

l am CELISE



# I am CELISE, an International Project to help SMEs and rural areas within the bioeconomy

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University of Cantabria

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# When was I conceived?



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- Natural fibers in construction
- Biomaterials for packaging instead of traditional plastics
- Highly purified cellulose products (micro and nanocellulose) in our health
- Problems of rural areas gender inequality
- Vulnerable areas in Colombia and Ecuador

**Important issues in our lifes** 





# When was I conceived?



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FP1205

FP1306

FP1407

**CA17128** 











Main people and networking involved at the begining





## When was I conceived?



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Strengthen international, intersectoral and crossborder collaboration in R&D&I through exchanges of research and innovative personnel between public and private entities.



**Europe Research Dynamization Actions** 

Meetings with partners

Reyes Sansegundo, European Project consultant



<u>European and International Project Office - OPEI</u>

### **Background and help**





## Who am I?



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Sambucus nigra

Beatriz Fernández Secadas

Transfer of knowledge on sustainable cellulose-based materials from biomass residues and that can be used not only in small and medium-sized enterprises (SMEs), but also in rural and vulnerable areas of Europe and Latin America.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Sklodowska-Curie grant agreement No 101007733

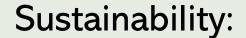




# What would I like to do?



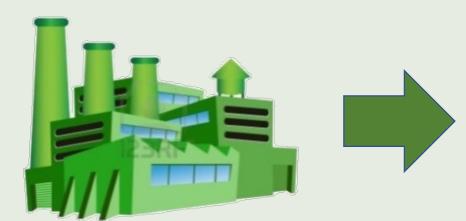
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Social: rural and vulnerable áreas in Colombia (post-conflict) and Ecuador, gender equality, portable and adaptable pieces of equipment, educational programmes

Environmental: natural aditives, residues of biomass, bioenergy

**Economic:** every-day products, artisan products, construction, packaging and health, new business models





From big to small biorefineries



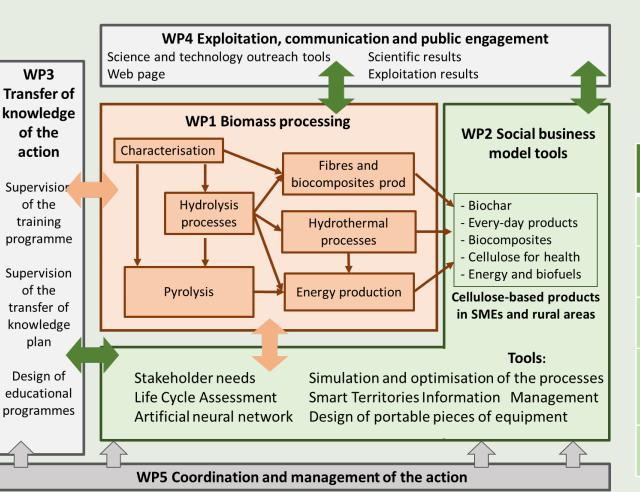


# What am I composed of?



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# 5 work packages

| WP                                | Leader and Institution  |  |  |  |  |  |  |  |
|-----------------------------------|-------------------------|--|--|--|--|--|--|--|
| WP1. Biomass processing           | Dr. Laura Andze, LS-IWC |  |  |  |  |  |  |  |
| <b>WP2.</b> Social business model | Dr. Radovan Vacek,      |  |  |  |  |  |  |  |
| tools                             | INOCURE                 |  |  |  |  |  |  |  |
| <b>WP3.</b> Transfer of knowledge | Dr. Tamara Llano, UC    |  |  |  |  |  |  |  |
| of the action                     |                         |  |  |  |  |  |  |  |
| <b>WP4.</b> Exploitation,         | Dr. Grzegorz Kowaluk,   |  |  |  |  |  |  |  |
| communication and public          | SGGW                    |  |  |  |  |  |  |  |
| engagement                        |                         |  |  |  |  |  |  |  |
| <b>WP5.</b> Coordination and      | Dr. Alberto Coz, UC     |  |  |  |  |  |  |  |
| management of the action          |                         |  |  |  |  |  |  |  |





# What am I composed of?





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Raw materials



Characterisation methods



Pre-treatment methods



Final methods and purification



Products and fuels

WASTE

Rural areas:

- Cocoa
- Coffee
- Soya
- Corn

#### From SMEs:

Brewery

D1.1. Traditional and novel methods

- Rural areas
- SMEs
- Time of analysis

**Traditional** 

- Acid hydrolysis
- Alkaline hydrolysis
- Auto-hydrolysis

More novel:

- DES
- Steam Explossion Biological:
- Enzymatic

Biological:

- Fermentation (yeast, bacterial and fungus)
- Thermal:
- Pyrolysis
- Others:
- Fiber production (electrospinning...)

