



CONSERVE AND SUSTAINABLY USE THE OCEANS, SEAS AND MARINE RESOURCES FOR SUSTAINABLE DEVELOPMENT

The health of the marine environment affects us all. Healthy oceans, marine environments and fisheries help the earth's population's social, environmental and economic needs. Large parts of the marine environment is suffering due to environmental deterioration, unsustainable depletion and carbon dioxide saturation and acidification. Life below water receives relatively little attention from companies, despite requiring quite urgent action (1). According to experts, the progress made towards achieving SDG 14 is the least out of all SDGs within Europe (1). However, numerous companies are working towards approaches for sustainable fishing practices and reducing ocean pollution.

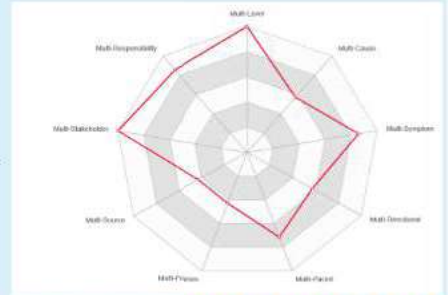


WICKEDNESS SCALE

The SDG was analysed using the wickedness scale. The total of this analysis came to 51 points, which means that this problem is classified as a wicked problem (2).

The aspects that scored the highest in terms of wickedness are the ones which have interlinkages with many other SDGs. SDG 14 affects many different stakeholders and all stakeholders have to be included in the approach to solutions. The conditions of oceans and marine resources directly affect climate action (SDG 13) due to carbon sinks and regulation of global climate patterns. Furthermore, fisheries and other ocean resources act as a source of income for diverse communities. Therefore, protection of ocean and marine life conditions helps reduce poverty (SDG 1), hunger (SDG 2), inequality (SDG 5/10) and improve health (SDG 3).

Short term trade-off might appear to favour the pursuit of economic growth (SDG 8) and industrial development (SDG 9) over conserving ocean health. This can be achieved through e.g. discarding waste and transporting in a cheap manner. However, these advantages will disappear over time when ocean health becomes properly valued (3). Furthermore, the number of stakeholders and the spread of responsibility scored highly on the wickedness scale. Responsibility and jurisdiction are hard to define, since large parts of the oceans do not belong to a sovereignty and thus fall under international jurisdiction.



GENERAL TRENDS

The current efforts to protect the oceans are not yet meeting the needs and goals of this SDG, as set out by the UN. Below, the most important trends are discussed.

SDG 14.1

Plastic makes up a large portion of marine debris. If current trends continue, the oceans will hold around one kilogram of plastic for every three kilograms of fish by 2015. By 2050, there will be as much plastic as fish in the oceans (4).

SDG 14.3

One of the set targets was to address and minimize the effects of ocean acidification. New reports have shown that between 2015 and 2019, there was an increase in variability in pH and acidity of the oceans of 10-30%. Since pre-industrial times, there has been an increase of acidity of 26%. If we continue at this rate, this will increase by the end of the century to 100-150%, which will have serious consequences for marine life (5).

SDG 14.4

In 1974, the proportion of fish stocks within biologically sustainable levels were at 90%. Since then, this has declined to only 66.6% by 2015 and 65.8% by 2017 (5).

SDG 14.5

The protected areas covering waters under national jurisdiction has more than doubled since 2010. In December 2019, more than 24 million km² (17%) of this area was protected. Much of the covered area is concentrated in Oceania, the Caribbean and Latin America (5).

FRONTRUNNER: CALYSTA

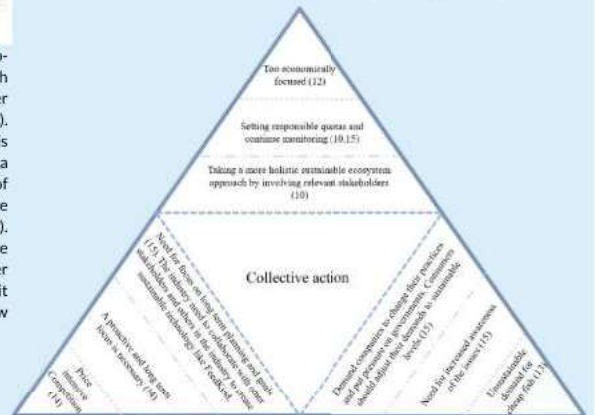


A frontrunner with regards to SDG 14 is Calysta. Their novel lab-grown fish feed, FeedKind, made with microbes instead of wild fish which is a primary cause of overfishing (6). FeedKind is a cheaper version, it is protein-dense and does not jeopardize human health (6). FeedKind has been approved by Norway and the EU and Calysta is currently on its way to producing 20000 tonnes per year (7). Calysta has raised over \$40 million to improve the commercial viability of FeedKind working towards a profound impact on SDG 14. The company is relatively new and had its first product ready in 2018 (8). This is a weakness since we do not know how it will fare on the commercial market in the long run and whether it will gain proper traction. It is still an important step in the right direction and if it succeeds, it will be extensive proof of the concept of how technological innovation can impact the industry and the SDGs.

The lie of the land – exploring the distance to cover to achieve Target 14.4. By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible



SOCIETAL TRIANGULATION: NOREWEGIAN FISH



To further analyze the wickedness of SDG 14, we have applied societal triangulation assessing the responsibilities of the different stakeholders. After seeing the herring stock being depleted in the 1970s and its disastrous consequences, the Norwegian government has been managing overfishing working with quotas (9). The Norwegian government has made a pledge to SDG 14 about fighting overexploitation of ocean resources which they are realizing with an ecosystem approach and strict monitoring (9, 10). The market experiences great demand but also increasingly tough competition on price which has led to an extreme increase in production but reduced yield (11). In the fishing industry itself, there seems to be a strict profit focus on sustainable action primarily reactively to government interventions and pressure from other stakeholders. Fish feed for farmed fish is often made with wild fish which leads to overfishing and weakens the food supply of developing areas (12). This is where other parties in the market like Calysta can innovate and through technology mitigate some of the adverse environmental effects. The NGO 'Our Fish' has denounced Norway and the EU for not taking serious enough measures against overfishing (13). This puts some doubt to the sincerity of the government's actions and to what extent the trade-off between long and short term benefits is being made. Next to the organization, fish on the coast of Norway has traditionally been vital for local communities, putting pressure on both the government and the market (9). Ultimately, all three sectors have to come together to overcome the wicked problem and create a resilient food system (12).

POSSIBLE CORPORATE APPROACH - STINGRAY MARINE SOLUTIONS - BASED IN OSLO

