



Siracusa, 27 September 2024

How Bioeconomy and Social Innovation  
can improve the food system

**“Focus on innovative governance in  
Sicily: realization of communities of  
practice connected to food and food  
waste valorization, for the blue  
bioeconomy in Sicily”**

Concetta Messina- UNIPA  
Eleonora Curcuraci - UNIPA  
[eleonora.curcuraci@unipa.it](mailto:eleonora.curcuraci@unipa.it)

## Engage4BIO PROJECT



# Engage 4BIO

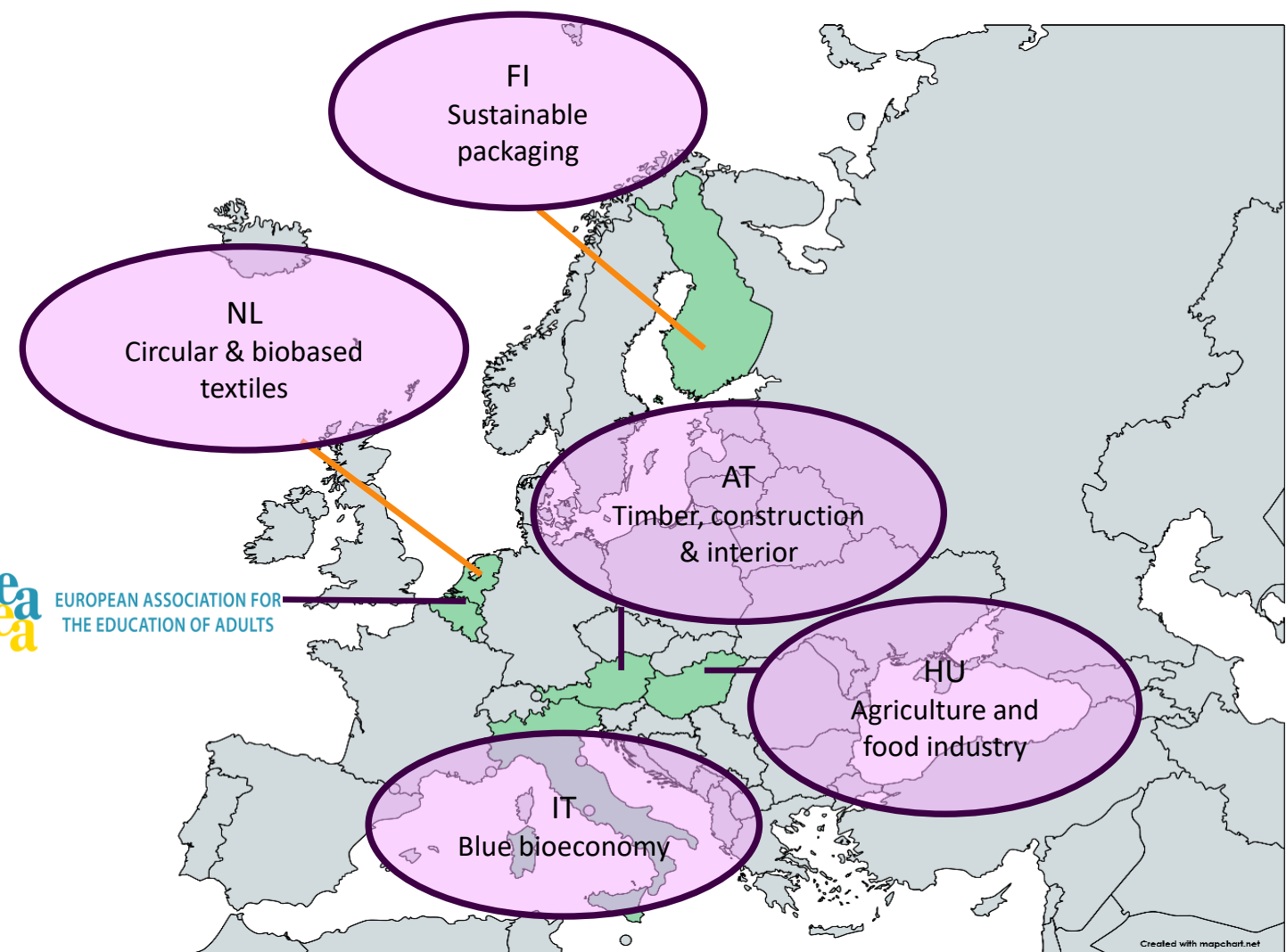
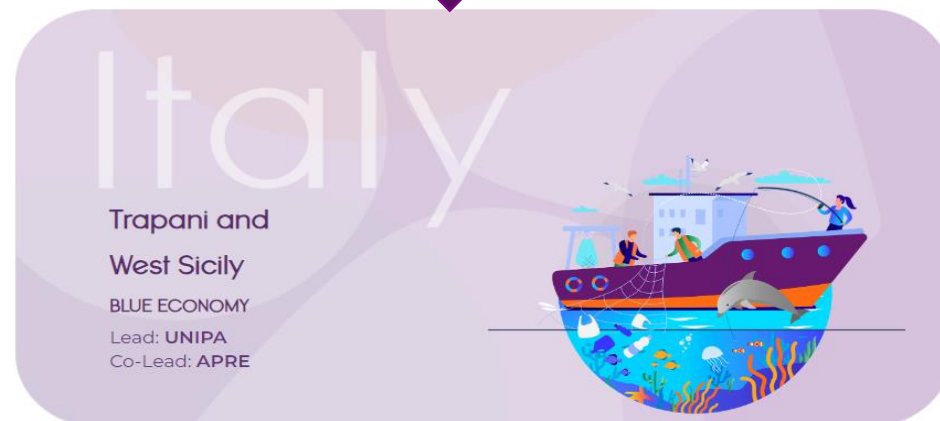