- Biofuels
- Artisan products
- Biochar
- Chemicals
- Nanocellulose

Stakeholder needs Simulation and optimisation Artificial Neural Analysis

LCA

Smart Territories Information Design of portable equipment

**RURAL AREAS AND SMES** 





# Who are my parents?





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| Country | Partner   | Acronym                                   | Logo   | Kind of institution | Web page                |
|---------|---|---|--|---------------------|-------------------------|
|         | University of Cantabria   | UC  | UC<br>UNIVERSIDAD<br>DE CANTABRIA              | University          | https://web.unican.es/  |
| Spain   | Polytechnical University of Madrid                                  | UPM                                       | POLITÉCNICA  UNIVERSIDAD POLITÉCNICA DE MADRID | University          | https://www.upm.es/     |
|         | Quantum Artificial Intelligence, S.L                                | QAI                                       | QUANTUM ARTIFICIAL INTELLIGENCE                | SME                 |                         |
| Latvia  | Latvian State Institute of Wood Chemistry                           | LATYIAN STATE INSTITUTE OF WOOD CHEMISTRY |  | Research Centre     | http://www.kki.lv/en    |
|         | Warsaw University of Life Sciences                                  | SGGW                                      | WARSAW UNIVERSITY OF LIFE SCIENCES             | University          | https://www.sggw.edu.p  |
| Poland  | Warsaw University of Technology WUT Warsaw University of Technology |   | Warsaw University<br>of Technology             | University          | https://www.pw.edu.pl/e |
|         | Institute of Physical Chemistry – Polish<br>Academy of Science      | IChF                                      | ICHF Institute of Physical Chemistry PAS       | Research Centre     | https://ichf.edu.pl/en  |



# Who are my parents?







| Country           | Partner                              | Acronym   | Logo  | Kind of institution      | Web page                             |
|-------------------|--------------------------------------|---|---|--------------------------|--------------------------------------|
|                   | Aristotle University of Thessaloniki | AUTH  | A R I S T O T L E<br>U N I V E R S I T Y<br>OF THESSALONIKI | University               | https://www.auth.gr/en/              |
| Greece            | Ecoresources IKE                     | Ecoresources IKE  Inocure sro  INOCURE  Bangor University  TWI  TWI  TWI  ECORES  SME  SME  SME  SME  University  University  Research Centre | SME   | https://ecoresources.gr/ |                                      |
| Czech<br>Republic | Inocure sro                          | INOCURE   | INOCURE   | SME                      | https://inocure.cz/                  |
|                   | Bangor University                    | BANGOR  | PRIFYSGOL BANGOR UNIVERSITY                                 | University               | https://www.bangor.ac.uk/            |
|                   | TWI                                  | TWI   | TWI   | Research Centre          | https://www.twi-<br>global.com/      |
| United<br>Kingdom | Carbon Compost Company Itd           | CCC   |   | SME                      | https://www.carboncompos<br>t.co.uk/ |
|                   | VoCATE, LTD                          | VoCATE  |   | SME                      |                                      |





# Who are my parents?





| Country   | Partner  | Acronym  | Logo  | Kind of institution | Web page                      |
|-----------|--|----------|---|---------------------|-------------------------------|
| Colombia  | Universidad Cooperativa de Colombia                            | UCC      | UNIVERSIDAD COOPERATIVA                             | University          | https://www.ucc.edu.co/       |
| Ecuador   | Universidad Nacional del Chimborazo                            | UNACH    | UNIVERSIDAD<br>NACIONAL DE<br>CHIMBORAZO            | University          | https://www.unach.edu.<br>ec/ |
| Argentina | Universidad Nacional del Litoral                               | FICH-UNL | FICH UNL+FACULTAD DE INGENIERÍA Y CIENCIAS HÍDRICAS | University          | https://www.unl.edu.ar/       |
| Uruguay   | Latitud - Fundación del Laboratorio<br>Tecnológico del Uruguay | Latitud  | lati o  | Research Centre     | https://latitud.org.uy/       |





# Where will the exchanges take place?



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621,000€

Research stays and knowledge transfer (Secondments) among all partners:

- 83 secondments 135 person/months
- 49 participants
- 45% women, 40% ESR

The management and calendar of the stays is based on the knowhow of each partner, on the objectives of the project and on the work packages.

