



LEADING A REVOLUTION
IN BIOWASTE RECYCLING

Biowaste cross-project Webinar Stakeholder's Engagement and Awareness

Kozani/Region of Western Macedonia



➤ Kozani/Region of Western Macedonia

4 Regional Units → 9.600 Km² in total, 282.120 total population

1. Kozani → 149.270 inh.
2. Kastoria → 50.280 inh.
3. Grevena → 31.490 inh.
4. Florina → 51.080 inh.

Regional Strategy for the Region

- Regional Waste Management Plan of Western Macedonia (will be revised in 2021)
- National Waste Management Plan 2020 - 2030



Kozani is the Biggest City of the Region

➤ Kozani/Region of Western Macedonia

Two Different Projects

SCAL//BUR

- Kozani City only
- Pilot
- Linked 3rd Party – UoWM

hop

- The Region of Western Macedonia
- Lighthouse
- Linked 3rd Party – DIADYMA

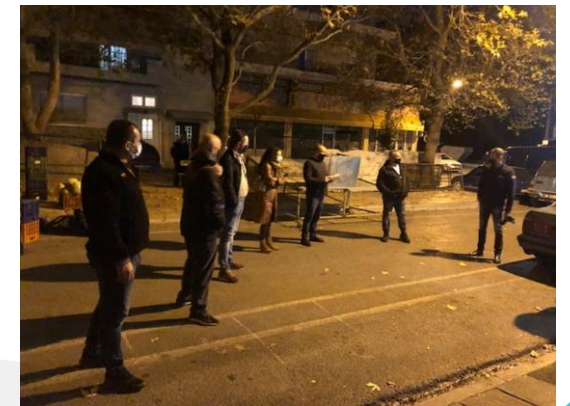
➤ COVID-19: Challenges and impacts

- All the indoor meetings are forbidden → We managed to implement a BCM in an open space with the Open Market traders
- HoReCa was closed → We had an online meeting with the president of their association.
- The Waste Management Company didn't separate any waste from areas with high number of Covid-19 Cases → this was directly Landfilled



➤ BWC during Covid-19 Pandemic

- CluBE achieved to fulfil a biowaste Club targeting the Open Markets.
- A day before the start of the biowaste collection from the open market.
- The BWC meeting took place in the area of the open market (open space)
- We gather 18 people (keeping all the appropriate measures to prevent Covid – 19 spread) → Distances, masks, sanitizers
- The participants were representatives from the Municipality of Kozani, DIADYMA and representatives of the associations of the sellers/producers



➤ Biowaste Collection of Kozani Open Market

- We took advantage of the 50% operation of the Open Markets in order to start the pilot collection of Biowaste from Open Markets
- We managed to bring in the Municipality and the Waste Management Company, who accepted the challenge despite the Covid-19 Outbreak, keeping all the safety measures
- Due to the 50% operation of the Open Markets it was easier to discuss with producers while implementing the pilot collection of the Biowaste
- Safer at 50% than at full operation



➤ Biowaste Collection of Kozani Open Market

On Saturday 14th of November we started the biowaste collection

- **1st Step:** we provide the sellers bags to start collecting their biowastes
- **2nd Step:** we distributed a leaflet with instructions on what to put in the bags
- **3rd Step:** In collaboration with CSCP, we developed a questionnaire about their perception regarding the biowastes and we collected the answers in the form of an interview.
- **4th Step:** When the open market closed the sellers left the bags in their place.



ΥΠΟΛΕΙΜΜΑΤΑ ΛΑΪΚΗΣ ΑΓΟΡΑΣ **ΔΗΜΟΣ ΚΟΖΑΝΗΣ**

Διαλογή στην Πηγή (ΔοΠ) Βιοαποβλήτων
ΟΔΗΓΙΕΣ ΣΥΛΛΟΓΗΣ

Μέσα στη σακούλα - καφέ κάδο βάζω:

- Φρούτα και λαχανικά
- Κρέας και Ψάρια
- Ζυμαρικά, Ρύζι και Όσπρια
- Ψωμί, Κέικ, Γλυκά
- Γαλακτοκομικά (τυρί, γιαούρτι)
- Αυγά

ΔΕΝ Βάζω!!!

