



Protecting Blue Horizons

The head of a sewage treatment plant

One possible scenario: Along the western coast of an island in a temperate sea, a species rich ecosystem needs urgent protection. As a result, also the octopus population, a commercially important species for the local fishers can recover. Overfishing, particularly from destructive bottom trawling, pollution and invasive species, strain the ecosystems. In order to protect fish and octopus nursery areas and allow the juvenile individuals to grow, a Marine Protected Area (MPA) is being planned.

NB Another scenario can be chosen for all to fit your context better, applicable to all. See fictional map or use a map of a coastal area close by to help visualise the conflict areas between different interests.

MPAs are geographically distinct zones which aim at safeguarding the biodiversity through habitat protection, maintaining marine ecosystem healthy or restore them to a healthy state for the supply of ecosystem products and services. They are fundamental because they help to release the pressure on the habitats and on the species. Indeed, the human activities and all the phenomena linked to the climate change put a huge pressure on ecosystems.

Imagine being the head of a sewage treatment plant working on the western coast of the island. The sewage treatment plant **collects and treats wastewater** coming from private houses and from local factories, providing an essential service to the environment and the citizens. After the treatment, the water is released into the local river and after few kilometers reaches the sea. You have recently learned the news that a Marine Protected Area is being planned and the mouth of the rivers where you discharge treated waters falls inside the boundaries of it.

At the moment the treatment plant can only implement the **mechanical retention of wastes**. This mechanical treatment does not prevent domestic organic and other chemicals to enter the river and so affects water quality and marine life in the Marine Protected Area. That allows aerobic bacteria to proliferate and consume oxygen.

For this reason, you are investing and developing a new project to remove chemical pollutants from the water through a **constructed wetlands**. This is an artificial wetland with a selection of plants and bacteria using the natural function of vegetation, soil, and micro-organisms to remove a range of pollutants such as biodegradable organic matter, excess of nutrients, pathogens, and even heavy metals. You need to explain this to other discussants as they might not be familiar with the concept. You can remind them that natural wetlands fulfill such roles, but have been reduced through urbanization and industrial agriculture. Constructed wetlands optimize the effectiveness of natural wetlands through science-based combinations of species, often on slightly less space,

Constructed wetlands have thus positive effects for the marine life. Moreover, the construction of new wetlands allows the development of a recreational area for residents and tourists. They are normally much cheaper than conventional treatment plants. However, the project still requires a big area and unobstructed slow water flows that will prevent more coastal housing and hotel construction. Some environmentalists still doubt the safety and fear continued pollution of coastal waters.