**Secondments** 

| D  | Profile | Male or     | Sending      |             |          |        |                  |            |         |          | Months      |         | _    |                      |                       |        |               |               |        | -      | _       |       | _ |
|----|---------|-------------|--------------|-------------|----------|--------|------------------|------------|---------|----------|-------------|---------|------|----------------------|-----------------------|--------|---------------|---------------|--------|--------|---------|-------|---|
| _  |         | Female      | organisation | 1 2 3       | 4 5 6 7  |        | 11 12 13         |            |         | 20 21 22 | 23 24 25 20 |         |      |                      | _                     | 35 36  | 37 38         |               |        | 2 43 4 | 44 45   | 46 4  | 7 |
| 1  | ER      | М           | UC           |             | 1,b FIG  | CH     | $\perp$          | 1,b        | _       |          |             | 4,b UI  | _    | ECORES               | Vo 4,d                | Ш      | 3,8           | a UC          |        | Щ      |         | Ш     | _ |
| 2  | ER      | F           | UC           |             |          |        |                  | 1,         | b INO   | 1,b FICH |             | 4,      | ,c U | NACH                 |                       | Щ      |               |               | 4,b    | UCC    |         |       |   |
| 3  | ER      | F           | UC           |             |          |        |                  |            |         | _        | JNACH       |         | _    |                      | 3,d IN                | ЮС     |               |               |        | 3      | B,d CO  | cc    |   |
| 4  | ER      | M           | UPM          |             |          |        |                  |            |         | 1,b INOC |             |         | 4,d  | Lat UNA              | 4,d                   | 4,0    | :co           |               |        | Ш      |         |       |   |
| 5  | ER      | M           | LS-IWC       | 1,b UCC     |          |        |                  |            |         |          |             |         | Ш,   |                      |                       |        |               |               |        | Ш      |         |       |   |
| 6  | ER      | F           | LS-IWC       |             |          |        |                  |            | ш       |          |             |         | Ш    | <mark>1,b</mark> սcc |                       |        |               |               |        | Ш      |         |       |   |
| 7  | ER      | F           | LS-IWC       |             |          |        |                  |            | 2,c INC |          |             |         | 3,a  | UCC                  |                       |        | Ш             |               |        | Ш      |         |       |   |
| 8  | ESR     | М           | LS-IWC       |             |          |        |                  |            |         |          |             |         |      |                      |                       | 3,b \  | JCC           |               |        |        |         |       |   |
| 9  | ESR     | F           | LS-IWC       |             |          |        |                  | 2,c INOC   |         |          |             |         |      |                      |                       |        |               |               |        |        |         |       |   |
| 10 | ER      | M           | LS-IWC       |             |          |        |                  |            |         |          |             |         | 3,b  | UCC                  |                       |        |               |               |        |        |         |       |   |
| 11 | ER      | M           | SGGW         |             |          |        |                  |            |         | 1,b FIC  | 4           |         | 2,c  | UCC                  |                       |        |               |               |        |        |         |       |   |
| 12 | ESR     | F           | SGGW         |             |          |        |                  |            |         | 1,b FIC  | 4           |         | 2,c  | UCC                  |                       |        |               |               |        |        |         |       |   |
| 13 | ESR     | F           | SGGW         |             |          |        |                  | 1,b        | UCC     |          |             |         |      |                      |                       |        |               | 3,            | d INOC | 3      | 3,d INC | _     |   |
| 14 | ESR     | F           | WUT          |             |          |        |                  |            |         | 1,b      | co          |         |      |                      |                       |        |               | 1,            | bucc   | 3      | B,d cc  | c     |   |
| 15 | ER      | F           | BANGOR       |             |          |        |                  |            | 1,b     | ICH      |             |         |      |                      |                       |        |               |               |        |        |         |       |   |
| 16 | ER      | М           | BANGOR       |             |          |        |                  |            |         | 3,b UCC  |             |         |      |                      |                       |        | 2,0           | C INO         |        |        |         |       |   |
| 17 | ER      | F           | BANGOR       |             |          |        |                  |            |         | 2,c INO  |             | Ш       |      |                      |                       |        | 2,0           | c INO         |        | $\Box$ |         |       |   |
| 18 | ER      | М           | BANGOR       |             |          |        |                  |            |         |          |             | 4,a UCC |      |                      |                       |        |               |               |        |        |         |       |   |
| 19 | ESR     | М           | AUTH         |             |          |        |                  |            |         | 3,d INC  |             |         |      |                      |                       |        |               |               |        |        |         |       |   |
| 20 | ER      | F           | AUTH         |             |          |        |                  |            | 1,b     | ссс      |             |         |      |                      |                       |        |               |               |        |        |         |       | J |
| 21 | ESR     | F           | AUTH         |             |          |        |                  |            |         | 2,b INC  |             |         |      | <mark>2,b</mark> INC |                       |        |               |               | П      | $\Box$ |         |       | 1 |
| 22 | ER      | М           | IChF         |             |          |        |                  |            |         | 4,d ucc  | 2,b QAI     |         | 2,b  | ucc                  |                       | П      |               | П             |        | $\Box$ |         |       | T |
| 23 | ER      | М           | INOCURE      |             |          |        |                  | 2,b UC     |         |          |             |         |      |                      |                       |        |               |               |        |        |         |       | 1 |
| 24 | ESR     | М           | INOCURE      |             |          |        |                  | LS-IW      | /C 2,b  |          |             |         | Т    |                      |                       |        |               |               |        |        |         |       |   |