• Συσκευασίες κάθε είδους (χαρτί, χαρτόνι, πλαστικό, αλουμίνιο, ξύλο)

Μετά το τέλος της λαϊκής, μαζεύω τα υπολείμματα στη σακούλα και την τοποθετώ πίσω από τον πάγκο, έτσι ώστε να είναι προσβάσιμη από το συνεργείο που έχει αναλάβει την αποκομιδή.

SCAL+BUR **CIUBE** **Διαδύμα**

➤ Biowaste Collection of Kozani Open Market

- 5th Step: DIADYMA collected the bags
- See the Video

<https://www.youtube.com/watch?v=xJHbL8KhkiY>



All the team was wearing specially prepared t-shirts with the logos of SCALIBUR, CluBE, DIADYMA and the Municipality of Kozani



➤ Biowaste Collection of Kozani Open Market

Notes from the Biowaste Collection from the Open Markets

1. Not Everyone followed – but a lot did!!

➤ Biowaste Collection of Kozani Open Market

Notes from the Biowaste Collection from the Open Markets

2. "What's in it for us?"

"Helps environment..."

"Free entrance in open market?"

"Avoid fines...?"

➤ Lessons learned and way forward 2021

Notes from the Biowaste Collection from the Open Markets

3. "Competition"...!!!!

People who have hens, pigs and other animals in their backyard collect biowastes from the Open Market every Saturday

Attention not to break this circular economy loop!



➤ HoReCa for Biowastes and Coffee residues

- CluBE with DIADYMA approached the Association of Cafeteria Owners regarding the coffee residues and food biowastes
- Together, we prepared a document with topics and concerns in order to be discussed in their next board of directors meeting.



➤ HoReCa for Biowastes and Coffee residues

2 different Topics for Discussion

- a. Collection of the appropriate data

- List of all the cafeterias
- Indicative quantities
- Availability of storage in store
- Storage bins
- Ways of collection
- Frequency of collection
- Time of collection



- b. Motivation - Involvement

- Frequent and effective collection of biowastes in order not to cause any problems regarding the operation of the cafeteria
- Distribution of brown bins in each cafeteria depending the quantities
- Information campaign – awareness raising to end-users / clients

➤ CluBE Actions in the past 6 months

Citizens and Value Chain Actors Surveys

- Surveys gathering feedback on stakeholders' perceptions of biowaste and bio-based products and sorting behaviour
- Part of the stakeholder engagement evaluation process



ΔΗΜΟΣ ΚΟΖΑΝΗΣ



SCALIBUR ΕΡΕΥΝΑ

ΒΙΟΑΠΟΒΑΛΤΑ & ΒΙΟΠΡΟΪΟΝΤΑ

ΠΡΟΣΩΠΙΚΕΣ ΠΛΗΡΟΦΟΡΙΕΣ

➤ CluBE Actions for the next 6 months

- Gather as many questionnaires as possible
- Expand communication to the entire HoReCa sector
- Design how the collection of biowaste from HoReCa Sector (including coffee residues) can be achieved.
- Organise the next Biowaste Club in Kozani.



➤ Region of Western Macedonia

- North Western Part of Greece
- The only Region in Greece without sea coast
- ~284.000 inh., 2,6% GR, 12 Municipalities
- Regional GDP (PPS per inhabitant in % of the EU28 average): from 83% (2006) to 59% (2017)
- Unemployment 27,1% (2019)
- Strong energy sector (lignite based): was >50% of GR total until 2012
- Energy sector March 2020 (lignite based): 12,47%
- 3 District Heating Networks (lignite)
- Agriculture and animal breeding
- Forest coverage
- Continental climate



➤ Western Macedonia



Pindos National Park "Valia Kalda"



Bridge over Aaos River



Kozani Central Square in white



Vasilitsa Ski Resort



➤ Decarbonising Western Macedonia

- 4 lignite mines 40 Mtns / yr
- \approx 50% total GR MWeI until 2012
- \approx 12,5% from lignite (March 2020)
- \approx 20.000 jobs
- > 200 cooperating SME's

3 / 5 DH in the country

3 / 4 municipal DH

Challenge
Lignite plants
decommissioning....????



