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The Sasakawa Peace Foundation at the U.N. Ocean Conference: Special Coverage

Sasakawa Peace Foundation aims to help catalyze U.N. ocean talks

Maiko Muraoka
Contributing writer

The 2025 U.N. Ocean Conference, with the theme "Accelerating action and mobilizing all actors to conserve and sustainably use the ocean," will take place from June 9 to 13 in Nice, France.

In a recent interview with The Japan Times, President Atsushi Sunami of the Sasakawa Peace Foundation (SPF), a private Japanese think tank and foundation, spoke about the significance of the conference, what Japan should communicate there and how SPF can contribute.

The U.N. Ocean Conference was launched in 2017 with the aim of supporting the implementation of the U.N.'s sustainable development goal 14, which aims to "conserve and sustainably use the oceans, seas and marine resources for sustainable development."

Sunami said the importance of this conference, which is being held for the third time, lies in promoting discussion and action among countries on issues related to the ocean that are closely linked to climate change.

"The ocean, which covers approximately 70% of the Earth's surface, plays a major role in climate-change mechanisms. However, climate-change countermeasures have primarily focused on land areas inhabited by humans, leaving discussions about the ocean less developed," he said.

To address this, Sunami said, the conference will cover diverse topics including the promotion of the establishment of marine protected areas, the sustainable management of marine resources, the creation of an international agreement on plastic pollution and the promotion of marine science. He said Japan must take the lead in these discussions by demonstrating its commitment to environmental issues and leveraging its technology for global benefit, as well as fulfilling its responsibilities as a maritime nation that has long benefited from a free, open and healthy ocean and nurtured a rich ocean-based culture.

He further suggested that Japan should expand its efforts in showcasing innovative environmental technologies and sharing its experience with sustainable resource management methods that have allowed people to benefit from the ocean while preserving marine biodiversity. He also noted that Japan, with its long-standing fish-eating culture and as a major fish importer, is well-positioned to send a strong message against illegal fishing and to take a leading role in advancing "blue carbon" initiatives, which strategically utilize coastal and marine ecosystems' carbon absorption abilities and other ecological and social benefits. "Across various regions in Japan, projects are underway to grow seaweed that not only absorbs carbon dioxide and serves as human food but also contributes to the recovery of marine resources by functioning as habitats for fish and providing benefits to the local community."

Atsushi Sunami, president of the Sasakawa Peace Foundation

"Ultimately, all of this relies on ocean science," he said, explaining that any ocean-related measures and the promotion of the "blue economy" must be based on accurate analysis of the state of the ocean, an area where Japan can also take the initiative.

However, Sunami also noted that narrow national interests do not always align with what the world needs to do to protect the ocean, so there will inevitably be tension between nations.

"In the absence of a global government with sole authority to make and enforce decisions, individual countries serve as the highest level of decision-making units. Consequently, international agreements are only effective through the continued compliance of all participating countries," he said.

He emphasized the need for non-state actors in overseeing and encouraging participating countries to ensure their compliance. "The U.N. also recognizes the importance of such non-state actors and grants special observer status to select organizations to participate as observers in U.N. conferences," he said. "Holding this status, SPF needs to help create an environment where participating countries can engage in deeper discussions when [reaching] consensus is challenging, provide necessary knowledge and support multilateral processes based on the relationship of trust."

Domestically, SPF works to communicate global viewpoints, including those of non-governmental organizations that urge nations to adhere to international standards, to the Japanese government, aiming to align national and global benefits as best it can. "We cooperate with the government to integrate these voices into Japan's policies and contribute to the international community," he said.

In conclusion, Sunami expressed his sense of mission to help communicate Japan's efforts and active engagement with ocean-related issues at the U.N. Ocean Conference in June.

SPF institute advances ocean policy-science nexus

Masanori Kobayashi
SENIOR RESEARCH FELLOW,
SASAKAWA PEACE FOUNDATION

Achieving a sustainable ocean requires effective policies, institutional transformation and stakeholder collaboration. The Ocean Policy Research Institute of the Sasakawa Peace Foundation undertakes policy research, facilitates stakeholder dialogue and supports interdisciplinary science, education and human resource development. The institute, established in 2002, was merged with SPF in 2015. With support from the Nippon Foundation, OPRI-SPF spearheads a wide range of policy research and project activities focused on ocean issues, including those related to small island countries.

