



IMPAQT

Intelligent Management System for
Integrated Multi-trophic Aquaculture

XVII Congreso Nacional de Acuicultura



This project has received funding from the EU H2020 research and innovation programme under Grant Agreement No 774109

Inma Sánchez Cantero
WP5 leader-Sustainability and
Circular Economy Approach
Mail: isanchez@leitat.org

Introduction

- From May 2018 to April 2021
- Project Budget: 5'883'180 €
- A consortium comprised of 21 partners from different countries: UK, Irlanda, Netherlands, Turkey, France, Portugal, Poland, Spain, Italy, China, Greece,

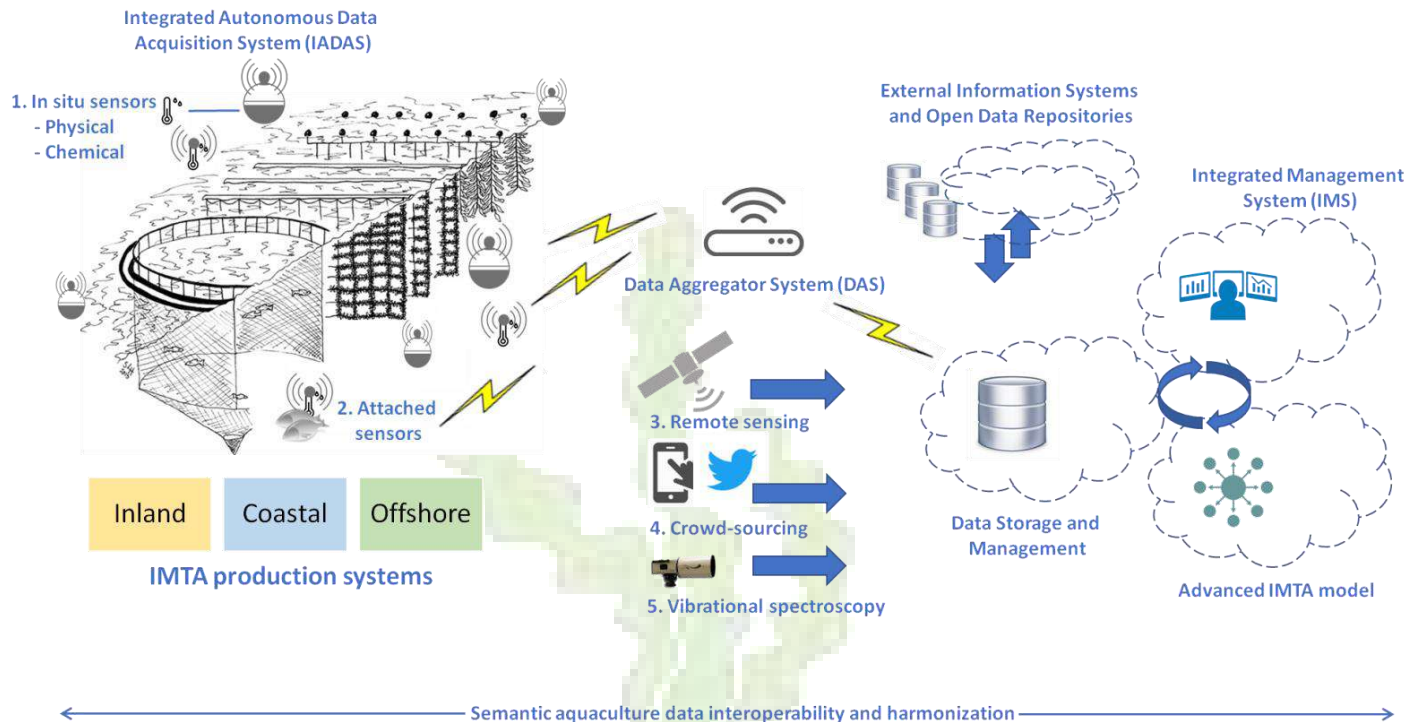


- IMPAQT is driven by 6 pilots, covering geographical differences throughout EU (UK, Netherlands, Ireland, Turkey) and China and different scenarios from inland and coastal to offshore aquaculture systems.

