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UNIVERSITAT CENTRAL
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tecnio
catalonia
ACCIÓ
Generalitat
de Catalunya
Fins a 31/12/2023

Daniel Egas
Researcher in environmental sustainability at the BETA Technology Center

Beta
Biodiversitat, Ecologia, Tecnologia Ambiental i Alimentària

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EU funded INNOTRANSLACT Project

Interreg POCTEFA
UNIÓN EUROPEA
UNION EUROPÉENNE
INNOTRANSLACT

Its ultimate objective is to promote de development of a more **sustainable traditional dairy sector**; and therefore, increase its competitivity in the European market.

Environmental assessment of nine traditional/artisanal dairy production systems located at the north-east of Spain

Basque country

Catalunya

(3 systems)

(4 systems)

(2 systems)

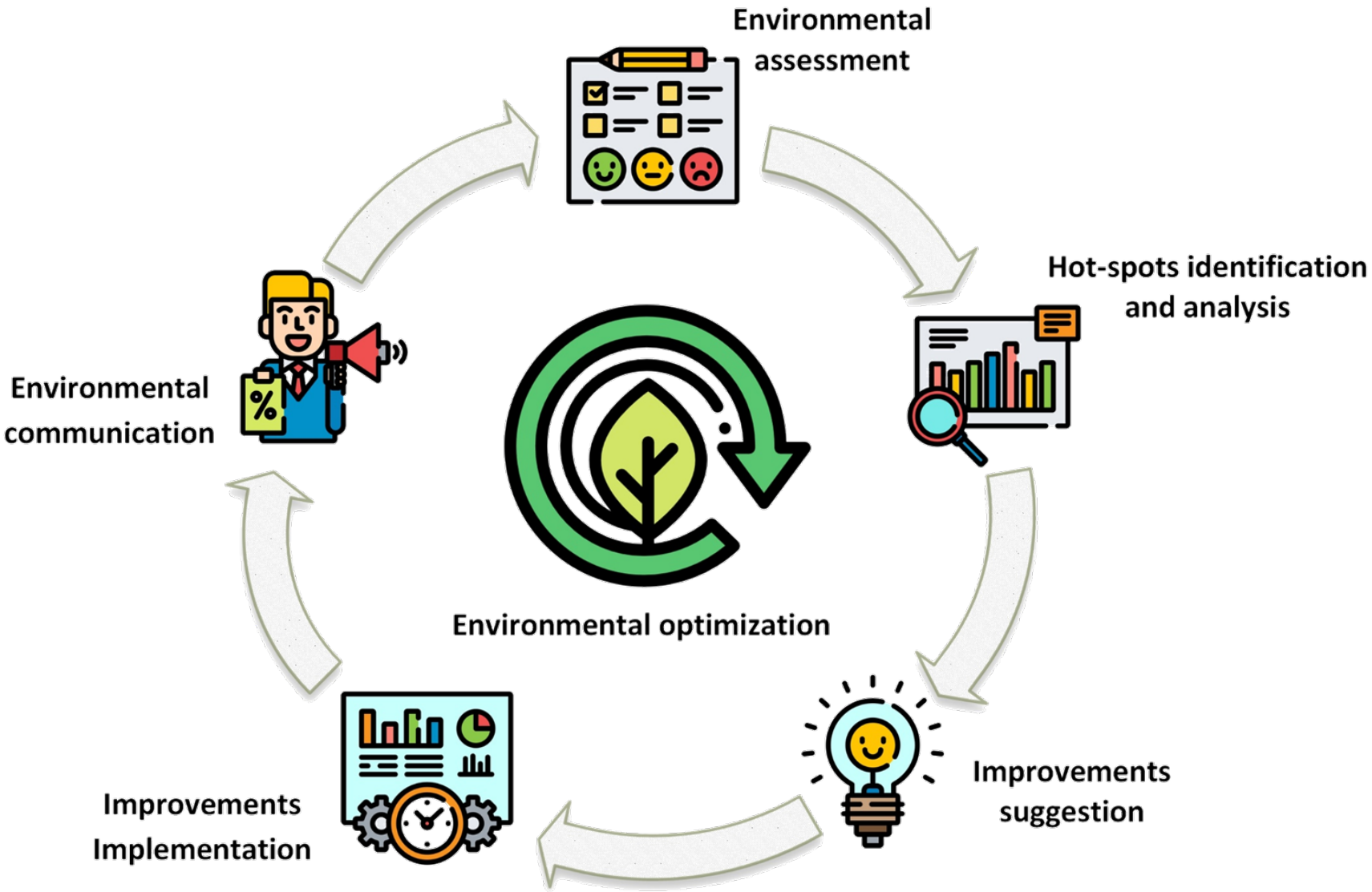
Raw milk

Cheese

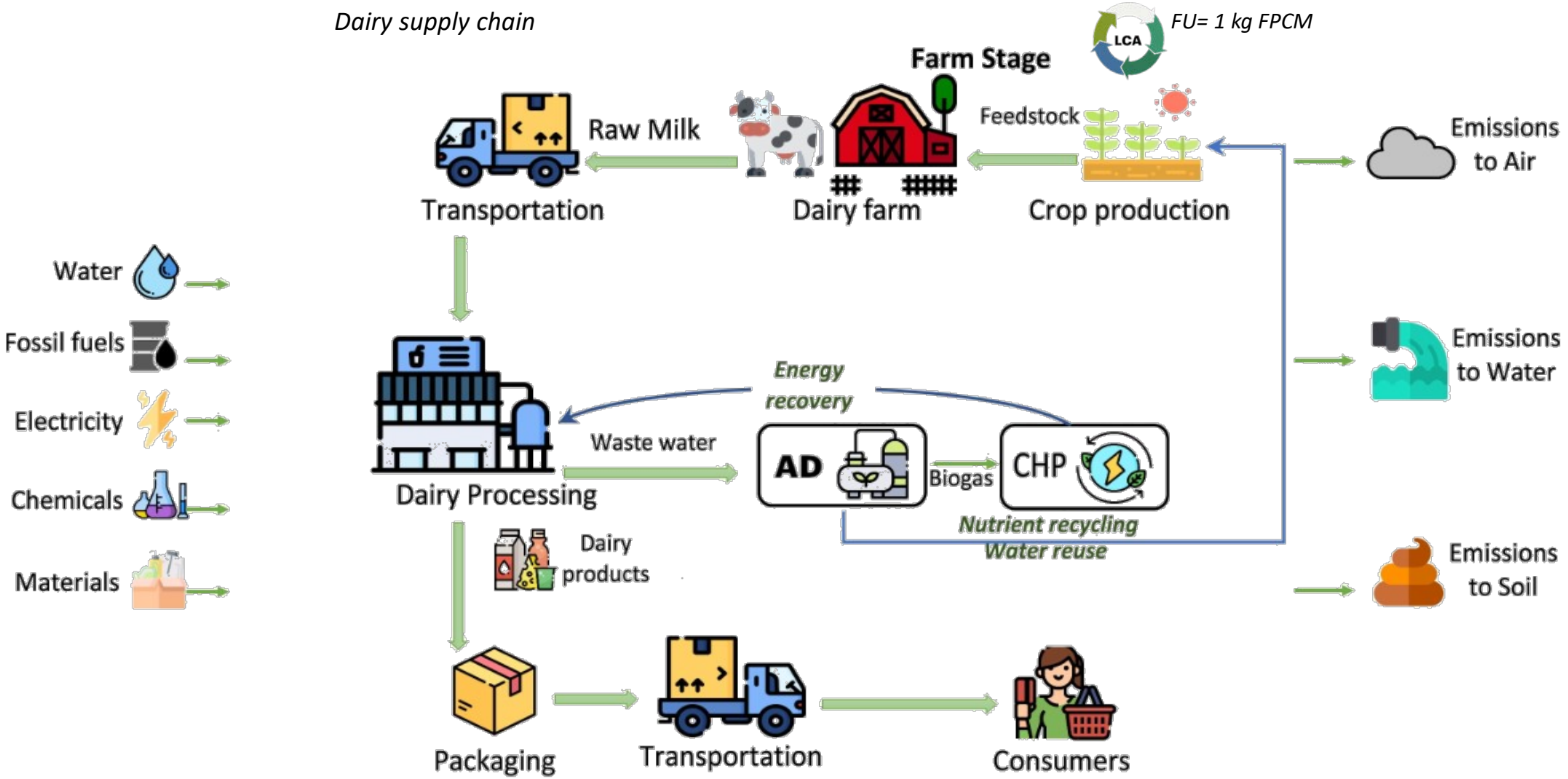
Yogurt

What is the environmental performance of the artisanal dairy products?