Multiple sectors involve the ocean, such as fisheries, aquaculture, tourism, maritime transportation, ocean-based renewable energy and maritime security. Their various objectives can sometimes conflict, making it essential to promote co-benefits, identify synergies and optimize trade-offs. Cross-sectoral and interdisciplinary policy analysis is therefore vital. OPRI promotes policy dialogues among multiple stakeholders from holistic perspectives to facilitate policy coordination and foster collaboration.

Local and regional characteristics must also be considered when developing policies for a sustainable ocean. OPRI supports regional-level multistakeholder dialogues to reflect these characteristics in policy development and to advance regional cooperation.

This March, SPF collaborated with the Nippon Foundation and The Economist to organize the World Ocean Summit and the World Island Forum in Tokyo. During the same week, SPF hosted the "sherpa" meeting of the High Level Panel for a Sustainable Ocean Economy (also known simply as the Ocean Panel) in collaboration with Japan's Ministry of Foreign Affairs and the World Resources Institute. SPF also hosted the Asia-Pacific chapter meeting of the Friends of Ocean Action of the World Economic Forum.

Pacific island countries have been vocal in calling for the urgent implementation of measures to reduce greenhouse gas emissions and keep the global temperature increase within a threshold of 1.5 degrees Celsius. These nations are particularly vulnerable to the impacts of climate change, including more frequent and intense typhoons, cyclones and hurricanes, and rising sea levels.

There are also projections of declining fish catches in some parts of the Pacific, as warming ocean waters may cause migratory fish species to shift poleward, away from the exclusive economic zones of some island countries. Due to the relatively small size of their economies, the budgets proposed for adaptation to climate change are small and often don't meet thresholds for external funding. One of the key challenges is for Pacific island countries to collaborate in identifying shared challenges and coordinating responses. By developing regionwide project proposals, they can increase the scale of funding requests and improve their eligibility for support from international financing organizations. It is also vital to develop the capacity to design and implement projects. It has been proposed that an institute like OPRI help island countries in organizing dialogues, developing project proposals and facilitating access to financing from multiple sources including governments, philanthropic organizations and the private sector.

At the summit and forum, Palau President Surangel Whipps Jr. emphasized the importance of materializing blended financing to support the implementation of the Palau Blue Prosperity Plan and the Pacific island countries' Unlocking Blue Pacific Prosperity initiative. Filimon Manoni, formerly the attorney general of the Marshall Islands, serves as the Pacific Ocean commissioner of the Pacific Islands Forum. The Office of the Pacific Ocean Commissioner has been relocated from Fiji to Palau, and expectations are that it will play a more instrumental role in advancing regional cooperation toward achieving a sustainable ocean and addressing the ocean-climate nexus.

SPF hosted an international ocean seminar with the Friends of Ocean Action and the International Union for Conservation of Nature to discuss strategies for achieving the target of expanding marine protected areas to 30% of the global ocean by 2030, addressing ocean acidification and promoting "blue finance."

OPRI also collaborates with the Japan Blue Economy Association to promote the conservation and restoration of marine ecosystems. The association certifies carbon sequestered by conserved or restored seagrass and issues J-Blue Credit certificates, which companies purchase to offset their greenhouse gas emissions, thereby providing incentives to seaweed farmers and conservation organizations. OPRI also contributes to Friends of Ocean Action discussions on blue impact finance.

Additionally, OPRI manages the Ocean Shot project, a research initiative that was launched in 2023 with support from the Nippon Foundation. Ocean Shot provides grants for research aimed at discovering new marine species and ecosystems, as well as collecting related data and developing technological applications. In 2023, four proposals were selected from among 30 applications. The second round of proposals were selected in 2024, and the call for 2025 is expected to be released shortly.

