



## KIMO RESOLUTION 18/02

### Impacts of Ocean Acidification

Ocean acidification affects the entire world's oceans, including coastal estuaries and waterways. The increasing volume and rate of our CO<sub>2</sub> emissions from human activity is progressively impacting the oceans, causing the acidity of seawater to increase.

The oceans absorb around 25% of atmospheric CO<sub>2</sub> derived from burning fossil fuels and land use changes, and this CO<sub>2</sub> dissolves in seawater to form carbonic acid. As humans have emitted more and more CO<sub>2</sub> into the atmosphere, the ocean has absorbed greater amounts at increasingly rapid rates. This is altering the system's ability to adjust to changes in CO<sub>2</sub> that naturally occur over the millennia, significantly changing the chemistry of the seas, and leading to progressive acidification. Ocean acidity has increased by 30% since the beginning of the Industrial Revolution and the rate of acidification will accelerate in the coming decades.

When CO<sub>2</sub> is absorbed by seawater, a series of chemical reactions occur resulting in the increased concentration of hydrogen ions. This increase causes the seawater to become more acidic and causes carbonate ions to be relatively less abundant.

Carbonate ions are an important building block of structures such as seashells and coral skeletons. Decreases in carbonate ions can make building and maintaining shells and other calcium carbonate structures difficult for calcifying organisms such as oysters, clams, sea urchins, shallow-water corals, deep-sea corals, and calcareous plankton.

Ocean acidification could trigger a chain reaction of impacts through the marine food web, beginning with mortality of larval fish and shellfish, which are particularly vulnerable. This will affect the fishing industry and threaten the food security of many of the world's poorest people. Many economies are dependent on fish and shellfish and people worldwide rely on food from the ocean as their primary source of protein. Most regions of the ocean will become inhospitable to coral reefs, affecting food security, tourism, shoreline protection and biodiversity.

Current legislation is only just beginning to address ocean acidification, mainly through overarching climate change strategies (such as 7<sup>th</sup> EU Environment Action Programme and EU Adaptation Strategy) and through the UN's Sustainable Development Goals; SDG 14: Life below water aims to 'sustainably manage and protect marine and coastal ecosystems from pollution, as well as address the impacts of ocean acidification'. In order to halt the exponential rise in ocean acidification global, national and regional legislation is necessary. This requires cooperation with partner countries, including neighbouring countries and overseas countries and territories. It also requires transparent engagement with non-governmental actors is important in ensuring the success of the 7th EU Environment Action Plan and the achievement of its priority objectives.



Recognising that biodiversity loss and the degradation of ecosystems through ocean acidification have important implications for the environment and human well-being, have impacts on future generations and are costly for society as a whole:

KIMO urges the European Commission and Member States to:

1. Include ocean acidification in global climate change policy discussions;
2. Develop robust mechanisms that maintain marine biodiversity and build resilient ecosystems so that loss of species through ocean acidification does impact the food chain;
3. Ensure involvement of local actors – NGOs, private sector, academia - as stakeholders in ocean acidification actions.

KIMO members:

Agree to submit this Resolution to all National Governments, the European Commission and other relevant organisations.