



Spotlight on Innovation in Republic of Korea's Seaweed Sector: Entrepreneurial Startups Expand into Global Markets



Thursday, April 11, 2024

6:00-7:30 a.m. EST (Washington, D.C.)

7:00-8:30 p.m. KST (Seoul)

10-11:30 a.m. GMT

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The seaweed sector is brimming with untapped potential that extends far beyond its current primary uses as food, aquaculture feed, and hydrocolloids. [The World Bank Global Seaweed New and Emerging Markets Report 2023 estimates the growth potential across 10 emerging seaweed markets could be up to US \\$11.8 billion by 2030.](#)

In particular, seaweed may have the potential to play a more substantial role in biodegradable packaging, a market that is projected by India-based Mordor Intelligence to grow from [US \\$105.26 billion in 2024 to US \\$140.66 billion by 2029, at a compound annual growth rate \(CAGR\) of 5.97%](#). The World Bank projects [a 36 percent CAGR on seaweed-based meat and seafood alternatives, which will add \\$448 million between 2022 and 2030. This was estimated to be worth \\$10.2 billion in 2022.](#)

The Republic of Korea has soared to the top of the seaweed private sector ranking capturing [a 70.6% share of the global dried seaweed market valued at \\$918 million](#). Korea is also at the forefront of a transformative wave in the realm of sustainable innovations, with startup companies pioneering the exploration of seaweed's extensive potential.

This webinar draws inspiration from the country's successes and will highlight significant growth opportunities and innovative applications in new regions. It is designed to promote private sector growth and strengthen collaboration between the private and public sectors.

In this webinar we will be joined by three private sector innovators that have received support from the government of the Republic of Korea to develop seaweed enterprises. The Korea Institute of Marine Science & Technology Promotion ([KIMST](#)), a public organization governed by the Ministry of Oceans and Fisheries, is providing phase-specific startup support and cultivating an innovative ecosystem for entrepreneurs in the marine industry.

Two enterprises, [SeaWith](#) and [HN Novatech](#) are offering healthier alternatives to meat consumption, promoting a more sustainable, health-conscious food system. Lastly, we will hear from [Marine Innovation, which](#) produces biodegradable plates made from seaweed, providing an innovative eco-friendly dining solution that minimizes waste and enhances environmental awareness.

AGENDA

Chair and Moderator

Chris Brett, Lead Agribusiness Specialist, Agriculture & Food Global Practice, The World Bank

Presentations

Ms. Seul-A Kim, Team Leader, Korea Institute of Marine Science & Technology Promotion (KIMST)

Yanghee Kim, CEO, HN Novatech

Joonho Keum, CEO, SeaWith

Wan Young Cha, CEO, Marine Innovation

Discussant

Dr Junning Cai, Economist and Aquaculture Officer, Food and Agriculture Organization of the United Nations (FAO).

Question and Answer

Harrison Charo-Karisa, Senior Fisheries Specialist (Aquaculture), Environment, Natural Resources & Blue Economy Global Practice, The World Bank

Closing Remarks

Chris Brett, Lead Agribusiness Specialist, Agriculture & Food Global Practice, The World Bank

SPEAKERS:



Chris Brett was appointed as the Lead Agribusiness Specialist with the World Bank in November 2016 and joined the Agriculture and Food Global Agricultural Practice, based in Washington, D.C. He has a master's degree in management for Agricultural Development from Cranfield University in the United Kingdom. He has more than thirty years' experience working within the public private and voluntary sectors in Africa, Asia, and Latin America.



Seul-A Kim serves as the team leader of the Entrepreneurship Investment Team at the Korea Institute of Marine Science & Technology Promotion (KIMST). She has expertise in supporting marine fisheries startups and investment initiatives, as well as managing marine fisheries R&D projects and public institutions.

KIMST, as a public organization under the Ministry of Oceans and Fisheries, has advocated for the creative planning of marine science and technology, leading technology development, discovering collaborative projects, and providing preemptive policy support. KIMST supports marine enterprises with technical services to enhance intelligence, informatization, and the high-value addition of marine science and technology. It is also endeavoring to offer phase-specific startup support and build an innovative ecosystem for entrepreneurs in the marine industry who face challenges in identifying technology trends amid the rapidly changing R&D environment.



