

## **Bringing into full play the function of marine carbon sequestration and developing marine carbon sequestration economy**

### **1. Title**

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### **2. Background**

Oceans are the main absorbers of carbon dioxide. According to statistics, the oceans absorb about 93% of the greenhouse gases in the atmosphere. Coastal blue carbon (mangroves, salt marshes, seaweeds, etc.) and water blue carbon, especially marine inert dissolved organic carbon pools dominated by microorganisms, have the same reserves as atmospheric carbon dioxide, with an average carbon age of about 5,000 years. The oceans absorb large amounts of carbon dioxide and solidify it, which is larger and longer than forest carbon sinks. Fully exerting the function of ocean carbon sink and developing ocean carbon sink economy are effective ways to solve and control global warming problem based on nature. Because people have a late understanding of the function of ocean carbon sinks, there are few projects to achieve ocean carbon sinks.

### **3. Protecting Marine Ecology and Improving Carbon Sequestration Capacity of Ecosystem**

Bio-pump and micro-bio-carbon pump are two important ways of ocean carbon storage. They have not only important scientific significance, but also broad application prospects. It can be used to increase carbon sink, so as to achieve the purpose of emission reduction. Coastal blue carbon ecosystems, including mangroves, salt marshes and seagrass beds, can absorb large amounts of carbon from the atmosphere and oceans, and store it in ecosystems, playing an important role in mitigating climate change. Marine ecological disasters can seriously reduce the offshore marine carbon storage capacity, so the protection of marine ecosystems is essential. We should reduce land fertilization and coordinate land and sea management to solve environmental problems such as coastal eutrophication, red tide, acidification and anoxia. Reduce the destruction of seagrass beds, mangroves and salt marshes by human activities and promoting marine biodiversity. Policy frameworks, management methods and financial incentives for the protection, restoration and sustainable use of coastal blue carbon ecosystems are encouraged.

### **4. Comprehensive Monitoring and Forecasting of Marine Ecological Disasters**

Monitoring marine ecological disasters, such as red tides and green tides, caused by environmental factors such as climate change, extreme weather events, environmental pollution and changes in marine habitats; Investigate the coastline and ecological environment of the ecological seawall engineering area, and determine the functional elements and spatial allocation of the ecological seawall according to local conditions, including coastal topography, coastal natural vegetation, beach and so on.

The long-term characteristics of marine ecosystems and early warning of major marine ecological and environmental disasters should be forecasted, and the comprehensive monitoring, risk identification and forecasting and early warning capabilities of marine ecological disasters should be improved to provide basic guarantee for the protection of marine ecological environment.

#### **5. Monitoring of marine atmospheric greenhouse gases in offshore waters**

Strengthen the monitoring of offshore marine atmospheric greenhouse gases, establish the continuous monitoring capability of atmospheric concentration of carbon dioxide and methane over offshore oceans, monitor the background changes of emission-limited greenhouse gases and the distribution of sea-air carbon fluxes accurately, master the laws of carbon sources, sinks and transport, and provide the most basic data support for the research of marine carbon sink function.

#### **6. Developing Ocean Carbon Sequestration Economy and Promoting Blue Carbon Development**

Strengthen the protection of marine resources, adhere to the line of sustainable development, contribute to the construction of ecological civilization, develop the marine carbon sink economy, realize the marine carbon sink and create economic value at the same time. We will vigorously promote innovation and development of marine carbon sequestration and storage technologies, develop marine renewable energy development technologies, actively develop marine carbon sequestration industries, build marine pastures, develop beach planting technologies, and develop marine carbon sequestration fisheries. Strengthen the ocean carbonization and cooperation of all countries in the world, vigorously develop the ocean economy and prosper the global economy.

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