How can we improve its current environmental performance ?

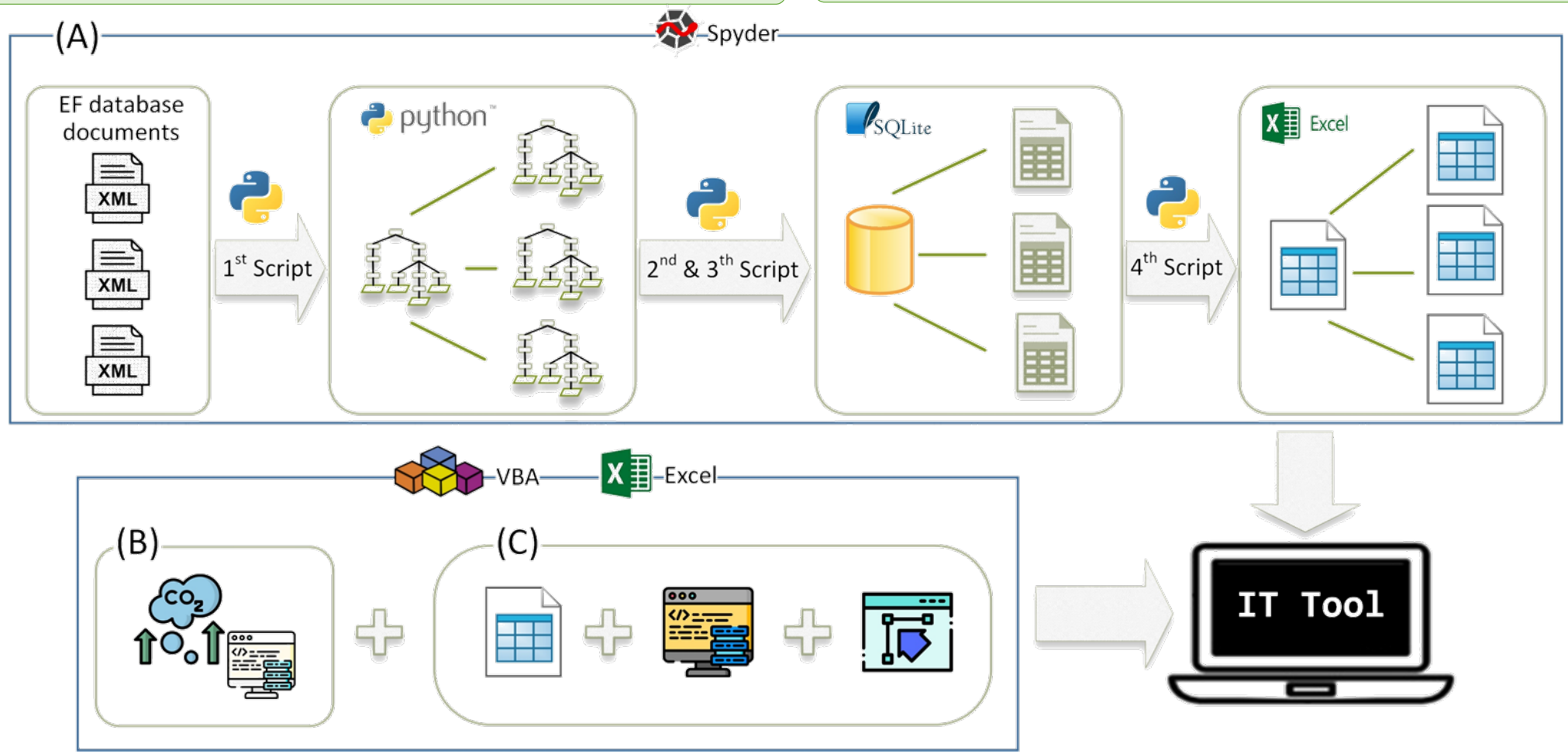

Environmental assessment
Hot-spots identification and analysis
Improvements suggestion
Improvements Implementation
Environmental communication
Environmental optimization

