AQUAPEF TOOL

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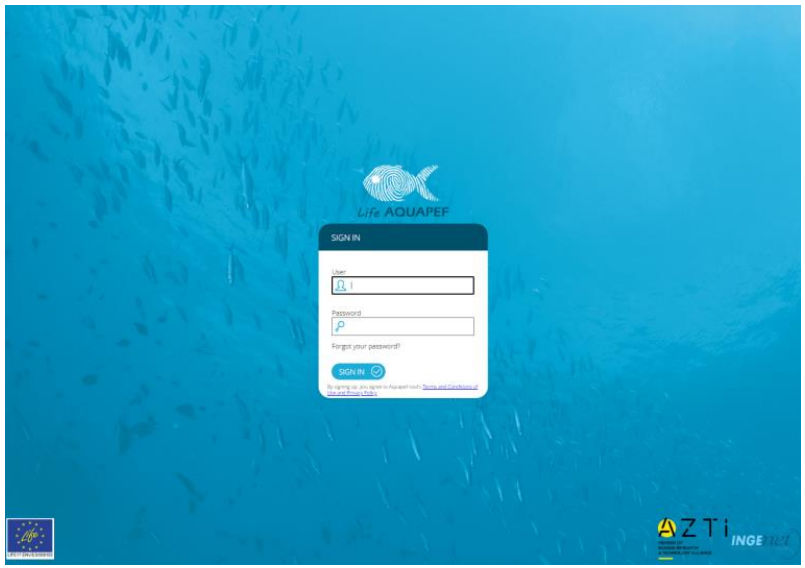
https://lifeaquapef.eu

LIFE17 ENV/ES/000193

Innovative **tool** to **facilitate the evaluation and communication of aquaculture product environmental impact**

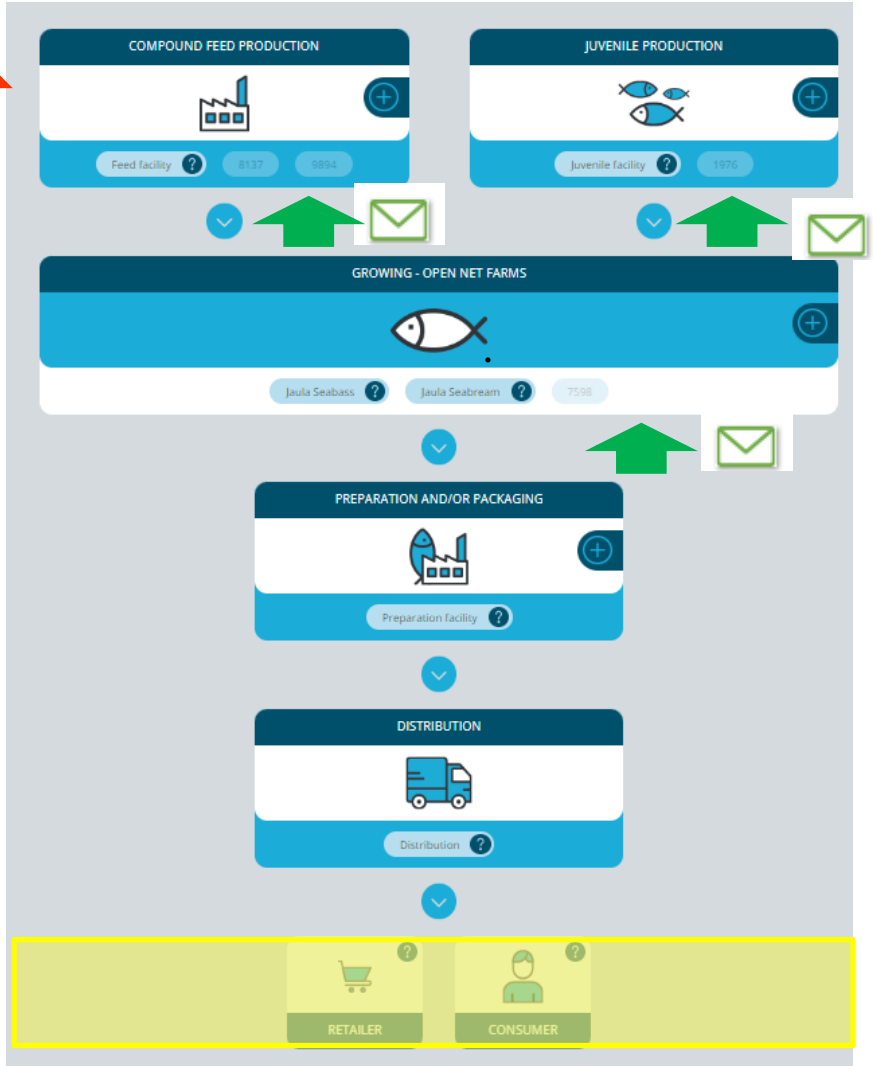
Key features:

