNSA-SEBS, as well as its network of partners and stakeholders, the Hub is equipped to effectively execute its planned activities. The Hub will be established in an online format, for which UNSA-SEBS already possesses all the necessary infrastructure. Of particular significance in this regard is UNSA-SEBS's existing Moodle system, which includes a comprehensive learning management system.

Future trends

Currently, lack of public knowledge and media disinterest contributes to a broader challenge: the low public awareness and engagement with circular economy principles in BiH. Without awareness campaigns, public education efforts are significantly hampered. To address this, there is a need for concerted efforts to educate and engage general public, all relevant stakeholders including the policy makers, NGOs, education institutions and media about the importance and benefits of the circular economy and repair and reuse principles in particular. By increasing promotion, we can stimulate public interest, encourage policy discussions, and foster a culture that values sustainability and circular practices.

Through the work of the hub, UNSA-SEBS will aim to facilitate the sharing of success stories, best practices, and innovative solutions from both local and international contexts. Highlighting examples of how circular economy practices, with focus on repair and reuse, can lead to economic, environmental, and social benefits can hopefully inspire businesses, policymakers, and individuals in the country to adopt these principles.

France

The French Hub has chosen not to focus on one specific sector but rather on the existing networks of stakeholders in the regional repair and reuse sector, which are strongly interconnected, therefore taking the form of a horizontal hub, coupled with a "communication" hub for consumer awareness. In fact, thanks to having the Regional Network of Resourceries and Recycleries as associated partners, alongside overarching stakeholders of the repair economy (Chamber of Crafts, South Region, Agency for Environmental Development), the Hub will be effectively able to act on both general repair sector development and consumer behaviour change.

In terms of Hub nature, structure and support to repair SMEs, the French Hub will take the shape of an online page and group embedded in the existing Regional Platform for Circular Economy (PRECI), which is very active and has a strong reach. The Hub is currently in consultations with the main stakeholders aforementioned in order to come as a complementary tool wherever gaps need to be filled in a region with advanced structure already in the field.

Networking, awareness and communication events will be held to support SMEs, entrepreneurs and project holders in the repair sector. In terms of training, the REPper Hub will collaborate with regional and national stakeholders to develop training materials currently missing, and most of all contribute to creating an official certification for "valorising agents", which is a central craft in the repair/reuse sector and is not currently considered an official qualified job.

Policymaking roundtables will establish the connections between the different REPper Hub priorities (supporting SMEs, developing training materials, changing consumer behaviours). On the "communication and awareness" side, a whole panel of activities with schools, the "little book of repair", the local repair FAQ, and the REPper Festival in Marseille on October 18-19, 2024, will be the main highlights of an action resolutely based on the needs expressed by stakeholders in the field, both institutional, network and operational.

Greece

Justification for the focus / selected sector

As it is agreed at the project level "sectorial HUBS it's a hub in a specific economic sector and target should be professionals who perform repair", to further enhance the repair economy businesses and strengthen the circular economy, the following actions should be highlighted in future initiatives. These initiatives will be supported by the GR Hub, which focuses on reinforcing and supporting key sectors crucial for the circular economy, particularly those that have not been sufficiently highlighted.

The transition to a circular economy in Greece is essential for fostering sustainable development, creating economic opportunities, and providing significant environmental benefits. This transition relies heavily on the robust development of domestic recycling, material recovery, and product repair sectors. These sectors are pivotal in reducing waste and promoting the efficient use of natural resources throughout the product lifecycle, ultimately benefiting income levels and employment rates.

Below is the detailed information on the key economic activities related to the repair and reuse sectors in Greece, according to the NACE Rev.2 classification. The data includes turnover, added value, and number of employees for each activity.