Dairy supply chain



Step A and B: Background procedures

Step C: User Interface and Data management



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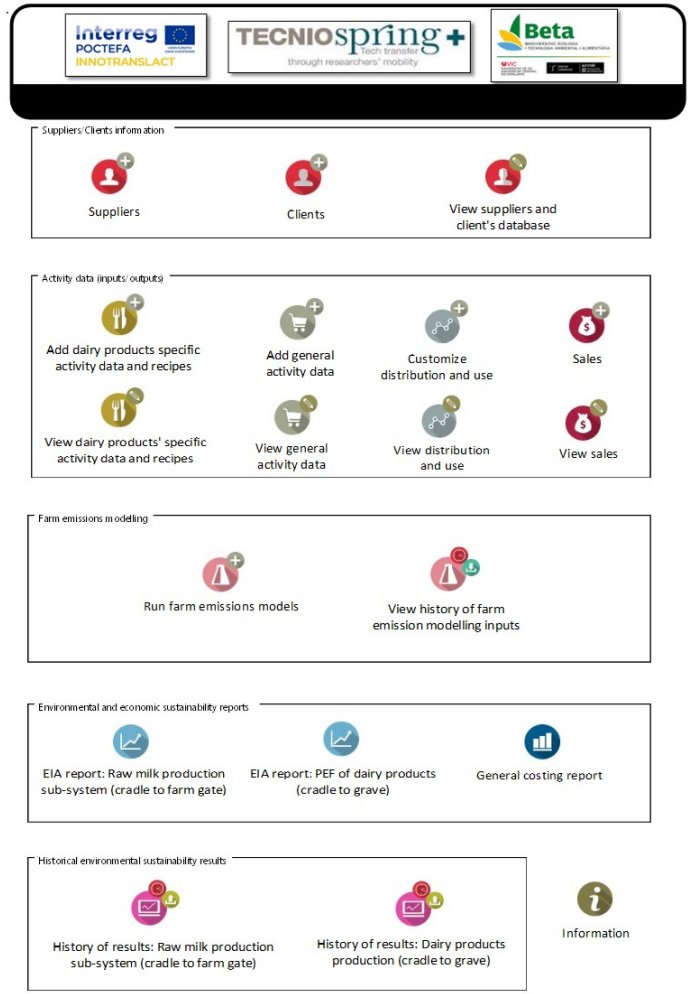
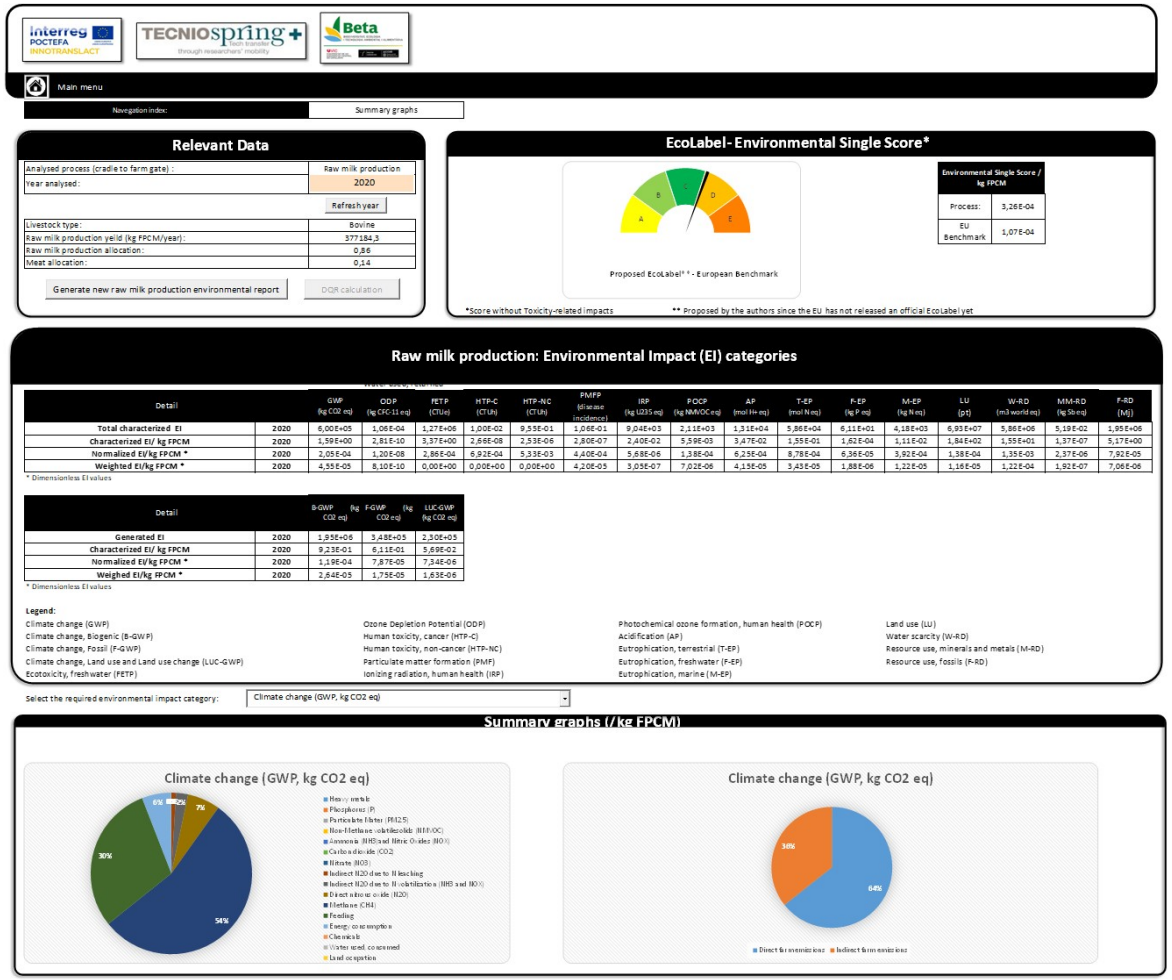
Excel Objects used as databases and to report results as graphs or tables