➤ Biomass availability

Animal waste: >500.000tns/yr



Urban waste: >150.000tns/yr



Agricultural residues: >200.000tns/yr



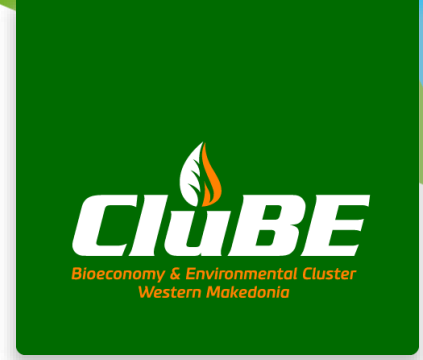
Forest residues: ≈ 10.000 tns/yr
Forest exploitation: > 50.000tns/yr
Artificial forests: >40.000 acres \approx
80.000tns/yr (thinning)



Depleted coal mines: ≈ 150.000 acres



➤ Establishment of CluBE



Western Macedonia, Greece

Bioeconomy and Environment Cluster – CluBE

- Formally established (2014 - Bioenergy)
- Not for profit company
- Bottom-up approach

<https://clube.gr>

Development of common business
and R&D

➤ Areas of Activity

Energetic exploitation of **biomass** for District Heating and industrial, commercial and domestic use

Development of the green hydrogen economy **Hydrogen** for storage and transport

Co-firing of biomass with lignite

Increasing the share of **biofuels in the energy mix** of transportation fuels,

Optimization of heating systems

Urban Waste **Exploitation**

Biomass development (energy **plantations**, certification schemes, etc.)