Economic Activities Related to Repair and Reuse in Greece:

NACE Rev.2 Code	Economic Activity	Turnover (million €)	Added Value (million €)	Employees
33.11	Repair of metal products	23.9	9.7	458

NACE Rev.2 Code	Economic Activity	Turnover (million €)	Added Value (million €)	Employees
33.12	Repair of machinery	285.8	89	4,637
33.13	Repair of electronic and optical equipment	27.3	8.2	481
33.14	Repair of electrical equipment	128.5	29.5	1,122
33.15	Repair and maintenance of ships and boats	318.9	157.7	6,932
33.16	Repair and maintenance of aircraft and spacecraft	17	6	154
33.17	Repair and maintenance of other transport equipment	25.1	9.1	16
33.19	Repair of other equipment	1	0.3	33
45.20	Maintenance and repair of motor vehicles	979	158.1	31,659
45.40	Sale, maintenance, and repair of motorcycles and related parts and accessories	495.1	52.2	5,140
95.11	Repair of computers and peripheral equipment	86.5	21	1,126
95.12	Repair of communication equipment	35.6	4.2	466
95.21	Repair of consumer electronics	26.2	4.6	1,046
95.22	Repair of household appliances and home and garden equipment	84.8	15.6	2,753
95.23	Repair of footwear and leather goods	10.8	0.4	1,109
95.24	Repair of furniture and home furnishings	2.1	0.3	116
95.25	Repair of watches and jewelry	2.7	0.3	186
95.29	Repair of other personal and household goods	39.4	1.9	3,147

Analysis

- The maintenance and repair of motor vehicles (NACE 45.20) stands out as the most significant sector in terms of turnover (979 million €) and employment (31,659 employees).
- Repair and maintenance of ships and boats (NACE 33.15) also show substantial economic activity with a turnover of 318.9 million € and 6,932 employees.
- Other notable sectors include the repair of machinery (NACE 33.12) and the sale, maintenance, and repair of motorcycles (NACE 45.40), both of which contribute significantly to turnover and employment.

These activities are crucial for Greece's transition to a circular economy, indicating strong existing capabilities in repair and maintenance that support sustainability goals.

Characteristics of the focus / selected sector – HUB

Repair of Shoes and Leather Goods in Greece

Sector Overview:

NACE Code: 95.23

2019 Key Figures:

- Turnover: €10.8 million
- Added Value: €0.4 million
- Number of Employees: 1,109

Repair of Furniture and Home Furnishings in Greece

Sector Overview:

NACE Code: 95.24 ,2019 Key Figures:

- Turnover: €2.1 million
- Added Value: €0.3 million
- Number of Employees: 116

Textile Repair Economy in Greece

Sector Overview:

The textile repair economy in Greece, encompassing the repair and alteration of clothing and other textile products, is a vital part of the circular economy. This sector helps in extending the life of textile products, reducing waste, and promoting sustainability.

Key Aspects

Economic Contribution:

- Turnover: The exact turnover specific to textile repair in Greece is not widely reported, but the sector contributes significantly to the overall textile and apparel market.
- Added Value: The added value comes from the extension of the life of textile products, reducing the need for new purchases and thus saving resources.
- Employment: The sector provides jobs for tailors, seamstresses, and repair specialists, contributing to local employment and skill preservation.

Importance of Repair Sectors for the Circular Economy

The repair industries for footwear, leather goods, furniture, home furnishings, textile, and other personal and household goods contribute significantly to Greece's circular economy by:

- **Reducing Waste:** Promoting repair and reuse reduces the overall amount of waste.
- **Creating Economic Benefits:** Added value from these sectors fosters economic growth and resilience.
- **Providing Employment:** These businesses offer vital employment opportunities, bolstering the local economy.

Italy

The repair sector in Italy is an economic activity area that includes a large range of services, from household appliances to small everyday objects. While consumers have a growing awareness of the importance of sustainability and waste reduction, also a sector composed of many small (often family-run) enterprises and small centres that voluntarily and aggregately develop repair services was found.