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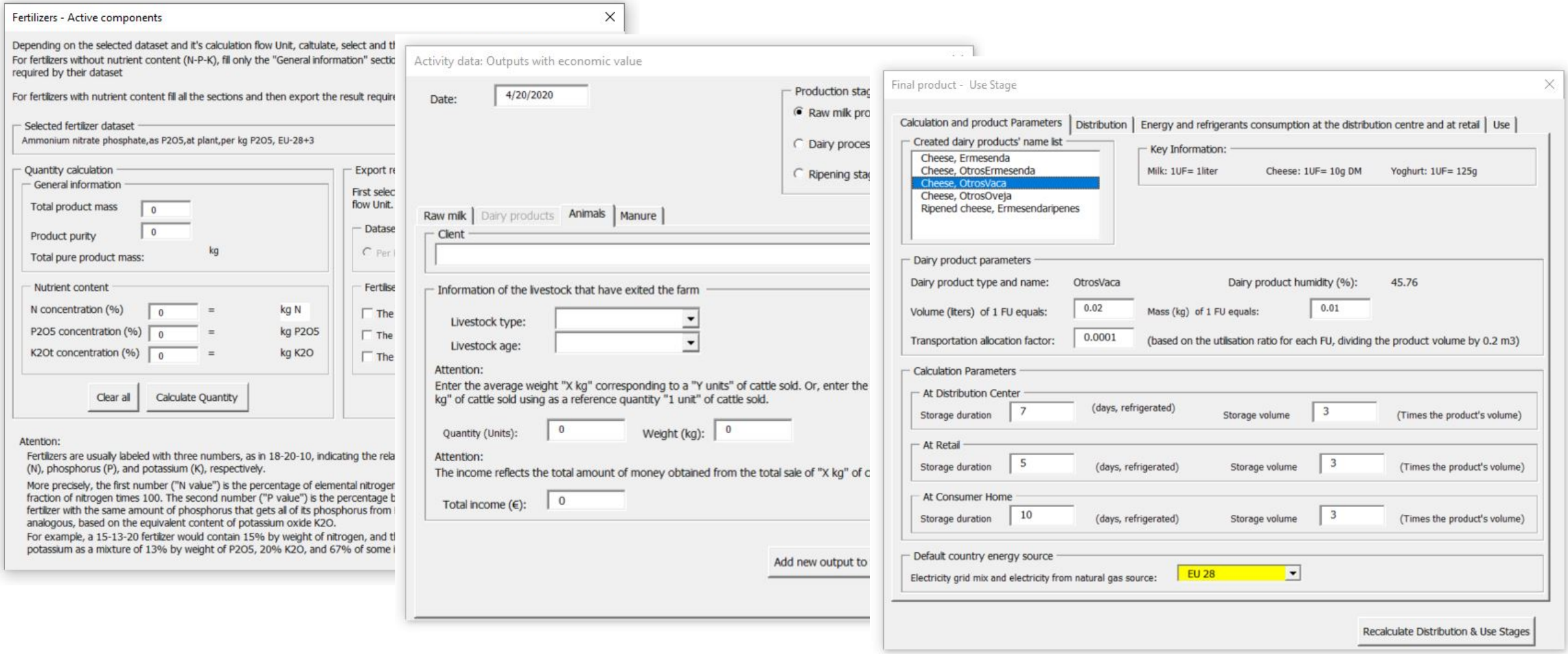