## Multi-stakeholder engagement to strengthen regional bioeconomy value-chains

Better understanding, intensified  
engagement, training and development in  
regional bio-based systems

- Strengthen the circular and sustainable bio-economy and sustainable regional development through the involvement of the actors of the quadruple helix (public institutions, research, enterprises and civil society)

# THE HUBS



## THE ITALIAN HUB

The ITALIAN HUB  
promotes the  
regional blue bio-  
economy and the  
utilisation of  
marine resources

contributing to the  
regional sustainable  
development by

- ✓ Understanding Regional Systems (Map & Gap Analysis)
- ✓ Co-creating and co-developing activities with local stakeholders in the blue sector, students, researchers and civil society

**BLUE  
BIOECONOMY**  
Trapani and  
West Sicily



## Step 1: Map & Gap analysis

### Map and gap analysis

- ✓ Identification and analysis of potential developments in the regional bio-economy
- ✓ Understanding the level of stakeholder involvement, maturity and needs for the transition to a blue bioeconomy

#### Step 1

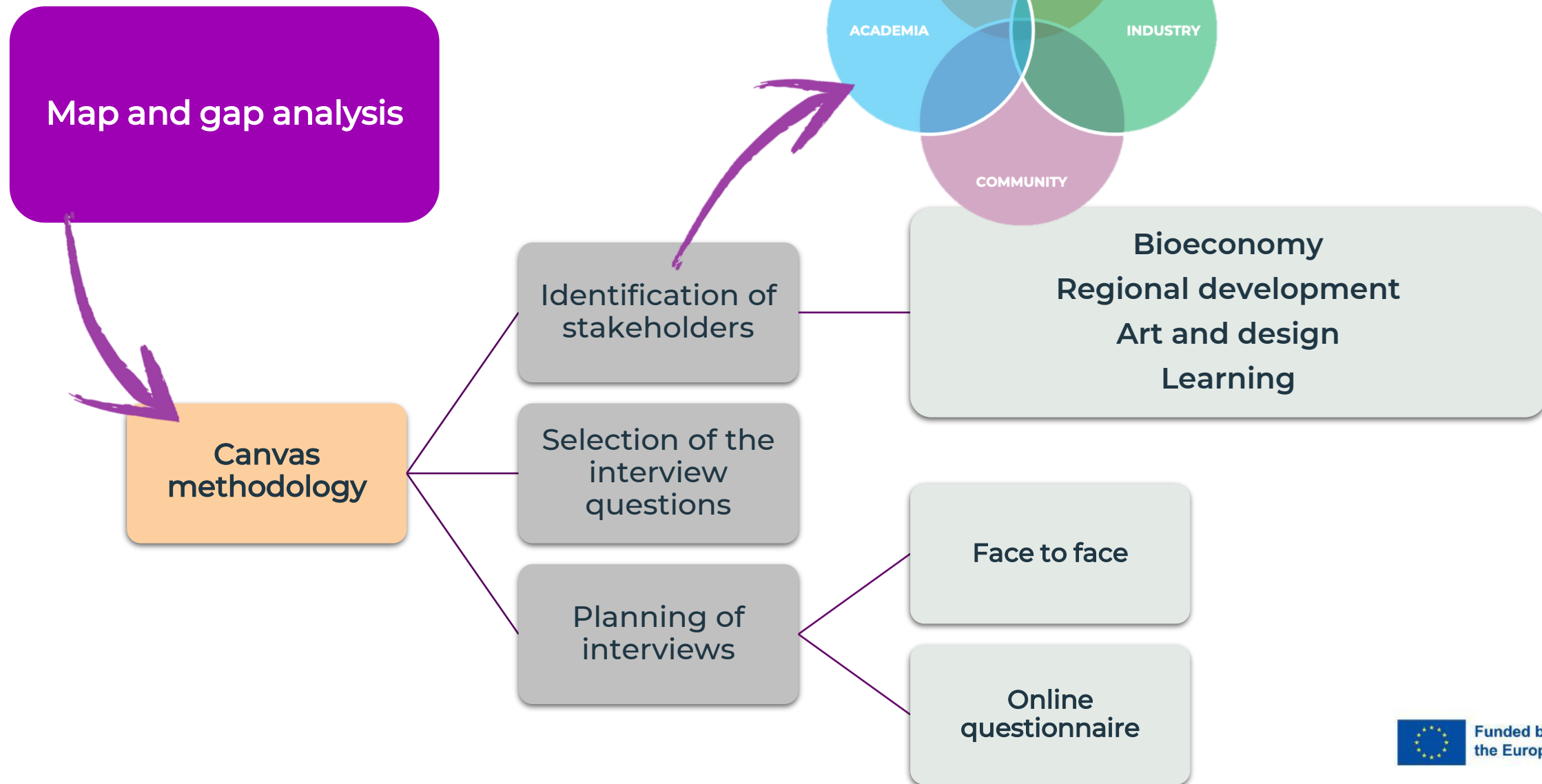
### Mapping results (By Hub)

Horizontal analyses four perspectives (Canvas methodology: framework to reflect and propose actions for the development of the regional bio-economy):

- Bioeconomy
- Regional development
- Art and design
- Learning



## Step 1: Map & Gap analysis



## Step 1: Map & Gap analysis results

### Bioeconomy

#### MAP

- Fisheries and fish processing producers are grouped in associations
- High production of by-products of marine origin

#### GAP

- End-users (biorefineries, marine biotechnology companies, etc.) not represented
- Growth opportunities for companies not yet sufficiently secured



### Regional development

#### MAP

- The actors involved in the regional development of the blue bioeconomy belong to private enterprises, universities, research sector, etc.
- Dialogue and cooperation between the different sectors take place through specific projects and programmes

#### GAP

- Investment in research and innovation is lower than the European average
- Links between industry and research are still underdeveloped



## Step 1: Map & Gap analysis results

### Art and design

#### MAP

- Sicily is a region with a strong vocation for tourism, hosting recreational activities, exhibitions, music and food festivals
- Increasing number of projects promoted by the EU on “Creativity, Design & Made in Italy”

#### GAP

- Low promotion of art and design activities related to the biobased sector
- Low level of maturity in exploring the relationship between art and design and the biobased economy



### Learning

#### MAP

- Adoption of bioeconomy practices in the Italian educational and training programmes
- Promotion of specific training courses at local universities at regional level (FORTHEM and Europe DIRECT programme)

