The Octopus Case study in **Algarve, Portugal**

Conducted by **Centre of Marine Sciences of the Algarve (CCMAR)**

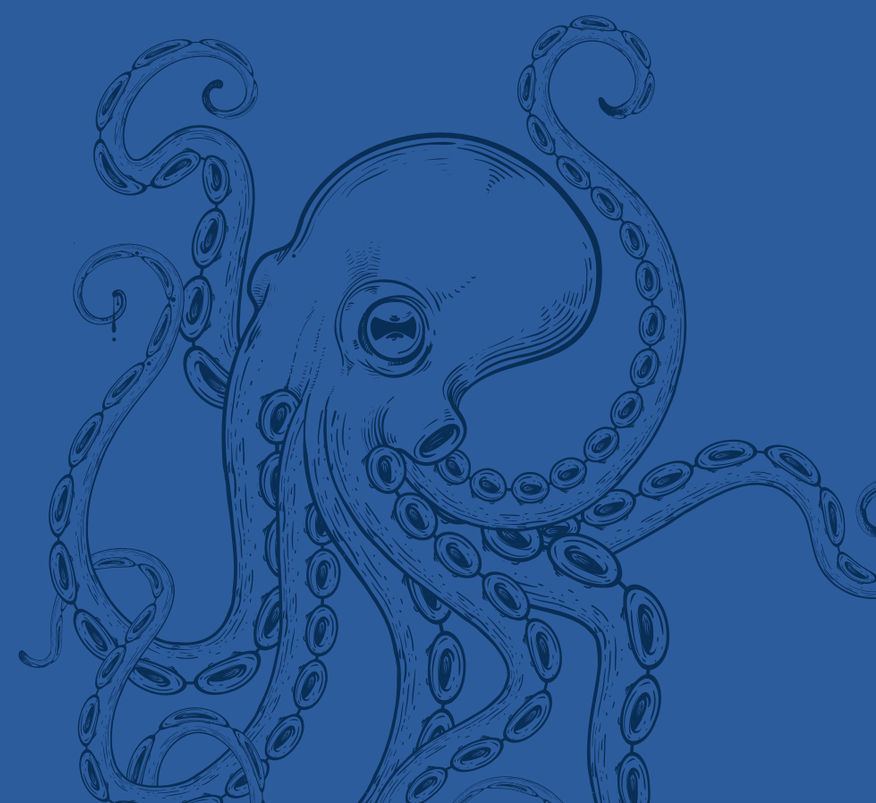
SEA2SEE

The **common octopus** (*Octopus vulgaris*) is a fascinating marine invertebrate found in oceans worldwide, especially in tropical and temperate waters.

Despite its complexity, the common octopus has a short life cycle, living only about **1 to 2 years**.

It is primarily solitary, hunting at night for prey like crabs, fish, and mollusks using its powerful beak to crush shells.

It can be up to **1 meter in length** and **weigh up to 15 kg**. A soft, boneless body allows it to squeeze through tiny spaces and eight arms, each equipped with two rows of suckers for gripping, tasting, and manipulation.



The **common octopus** has specialized skin cells called chromatophores that allow for a rapid color change for camouflage or communication. Considered **one of the most intelligent** invertebrates, the common octopus is capable of **problem-solving, tool use**, and **complex behaviors** like escape tactics. Its unique biological and behavioral adaptations make it a **highly studied species**.

The octopus' fishery is one of the **most important small-scale fisheries** in mainland **Portugal**, not only regarding the first sale price and volume of landings, but also concerning the socioeconomic dimension of this fishery.

Focusing on the **common octopus** (*Octopus vulgaris*), this activity is particularly relevant in the **Algarve**, where more than **500 vessels** operate these gears and where octopus landings represent **almost half of national landings**.

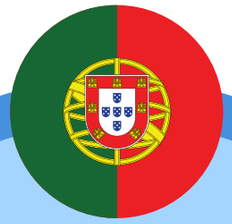
2401

tons landed at the Algarve (in 2023)

19.48

million euros

First-sale value at the Algarve



38.5 %

of the total landed in **Portugal**

In 2023, **2401 tons** of common octopus were sold at the mandatory auction in the **Algarve**, reaching a total first-sale value of **19.48 million euros**. This quantity accounted for **38.5%** of the total landed in **Portugal** and **40.2%** of the total first-sale revenue generated nationwide.