Thanks to the REPper project, the Metropolitan City of Bologna has started a dialogue with local businesses and in particular with R.U.S.KO. They are an association of volunteers who want to contribute to the recovery of the environmental, social and economic sustainability of our communities through the organisation of local events aimed at the rediscovery and enhancement of self-repair and regeneration of goods, as an alternative to waste. They call these events Repair Cafés, after the experience born in the Netherlands in 2009 and since then rapidly spreading all over the world, and from which they take their inspiration. They therefore organise periodic and itinerant events that take place in various places in the Metropolitan City of Bologna.

The idea is therefore to create a HUB in collaboration with Altroconsumo and the experience of R.U.S.KO. that has a double value: both physical and online.

Metropolitan City of Bologna will take care of the construction of the physical HUB: an internal MCBO contact person is defined (who will also function as a contact point). The HUB annually offers some in-presence moments in which workshops or in-depth studies are organised. The R.U.S.KO. space will be used and the training skills of the current repairers, who are all volunteers to date, will be implemented. The physical space will also act as a contact point where people can get information and create relationships between consumers, businesses, trainers and the community.

The role of the Metropolitan City of Bologna is to act as a connecting and activating force, bringing together the experiences of the various territorial realities that participate in the initiatives by sharing skills and contacts, points of view on difficulties and needs.

At the same time, Altroconsumo takes care of the online part. The HUB will be created from the same web address as Altroconsumo in order to exploit traffic. Initially, it will be a landing page on which there will be useful information about the project and a wide range of materials. Subsequently, the platform will be powered by specific content related to the repair of small objects and videos and documents will be developed to help people carry out the repair themselves.

The HUB that will be created will therefore be sector-specific and will focus on the following areas:

- Starting with the Sharepair project - a lot of materials on small appliance repair will be developed and in cooperation with R.U.S.KO. also, small appliances will be dealt;
- Ciclofficina - also of interest to MCBO because PORTO15 aps has experience on the topic thanks to active projects developed to combat school drop-out.

However, the possibility of adding other areas is still open, thanks to the involvement of associations in the area that develop projects aimed at the employment of disadvantaged people.

Portugal

DECOP is an organization with the aim of empower people through product testing, informing, advising, supporting and representing consumers. For this reason, DECOP Hub will function as an online communication/awareness Hub specifically aimed at consumers and citizens, with the primary goal of inform and empower consumers towards the repair sector. This initiative is rooted in the belief that providing the necessary information PP4 aim to address common issues faced by consumers, making them more capable of maintaining and prolonging the life of their electric and electronic equipment's.

The online information and training PP4 offer will be tailored mainly for non-professionals, ensuring that the content is accessible and easy to understand for individuals with no prior technical knowledge. Our resources could include step-by-step video tutorials, written guides, and potential workshops, all designed to cover a wide range of small repairs "do it yourself" in areas such as electronics and household appliances and information about the brands and official and independent repairers – all available on an online Hub (webpage).

By not targeting any professional profile, PP4 focus efforts entirely on the everyday consumer, which makes sense as a consumer organization. This allows us to concentrate on creating content that is specifically designed to be user-friendly and practical. Our mission is to foster a culture of repair and reuse within the community, reducing waste and encouraging more sustainable consumption habits. Through our Hub, PP4 aspire to

create a knowledgeable and empowered consumer base that values the importance of maintaining and repairing their electric and electronic equipment (EEE).