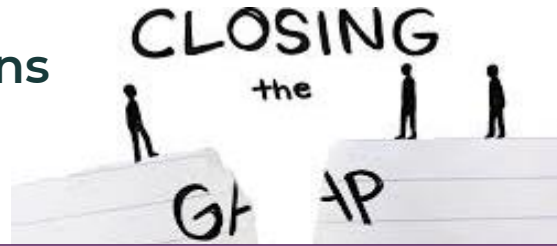
#### GAP

- Lack of updated training courses and teaching programmes
- Inefficient communication strategies





## Step 1: Map & Gap analysis conclusions



### Need to:

- Strengthen collaboration between industry, research and education (e.g. common guidelines)
- Develop new knowledge and technologies for sustainability in the marine environment
- Train new professionals with knowledge and skills in the blue bioeconomy
- Define communication strategies able to intercept the curiosity and creativity of young people
- Support the role of artists and the creative sector in the development of the blue bioeconomy

## Phase 2: Co-creation workshops

Map and gap analysis

Co-creation workshops

Step 1

Step 2

### Collection of co-created Innovative formats

1

Vision and  
strategy  
Pathfinder  
Manual

2

Guidelines for  
training and  
mentoring for  
skills development

3

Awareness and  
Knowledge Gain  
Campaigns

4

Innovative  
Governance  
models

## Step 2: Co-creation workshops

Day 1

Local bioeconomy  
vision and strategy  
approach

22 June 2023

University of Palermo, Polo  
Universitario di Trapani (Trapani)

In person - 2 days  
n. 72 participants

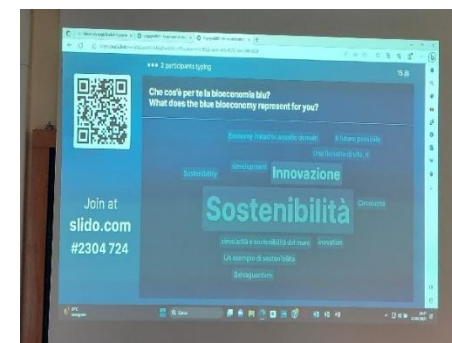
Introduction to the  
vision and strategy  
co-creation  
workshop



Intervention of facilitators from the  
quadruple helix

Co-creative open discussion

Collection of  
ideas for new  
visions and  
strategies



Live pool questions  
& answers by SLIDO



## Step 2: Co-creation workshops

Day 2

Local bioeconomy  
vision and strategy  
approach

22 June 2023

University of Palermo, Polo  
Universitario di Trapani (Trapani)

In person - 2 days  
n. 72 participants

- Training actions on specific blue value chains of regional importance
- Realisation of artistic events to communicate the concepts related to the circular economy and blue bio-based compounds
- Application of a more collaborative innovative governance model for the interaction of the potential stakeholders of the quadruple helix



European Maritime Day in  
my country opening  
ceremony, interviews with  
authorities and  
stakeholders



Guided visit to  
“Torre Ligny”  
museum



Laboratory  
experience on  
marine bio-based  
solutions

## Step 2: Co-creation workshops

Guidelines for  
training and  
mentoring for adults  
including skills  
development

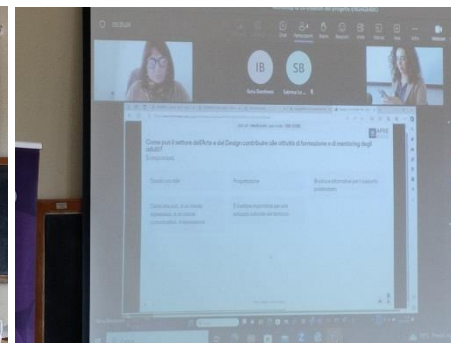
09 November 2023

University of Palermo, Polo  
Universitario di Trapani (Trapani)

Hybrid - 4 hours  
n. 36 participants

To contribute to the dissemination  
of the knowledge acquired on the  
enormous unexpressed growth  
potential of the oceans:

- Training course for high school  
teachers



Introduction to the training  
and mentoring co-creation  
workshop

Live pool questions &  
answers

Collection of ideas

Co-creative open  
discussion



## Step 2: Co-creation workshops

Knowledge gain and  
awareness Campaign

13 December 2023

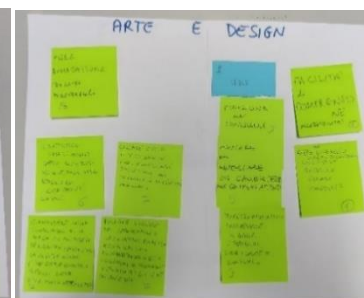
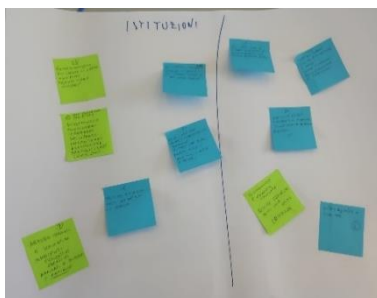
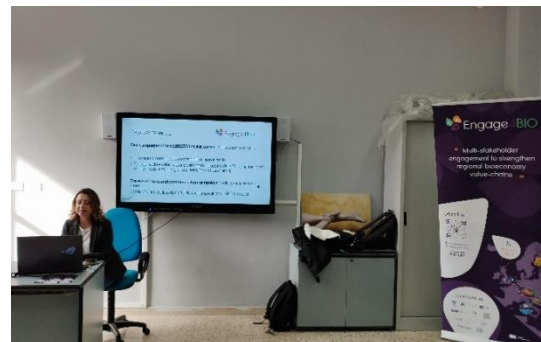
Istituto di Istruzione Superiore “S.  
Calvino - G.B. Amico” (Trapani)

University of Palermo, Department  
of Architecture (D'ARCH) (Palermo)

Hybrid - 4 hours  
n. 24 participants

To contribute to raise awareness on  
conscious and sustainable use of  
marine resources and to promote  
campaigns focusing on developing  
new best practices:

- “Conscious and sustainable consumption of marine resources”
- “What a wonderful waste! Re-use, recycling and valorization of waste from marine supply chains”



Introduction to the  
knowledge gain and  
awareness campaign co-  
creation workshop

Facilitators: the role of art  
and design in  
communication and  
awareness campaigns

Collection of ideas



## Step 2: Co-creation workshops

Innovative  
governance models

15 December 2023

Regione Siciliana Dipartimento  
Delle Attività Produttive  
(Palermo)

Hybrid - 3 hours  
n. 13 participants

To promote better connections and interactions among the different domains of public sector, private sector and knowledge (research and education):

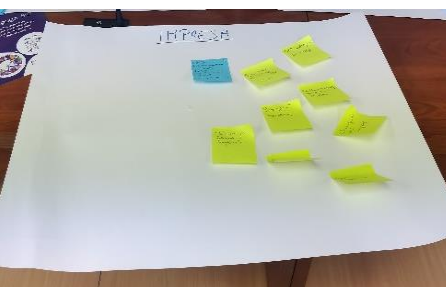
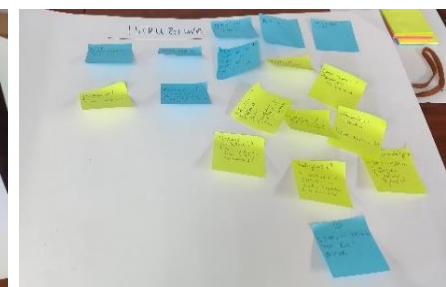
- Realization of a Living Lab
- Drafting of a Road map
- Realization of a Community of Practice



Presentation  
stakeholders and  
introduction to the  
innovative  
governance co-  
creation workshop



Open discussion



Co-creation  
activity

## Step 3: Implementation of the activities

Map and gap analysis

Step 1

Co-creation workshops

Step  
2

Implementation of the  
activities  
in context with  
stakeholders

Step  
3

## Step 3: Implementation of the activities



### Launch of the Realization of a Living Lab

- ❖ Co-designing new circular marine biobased productions and good practices in support of regional development paths for sustainable fishery, utilization and consumption