SPF President Atsushi Sunami speaks at the Blue Africa Summit. SASAKAWA PEACE FOUNDATION

OPRI also manages the Ocean Education Pioneer School Program, which supports elementary, junior and senior high schools in designing and implementing ocean education initiatives. These schools engage with local organizations to give students opportunities to learn about coastal and marine ecosystems and explore solutions to the challenges they face. OPRI also manages a fellowship program that supports students studying at the World Maritime University in Malmo, Sweden. Each year, OPRI hosts fellows from the university for two weeks of training in Japan. OPRI has collaborated with Nelson Mandela University in South Africa and the Marine Science Institute of the University of the Philippines Diliman to design a pragmatic, intensive leadership development program for sustainable blue economies.

The Sasakawa Peace Foundation has convened a high-level expert meeting on sustainable blue economies in Africa. Africa's population has been growing steadily, making sustainable blue food an important policy objective to ensure food security. At the same time, it is essential for the continent to conserve marine and coastal ecosystems, promote sustainable fisheries and aquaculture, and eliminate illegal, unreported and unregulated (IUU) fishing.

Africa also faces multiple challenges, including climate change and human-induced impacts that have adversely affected coastal fisheries. As the government of Japan prepares to host the ninth Tokyo International Conference on African Development in Yokohama this August, SPF aims to develop policy recommendations and build networks to foster partnerships for implementing programs and projects that support sustainable blue economies in Africa.

Mitsutaku Makino has directed the OPRI program since January while concurrently serving as a professor at the Atmosphere and Ocean Research Institute at the University of Tokyo.

The president of the Sasakawa Peace Foundation, Atsushi Sunami, said, "We must act more proactively to engage various stakeholders around the world in forging concerted actions to achieve a sustainable ocean."

SASAKAWA PEACE FOUNDATION
Think. Do. and Innovate-Tank

Bonds catalyze financing for 'blue economies'

Masanori Kobayashi
SENIOR RESEARCH FELLOW,
SASAKAWA PEACE FOUNDATION

Mobilizing financial resources is one of the key policy pillars for promoting sustainable "blue economies." A number of innovative financing mechanisms and approaches have been explored around the world. One such approach is the issuance of bonds for blue economies, commonly known as "blue bonds."

Mizuho, a leading financial group in Japan, has been advancing ESG investment and sustainability financing. For example, Mizuho supported the issuance of a blue bond in 2022 for Maruha Nichiro, a seafood supply company. Valued at ¥5 billion ($34.2 million), the bond contributes to the company's plan to construct a land-based salmon farm in the Toyama Prefecture town of Nyuzen, located on the northern coast of central Honshu. The project employs a closed-circulation system that aims to conduct aquaculture without discharging fish excrement or fishmeal residues into the sea. It is expected to supply "blue" food through a sustainable production system.

In 2023 and 2024, Mizuho supported the issuance of blue bonds by Iwate Prefecture in northeast Japan by issuing blue bonds. The bond issued in 2023, valued at ¥5 billion, promoted various initiatives in fishing communities, including the development of sewage systems, the restoration of seagrass beds, the removal of debris in fishing zones, sanitary facilities for handling fish, maintenance of a fisheries high school training ship and construction of wave embankments. The second bond, with the same value, was issued in 2024 to continue facilitating these efforts.

Oyster farming is a key form of aquaculture in Iwate Prefecture. MASANORI KOBAYASHI

World Ocean Summit 2025 Side Event at Mizuho. MIZUHO FINANCIAL GROUP

Additionally, in 2023, Mizuho supported the issuance of a blue bond by the government of Indonesia — the first sovereign blue bond in Asia. Valued at ¥20.7 billion, it was followed by a second bond in 2024 worth ¥25 billion. These bonds aim to finance sustainable marine and coastal projects.

The specific impacts of these blue bonds have yet to be fully realized. However, they have successfully helped mobilize financial resources and foster collaboration between governments, businesses and investors to promote sustainable blue economies.

"Blue bonds will help governments and businesses in their efforts to promote sustainable blue economies and empower coastal communities," said Kotaro Sueyoshi, joint general manager of the Sustainable Business Promotion Department in Mizuho Financial Group.

Innovations toward sustainable marine economies

Coral destruction and bleaching are among the adverse consequences of the warming of ocean waters, the increasing intensity of typhoons, the development of coastal lands and worsening marine pollution. The Kunming-Montreal Global Biodiversity Framework, adopted in 2022, calls for action to restore at least 30% of degraded ecosystems and conserve at least 30% of marine and coastal areas by 2030.