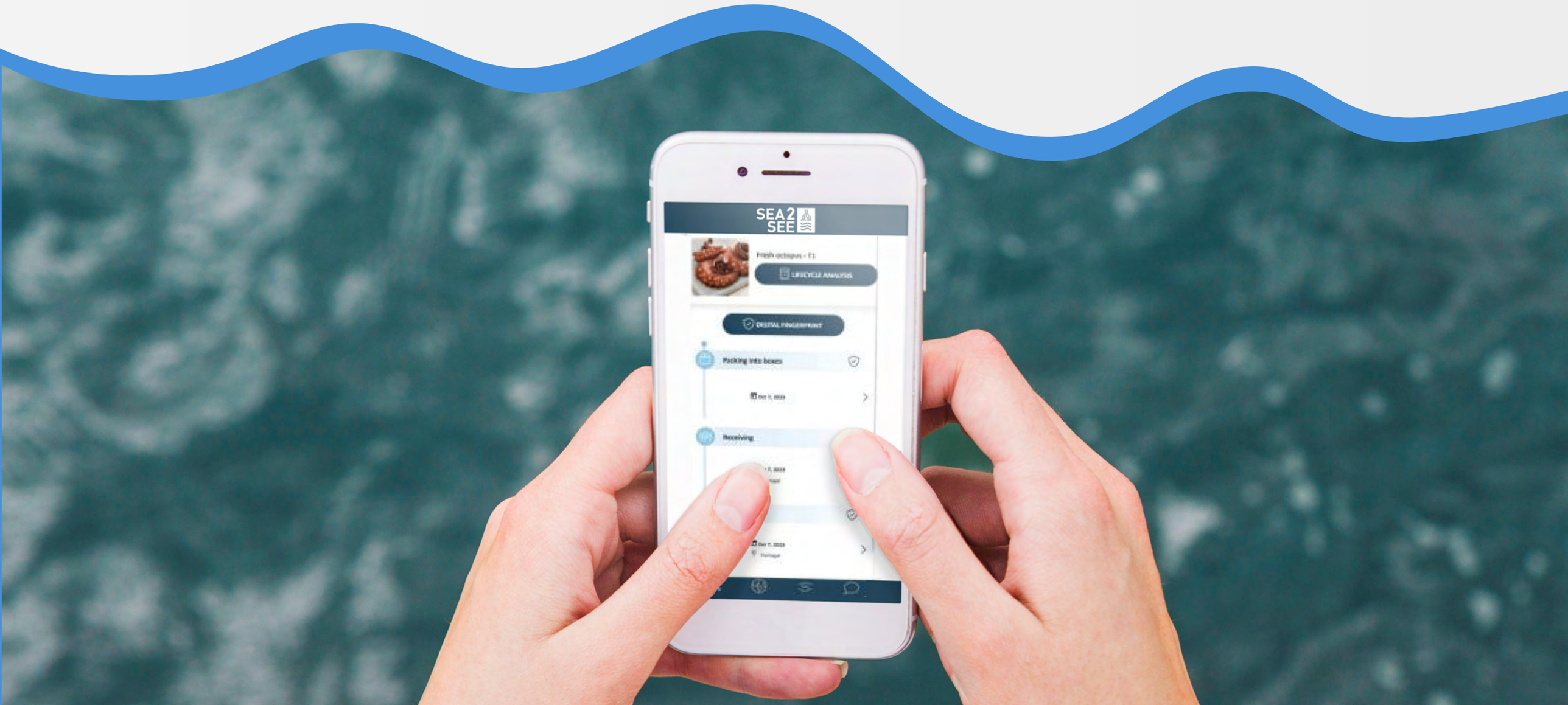
An ideal setup to apply the SEA2SEE blockchain solution to the fishing industry

- Overall economic and social importance
- Governance setting
- Availability, cooperation and engagement of the fishing community and other stakeholders

Objective of Fuzeta case study:

To implement a blockchain technology app in the fisheries sector, despite the complexity of its value chains.

To have the stakeholders use the traceability app to collect data in real time and prove that it is possible to trace fished seafood products from the moment they are caught to the moment they are consumed.



- The octopus sold at the Fuzeta auction will contribute to promote traceability and demonstrate the importance of transparency in this value chain, proving that it is possible do add value to a seafood product already highly valuable

- The app will provide users with information about the source of the octopus, method of capture, sustainability of the fishery. This information will benefit fishers and local tourism by adding value to the fished octopus, reducing illegal sales and improving data quality for stock assessment and management.

Where are we at this moment?

The CCMAR team is:

- Identifying and mapping the different and complex value chains of the common octopus sold at the Fuzeta auction site

- Working on engaging stakeholders

- Integrating the data in the blockchain app and personalizing the Sea2See solution to this species

“The octopus’ fishery is one of the most important small-scale fisheries in mainland Portugal and is the first regional fishery managed through a co-management system, thanks to years of collaboration between fishers, fishing associations, administration, scientific community, and civil society.

The common octopus is a valuable seafood product that could greatly benefit from the implementation of the Sea2See traceability app, demonstrating that traceability is achievable within Portuguese small-scale fisheries.”

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