Demonstrative activity with fishermen organization, local authorities and master students

Meeting with regional authority, Italian maritime authority organization of recreational fishery and civil society





## Step 3: Implementation of the activities



Launch of a training course for skills development on the blue bioeconomy

- ❖ Training for secondary school teachers from 6 educational institutions in the province of Trapani on blue bioeconomy and blue growth at a regional scale

- To encourage the integration of the blue bioeconomy topic in future educational pathways
  - To contribute to the creation of new professional *curricula*

Cos'è il Programma Europeo Zero waste?

No      Non saprei      Non so      Ne ho sentito parlare

La tendenza al "rifiuto zero"

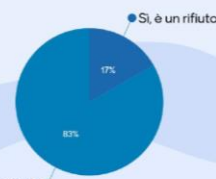


Conosci prodotti marine biobased?



No

Lo scarto della filiera ittica è un rifiuto?



No, non è un rifiuto



Funded by  
the European Union

## Step 3: Implementation of the activities



### Launch of 2 awareness raising campaigns

1. Conscious and sustainable consumption of marine resources
2. What a wonderful waste! Re-use, recycling and valorization of waste from marine supply chains



- Professional Technical Institute for Graphics and Communication
- Professional hotel institute

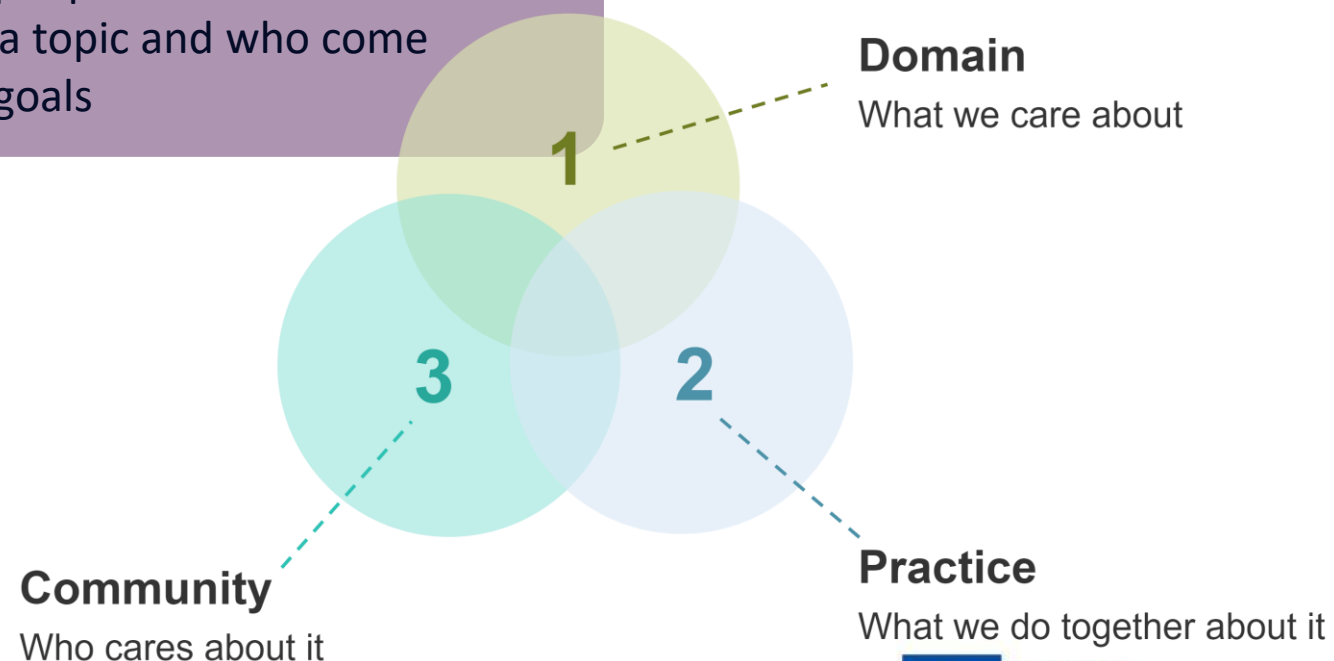
- 
- Logo
  - Video
  - Infographic
  - Flyer
  - roll-up
  - Show cooking