The Okinawa village of Onna, known as Onnason in Japanese, is a popular tourist destination renowned for its snorkeling and diving spots 45 kilometers north of Naha, the prefectural capital. In 2018, the Onna Village Office adopted the Coral Village Declaration, committing to the conservation and restoration of coral reefs through initiatives on coral farming and transplantation.

Mozuku, a seaweed native to Okinawa, is rich in water-soluble dietary fiber that supports the health of the immune system. Co-op supermarkets have established a trust fund for coral conservation, contributing 1% of revenue from mozuku sales. These funds support coral farming and transplantation in areas where reefs have been damaged or depleted.

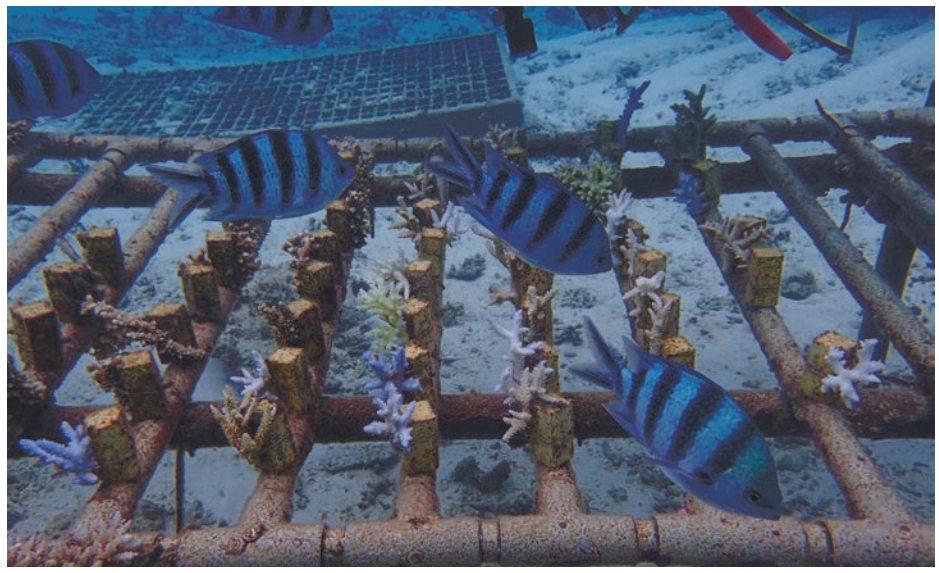
Onna village continues to face challenges in optimizing tourism and enhancing the marine environment. The pandemic severely impacted the tourism sector in Okinawa in 2020 and the following years. However, one positive outcome has been the improvement in seawater quality in the area. Water visibility is better than before, allowing for clearer views of marine life, and coral growth has also improved.

Mozuku is marketed throughout Japan. Okinawa hotels serve the seaweed as part of their meal offerings, making the return of tourists essential for revitalizing the consumption of mozuku there. Consequently, it is increasingly acknowledged that rather than merely restoring the number of tourists to pre-pandemic levels, it is crucial to promote tourism in a way that does not compromise the enhanced marine environment.

Coral transplantation in Onna village, Okinawa MASANORI KOBAYASHI

Local sugarcane farmers strive to cover their land with grass species during the fallow period. Bare land contributes to red soil runoff, which increases sedimentation and turbidity, ultimately hindering the growth of corals and mozuku. Grass coverage mitigates red soil discharge into runoff and the marine environment while enhancing soil nutrients. Sugarcane farmers aim to boost sugarcane production while reducing red soil runoff to protect the marine ecosystem and support its productivity.

"Coral reefs symbolize a healthy ocean, which is vital for fisheries and mozuku farming," said Masami Yamashiro, the managing director of Sea Growth, a nonprofit organization dedicated to coral reef conservation, and a former president of the Onna Village Fishery Association.



Farmed juvenile coral MASANORI KOBAYASHI

Restoring fish habitats with oyster-shell structures

Fish stocks are being depleted for multiple reasons, one of which is the destruction of fish habitats and spawning grounds. A venture company based in Okayama called Kaiyo Kensetsu — which means "ocean construction" — has been promoting innovative approaches to restoring these critical environments.