- A **friendly online tool adapted to aquaculture sector** based on the methodology **Marine Fish PEFCR**
- A **networking tool** which allows creating complex chains by different companies and agents of the supply chain
- A tool which allows companies to **know** their **environmental impact values** and their relative contribution along the supply chain



HOW TOOL COLLECTS DATA ALONG THE AQUACULTURE VALUE CHAIN

VALUE CHAIN DATA IS COLLECTED UPSTREAM



Companies involved in the acuaculture value chain will introduce data of their **own** processes of the chain and send invitations to their suppliers until complete the whole chain

Confidentiality is a priority!

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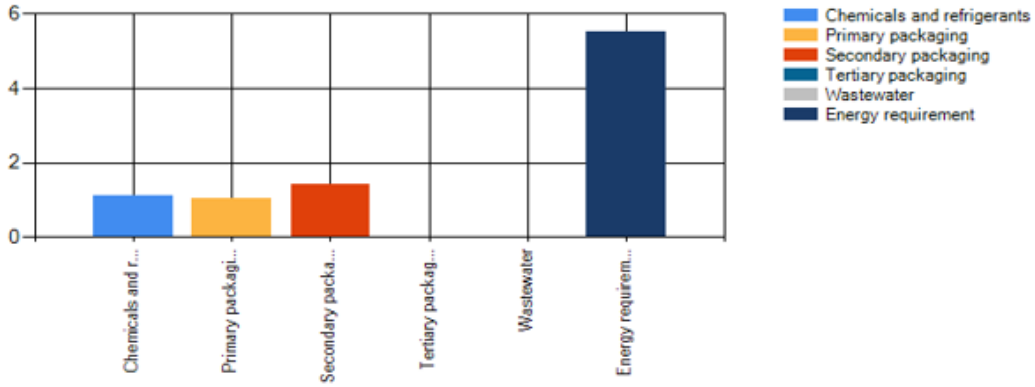
QUESTIONNAIRES

Antibiotics, chemicals and consumables				
Name	Quantity	Unit	PR	TR
Antibiotic 1	150	kg	2	1
Energy requirement				
Energy type	Quantity	Unit	PR	TR
Electricity from biogas	2000	Kwh	1	2
Water				
Water type	Quantity	Unit	PR	TR
Water, completely softened	10	t	2	3

- One questionnaire for each process
- Feed suppliers which have calculated environmental impacts following PEF methodology can introduce impacts directly
- Utilities to import data from files generated with external ERP

ENVIRONMENTAL IMPACT VALUES OF COMPANY'S PROCESSES

Preparation facility
Climate change (kg CO2 eq)