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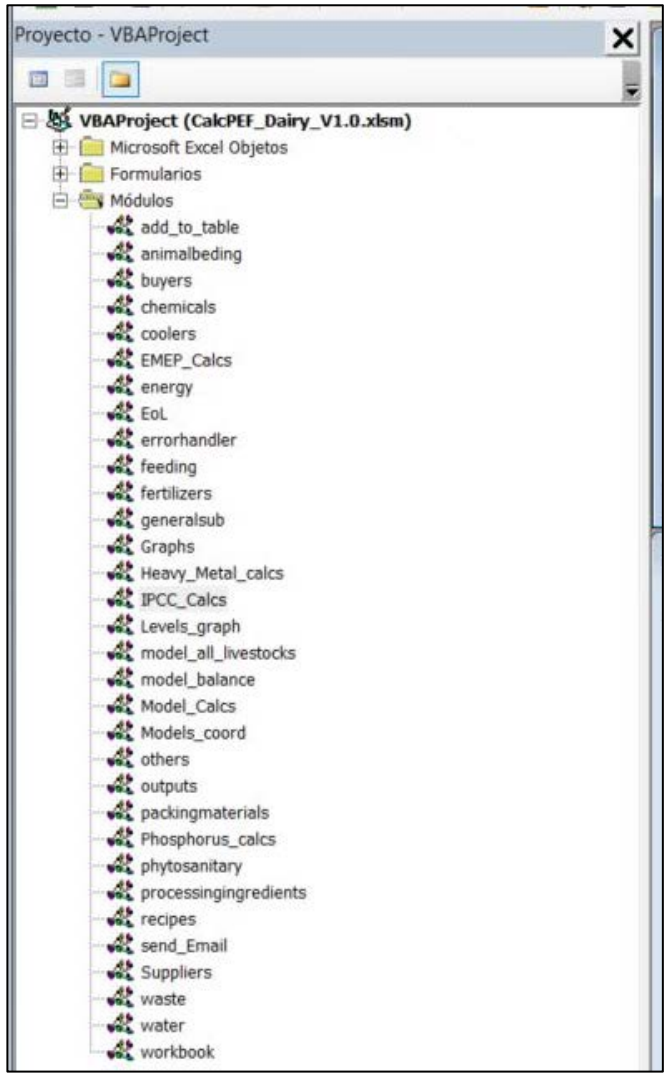
- PEF calculation criteria, parameters and formulas
- Data Quality Rating (DQR) formula
- Circular Footprint Formula (CFF)
- PEF allocation rules and formulas
- Biophysical allocation (IDF, 2015)
- Dry matter content allocation
- PEF emission models for direct farm emissions



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- PEF calculation criteria, parameters and formulas
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- PEF emission models for direct farm emissions

CalcPEF_Dairy_V1.0.xlsm - IPCC_Calcs (Código)

(General) | N2O_E_from_GrazedSoils

```
Sub N2O_E_from_GrazedSoils()
'N amount exctreted at pasture range and padock (1)
Fprp = AAP * MMS(1) * Nex_t
Select Case Model_Calcs.livestockindex
    Case Is = 2, 3  'sheep or goat
     N2O_N_PRP = Fprp * EF3_prp_so
    Case Is = 1, 4     'cattle or swine
    N2O_N_PRP = Fprp * EF3_prp_cpp
End Select
N2O_D_PRP = N2O_N_PRP * (44 / 28) '(Direct N2O- Manure excretion on the pasture)(kg N2O/year)


End Sub
```