Kaiyo Kensetsu has developed a cubic structure made of steel frames filled with discarded oyster shells. This system, called Shellnurse, ranges in size from 1 to 2 meters per side, and multiple units can be combined to create a mound. It serves as both a habitat and spawning ground for fish, and also helps aggregate them. Shellnurse has already seen success in many parts of Japan.

After oysters are harvested for food, their shells are often discarded as waste. In some regions, these discarded shells are crushed and repurposed as fertilizer for farmland. However, there is a growing belief that it may be more beneficial to return the shells to the ocean, as they originate from there. Reintroducing oyster shells could allow them to dissolve and release calcium and calcium carbonate, which could help mitigate ocean acidification.

There is growing recognition of the potential of oyster shells to restore fish and shellfish habitats on the seafloor. A comparative study examined the impact of oyster shells versus turban snail shells on increasing fish and shellfish biomass. The results indicated that areas with a concentration of oyster shells supported a greater abundance of juvenile shellfish than those with turban snail shells.

Various laws regarding the protection of the marine environment prohibit the dumping of waste in coastal areas. Therefore, the installation of shell nurseries must be time-bound and should not be considered a form of waste disposal. The duration for these installations can be set for 30 years. When shell nurseries are placed in typhoon-prone areas, they may be displaced to different locations due to strong waves and tides. It is crucial to carefully select the locations for shell nursery installation to avoid areas that are susceptible to typhoons and strong tidal currents.

A variety of kinds of artificial reefs have been on the rise. Some efforts focus on utilizing steel slag products, which contain iron and calcium components that are effective in restoring seagrass habitats. Additionally, porous and permeable concrete structures are employed as artificial reefs, serving the dual purpose of acting as wave breakers and controlling coastal erosion. The type of artificial reef selected should be based on site characteristics and specific objectives.

Kaiyo Kensetsu has launched a pilot project in La Paz, on the western coast of Mexico. A key feature of this initiative is a local agreement among fishermen not to fish in areas where Shellnurse units are installed. These zones are designated as sanctuaries, and fishermen harvest only those fish that swim out of the protected areas — benefiting from the spillover effect of the Shellnurse system.

"We help nature restore its function by applying natural materials to the extent possible," said Masaki Katayama, the president of Kaiyo Kensetsu.

A Shellnurse artificial reef in La Paz, Mexico MASANORI KOBAYASHI

Shellnurse components containing oyster shells MASANORI KOBAYASHI

Promoting sea sustainability with oyster farming

TAEKO TERAO
Contributing writer

One man is working to revive Japan's oceans through oyster farming, saying, "The sea is dirtier than you might think." His oysters, which he grows using a new cultivation method he developed himself, are strongly backed by starred chefs.

That man is Satoshi Umetsu, president of Umiotoko Co. Ltd. His company is located in Tara, a Saga Prefecture town on the Ariake Sea, one of the most productive oyster farming areas in Kyushu.

Umetsu in Benin, inspecting oyster farming operations.

A delegation of legislators came all the way from Mexico to visit Umetsu.

Umetsu's oysters are a big hit on Japanese e-commerce sites.

Umetsu was born into a family that operates a port construction business there. He joined the family business after graduating from junior high school, and as part of that job, he dived in many ports and harbors. From the age of 33, he traveled around the country as a sales representative, witnessing increased sea pollution and the decline of the fishing industry. While the sea appears to be clean on the surface, diving allowed him to see the sludge that has accumulated at the bottom. Although the government has been making efforts toward improving marine water quality, we have not yet reached the point where we can restore sea life to the sea.

"The Ministry of Land, Infrastructure, Transport and Tourism's definition of a 'clean sea' is one that is clear and at first glance looks beautiful, but it is difficult for bacteria and other organisms to grow in water like that," he said. "From a fisherman's point of view, sea waters that look muddy because they are rich in nutrients that preserve the ecosystem are ideal."

With this in mind, Umetsu's research into marine soil improvement led him to a potential savior: oysters. "It turns out that in a sense, oysters are at the top of the marine food chain," he said. "As phytoplankton increase thanks to nutrients flowing from the mountains into the sea, seaweed and oysters can grow. Bacteria break down the waste produced by oysters, reverting it to nutrients that fish can eat, resulting in more fish. However, when the populations of oysters and other bivalves decrease, the result is too much phytoplankton, producing red tides and collapsing the ecosystem. One of the best things to do to return the oceans to health, therefore, is to grow oysters!"