Slovenia

In Slovenia successful local companies such as Gorenje, BSH, Eurel, and Domel have small and large household appliance production facilities. These companies are recognized as sound environmental practices: the products are composed of fewer materials and components that can be recycled to at least 80 %, are designed to offer high reliability, efficient use and environmentally friendly operation and degradability, are durable, etc. Based on information on quantities and types of waste in Slovenia, PP2 recognize the need to improve the level of competence and confidence in repairers. The current general situation is: "repair is not worthwhile". Additionally, a consumer must wait up to a month for a household appliance to be repaired because of the profession's severe staff shortage. The manufacturer or an authorized repairer has 30 days to fix it, but there is a severe shortage of repairers on the ground. For white goods, the manufacturer must ensure the repair, maintenance and supply of spare parts for at least three years after the warranty expires. A consumer chooses to buy a new item instead of repairing an old one because the price of a repair is comparable to the cost of a new, low-cost appliance. Slovene Consumers' Association conducts online consumer surveys. In 2023 (ZPS, 2023), they surveyed 500 participants. 77 % of respondents doubt the feasibility of repairing the fault because of the missing information on the cost and likelihood of repairing a fault. 57 % would not wait too long for a repair or spare parts to be delivered. 38 % of respondents would prefer to buy a new product instead of repairing an old one if a concrete technological advance has occurred. Around 50 % chose to repair an appliance by a repairer. Only 14 % undertook the repair themselves or with a friend, which helped to relieve the service providers. Consumers reported a lack of trust in the service in Slovenia. Some providers wanted to charge for only conversation. Another consumer was told they were busy with other work and could not repair the machine under warranty, so they sent him a spare part, which a customer had to replace himself. Consumers also reported incomplete repairs that they had to complete themselves and a case where the repairer did not even undertake the repair because they no longer repair such machines. Even more concerning is that 8 % of respondents note a sub-optimal appliance performance even after repair, and 7 % have again experienced the same appliance malfunctioning. This could also be due to poor skills. If people choose to throw away the appliance, only 18 % of e-waste is correctly recycled.

The textile industry is the biggest polluter on Earth. In Slovenia, too, the trend of excessive textile consumerism can be seen, with new clothes not being used more than once or twice. Due to the affordable prices of lower-quality items, torn clothes are no longer mended, non-functional zippers are not repaired, etc. The Humana project, a clothing and footwear collection that saves third-world countries and the lower and medium classes through second-hand sales of undamaged clothes, is also booming. Consumers often do not follow the rules, so they dump unsuitable ripped items in the bins, and such textiles end up in landfills. This otherwise good project inadvertently encourages more consumption and reduces the need for repairs. A more significant number of providers of refurbished computers can also be identified. Therefore, PP2 wants to encourage consumers to increase the credibility of the purchase of such products. Like elsewhere,

PP2 now sees a trend towards buying new wooden products that look old. Given the amount of old furniture found in households, it is necessary to bring consumers closer to the ease of repairing wooden products. A poorly closing door, a small dent or a broken side really shouldn't be a reason for a solid wood cabinet to fall apart on the landfill.

Based on actions implemented at the national level in the last years, PP2 feels that a **horizontal hub** is the most appropriate type of hub that should be established in our country.

Spain

The sector identified in Spain is **electric appliances and electronic devices**. Within these domains, we have identified specific product families that might have different characteristics. Those are:

- **Large household appliances**, such as washing machines or fridges, are incentivized for repair due to their high prices, encouraging repair over replacement.
- **Electronic products**, notably smartphones, tablets, and printers, are frequently requested for repairs by users.
- **Small appliances** faces significant challenges, as items like blenders are often discarded rather than repaired due to their low cost. In contrast, higher-priced items such as vacuum cleaners are more likely to be repaired.

6. Key Profiles related to the Repair Selected Sectors

The data collection on the needs analysis, along with the identification of the repair sectors within the HUB helped the partners to identify the most relevant professionals that they will approach or they already did during the interview session.

Albania

The key professional profiles for the selected repair sector are identified through the questionnaire.

Electronics repair sector:

- Electronic Repair Specialists/ Mobile phones repairers - 56%
- PC repairers - 26%
- Appliance Repair Technicians - 18%

Textile repair sector:

- Textile repair technicians/Tailors and Seamstresses - 77%
- Leather/footwear repairers -18%
- Fishing nets repairers - 5%

Other repair sectors:

- Watches, glasses and jewellery repair - 45%
- Mechanical repair- cars, bicycles, chainsaws - 37%
- Furniture repair - 18%

