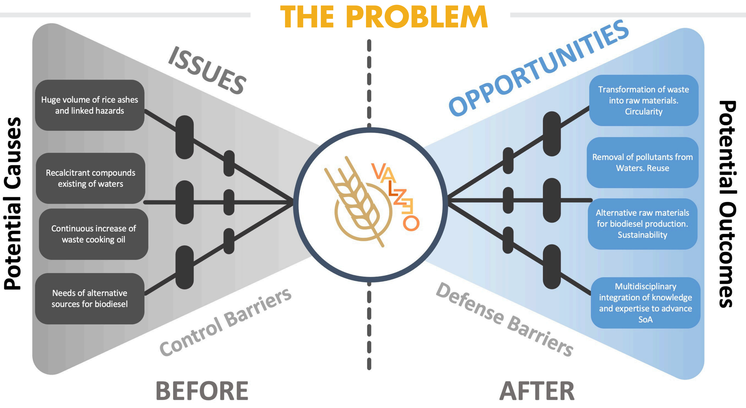
Valorisation of agro-industrial wastes via the production of zeolite-based composite materials and their use in environmental remediation and biofuel production

THE PROBLEM



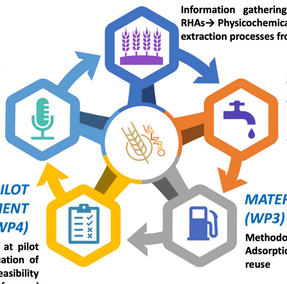
THE APPROACH

COLLECTION, SELECTION, CHARACTERIZATION OF RAW MATERIAL (WP1)

Information gathering→ Collection, shorting, purification of RHAs→ Physicochemical characterization → Optimization of SiO2 extraction processes from RHAs

DISSEMINATE & COMMUNCIATE (WP5)

CDP → Promotional kit → Campaigns → Monitoring → Outreach activities →Assessment of technology transfer



DEVELOPMENT OF FUNCTIONAL MATERIALS FOR WWT (WP2)

Synthesis of hierarchical zeolites→ Synthesis of MONs and encapsulation→ Synthesis of MOFs → Theoretical modelling → Physicochemical characterization

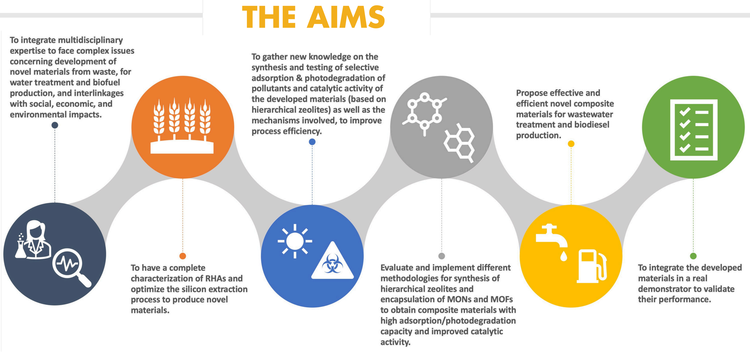
VALIDATION OF MATERIALS AT PILOT SCALE AND REAL ENVIRONMENT (WP4)

ENDUSERS IDENTIFICATION→ WWT validation at pilot plant→ Evaluation at treatment plant→ Evaluation of biodiesel obtained→ Scalability and economic feasibility studies → Assessment of technology transfer and exploitation → Contacts with EU standardization

MATERIALS' VALIDATION AT LAB SCALE (WP3)

Methodologies for pollutants quantification→ Adsorption studies→ Catalytic studies→ Evaluation for reuse

THE AIMS



TARGET GROUPS

Media

publication editors, also interested in the project results

Researchers, innovators, entrepreneurs

especially young people - interested in opportunities offered by the project to increase their visibility, being in contact with a high-level international community with the same areas of interest.

Policy makers

interested in Joint Action Plan and its relation to public support to R&D and Innovation in WEF priorities

Industrial players

especially SMEs, in search for new trends and products for the future

Public Administrations

interested in learning more about how successfully implement innovative strategies in the valorization of rice ashes, pollutants removal and bio-based industries

Other funded projects

interested in the project outcomes

CAPACITY BUILDING

INTERDISCIPLINARY

Stimulating interdisciplinary research, mobility and networking within wine value chain

SKILLS

Improved skills of individuals (Grant writing, Knowledge transfer issues, Ethics and legal aspects, Cultural integration, Entrepreneurship culture)

SYNERGIES

Creation of new synergies for brain-gain and training efficiently at EU-UK-CUBA level and stimulate new collaborations

SDGS

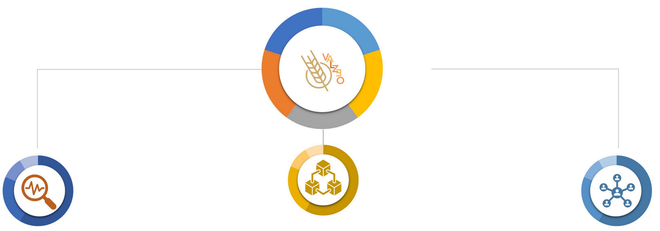
Sustainable development goals and strategic approach to strengthen international cooperation

SDG2
SDG4
SDG6
SDG7
SDG8
SDG9
SDG12
SDG15

ACCEPTANCE

Increase acceptance of new technologies that will facilitate access to new and emerging markets, job creation potential, sustain attractiveness for investors and entrepreneurs and facilitate public-private cooperation through appropriate investments

EXPECTED OUTPUTS



Dissemination

10 articles in high-impact peer reviewed journals. **4** Network-wide training events. **3** modules of on-line (as MOOCs for e-learning to be capitalized through webinar sessions) training material addressing ToKs. **10** oral presentations at international and national conferences and **20** posters presentation. **3** policy briefs for recommendation of new technologies.

Communication

1 Official project website. **+300** downloads via Open Access. **16** Participations at EU Researchers' Night for **4** years and Biennial edition of ESOF. **4** VALZEO annual open days at UAB, UPO, UNIVPM and UH. **4** informal Science Cafes and **4** brokerage events for speed dating among attendants for quick exchange of information and outputs during the **4** scheduled user workshops. **2** visits to Large Infrastructure Facilities in ES and IT. **4** trade press and presentations at fairs and trade shows.

Exploitation

Synthesis and characterization of novel multifunctional zeolites, MONs, and MOFs as water adsorbent or catalysers for biodiesel production (*Patenting, licensing, service creation or consultancy services).* Adsorbent materials within integrated pilot plants for water treatment (*Renting, joint venture, collaborative research*).

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