

KEY STORIES

Eutrophication and agriculture



WHY LOOKING AT ... EUTROPHICATION AND AGRICULTURE?

If we ask you to name sectors that are key to the sustainability of the ocean, you will surely mention fishing, maritime transport, coastal tourism, marine renewable energy ... maybe you will not think of agriculture, or of other land-based economic activities that impose pressures on marine ecosystems.

If you ask marine stakeholders of the Baltic sea, agriculture is likely to be mentioned by many: over 95% of the Baltic Sea is affected by eutrophication and agriculture is one of the main sources of the nutrient input. The poor environmental conditions of the Baltic Sea are known for 40 years and are addressed by numerous regulations. However, knowing the problem is not solving it: the political objective of achieving Good Environmental Status (GES) by 2020 has failed and eutrophication remains a significant threat requiring urgent action.

WHICH CHALLENGES FACED FOR ADDRESSING ... EUTROPHICATION?

There are different sources of pollution that explain eutrophication such as discharge of polluted wastewater from public water supply systems or from some industry sectors, and farm practices in terms of nutrient application for crops, or the management of farmyard manure in relation to livestock production.

Improved farm practices that reduce nutrient losses to water do exist and are known by professionals. There is also evidence that more drastic changes in farm strategies, e.g. with a shift to conservation agriculture, can contribute to addressing eutrophication.

There are many factors, however, that constraint or facilitate their implementation—technical factors and the relevance of some practices to specific farming systems and geographic contexts, capacity, socio-economic implications and viability, incentives and accompanying measures... Thus, despite available technical/technological solutions, eutrophication still remains!

Much of the knowledge that relates to eutrophication focuses on describing the eutrophication state - e.g. algal blooms leading to oxygen-minimum-zones - and links it to harmful agricultural practises. However, the connection between the state of marine ecosystems is not always explicitly combined with knowledge on global markets and policies (including the Common Agriculture Policy), the organisation of the agriculture and food system, technological development, consumer choices and societal values that are driving—or connected to farm strategies, agricultural practises and ultimately the discharge of nutrients to the sea. Indeed, farm strategies and practices linked to crops and livestock respond to many of these factors combined with the need to account for local features of rural territories. Of particular importance is the way food value chains are organised, and of the multi-dimensional interactions that exist between farmers, agroindustry, retailers and wholesalers, consumers, policy and decision makers...

WHAT CAN OCEAN LITERACY DELIVER?

Many Ocean Literacy initiatives targeting eutrophication or wider marine challenges have been implemented in the Baltic Sea. Similar to knowledge, much attention is given to the state of the sea, and to the description



of the main sources of pressures (in particular agriculture). More limited attention is given to the shared responsibility all value chains actors (from producers to consumers, including policy makers) have in the problem and in the solution for improving the situation.

To accompany changes, Ocean Literacy initiatives must target all actors of the agricultural value chain, so they understand Baltic Sea eutrophication challenges and solutions, along with their specific role and responsibility. This requires, in particular, that the link between globalisation, the food system and trends in consumer choices and market responses are shared and well-understood—even if causal relationships between these, farm practice and eutrophication remain complex.

When developing Ocean literacy initiatives, let's not forget ... policy makers as they have specific roles in contributing to solutions for eutrophication that is strongly connected to major EU (agriculture, environmental or consumer) policies. In addition, policy makers must demonstrate 'good example', improving their communications, facilitating cross-sectoral dialogues and contributing to capacity building so solutions 'at the source' are favoured instead of end-of pipe measures.

Providing knowledge is only one factor that can support behaviour change.



It is important to understand psychological and social factors that drive actors' actions and behaviour, as this can help identifying motivations to take ownership for solutions.

Thus, the power of effective Ocean Literacy initiatives lies in the combination of improved narratives that are told while addressing the social psychological factors of the different target groups.

TAKE-HOME MESSAGES

- Ocean literacy initiatives that combine improved 'value chain' narratives while addressing social psychological factors can support changes—be it for individuals or the policy framework.
- Ocean literacy initiatives can support cross-sectoral dialogues and cooperations.
- Ocean literacy initiatives shall motivate actors to identify a wider range of solutions than only (technological) measures—including change of system, adaptation to value chains, change in consumption habits, etc.