Bosnia & Herzegovina

As previously elaborated, UNSA-SEBS is in the process of establishing an awareness-raising Hub. As it is agreed at the project level, awareness hubs will be devoted to co-design, design thinking and participatory process", and it will „target citizens and NGOs". Therefore, targets for the awareness hub in BiH encompass a broad spectrum of stakeholders, each playing a crucial role in the transition towards sustainable practices. These targets include:

- General public
- Business community
- Government and policymakers
- Educational institutions (schools, universities, and vocational training centers)
- Media
- NGOs
- Industry associations and chambers of commerce
- Consumers and consumer advocacy groups

By targeting these diverse groups, the UNSA-SEBS's awareness-raising hub can create a comprehensive and inclusive approach to promoting the repair and reuse principles across all sectors of society.

France

The professions that are identified and related to the French HUB are the following:

- Modeller-stylist
- Manufacture of made-to-measure clothing
- Manufacture of leather goods
- Saddlery
- Manufacture of various wooden objects
- Wickerwork, esparto work, straw work
- Watchmaking
- Manufacture of interior furnishing seats
- Manufacture and finishing of various types of furniture
- Manufacture of garden and outdoor furniture
- Manufacture of rattan furniture
- Manufacture of jewellery and related articles
- Manufacture of imitation jewellery and similar articles
- Manufacture of musical instruments
- Manufacture of clothing accessories
- Repair of fabricated metal products

- Repair of agricultural equipment
- Repair of electronic and optical equipment
- Repair of electrical equipment
- Repair of computers and peripheral equipment
- Repair of communications equipment
- Consumer electronics repairing
- Lawn mower repairs
- Repair of household appliances
- Repair of footwear and leather goods
- Furniture and household equipment repair
- Watch and jewellery repairing
- Cutlery sharpening
- Cycle repairs
- Alteration workshop
- Repair of sporting goods and camping equipment
- Piano tuners and restoration of other musical instruments
- Repairs not elsewhere classified

Greece

The GR Hub will target businesses in the Textile and Furniture sectors, which play a crucial role in transitioning towards sustainable practices. The target group for the sectorial hub in GR includes businesses related to the repair sector of:

- Footwear and leather goods
- Textile and clothes
- Furniture and home furnishings
- Or other personal and household goods

Italy

As a result of the interviews developed on the training theme, it emerged that there is a number of realities in the territory of the Metropolitan City of Bologna that implement training courses related to the electronics theme. With the environmental focus of recent years, they have included in their training courses a focus on repairing everyday objects that have electronic components (small electrical appliances, e-bikes and electric scooters). The target group of the training courses are 15- to 18-year-olds at high risk of dropping out of school, and together with R.U.S.KO. they have initiated lessons and meetings open to the public on the repair of small everyday electronic objects (hairdryers, mixers, blenders, electric scooters). The feedback was very positive, also in terms of the impact on the children themselves, as they acquired the knowledge to repair objects, they use every day and which in their own small way are very important (e.g. the electric scooter to get to the training school from their home).

Portugal

Our target audience is consumers. PP4 won't have information for professionals, but the key professionals identified to provide information to consumers are:

- Electronic Repair Specialists
- Household appliance repairers

Slovenia

PP2 wants to target relations between existing and new SMEs, individual repairers on one side and consumers on the other, and provide management such as Repair Cafés, practical knowledge on how to repair products, including **students and well-skilled individuals to exchange knowledge and teach consumers**, will be increased. Our hub will also promote International Repair Day, support it with an awareness-raising campaign, and promote repair activities that stakeholders will offer to perform. There is an active website https://www.mojobrtnik.com/ - the largest servicians provider in Slovenia. Many individuals operating in a small local area are found, often their services are not the primary source of income. The key to reversing this trend and boosting the need for their skills will be the networking of individuals. The aim is to create a strong and visible businesses that young will recognise as great profession of the future that can provide a good quality of life.

The most common activities in the repair sector are related to the repair of:

- PC and laptop,
- Mobile phones,
- Bycicles,
- Little household appliances,
- Textile repair technicians/Tailors and Seamstresses and
- Wooden furniture.