Yanghee Kim currently serves as the CEO of HN Novatech, a company dedicated to advancing the possibilities of plant-based alternatives. Notably, Ms. Yanghee Kim has led groundbreaking projects, including the development of the world's first plant-based mackerel as a substitute for seafood, along with plant-based alternatives for shrimp, raw shrimp, and cocoa. Her commitment to providing plant-based alternatives that meet high standards of taste and quality is evident in achieving Vegan Certification for Amino Acid Complex (ACOM-S) with a beef flavor. Ms. Kim has held key positions in government agencies and research institutes, where she held key positions as a commissioner for both **the** Ministry of Agriculture, Food and Rural Affairs (MAFRA), as well as the

Ministry of Oceans and Fisheries (MOF). With a distinguished background that includes serving as a former Director at Gangneung Foods and CEO at GS Consulting, Ms. Kim has garnered notable accolades, such as winning the Patent Commissioner's Award.



Joonho Keum is the co-founder and CEO of SeaWith. He is currently a Ph.D. candidate in the NewBiology department at Daegu Gyeongbuk Institute of Science and Technology (DGIST), conducting research in tissue engineering and senescence biology. He won first prize in the Marine & Fisheries Startup Contest, leading to the establishment of 'Yo.od,' a startup focused on developing low-iodine seaweed using advanced technology. Leveraging his expertise in bioengineering, Joonho transitioned 'Yo.od' into 'SeaWith,' continuing the business under this new name.

'SeaWith' is now producing 'welldone,' a cultivated meat product based on algae engineering technology. They have achieved the highest production volume globally and the lowest cost using seaweed and microalgae-based materials. The company is in the process of obtaining approvals in the United States and Korea, with plans to launch the product in 2025.



Wan Young Cha is the CEO of Marine Innovation, a company that embodies the fusion of seaweed and innovation to address environmental challenges. With a focus on utilizing seaweed, Marine Innovation pioneers solutions that not only bring innovation to the forefront but also create social value through the development of eco-friendly packaging, containers, and seaweed-based foods such as sweet jelly.

Mr. Cha has over two decades of unwavering dedication to advancing eco-friendly materials and products. His journey commenced with invaluable experiences at Hyundai GLOVIS and PT.CNG Indonesia, and was acknowledged by a range of prestigious accolades, such as the 26th Marine Day Award and the esteemed President's Citation. Moreover, Mr. Cha's work has consistently aligned with the UN Sustainable Development Goals,

demonstrating a steadfast commitment to fostering innovation for positive environmental impact.



Dr. Junning Cai is an economist and Aquaculture Officer at the Food and Agriculture Organization of the United Nations (FAO). His expertise lies in economic analysis, sector assessment, policy and planning, business development, and bioeconomic modeling of aquaculture operations. He leads the development of the World Aquaculture Performance Indicators (WAPI), an FAO initiative aimed at enabling evidence-based policymaking and sector management. He has authored, edited, or developed a range of knowledge products under WAPI, including various products (e.g. global overviews, country studies, and factsheets) focusing on the algae sector. He also serves the seaweed community by being a member of the Scientific Council of the Global Seaweed Coalition and the Advisory Board of GlobalSeaweed-SUPERSTAR.



Dr Harrison Charo Karisa is a Senior Fisheries Specialist (Aquaculture) at the World Bank Group. He is currently engaged in global efforts of the Aquabusiness Investment Advisory Platform to support governments and private sector to assist aquaculture development, strengthen livelihoods, and enhance food and nutrition security. He Holds a PhD in Animal Sciences (Fish Breeding, Genetics and Aquaculture) from Wageningen University of Life Sciences, in the Netherlands and an MSc in Biodiversity from Swedish Agricultural University, Sweden.

This workshop is part of the Aquainvest Platform supported by PROBLUE and KWPF, which offers World Bank Group staff and external experts the opportunity to learn about blue economy tools and activities. [PROBLUE](#) is the World Bank's blue economy program that supports a sustainable and integrated development of marine and coastal resources in healthy oceans.

For any questions about the event please contact: aquainvest@worldbank.org or vprasad@worldbank.org