CalcPEF_Dairy_V1.0.xlsm - feeding (Código)

(General) | add_outsidefeeding

```
Public Sub add_outsidefeeding()
Dim LastRow As Integer
'defining the value of the last row
LastRow = s_inputs.Range("A:R").Find("*", Searchorder:=xlByRows, Searchdirection:=xlPrevious).row

'creation and assignation of the farm sales ID
If s_inputs.Cells(LastRow, 1).Value = "ID" Then
s_inputs.Cells((LastRow + 1), 1) = 1
Else
s_inputs.Cells((LastRow + 1
End If

'MsgBox lastrow
'creation of the farm sales
s_inputs.Cells((LastRow + 1
s_inputs.Cells((LastRow + 1
```

```
Public Sub add_outsidefeeding()
Dim LastRow As Integer
'defining the value of the last row
LastRow = s_inputs.Range("A:R").Find("*", Searchorder:=xlByRows, Searchdirection:=xlPrevious).row

'creation and assignation of the farm sales ID
If s_inputs.Cells(LastRow, 1).Value = "ID" Then
s_inputs.Cells((LastRow + 1), 1) = 1
Else
s_inputs.Cells((LastRow + 1), 1) = s_inputs.Cells((LastRow), 1).Value + 1
End If

'MsgBox lastrow
'creation of the farm sales data Base
s_inputs.Cells((LastRow + 1), 2) = CDate(frm_inputs.txt_inputs_date)
s_inputs.Cells((LastRow + 1), 9) = year(CDate(frm_inputs.txt_inputs_date))
```

eda

2018
April

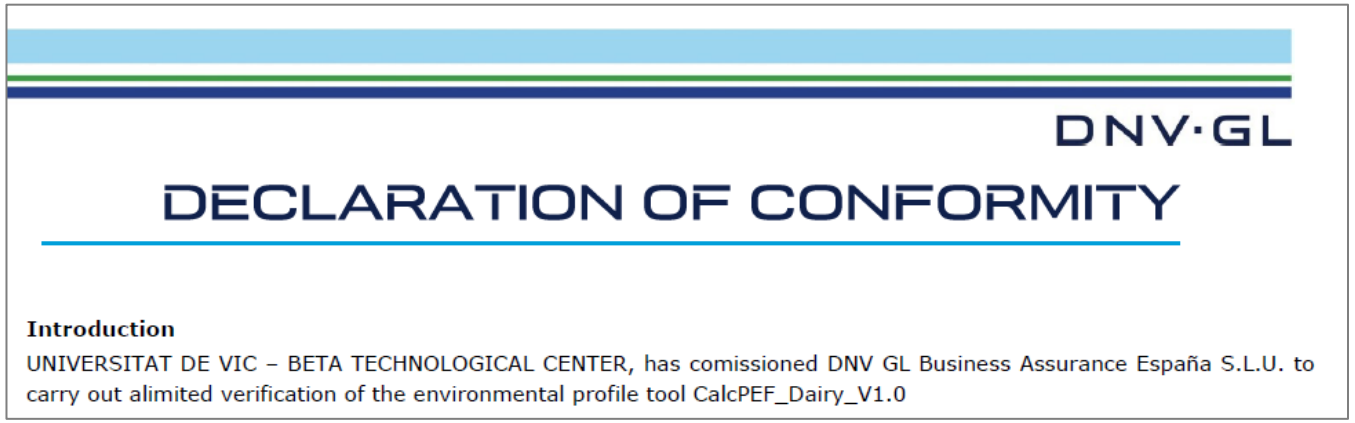
connect to the world of dairy

Product Environmental Footprint Category Rules
for Dairy Products

*Prepared by the **Technical Secretariat**:*
The European Dairy Association (EDA), ACTALIA, the Alliance for Beverage Cartons and the Environment (ACE), the French Environment and Energy Management Agency (ADEME), BEL group, French Commissariat Général au Développement Durable (CGDD), Constantia Flexibles, Coopérative Laitière de la Sèvre (CLS), Centre National Interprofessionnel de l'Economie Laitière & Association de la Transformation Laitière Française (CNIEL/ATLA), Danone, DMK GROUP, the European Container Glass Federation (FEVE), Fonterra, FrieslandCampina, the International Dairy Federation (IDF), the Institut français de l'élevage (IDELE), REWE Group, and Quantis