Spain

When citizens can't fix their appliances themselves, they need to call in a professional. These professionals typically fall under the following categories:

- Mechanics and repairers of electrical equipment (CNO-11 Code: 7521)
- Mechanics and repairers of electronic equipment (CNO-11 Code: 7531)
- Installers and repairers of information and communication technologies (CNO-11 Code: 7533)

Repair technicians usually undergo vocational training, often through a program called **Formación Profesional (FP)**, to gain the necessary skills and certifications. The most common paths to becoming a repairer involve:

For electrical appliances repair:

- FP in machines and tools
- Installation and Maintenance
- Electricity and Electronics

For electronic products repair:

- Higher Technician in Electronic Maintenance
- Electricity and Electronics
- Electronic equipments

Alternatively, professionals can certify their expertise through **certificates of professionalism**, which recognize professional experience exclusively. Examples include:

- Certificate of Professionalism in Assembly and Repair of Microcomputer Systems
- Certificate of Professionalism in Repair and Maintenance of Household Appliances

7. Identification and adaptation of the key skills and competences

A synopsis of the previous chapters could examine the existing skills and propose adaptations to meet the current and future demands of the repair sector.

Albania highlights the need for technical training and upskilling to address gaps in current repair practices. **Bosnia & Herzegovina** identifies a fragmented educational system with significant gaps in training relevant to the circular economy and suggests improvements/changes in vocational education and lifelong learning to be updated with labor market needs and promote a repair culture. **France** comments the importance of compliance with industry standards and the need for improving skills in safety practices and technological advancements. **Greece** points out the necessity for business model improvement and regulatory compliance in the repair sector. **Italy** addresses the need for targeted training programs to support the repair economy and promote environmental sustainability. **Portugal** emphasizes the growing demand for skilled technicians in Electrical and Electronic Equipment. **Slovenia** highlights the importance of networking and promoting repair activities to boost the repair sector. **Spain** refers to the importance of certifications for professional development and emphasizes the need for practical training and the creation of targeted training programs.

The project will try to address these needs through the establishment of **8 HUBS: 1 Sectorial, 2 Horizontal, 3 Awareness and 1 Horizontal/Awareness HUBS.**

8. Conclusion

The Joint Needs Analysis provides a detailed examination of the repair sectors across eight partner countries, identifying key trends, challenges, and needs. Through a combination of desk research and interviews, the analysis reports the growing importance of repair industries, particularly in electronics and textiles, while also highlighting significant gaps in technical skills, business models and access to financing. Despite an overall positive trend in employment and income in the repair sectors, a severe decline in investments threatens the sustainability and growth of these industries. The study emphasizes the necessity for targeted training programs, improved business models, and greater public awareness of circular economy principles to support the repair economy. By addressing these gaps, the sector can enhance its contribution to environmental sustainability and economic resilience across the participating countries.

The gap analysis and identification of training needs across the countries highlight challenges and opportunities within the repair sector. Despite varying degrees of development and specialization, common aspects emerge, such as the necessity for advanced technical skills, improved business and management capabilities, and enhanced customer service. Countries like Albania and Bosnia & Herzegovina emphasize the need for comprehensive vocational training and access to financing, while countries such as France and Italy focus on the formal recognition of repair professions and safety practices. Greece and Spain highlight the importance of technical expertise and public awareness, respectively, whereas Portugal and Slovenia underscore the need for digital literacy and sustainability knowledge. Addressing these gaps through targeted training programs and promoting collaboration among stakeholders will be crucial in enhancing the repair economy, promoting environmental sustainability, and supporting the circular economy initiatives across these regions.