| 25 | ESR     | F           | INOCURE      |             |          |        |                  | 1,b LS-IW  | C       |          |             |         | Т    |                      |                       |        |               | П             |        | П      |         |       |   |
| 26 | ESR     | М           | INOCURE      |             |          |        |                  |            |         | 4        | ,b UC       |         | Т    |                      |                       |        |               |               |        |        |         |       |   |
| 27 | ESR     | F           | INOCURE      |             |          |        |                  |            |         |          |             | 1,      | d AL | тн                   |                       |        |               |               |        |        |         |       |   |
| 28 | ESR     | М           | INOCURE      |             |          |        |                  |            |         |          |             |         |      | BAN                  | IGOF <mark>2,b</mark> |        | П             | П             |        | П      |         |       |   |
| 29 | ESR     | F           | INOCURE      |             |          |        |                  |            |         |          | 1,b SC      | GGW     |      |                      |                       |        | П             | П             |        | П      |         |       |   |
| 30 | ER      | М           | TWI          |             |          |        |                  |            |         | 1,d AUTH |             |         | Т    |                      |                       |        |               | <b>3,a</b> U0 | c      |        |         |       |   |
| 31 | ER      | F           | TWI          |             |          |        |                  |            |         | 1,d AUTH |             |         |      |                      | П                     |        | П             | <b>3,a</b> U0 | c      | П      |         |       |   |
| 32 | ER      | М           | VoCATE       |             |          |        |                  |            |         |          |             | 4,      | a UC |                      | П                     |        | П             |               |        | П      |         |       |   |
| 33 | ER      | М           | QAI          |             |          |        |                  |            |         |          |             |         |      |                      |                       |        |               |               | 4,a L  | UCC    |         |       | T |
| 34 | ER      | F           | ECORES       |             |          |        |                  |            |         |          | UC 4,b      |         |      |                      |                       |        |               |               |        |        |         |       | Ť |
| 35 | ER      | М           | ECORES       |             |          |        |                  |            |         |          | 1,b UC      |         | Т    |                      |                       |        |               |               |        | $\Box$ |         |       | Ť |
| 36 | ER      | F           | ECORES       |             |          |        |                  |            |         |          |             |         | Т    |                      |                       |        |               |               | $\Box$ | 3      | 3,d SGC |       | Ť |
| 37 | ER      | М           | UCC          | 4,b         | UC       |        | $\neg \neg \neg$ |            |         |          |             | 1,d WUT | Г    |                      |                       | 1,d    | rwi           |               |        |        |         |       | T |
| 38 | ESR     | F           | UCC          |             |          | 3,a U  | с                |            |         |          |             |         |      |                      |                       |        |               |               |        |        |         |       | Ť |
| 39 | ER      | F           | UCC          |             |          |        |                  |            |         | 3,d U    |             |         | Т    |                      |                       |        | <b>3,a</b> Vo | CATE          | $\Box$ | $\Box$ |         |       | Ť |
| 40 | ESR     | М           | UCC          |             |          |        |                  |            |         | 4,b UC   |             |         |      |                      |                       |        |               |               | $\Box$ | $\Box$ |         |       |   |
| 41 | ER      | М           | UCC          |             |          |        |                  |            |         |          |             |         |      |                      | 4,a 10                | hF     |               |               | $\Box$ | $\Box$ |         |       | 1 |
| 42 | ESR     | М           | UNACH        | 1,b UC      |          |        |                  |            |         |          | ,c UC       | 4,      | b UF | M                    |                       | 1,b    | uc            | $\Box$        |        | $\Box$ |         |       |   |
| 43 | ER      | М           | Latitud      |             |          |        |                  |            |         | 1        | ,b uc       |         |      |                      |                       |        |               |               | $\Box$ | $\Box$ |         |       | 1 |
| 44 | ESR     | М           | FICH-UNL     |             |          |        |                  |            |         | 1        | ,b uc       |         |      |                      |                       |        |               |               | $\Box$ | $\Box$ |         |       | 1 |
| 45 | ER      | М           | FICH-UNL     |             |          |        |                  |            | 1,b JPN |          |             |         | Т    |                      |                       |        |               |               | $\Box$ | $\Box$ |         |       | 7 |
| 46 | ER      | М           | FICH-UNL     |             |          |        |                  |            |         | 1,b uc   |             |         |      |                      |                       |        |               |               | $\Box$ | $\Box$ |         |       | 1 |
| 47 | ESR     | F           | FICH-UNL     |             |          |        |                  |            |         |          | ,b uc       |         |      |                      |                       |        |               |               |        | $\Box$ |         | П     |   |
| 48 | ESR     | М           | FICH-UNL     |             |          |        |                  |            |         |          |             |         |      |                      | 4,a UC                |        |               |               | $\Box$ | $\Box$ |         | П     | 1 |
| 49 | ESR     | F           | FICH-UNL     |             |          |        |                  |            | 4,a     | UC       |             |         |      |                      |                       | $\Box$ |               | $\Box$        | $\top$ | $\Box$ |         |       | 1 |
|    |         | Tasks       |              | Task 1.1    | Task 1.2 | Task 1 | 1.3 Ta:          | sk 1.4     | ask 1.5 | Task 2   | .1 Task     | 2.2 T   | ask  | 2.3                  | Task                  | 2.4    | Task          | 2.5           | Task   | 2.6    | Ta      | sk 3. | 3 |
|    |         | ansfer mech | aniem        | (1) researe |          | _      | _                | n of equip |         |          | meetings    |         |      |                      |                       |        |               |               |        |        |         |       |   |