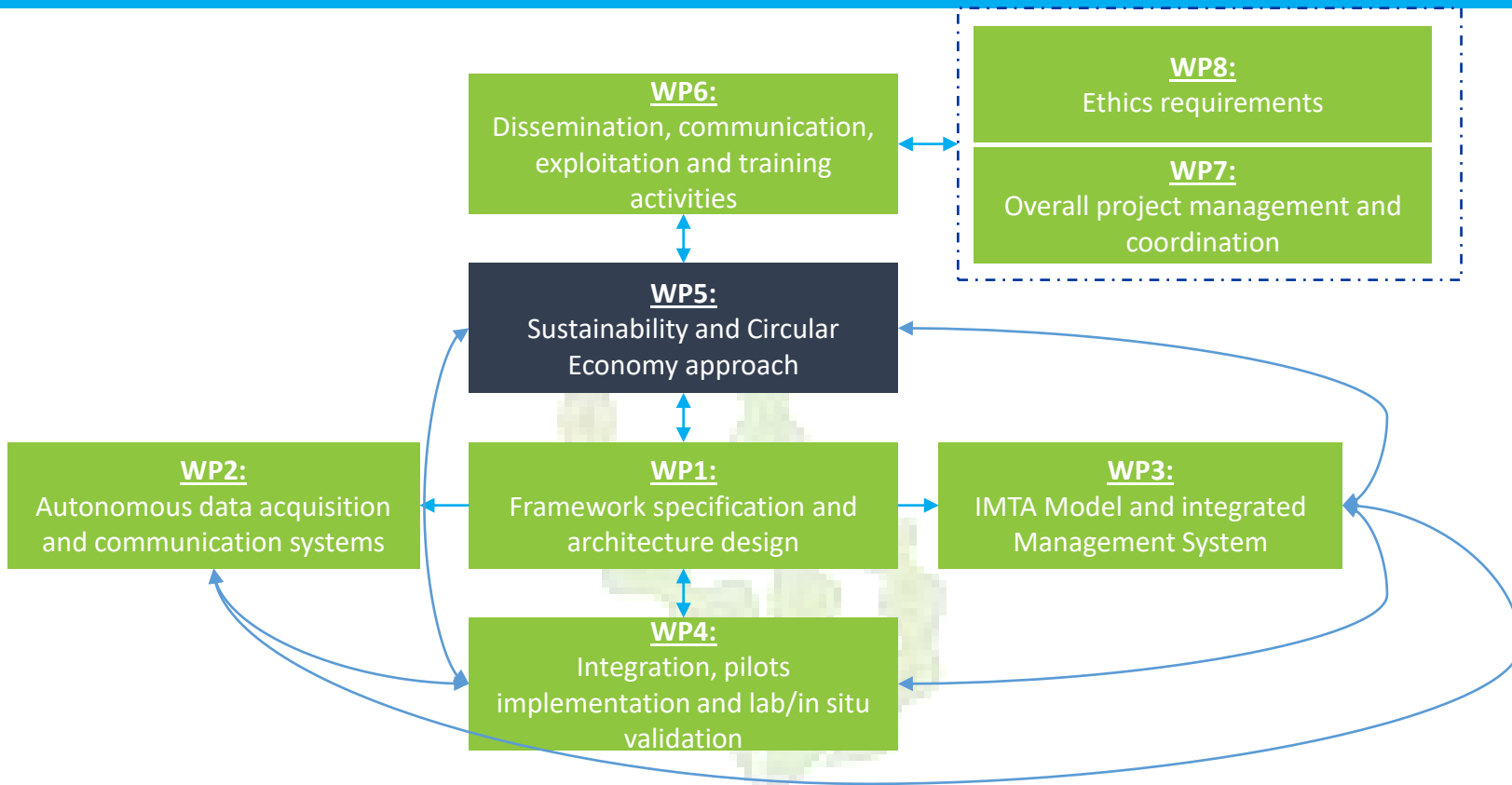
Objectives

- **The overall objective** to develop and validate in-situ a multi-purpose (inland, coastal and offshore productions), multi-sensing (heterogeneous sensors and new/emerging technologies) and multi-functional (advanced monitoring, modelling, data analytics and decision making) management platform for sustainable IMTA production.
 - ✓ Obj.1. To design and implement new/emerging efficient and cost-effective technologies in monitoring and management systems for IMTA production
 - ✓ Obj.2. To validate the Impaqt systems and IMTA model in-situ and the fish/seafood product in laboratory
 - ✓ Obj.3. To demonstrate an optimal sustainable IMTA development in a holistic perspective based on ecosystem services and circular economy principles
 - ✓ Obj.4. To promote an effective transfer of knowledge derived by Impaqt activities to the EU aquaculture stakeholders