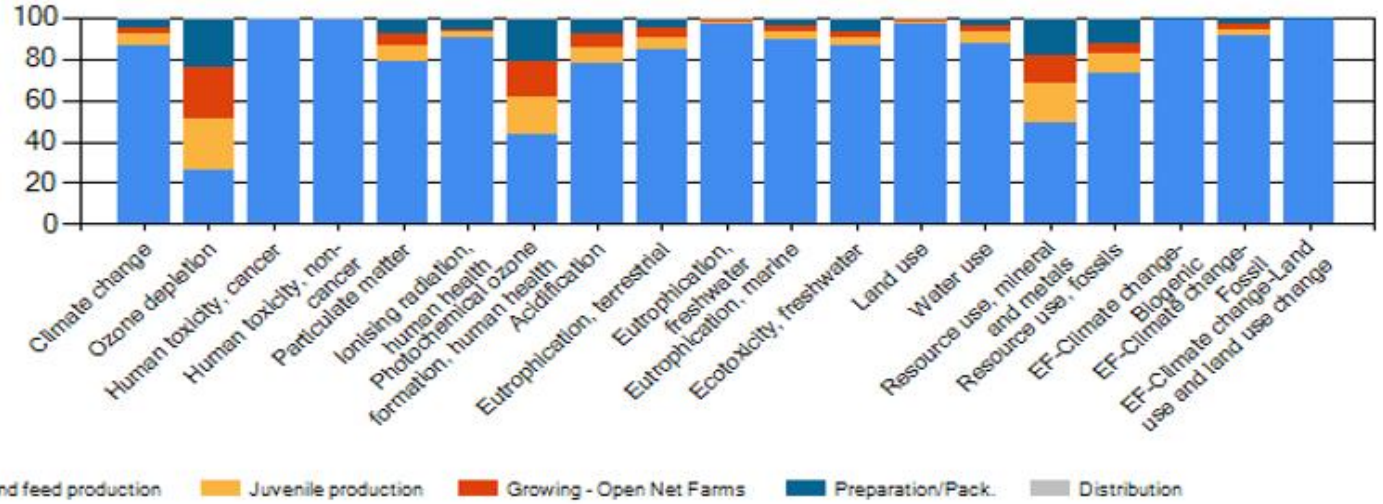


Results have been calculated based on the Product Environmental Footprint for **'1kg of edible fish product consumed'**

Section	Subsection	Value type	Value
Inputs	***Chemicals and refrigerants***		***1,11722***
		Lubricants	1,117217
Inputs	***Primary packaging***		***1,04601***
		Plastic tray	1,046008
Inputs	***Secondary packaging***		***1,41309***
		Porexpan box	1,413088
Inputs	***Tertiary packaging***		***0***
		Pallet, plastic (100x120)	0
Inputs	***Energy requirement***		***5,52391***
		Biogas for bioenergy	0,319516
		Diesel, burned in vessel	3,277947
		Electricity from biogas	1,106097
		Natural gas mix	0,60342
		Process Steam from biogas	0,114133
		Thermal energy from biogas	0,102796
Waste and Wastewater	***Wastewater***		***0,00183***
		Treatment of residential wastewater, large plant	0,001832
		TOTAL AMOUNT	**9,102055**