# Where will the exchanges take place?



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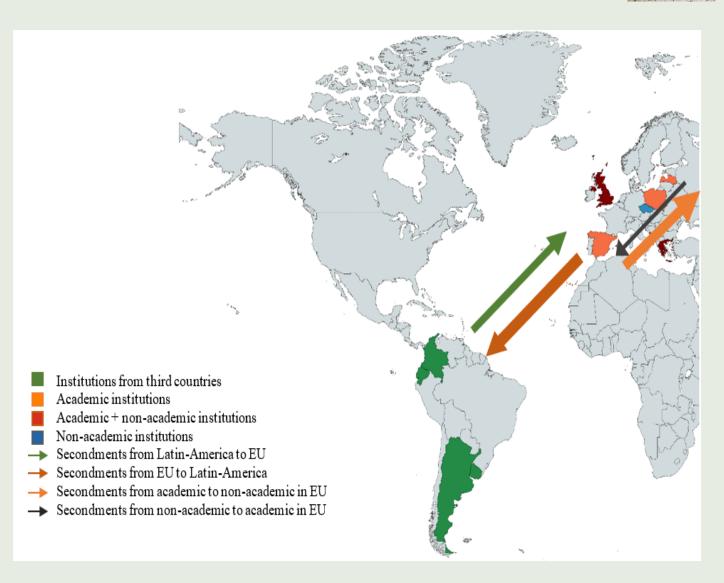
621,000€

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- 49 participants
- 45% women, 40% ESR

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#### **Secondments**





# What would I like to contribute?



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# Impact aligned with:

- the key objectives of the EU for international cooperation in R&D&i.
  - (i) food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the bioeconomy; and
  - (ii) climate action, environment, resource efficiency and raw materials.
- the objectives of the European Green Deal
- the sustainable development goals





# What would I like to contribute?





- Strengthening cooperation in research and innovation through the mobility of participants, the training of young researchers and lifelong learning opportunities for more experienced people.
- More attention to sustainable development, education and connection with the reality of vulnerable areas of Colombia and Ecuador. Gender inequality.
- Relationship with the concept of biorefinery in different areas (rural, non-rural, vulnerable areas and SMEs). <a href="https://www.bbi-europe.eu/">https://www.bbi-europe.eu/</a>
- Economic development is reinforced by the innovation of adhesives and additives and other recovery alternatives that are obtained from cellulosic biomass residues-Bioeconomy.
- Carry out a communication strategy throughout my life:
  - Open access
  - All society
  - Connection with vulnerable areas





# Problems during my life



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- Changing of the dates and secondments
- Institutions leaving the project
- Conflicts





Adaptation to the new situations (new agreements: having confidence)

Taking into account the real objectives/mission of the project!



## Conclusions





- Great connection and trust, as well as having a similar philosophy
  of life or mission among the main people that make up the
  project.
- Great adaptation
- Great social impact, being satisfied with what has been achieved.