

MARF as the Commercialized Marine BARF

Learning from real life

Case Studies about MARIPET and Discard Fisheries

Use Success Stories

MARF is a business model proposal, a raw food prototype will be developed in which a large proportion of discarded fish will be used in the nutrition of domestic cats and dogs.

A case study from (Turkiye), identified from Ege University
Science and Technology Center Support Program
(Ege University, Izmir - Turkiye)

Case Study Overview

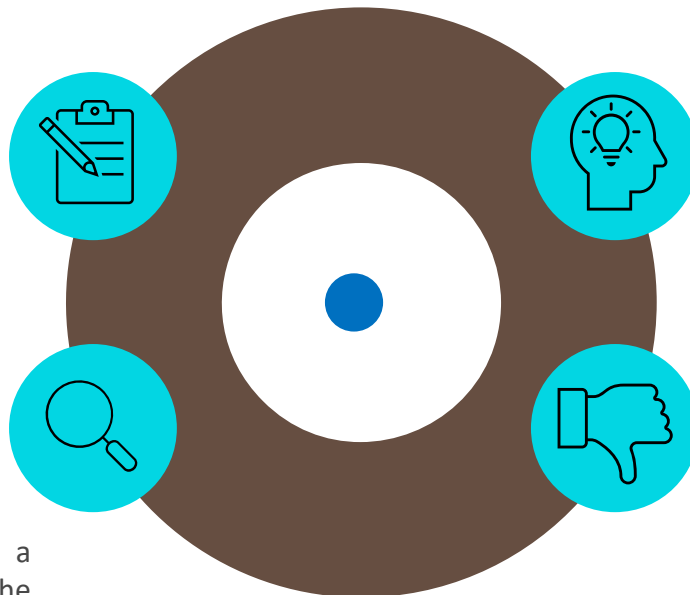
Description

The food industry used in feeding pets shows a growth of 2.6% annually.

The sector's most important and ever-increasing need, divided into two raw and dry food, is "raw materials of animal origin".

Identified (module-specific practices)

Converting of fishery discard into a commercial ingredient/product in the pet food industry.



Benefits

In this way, the negative effects of discarded fish on the ecological balance will be reduced and it will be possible to bring them into the economy as a value-added product.

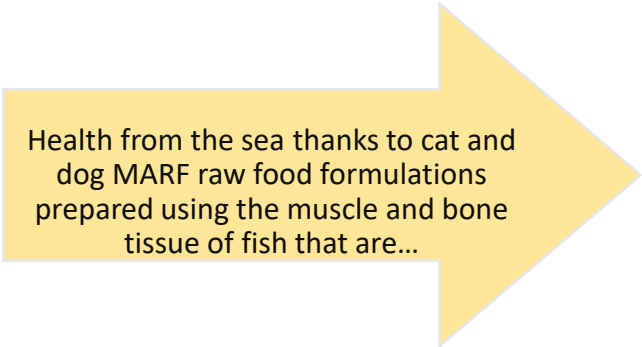
Drawbacks

In Türkiye, an average of 45% of the annual 430 thousand tons of marine catch is thrown back into the sea before it can be landed, it is DISCARDED. As long as discarded fish and marine fish fishing exist, they cannot be eliminated by scientific and technical means.

Description of the Case Study

The main idea of the proposal is «Discarded fish should be transformed into a value-added product and brought into the economy instead of being thrown back into the sea».

The food industry used in feeding pets shows a growth of 2.6% annually.



Health from the sea thanks to cat and dog MARF raw food formulations prepared using the muscle and bone tissue of fish that are...

- Strong muscle and skeleton structure;
- Healthy teeth;
- No bad smell of breath;
- Brilliant and soft hairs;
- High food digestibility and fewer feces;
- Less allergic reactions;
- Strong immunity.

What makes it beneficial to promoting MARIPET?

This case study illustrates one of the methods used to convert discarded fish into a value-added product.

Animal origin ingredients are the most expensive products in pet nutrition. Marine origin ingredients (discarded fish) will be gained to the pet food sector as an economically important main ingredient.