## Step 3: Implementation of the activities



### Launch of the Realization of a Community of Practice

A community of practice (CoP) is a group of people who share a common concern, a set of problems, or an interest in a topic and who come together to fulfill both individual and group goals





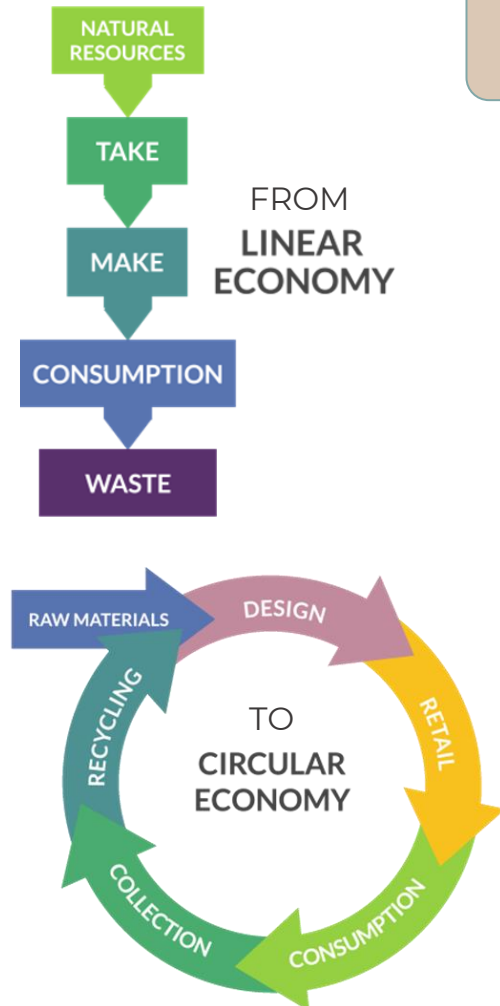
# Step 3: Implementation of the activities

## Community of Practice

realization of communities of practice connected to food and food waste valorization, for the blue bioeconomy in Sicily

VALORISING LOW-VALUE SPECIES WITH PROCESSING TECHNIQUES

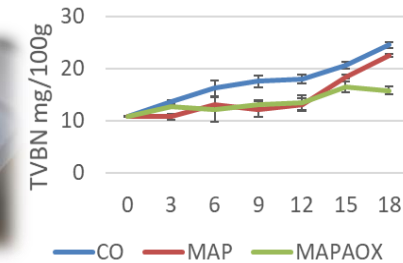
USE OF INNOVATIVE TECHNOLOGIES IN THE PROCESSING SECTOR → shelf-life extension



Zerro (*Spicara smaris*)



«Ritùnnu salàtu rattàtu»



EXTRACTION OF BIOACTIVE MOLECULES FROM PROCESSING BY-PRODUCTS

BENEFITS:

- ✓ New products
- ✓ Competitiveness
- ✓ Sustainability

## Step 3: Implementation of the activities



Promoting the consumption of fish products caught using traditional, selective and environmentally friendly fishing methods

Encouraging the consumption of fish products with labels that guarantee product traceability

Promoting fishing and consumption of “non-target species”

Low value species

- ✓ short life cycle species
- ✓ selective fishing techniques
- ✓ high nutritional value

- Seasonality
- Local consumption
- Traditional recipes

How to encourage its consumption:

- Increasing consumer awareness
- Ensuring product traceability
- Creating paths for the valorisation of resources

“Join Us!



How Bioeconomy and Social Innovation  
can improve the food system

“Focus on innovative governance in  
Sicily: realization of communities of  
practice connected to food and food  
waste valorization, for the blue  
bioeconomy in Sicily”

Eleonora Curcuraci - UNIPA

[eleonora.curcuraci@unipa.it](mailto:eleonora.curcuraci@unipa.it)