High level overview of IMPAQT platform

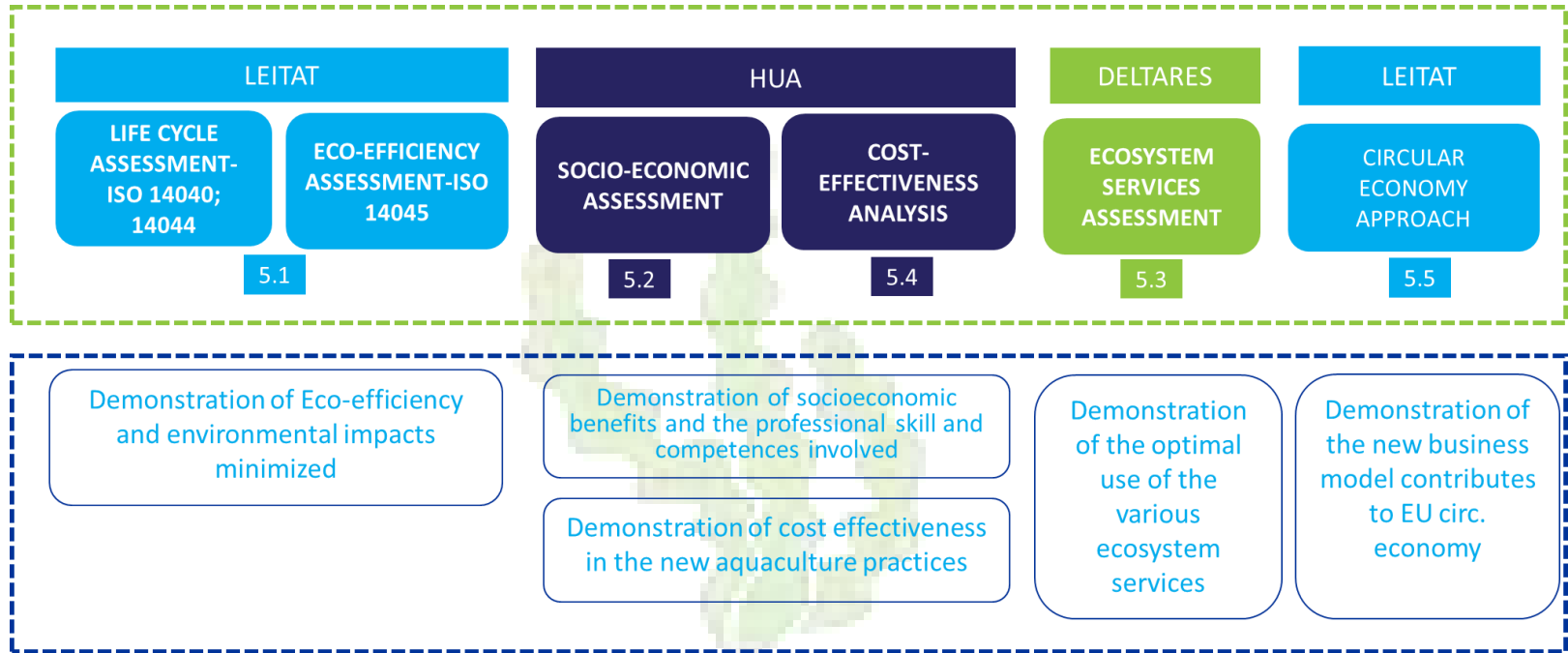


Implementation



WP5- Sustainability and Circular Economy approach

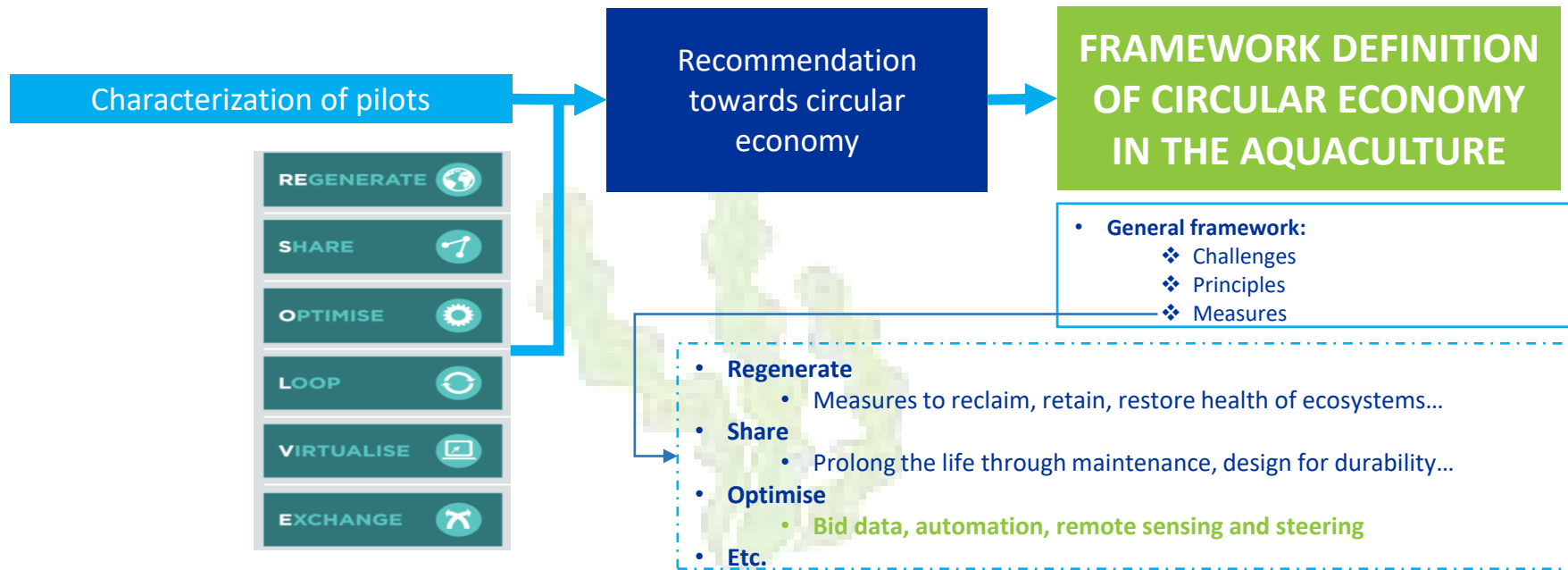
We have to demonstrate the sustainability of IMTA in a holistic perspective based on ecosystem services and circular economy principles.



WP5- Circular business models in IMPAQT Project

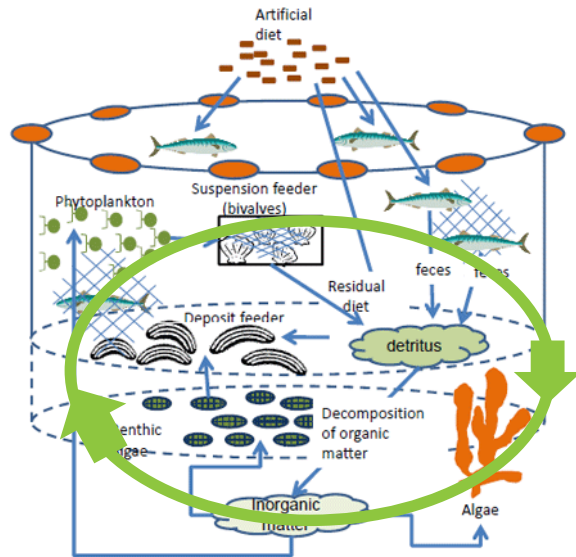
Objective: Demonstration that the new business model contributes to EU circular economy

The new aquaculture production model will be assessed in terms of demonstrating contribution to circular economy.