Environmental and economic impact



1. Reduce discard



2. Preservation of
ecosystem structure



3. Create an
economically
important animal-
origin ingredient



4. Long-term viability

References:

- *Aydin, I., Altan, O., 2022. MARF as the Commercialized Marine BARF. Ege University Science and Technology Application Center Academic Support Program.*

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GARUM AN ANCIENT CONDIMENT THAT REDUCE FISH DISCARDS

Case study from (Turkey), identified from research by (Izmir
Metropolitan Municipality, Turkey)

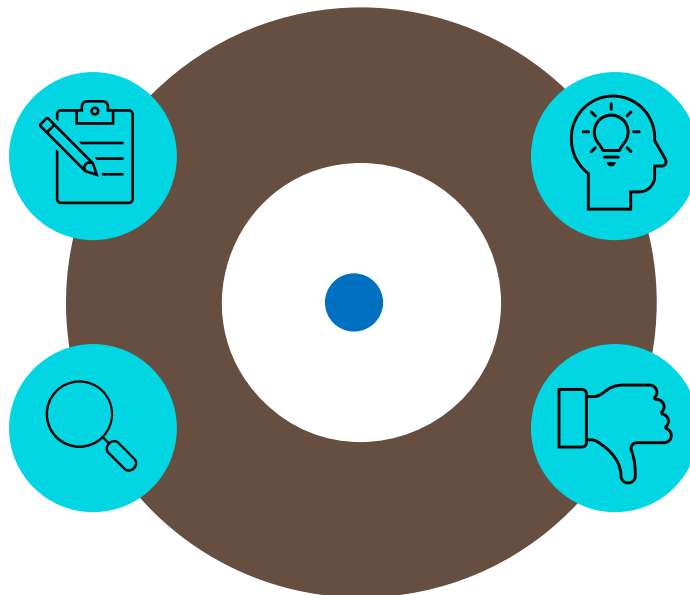
Case Study Overview

Description

1400-year-old dietary habit. Fishers avoided wasting fish organs, bones, and blood when preserving the flesh through smoking or drying. To prevent this, they used a method involving fermentation-autolysis creating the Garum.

Identified (module specific practices)

Use of modern laboratories, scholars are working to recreate garum.



Benefits

This case study represents an ancient culinary practice, one of the ways to reduce discards and leftover of fishes. Employing it as a methodology for assessing discarded waste

Drawbacks

Ready-to-eat condiments of shrimp and fish origin make traditions difficult to maintain. Additional labor for the fishers.

Description of the Case Study

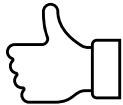
Fishers found it unacceptable for the parts such as internal organs, bones, and blood of the fish to go to waste while preserving the flesh by smoking or drying. To prevent this waste, a method was employed where the blood, bones, and internal organs of the fish were subjected to a fermentation-autolysis process in “Dolia” (large earthenware jars) with salt or seawater. This process was used to produce the Garum.



Use of modern laboratories, scholars are working to recreate garum



Methodology



Small decaying fishes trigger an autolytic process, as bacteria in their guts break down cell walls, liquefying muscle tissue proteins. Salt slows fermentation, allowing lactic acid bacteria to suppress foul-smelling toxins like cadaverine and putrescine. After 25 days, a paste of dissolved fish parts emerged, topped by an amber liquid with a scent resembling dried fish, seaweed, and spices. This sauce, rich in glutamic acid, akin to Parmesan cheese and umami-rich foods like tamari sauce and cooked mushrooms, served as a potent protein source (Bernal-Casasola,D., 2016)

What makes it beneficial to promoting MARIPET?

This case study represents an ancient culinary practice,
one of the ways to reduce discards and leftover of fishes.

Employing it as a methodology for assessing discarded
waste.

Environmental and economic impact



1. Reduce discard



2. Preservation of
ecosystem structure



3. Reduce of labor
costs



4. Long-term viability

References:

- *Bernal-Casasola, D., 2016, Garum in context: new times, same topics in the post-Ponsichian era, The Inland Seas, Towards an Ecohistory of the Mediterranean and the Black Sea.*
- *Ulaş, U., 2020, 10 Maddede Garum: Antik Dünyanın En Sevilen Çeşnisi,* <https://10layn.com/10-maddede-garum/>
- *Öztürk F., İzmir'de 1400 yıl önce 'garum' Tüketimi* <https://www.gazeteduvar.com.tr/izmirde-1400-yil-once-garum-yeniyormus-galeri-1589172>

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