

Groundbreaking research reaffirms Seaweed Farming's potential as a Blue Carbon Solution

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A study published by Oceans 2050 has demonstrated that seaweed farming can significantly mitigate climate change. The findings also underscore the need for robust frameworks to develop carbon credits for seaweed farming, ensuring that this promising Blue Carbon strategy can be integrated into carbon markets. By prioritizing marine spatial planning and sustainability, seaweed farming has the potential to become a cornerstone of the regenerative Blue Economy.

By quantifying the carbon sequestration potential of seaweed farms, the Global Seaweed Project demonstrates the feasibility of creating a new blue carbon market that can support both climate mitigation and the development of a sustainable Blue Economy.

This study, entitled "Carbon burial in sediments below seaweed farms matches that of Blue Carbon habitats," represents the first comprehensive and empirical study of carbon burial rates beneath seaweed farms worldwide. President Alexandra Cousteau, along with Chief Scientist Professor Carlos Duarte, unveiled landmark findings.

Conducted across 20 seaweed farms spanning five continents, the study confirms that seaweed farming can sequester carbon in the sediments below at rates comparable to vegetated coastal ecosystems like mangroves, salt marshes, and seagrasses. This research highlights the dual benefits of seaweed farming: meeting food security and economic development

goals while advancing climate change mitigation efforts.

Key findings include:

- Seaweed farms bury carbon at rates similar to mangroves and seagrasses, two ecosystems already known for their climate benefits.
- Older and larger seaweed farms store more carbon, showing that sustainable farming can have lasting impacts.
- If expanded worldwide, seaweed farming could remove up to 140 million tons of CO₂ from the atmosphere by 2050.

“This research provides compelling evidence of the critical role seaweed farming can play in addressing the climate crisis,” said Alexandra Cousteau, President of Oceans 2050. “By quantifying its carbon sequestration potential, we hope to unlock new avenues for investment in sustainable aquaculture as a climate solution.”

Professor Carlos Duarte, lead author and Chief Scientist of Oceans 2050, emphasized the study’s broader implications: “Seaweed farming offers a scalable, nature-based solution for carbon removal while delivering co-benefits such as biodiversity enhancement, economic opportunities, and food security. This research is a pivotal step towards integrating seaweed aquaculture into global climate strategies.”

This research is part of Oceans 2050’s Global Seaweed Project, launched in September 2020, and marks a pivotal milestone in the advancement of the seaweed industry, providing a robust scientific foundation for the creation of a verified carbon credit methodology.

The project highlights the significant social impact of seaweed farming, with over 99% of participating farmers, most of whom are women, coming from coastal communities in developing countries. This underscores seaweed farming’s potential to promote gender equity, improve food security, and strengthen local resilience to climate change.