Umetsu learned oyster farming mainly from the internet and YouTube videos by overseas producers. He could not understand English, so he copied what he saw in repeated on-site trial-and-error efforts. When he started in 2009, his efforts were largely directed at fishermen, as a way to help them. In addition to his local operations in the Ariake Sea, connections he had made in Tokushima, Kagawa, Yamaguchi and other areas through the port construction business offered him locations to develop new oyster beds, and in return, he shared with them the information he had gained from his research. This enterprise produced huge losses at first, but in 2012 the Ariake farm produced an amazingly delicious crop of oysters, which caused quite a splash when he exhibited them at the Japan International Seafood Show, organized by the National Fisheries Agency. This led him to start cultivating and selling the oysters himself. His oysters, which are grown from seed oysters native to Ariake, are small with black shells and have a concentrated sea flavor. They are quickly gaining popularity under the brand Umiotoko Oysters.

Satoshi Umetsu, the president of Umiotoko Co. Ltd., was born in Saga Prefecture in 1973.After graduating from junior high school, he started working in his family's harbor construction business, and after working as a diver, he began researching aquaculture for bivalve shellfish. He started an oyster farming business in 2014. His Umiotoko Oysters won the 2020 Grand Prix in the "Undiscovered Gems of Japan" competition, produced by Active Learning Co. President Takuya Hane. PHOTOS: UNDISCOVERED GEMS OF JAPAN / UMIOTOKO

"Locally sourced oysters are naturally suited to the Ariake Sea climate," Umetsu said, "so they are more robust and less susceptible to disease. This also helps to protect the sea."

Amid that success, a calamity occurred: Umetsu refused to use the seed oysters from Miyagi Prefecture that are prescribed by the Fisheries Cooperative, leading to his expulsion from the oyster division at the Oura Branch of the Ariake Sea Fisheries Cooperative in March 2019 and a ban on him performing any oyster farming, causing him tremendous financial losses. This put him at odds with the fishermen's cooperative. He filed a lawsuit with the Saga District Court to confirm that his expulsion was invalid and to claim damages.

Umetsu expresses his desire to "use the ocean more freely while preserving nature." The numbers of fishermen and industry newcomers are currently increasing, so plans are underway to create a Kyushu oyster brand, launch e-commerce enterprises and organize oyster tourism in Kyushu to allow visits to producers in its various regions. Incidentally, on the day of our online interview, Umetsu was visiting Benin in Africa to pass on how he plans to realize oyster farming.

"Oyster farming does not incur feed-related costs, making it a good way for developing countries to bring in foreign currency," he said. "Furthermore, increased digitalization of operations is shortening labor times for fishermen. This in turn frees up time for maintaining the mountains, because the trees and bamboo grown there are beneficial for fish reefs. A cycle like that would be ideal."

Umetsu clearly faces more challenges ahead.

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Umetsu's two sons are also involved in the aquaculture business.

The relatively small oysters have a concentrated flavor.

Democrat vs. Republican

America vs. China

White vs. Black

Economy vs. Ecology

Wealth vs. Health

Urban vs. Rural

Government vs. People

Dogs vs. Cats

Coffee vs. Tea

Man vs. Woman

Monopoly vs. Share

Privacy vs. Surveillance

Politics vs. Science

Think vs. Do

Reject vs. Embrace

You vs. Me

Argument vs. Dialogue

Where there's division,

there's an opportunity for progress.

#BeyondVS

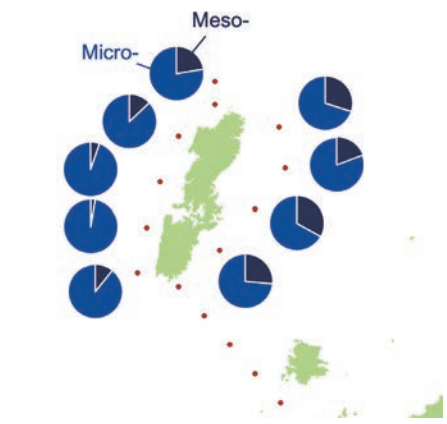
Dialogue matters.

