

Coral farming for restoration of areas affected by the MV Wakashio grounding

Mauritius is surrounded by an ocean teeming with diverse marine life, including fish, crustaceans, seaweeds, corals, and seagrasses. These species are essential for maintaining a healthy marine environment and benefit humans. Corals, for instance, provide habitats for many marine creatures, similar to tropical rainforests in their biodiversity. They also help protect coastlines. The blue economy in Mauritius relies heavily on this biodiversity, significantly contributing to fish catches and eco-tourism.

In late July 2020, a significant maritime disaster occurred off the southeast coast of Mauritius when the MV Wakashio, a 300-meter-long Japanese oil tanker, struck a reef near Pointe d'Esny. The vessel, one of the world's largest at 203,000 Dead Weight Tonnage (DWT), was sailing from China without cargo. Coral reefs, which are crucial both ecologically and economically, are highly sensitive to environmental changes and vulnerable to human activities such as oil spills. Exposure to oil can cause severe stress to corals, leading to bleaching and death.

In Mauritius, many efforts are being made towards marine conservation, such as coral farming. This involves growing coral fragments in nurseries until they mature, a technique known as coral gardening. Small coral fragments are grown on metal structures called spider frames, mimicking a natural process where coral pieces break off and grow into new colonies.

The EcoMode Society (EMS), has initiated the 'Reef Restoration' project, funded by the MOL (Mitsui O.S.K Lines). This project focuses on the restoration of dislocated corals resulting from the incident, employing coral farming techniques wherein broken coral fragments are collected from the Wakashio site. These fragments were grown in nurseries at Pointe aux Feuilles as well as in spider frames. They are closely monitored to ensure constant growth.

Additionally, at Pointe d'Esny, EMS has installed artificial structures and nursery tables made of pre-cast concrete blocks arranged in different layouts to maximize space and meet specific needs. Some blocks have integrated crevices or perforations to enhance coral attachment. The calcium bicarbonate in the concrete supports coral growth, and the design ensures adequate sunlight penetration. As the corals grow, their calcareous skeletons accumulate and bond, contributing to the coral colony. A total of 20 concrete blocks were created, reinforced with 10mm, 12mm, and 16mm iron bars. EMS transfers nursery-grown corals from Pointe aux Feuilles to the nursery site at Pointe d'Esny. Since the nurseries were established, the number of fish species at these sites has significantly increased. They include the fish species, Grey damselfish (*Chrysiptera glauca*), Spottail coris (*Coris caudimacula*), Honeycomb grouper (*Epinephelus merra*), Convict surgeonfish (*Acanthurus triostegus*) and Epulette surgeonfish (*Acanthurus nigricauda*).



Figure 1: Coral growth on spider frames at Pointe aux Feuilles with fishes

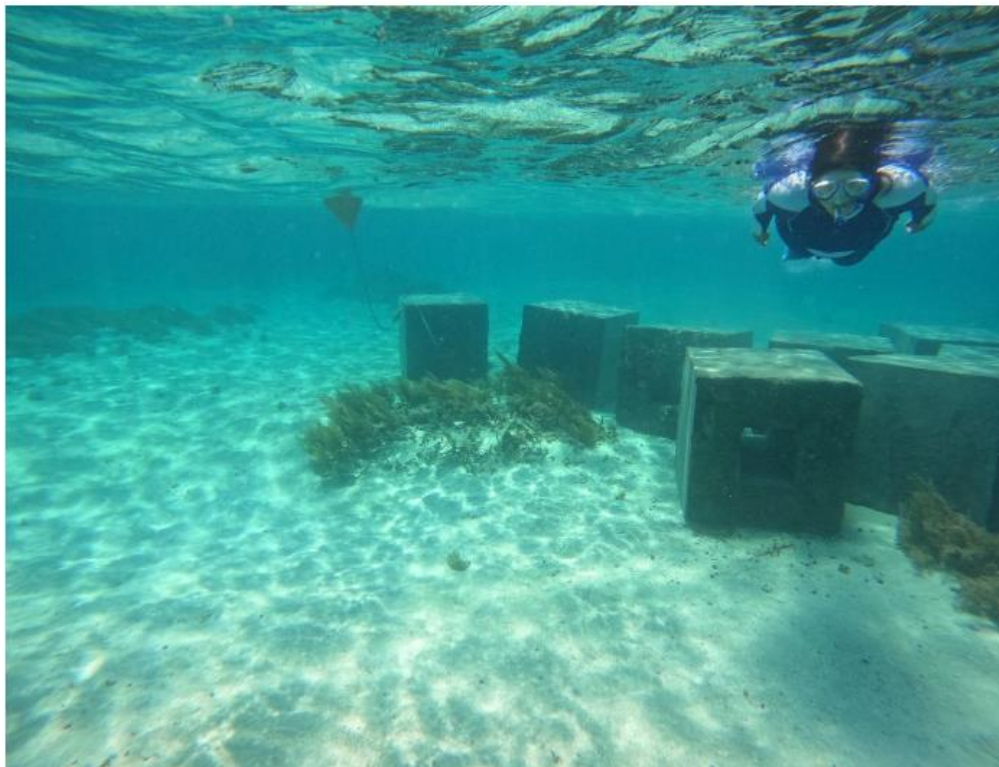


Figure 2: Artificial Concrete structures at Pointe d'Esny

EMS strongly emphasizes community engagement through strategies like community involvement, training sessions, and workshops to raise awareness among locals and fishermen. For instance, a three-day coral farming workshop was organised at the University. This workshop included informative talks about the importance of coral reefs and a visit to the Pointe aux Feuilles nursery, where participants actively took part in coral farming activities.



Figure 3: Students engaged in coral farming