Energy **efficiency** in business and commercial use, as well as households

Cooperation **models** (ESCO's, energy cooperatives, ...),

Optimization of **heating systems**

Promote the concepts of **smart cities and villages**

CluBE Members - More than 40 Quintuple Helix Members



Quintuple Helix

Public sector

R&D

SMEs

Environment


Social

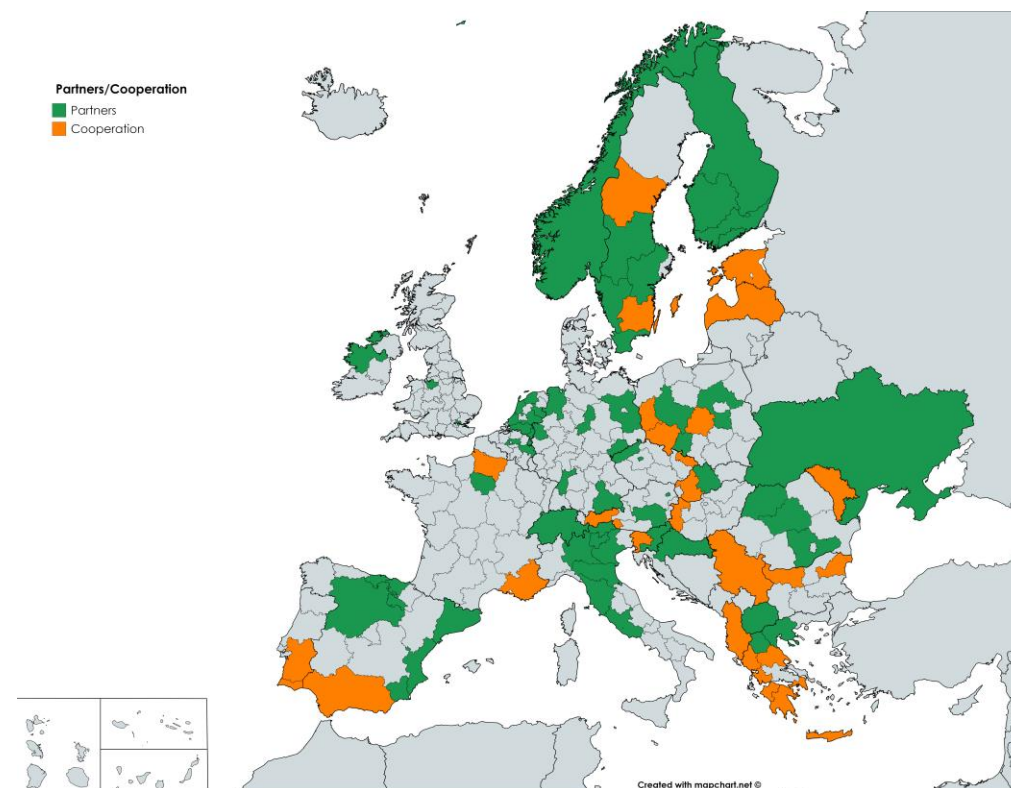
CLUBE: NETWORKING



CluBE European Networks and Partnerships



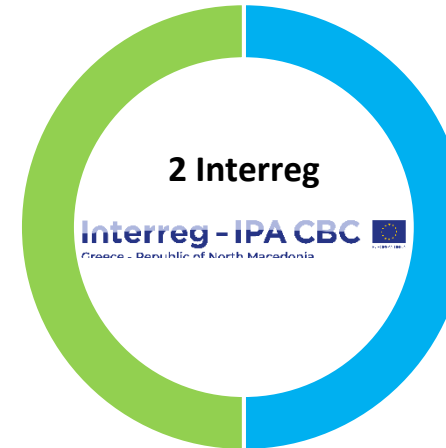
- Greenovate! Europe – Full member 
- European Bioeconomy Stakeholders Panel – DG RTD European Commission – member 
- Biobased Industries Consortium (BIC) – Associate Member 
- Innovawood – Full member 
- Hellabiom – Full member 
- Fuel Cells and Hydrogen Joint Undertaking (FCH JU) – Hydrogen Valleys Partnership – member 
- ENRD Mainstreaming the Bioeconomy Thematic Group – member 
- S3 Bioenergy Partnership – member
- Greek Bioeconomy Forum – founding member 



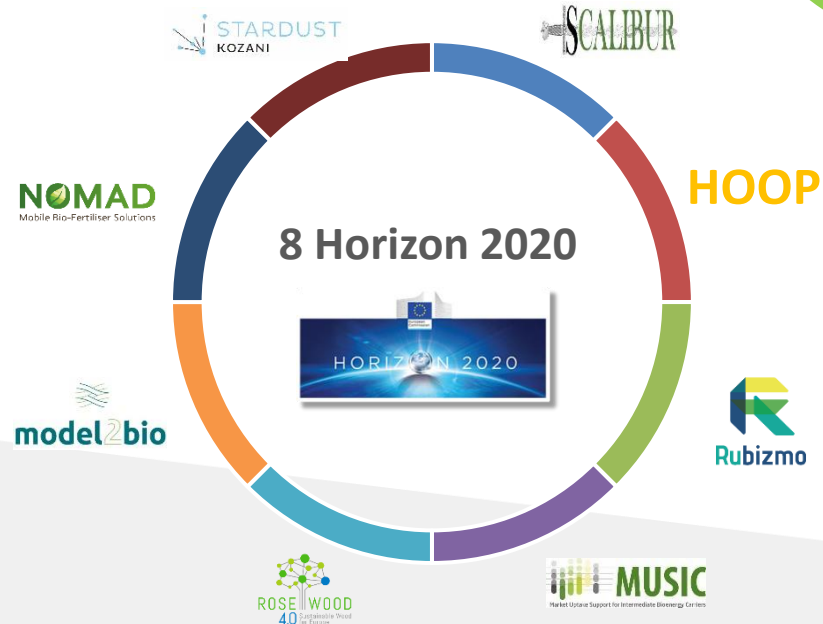
➤ CluBE - Project Portfolio



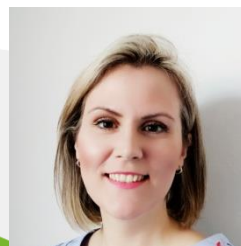
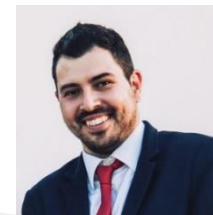
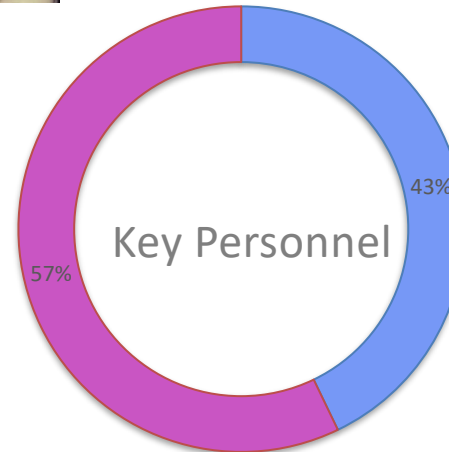
aGROWchain



BENEFIT



➤ CluBE - Key Personnel



Thank you !!!

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