

Domestication for Sustainable Seaweed Aquaculture:  
A Major Research Challenge for the Future of Blue Food Systems  
Co-Convened by Safe Seaweed Coalition (SSC) and the Zanzibar Seaweed Cluster Initiative (ZaSCI)  
July 7, 2021  
Summary

This event, moderated by Nichola Dyer of the Safe Seaweed Coalition, used a mix of keynote and panel addresses, together with polls and chat questions to engage the audience. It engaged 50 active participants from multiple stakeholder groups around the world. Poll results at the outset indicated that the group was somewhat knowledgeable about seaweed's varied uses and applications, and more than half of the attendees had consumed seaweed in the past week. A follow-up poll deployed at the end showed a marked increase in enthusiasm for and interest in seaweed.

Dr Myriam Valero, of the French National Scientific Research Centre CNRS, delivered the keynote, on the history of human interaction with seaweed, the steps on the trajectory from wild to domesticated seaweed, and how to better integrate knowledge on ecology and genetic diversity to promote sustainable seaweed production. She called domestication an “eco-evolutionary process”, stating that research on seaweed domestication should be oriented towards management practices and breeding strategies that allow the maintenance of its evolutionary potential.

The panel consisted of Dr Alejandro Buschmann, Professor, Universidad de los Lagos, Chile; Al-Jeria Abdul, Head of Sustainability at Seadling; Dr Flower E. Msuya, Senior Researcher at the University of Dar es Salaam and Founder and Chair of ZaSCI; and Vincent Doumeizel, Senior Advisor, Ocean at UN Global Compact and Director, Food Programme at Lloyd's Register Foundation. Alejandro spoke to the importance of finding more efficient seaweed harvesting methods that create higher yield and optimal light harvesting, by improving breeding of seaweeds as well as our physiological understanding and technical development of these plants, through more research. Al-Jeria noted seaweed's high and various nutrient content and its potential to tackle environmental issues, cited numerous ways in which seaweed can boost nature-positive food production, advance equitable livelihoods and promote social, gender, and economic equality. The production side can be very labor-intensive and inefficient and she called for innovative solutions to pull the industry “out of the Stone Age”. Flower spoke of the challenges faced in domesticating seaweed in Tanzania, including the need to develop new technologies to farm in deeper waters as ocean temperatures warm, particularly in shallow waters where seaweed is most commonly harvested. Research is needed to understand seaweed as food—how to domesticate new species, expand the number of seaweed-based food products, and increase awareness of the benefits of eating seaweed. Vincent stressed that seaweed is not only safe to eat, but nutritious and beneficial as well, the growth potential for seaweed farming, and the need to unify seaweed supply chains and markets. Clear regulatory guidelines for seaweed domestication are needed, established with the industry, and working with farmers and communities to promote safe and sustainable domestication, production, and consumption. Doing so could help ours be the first generation to restore ocean diversity and feed the world.

Each speaker also noted various pathways by which seaweed can help achieve SDG2. They agreed there is a vast research agenda to fill the knowledge gaps on how to scale up global seaweed domestication and production sustainably and responsibly for all involved stakeholders.

Discussion points included the evolution of seaweed domestication, the role of gender in the seaweed industry, seaweed's potential contributions to the achievement of SDG 2, the importance of advancing research, developing new farming technologies, creating a market for value-added seaweed products, and the need for rapid evolution in seaweed domestication. Audience members asked a broad range of questions, including about developing inland and freshwater systems, and managing biodiversity loss.

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