Bibliography

Albania

1. The data provided by INSTAT includes the data on the activity of repair and installation of machinery and equipment and repair of computers and personal and family items, for the years 2018-2022. To be found here: http://instat.gov.al/al/temat/industria-tregtia-dhe-sh%C3%ABrbimet/statistikat-strukturore-t%C3%AB-nd%C3%ABrmarrjeve-ekonomike/#tab4

Bosnia & Herzegovina

1. World Bank, Air Polution in Bosnia and Herzegovina, 2019
2. Agency for Statistics of BiH, Average monthly net and gross earnings of persons in employment, 2024
3. Federal Pension and Disability Institute, Pension structure for 2024, 2024 & Pension and Disability Insurance Fund of Republic of Srpska, Pension structure for 2024, 2024
4. International Labour Organization
5. Agency for Statistics of BiH, Registered unemployment, 2024
6. the World Bank, Rural population (% of total population) Bosnia and Herzegovine, 2024
7. E.g.: Centre for Policy and Government, Bosnia and Herzegovina Circular Economy White Paper, 2022 and LIR Evolution, Circular Economy Report Bosnia and Herzegovina, 2018.
8. OECD, Multi-dimensional Review of the Western Balkans: From Analysis to Action, 2022
9. Centre for Policy and Government, Bosnia and Herzegovina Circular Economy White Paper, 2022

France

1. BONJEAN Anne-Charlotte et. Al (2022), Panorama de l'offre de réparation en France Actualisation 2022. Rapport final. ADEME, 100 pages, online: https://urlr.me/Fk2v3
2. DUMORTIER, Anne-Sophie ; HERAUD, Anaïs (dec 2022)Les besoins en compétences dans des structures de l'économie circulaire : zoom sur les ressourceries en PACA, Carif-oref Provence, online : https://urlr.me/7hc1v
3. LAUSSU, Jennifer ; RIEUCAU, Géraldine (2022), Les métiers du réemplois dans les recycleries et ateliers vélos : quels défis et quels soutiens ?, Connaissance de l'emploi, Centre d'études de l'emplois et du travail.

Greece

1. Skill needs anticipation: Systems and approaches. Analysis of stakeholder survey on skill needs assessment and anticipation. ILO – Geneva, 2017.
2. ETC CE Report 2022/6 An Overview of Europe's Repair Sector, European Environment Agency, 2022.
3. Strategy for Upgrading Skills of the Workforce and its Interconnection with the Labor Market, MINISTRY OF LABOR AND SOCIAL AFFAIRS, Public employment Service, Athens, 2022.
4. Cedefop, Strengthening skills anticipation and matching in Greece – Labour market diagnosis mechanism – A compass for skills policies and growth, Publications Office, 2020, https://data.europa.eu/doi/10.2801/941618
5. Cedefop (2022). Skills Anticipation in Greece (2022 Update) (https://www.cedefop.europa.eu/en/data-insights/skills-anticipation-greece#_overview_of_the_greeceapproach).
6. Employment and activity by sex and age - annual data [lfsi_emp_a] Last update: 12-04-2022 https://appsso.eurostat.ec.europa.eu/nui/show.do
7. https://www.askardamykti.com/
8. https://www.dianeosis.org/wp-content/uploads/2022/10/Circular_economy-14102022.pdf
9. https://imegsevee.gr/wp-content/uploads/2022/11/kikliki_oikonomia.pdf
10. Iek Akmi : https://iek-akmi.edu.gr/sxoli-mixanotronikis/
11. Iek Delta : https://iekdelta.gr
12. American Farm School of Thessaloniki : https://www.afs.edu.gr/
13. https://eric.ed.gov/?id=ED398437

Italy

1. Il-tempo-come-valore-di-scambio-simbolico-in-una-ciclofficina-popolare.pdf (noblogs.org)
2. https://circulareconomynetwork.it/rapporto-2023/
3. Repair cafè: che cosa sono e dove si possono trovare (nonsprecare.it)
4. Repair cafè: cosa sono e dove sono (elle.com)
5. Incentivi per le riparazioni - Non sprecare

Portugal

1. https://diariodarepublica.pt/dr/legislacao-consolidada/decreto-lei/2020-150908020
2. https://diariodarepublica.pt/dr/detalhe/resolucao-conselho-ministros/190-a-2017-114337039
3. https://diariodarepublica.pt/dr/detalhe/resolucao-conselho-ministros/31-2023-210923319
4. https://www.lipor.pt/pt/sensibilizar/100-desperdicio/crew/
5. https://reboot.porto.pt/
6. https://circthread.com/