The current state of plastic pollution in seas

ARINA TSUKADA
Contributing writer

Plastic waste entering the sea is now seen as a critical global problem. The amount already in the sea is thought to total 150 million tons, with 8 million more added every year. It is predicted that the weight of marine plastic waste will exceed that of marine life soon after 2050.

Marine waste was first identified as a problem in the 1970s, but it only started to be mentioned in international political circles at the Group of Seven summit in Elmau, Germany, in 2015. Four years later, at the 2019 Group of 20 summit, a goal was established to stop the addition of any more plastic waste by 2030.



A comparison of microplastic deposits around Tsushima, Nagasaki Prefecture, based on ocean current simulations.

Lectures and workshops on marine debris are also held regularly for the general public.

So what is the current situation with ocean plastic waste? We spoke with Yutaka Michida, a professor at the Atmosphere and Ocean Research Institute (AORI) within the University of Tokyo, and Haruyuki Kinoshita of the Institute of Industrial Science (IIS) at the University of Tokyo. Both are working on a joint research project, FSI Marine Plastics Research, being conducted by the University of Tokyo and the Nippon Foundation.

Oceanographic surveys involving the sampling of seawater and silt from the seabed are designed to show how marine plastic waste moves and where it accumulates. PHOTOS: THE UNIVERSITY OF TOKYO FSI — NIPPON FOUNDATION RESEARCH PROJECT ON MARINE PLASTICS

"In a survey to help us understand the current situation, we investigated the plastic density in seawater samples taken over the past 70 years [1949-2016] by Japanese fisheries research and educational institutes, and found that the volume of plastic waste has been increasing tenfold every decade," Michida said. "Meanwhile, recent research has shown that the smaller the plastic particles, the more likely they are to accumulate in the mud on the seabed. Further, it has become clear that the size and type of plastic will influence its distribution by ocean currents and also the time it takes to accumulate within living organisms. This knowledge will potentially help us develop plastics with less environmental impact in the future."

With his colleagues, Michida is also investigating the effects of ocean plastics on marine life and the human body.

"When we examined hermit crabs that lived in coastal areas where plastic pollution was advanced, we found that in addition to microplastics, chemical substances added during the plastic manufacturing process had also accumulated inside them. Those substances may also be harmful to the crabs' metabolism," he said. "We also investigated the effect of microplastics on the human body. After conducting experiments using cultured cells, we discovered that fine particles of tens to hundreds of nanometers in size can enter the human bloodstream and lymph nodes. As a result, it is highly possible that humans will also absorb microplastics, and harmful substances will accumulate inside their bodies."

So all sorts of problems are connected with ocean plastics. But perhaps the most important task now is to raise awareness in order to reduce the amount of waste that is generated in the first place. Kinoshita spoke about an oceanographic data research platform he is working on, OMNI, that involves the participation of local residents.

"The efforts of researchers alone will never be enough, so we are trying to build a mechanism to collect data [on microplastics] with the help of citizens," he said. "Recently, we have collaborated with Zushi city [in Kanagawa Prefecture] to collect beach sand with local children, and we are now developing a program that will calculate the total amount of microplastics found in those samples. These educational activities are greatly appreciated by the Zushi citizens, who tend to be environmentally conscious. On the other hand, in places like Tsushima in Nagasaki Prefecture, the situation is different, because instead of household waste we find a great deal of industrial waste that is washed there from other countries. The opinions and ideas of the locals will differ by location, so it is important to hear from them directly."

Currently the project is entering its second phase, and plans are afoot for further collaboration with local science groups, local governments and citizens to raise awareness. When it comes to keeping plastics out of the ocean, it seems there is still much more that needs to be done.

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A survey is conducted to investigate the amount of microplastics on the ocean surface.

When algae and bacteria grow on plastic debris, it becomes heavy and sinks to the seabed.