WP5- Circular business models in IMPAQT Project

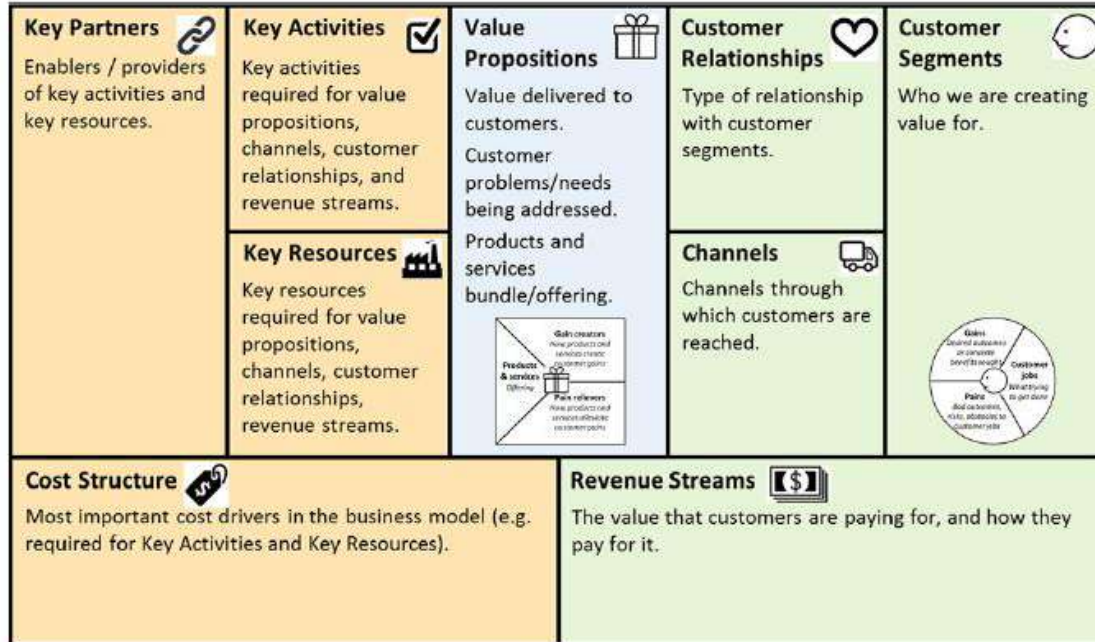
how aquaculture companies with IMTA systems create value while adhering to CE principles?



- Dissolved inorganic nutrients from metabolic and respiration processes, or leached from solid organic waste, including forms such as ammonium and orthophosphates, can be absorbed by inorganic extractive species, such as seaweeds and aquatic plants: **Seaweed performs a circular economy role of removing excess nutrients**
- Small suspended or slow sinking organic particulates generated from feed waste or faeces can be “captured” by organic extractive suspension-feeders, such as shellfish and some grazers.
- Heavier settleable organic solids also generated from feed waste or faeces can be consumed by organic extractive deposit-feeders, such as sea urchins, sea cucumbers, sea worms and deposit-feeding fish (e.g. mullets).

WP5- Circular business models in IMPAQT Project

how aquaculture companies with IMTA systems create value while adhering to CE principles?



- **VALUE PROPOSITION: IMTA SYSTEM**
- **KEY RESOURCES: THE IMPAQT PLATFORM**
- **KEY ACTIVITIES: mitigation of environmental impacts (quantified by LCA)**
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Upcoming activities

- To analyse the mitigation of environmental impacts through the application of a LCA
- To analyse the socio-economic implications along the value chain, through the application of a LCC
- The environmental and socio-economic analysis will be integrated with an Ecosystem Services Analysis- the methodology for this integration is currently under study
- To develop a common framework with the commercial pilot partners related to the incorporation of circular economy principles in the IMTA farms:
 - The IMTA system should be highlighted in the value of this companies
 - The identification of hotspot in the environmental analysis will allow to identify new environmental practices integrating the circular principles





IMPACT

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Thanks!



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