CONTRIBUTION OF PROCESSES IN THE WHOLE ENVIRONMENTAL IMPACT

Product: 1kg of box 10 pieces, seabass			Processes				
Impact category	**Units**	**Result-Direct values**	**Compound feed production**	**Juvenile production**	**Growing - Open Net Farms**	**Preparation/ Pack.**	**Distribution**
Climate change	kg CO2 eq	171,988267	149,2094838	8,769204468	4,681009739	9,102055475	0,226513453
Ozone depletion	kg CFC11 eq	2,99885E-06	7,99503E-07	7,43607E-07	7,27692E-07	7,28052E-07	1,44732E-13
Human toxicity, cancer	CTUh	3,18229E-06	3,13145E-06	4,33138E-08	1,67151E-09	5,79479E-09	5,37803E-11
Human toxicity, non-cancer	CTUh	0,000268134	0,000267978	1,06813E-07	1,11663E-08	3,56962E-08	2,72597E-09
Particulate matter	sdf	1,39725E-05	1,10262E-05	1,0084E-06	8,86721E-07	1,01573E-06	3,54536E-08
Ionising radiation, human health	kBq U-235 eq	8,826358694	7,991540261	0,31905799	0,031302006	0,483421004	0,001037434
Photochemical ozone formation, human	kg NMVOC eq	0,532821241	0,231089701	0,098304253	0,090116764	0,110519988	0,002790534
Acidification	mol H+ eq	1,960181002	1,532070382	0,145808819	0,132150949	0,147390549	0,002760304
Eutrophication, terrestrial	mol N eq	7,5137749	6,356183676	0,391930224	0,356645221	0,393879872	0,015135907
Eutrophication, freshwater	kg P eq	0,031479715	0,030558853	0,000347367	0,000238534	0,000333555	1,40602E-06
Eutrophication, marine	kg N eq	0,976139357	0,867854667	0,036803886	0,033191121	0,036919555	0,001370129
Ecotoxicity, freshwater	CTUe	5606,790583	4821,67224	227,1872213	190,8843646	364,9834874	2,063269204
Land use	Pt	32013,97933	31133,0169	338,0617721	223,676625	317,4766688	1,747362724
Water use	m3 depriv.	19,2901017	16,87258952	1,021496271	0,54485734	0,831087078	0,020071495
Resource use, mineral and metals	kg Sb eq	3,86533E-05	1,90805E-05	7,24727E-06	5,19955E-06	7,0287E-06	9,7265E-08
Resource use, fossils	MJ	1905,646663	1397,683144	177,9095693	90,01903137	236,942464	3,092454099
EF-Climate change-Biogenic		13,08745807	13,08655857	0,000299832	0,000299832	0,000299832	0
EF-Climate change-Fossil		117,3485929	107,5161024	3,277496856	3,277496856	3,277496856	0
EF-Climate change-Land use and land u		26,41439667	26,41394555	0,000150373	0,000150373	0,000150373	0



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ENVIRONMENTAL RESULTS

- Companies are able to create scenarios to analyze if there are improvements in the impact. *For example, changing packaging, changing feed formulation in the questionnaire…*

- *Compare environmental impacts between different products*

Box, 10 pieces Seabass

Impact category	Units	Result-Absolute values		Preparation/Pack.
Climate change	kg CO2 eq	6,642960066		6,642960066

Tray, 3 pieces Seabass

Impact category	Units	Result-Absolute values		Preparation/Pack.
Climate change	kg CO2 eq	9,328568928		9,102055475

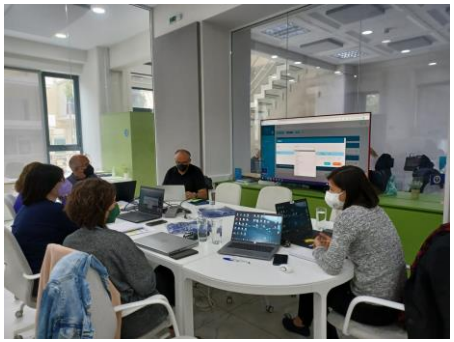
Tool testing with project partners

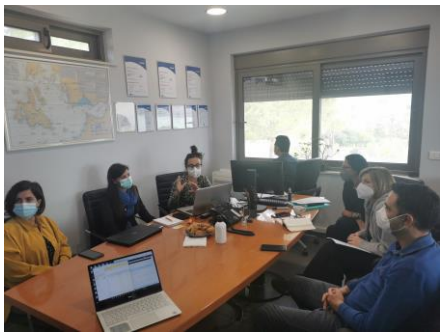
Forkys

CULMAR
Cultivos Marinos de Guardamar

AQUACULTURE SKIRONIS S.A.

Tool testing with external companies





Target Market

End Users:

Seabass and bream aquaculture producers (600 companies) can benefit of using AQUAPEF TOOL

- Big companies could have their own sustainability department
- SMEs may need the assistance of consultancy

Associations could benefit of using it, as a service for their members

Administrations also could benefit in order to stablish future interventions in this sector

Current status

The AQUAPEF tool is currently in TRL8

At the end of 2022 it will be ready to go the market

Main idea for the commercialization is to transfer it to third company

AQUAPEF

Thank you!

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More information: https://lifeaquapef.eu

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