The Great Barrier Reef

EFECTS OF CLIMATE CHANGE ON CORAL REEF

The acceleration of global warming is having a significant impact on marine biodiversity worldwide. A striking example of these changes can be seen in the Great Barrier Reef, located off the coast of Queensland, Australia. It is the world's largest coral reef system and home to an extremely rich marine biodiversity.

Things to Know :

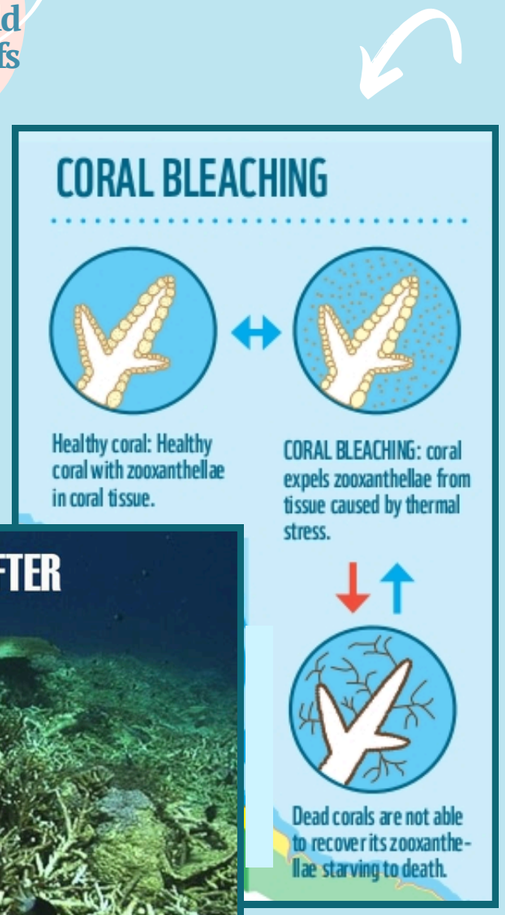
- According to the GIEC, a 2°C rise in global temperature could cause over 99% of warm-water coral reefs to disappear by the end of the century.
- Foot print emissions = Co2e x distance
- More than 500 millions of people deoends on coral reef

Solutions :

1. **Reduce your carbon footprint**: Greenhouse gas emissions contribute to global warming, which leads to coral bleaching. Reduce your carbon footprint by using public transport, favoring renewable energy sources, etc.

2. **Consume sustainably**: Choose products that are sustainably manufactured and do not harm the marine environment. Use personal care and household products that are biodegradable and do not contain harmful chemicals that could contaminate the oceans. Avoid coral-based products, such as coral jewelry.

3. Some corals can tolerate higher temperatures by modifying their metabolism and expelling the symbiotic algae responsible for photosynthesis. This process enables corals to survive heat-stressed conditions. One solution would be to **implant corals that are more resistant to heat**. For example, certain subspecies of the Acropora genus.



Sources : WWF, Fondation Tara Océan

IMPACTS ON CORAL

Ocean acidification

The increase in CO2 concentration in the atmosphere dissolves large quantities of carbonic acid in the ocean. Coral skeletons are essentially composed of calcium, a material that dissolves in acidic environments. Sea acidification thus weakens coral skeletons.

Rising temperatures

The greenhouse effect, which causes an increase in the temperature of the globe, induces an increase in the surface temperature of the Ocean. Beyond acidification, temperature change threatens the future of corals much more quickly. A warming ocean causes heat stress that contributes to coral bleaching and infectious diseases.

Risk of natural disasters

Storms and hurricanes can directly damage coral reefs through strong winds, wave action, and storm surges. These extreme weather events can break coral branches, dislodge coral colonies, and scatter reef-building organisms, leading to physical destruction and fragmentation of the reef structure. The sheer force of the storms can also stir up sediment, smothering corals and inhibiting their ability to photosynthesize and grow.