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## Copernicus helps fish and shellfish farmers monitoring toxic algal blooms

About 300 different types of algal blooms exist and a quarter of these blooms are Harmful Algal Blooms (HABs), producing toxins. HABs can have significant negative impacts: as an example, one single toxic bloom caused the loss of 500,000 salmon in Shetland, an archipelago in Scotland.

Understanding the occurrence and movement of Toxic Algal Blooms is a key commercial / economic factor in marine aquaculture enterprises and in the context of several leisure activities linked to tourism.

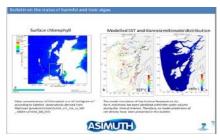
With 1.25 million tons of fish or finfish being produced every year, the EU is the 8th biggest producer in terms of volume of aquaculture in the world.

By appropriately anticipating the HABs events, farmers can take the appropriate decisions to prevent their fish from suffering from any toxic effects (such as piling their products in advance), improving their management strategies towards the impact of HABs with a particular focus on the sustainability of wild and farmed finfish and molluscan bivalve fisheries.

The aquaculture sector is increasingly exposed to international competition. An increased productivity and improved management practices will boost the supply of fish sustainably and limit price fluctuations for raw material.

Better monitoring HABs can also lead to preventing potential negative impacts on activities linked to tourism. Some HABs can cause foams which float in the ocean that can end up on beaches, which may be very unsightly in tourist spots.

The "ASIMUTH" project has been set up in 2009 in order to respond to the demand for short-term **forecasts of harmful algal blooms events** along the European Atlantic coasts, using EO data. It tracks the origins of algal blooms using remote sensing satellite data, by monitoring images of chlorophyll and water temperature. The project downscales the products of the Copernicus Marine **Environment Service (CMEMS)** and integrates these products with biological data with input from HABs experts to produce warning bulletins.



## Scottish HAB **Bulletin Excerpt**

(Source: the ASIMUTH project)

The provision of accurate HABs forecasts has enabled fish farmers to increase their productivity by approximately 5%, by optimising harvesting schedules and installing appropriate aeration systems. The forecasting system implemented within the ASIMUTH project targets to reduce the losses caused to the mussel industry by at least 12.5% in five target countries: France, Spain, the UK, Ireland and Portugal, representing a potential saving of USD 2.6 million (EUR 2.3 million).

Before the implementation of the project, HABs caused the mortality of 8,000 tons of fish per year (corresponding to **EUR 31.3 million)** and extensive losses from the fish farms. Today, the forecasting system is considered as being close to 100% in terms of accuracy.

5% gain in productivity for fish farmers thanks to the HAB monitoring system



Context



**Project** 