7. Internal study of ICRT (International Consumer Research & Testing): Large Household Appliances – Reliability and Satisfaction (2023) – online survey (II43457, July 2023)
8. Internal study of ICRT (International Consumer Research & Testing): Hi-Tech Devices – Reliability and Satisfaction (2024) - online survey (II43454, December 2023)

Slovenia

1. SURS (stat.si)
2. GOV.SI Portal
3. Poklicni standard (nrpslo.org)
4. Poklici in kompetence - Zavod Republike Slovenije za zaposlovanje (gov.si)
5. INSME – International Network for SMEs
6. SPOT (gov.si)
7. Data d.o.o: Vse na enem mestu za podjetnike
8. Domov (cpu-reuse.com)
9. Sekcija tekstilcev >> Informativne cene, normativi | OZS
10. Se popravilo aparatov sploh še splača? - Eko Dežela (ekodezela.si)
11. The reinforced Youth Guarantee - Employment, Social Affairs & Inclusion - European Commission (europa.eu)
12. Iniciativa ALMA: podpora pri zaposlovanju mladih - Zavod Republike Slovenije za zaposlovanje (gov.si)
13. Home - Erasmus+ (europa.eu)
14. Homepage of Pact for skills (europa.eu)
15. Circular economy action plan - European Commission (europa.eu)

Spain

1. https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/economia-circular/estrategia.html
2. Fundación Biodiversidad - Empleo y transición ecológica. Yacimientos de empleo, transformación laboral y retos formativos en los sectores relacionados con el cambio climático y la biodiversidad en España (2023)
3. FP Técnico en mecanizado
4. FP Técnico Superior en Mantenimiento Electrónico
5. FP Título Profesional Básico en Electricidad y Electrónica
6. FP Técnico en Equipos Electrónicos de Consumo
7. SEPE, Observatorio de las Ocupaciones – Informe de prospección y detección de necesidades formativas 2023
8. APIEM »Estudio de detección de necesidades formativas en máquinas electromecánicas«
9. Unete al Cambio, Ayuntamiento de O Rosal
10. Arréglatelas-Hemen Konpon
11. Repair Café
12. MITECO - Estrategia Española de Economía Circular 2030
13. FP Instalacion y mantenimiento

Annex 1: Interview template

Details of interviewer(s)	
Name(s)	
Organisation	

Details of interview	
Date and time of interview	
Place of interview	
Means of note-keeping	

Details of interviewee (please repeat as many times as the number of interviewees)	
Interviewee	Name: Age: [18-25], [26-35], [36-45], [46+] Gender: [male], [female], [other] Role: [Director], [Technician], [Administrative], [Other:.....] Education level: [Secondary school graduation], [Diploma], [Bachelor's Degree], [Master's Degree], [PhD]
Contact details	
Organisation	Name of the organisation: Reference Area: Relevant sector: Brief description of the organisation mission and services provided: ..... Brief description of the human resources of the organisation (in general and dealing with repair sector): .....

1. Could you provide a brief overview of your business model, target market, and marketing strategy for your repair services?

2. Which repair techniques or skills do you feel most confident in? Where do you face challenges?

3. Have you conducted any market research on the repair sector? If so, what have you discovered about the demand for repair services, existing competitors, and potential customers?

4. How often do you update your equipment or your techniques that are relevant to repairing?

5. What are the key obstacles in your role as repairer? E.g. training gaps, new equipment, knowledge of tools, other

6. What topics would interest you for training sessions in repairing and what skills would you like to adopt after repair training?

7. How do you prefer to receive training (workshops, online courses, hands on experience)?

8. What opportunities do you see for professional development and advancement in the repair economy sector?

9. Is there anything else you would like to share about your experience or expectations regarding repair services?