Version number: Version 1.0 (accepted by the EF steering committee on 19 April 2018)
Date of publication: 25 April 2018
Time validity: 31 December 2020

- Complies with the specifications set out in the European METHODOLOGy PEF (Environmental Product Footprint) https://eplca.jrc.ec.europa.eu/permalink/PEFCR_guidance_v6.3-2.pdf
- PEFCR for dairy products (Specific rules for assessing the environmental footprint of dairy products) https://ec.europa.eu/environment/eussd/smgp/pdf/PEFCR-DairyProducts_2018-04-25_V1.pdf



DNV·GL

DECLARATION OF CONFORMITY

Introduction

UNIVERSITAT DE VIC – BETA TECHNOLOGICAL CENTER, has comissioned DNV GL Business Assurance España S.L.U. to carry out alimited verification of the environmental profile tool CalcPEF_Dairy_V1.0

Tested and validated in real productions:
Environmental verification of Ermesenda cheese Produced by Formatgeria Mas D'Eroles

DNV·GL

DNV GL Declaración de Conformidad para Formatgeria Mas d'Eroles

Introducción

FORMATGERIA MAS D'EROLES ha encargado a DNV GL Business Assurance España SLU llevar a cabo una verificación del cálculo de huella de carbono para la siguiente unidad funcional (UF) expresada en toneladas.

- 10 gramos de materia seca eq. de queso Ermesenda

FORMATGERIA MAS D'EROLES tuvo la responsabilidad de comunicar el cálculo de emisiones o "huella de carbono" de gases de efecto invernadero expresados como CO_2 equivalente de acuerdo a la norma de referencia ISO 14067:2018

Carbon foot print eco-label issued by DNV-GL and labelled Ermesenda cheese

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Journal of Cleaner Production 215 (2019) 1149–1159

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Contents lists available at ScienceDirect

Journal of Cleaner Production

journal homepage: www.elsevier.com/locate/jclepro

Implementation of the Product Environmental Footprint Category Rules for dairy products: An approach to assess nitrogen emissions in a mass balanced dairy farm system

D. Egas [a], V. Vasilaki [b], E. Katsou [b], P. Stanchev [b], S. Ponsá [a], J. Colon [a,*]

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[b] Department of Civil & Environmental Engineering, Institute of Environment, Health and Societies, Brunel University London, Uxbridge Campus, Middlesex, UB8 3PH, Uxbridge, UK

https://www.sciencedirect.com/science/article/abs/pii/S0959652619301210

Journal of Environmental Management 260 (2020) 110049

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journal homepage: http://www.elsevier.com/locate/jenvman

Research article

$CalcPEF_{Dairy}$: A Product Environmental Footprint compliant tool for a tailored assessment of raw milk and dairy products

D. Egas, S. Ponsá, J. Colon *

BETA Tech Center. (TECNIO Network), University of Vic-Central University of Catalonia, C de La Laura 13, 08500, Vic, Spain

https://www.sciencedirect.com/science/article/pii/S0301479719317670

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Solicitud CalcPEFdairy Tool

Una vez aprobada la solicitud, el usuario recibirá una copia de la herramienta para el cálculo de la Huella Ambiental de Producto en el sector lácteo desarrollada por el Centro Tecnológico BETA en el marco de los proyectos (i) Interreg POCTEFA (Mejora de la competitividad del sector lácteo tradicional transfronterizo) y (ii) OPTIMISM (DSS to optimize the sustainability of the dairy sector, European Commission, H2020. MSCA-COFUND and Catalan Government (ACCIO). TECNIOSPRING+).

Correo *

Correo válido

Este formulario registra los correos. Cambiar configuración

https://docs.google.com/forms/d/e/1FAIpQLSe3H0FMtU5-aIZ6Z07HmsN4t8SEgBEHKGRKFanB_X93c5o8oQ/viewform?usp=sf_link

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Thank you for your attention

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