Charting a new future with the Blue Ocean Dome

The Blue Ocean Dome at Expo 2025 in Osaka, an immersive pavilion on ocean beauty and fragility. ZERI JAPAN

Yusuke Saraya
HONORARY DIRECTOR OF THE BLUE OCEAN DOME AT EXPO 2025 OSAKA, KANSAI
CHAIRMAN OF THE NPO ZERI JAPAN

The oceans, covering over 70% of our planet, are the foundation of life on Earth. They provide essential resources — food, oxygen, climate stability — and support countless industries and cultures worldwide. Yet today, they face escalating threats: Pollution, climate change and overexploitation are pushing marine ecosystems to a critical tipping point.

At Zeri Japan, we believe the fate of the oceans is inseparable from humanity's future. Recognizing the urgency of the crisis, we have presented the Blue Ocean Dome at Expo 2025 in Osaka — not merely as an exhibition, but as a call to action.

The Blue Ocean Dome is not just a pavilion. It is an immersive experience designed to confront visitors with the reality of the oceans' beauty and fragility. Through cutting-edge technology, scientific insight and artistic expression, it challenges each of us to rethink our relationship with the oceans and to recognize the stakes of inaction.

Global problems demand global solutions. The Blue Ocean Dome serves as a platform to showcase Japan's innovations and to foster international collaboration toward protecting marine ecosystems. Our focus is not only to raise awareness, but to catalyze real-world action — from reducing plastic waste to transforming fisheries toward sustainable practices.

Zeri Japan stands committed to advancing the United Nations' sustainable development goals (SDGs) by connecting science, society and policy. Through the Blue Ocean Dome, we aim to inspire a movement that transcends borders — because the oceans, and the future they sustain, belong to all of us.

At Expo 2025, we invite the world to engage with these urgent issues.

The Blue Ocean Dome represents not a starting point, but a decisive step toward ensuring that our oceans — and the life they support — can thrive for generations to come.

This article is sponsored by Zeri Japan (https://www.zeri.jp/en/)

ZERI JAPAN

Mitsui O.S.K. Lines leads way in sustainable shipping

Masanori Kobayashi
SENIOR RESEARCH FELLOW,
SASAKAWA PEACE FOUNDATION

Ships carry around 90% of internationally traded goods, by volume. Safe, timely and efficient maritime transportation is essential for delivering food, energy, medicine and other vital items to people across the globe, thereby supporting livelihoods and economic development.

Maritime transportation experienced a sharp decline during the COVID-19 pandemic but has since rebounded, surpassing prepandemic levels. It is projected to grow at an average annual rate of around 2% in the coming years. Sustainability has become a key guiding principle for the maritime sector. Although maritime transportation currently accounts for 3.1% of global CO2 emissions, this figure could rise to 17% by 2050 if no action is taken. Reducing emissions is vital for tackling climate change and protecting the marine environment.

To address this challenge, the International Maritime Organization (IMO) has set the ambitious target of achieving net-zero emissions by around 2050. It has also established interim goals of a 20% reduction in total emissions by 2030 (and striving for 30%), relative to 2008 levels, and 70% by 2040 (and striving for 80%).

Mitsui O.S.K. Lines (MOL) advocates for supporting people's daily lives from the "blue ocean" and strives to pioneer a prosperous future. In line with these corporate principles, MOL has integrated sustainability into its core management strategy.

Through its midterm management plan, Blue Action 2035, MOL aims to transform itself into a global social infrastructure company by addressing the most important sustainability issues, such as the environment, safety, human capital, digital transformation and governance. In February 2025, MOL launched the Blue Action Net-Zero Alliance as part of its commitment to achieving net-zero greenhouse gas emissions. MOL declared in 2021 its goal of reaching net-zero emissions by 2050, and outlined in 2023 a concrete pathway to achieve this target in its Environment Vision 2.2.

MOL is pioneering clean fuel use with the development of freight vessels powered by ammonia and successfully built new nine ammonia-fueled vessels, including capesize bulk carriers and chemical tankers. It is also taking steady steps toward the adoption of renewable energy in the maritime sector. For example, MOL has built Japan's first hydrogen-powered passenger ship, the Hanaria, which runs on hydrogen and biodiesel using a hybrid system combining hydrogen fuel cells, lithium-ion batteries and diesel generators.

MOL's ammonia-powered freight vessel MITSUI O.S.K. LINES LTD.

A mangrove workshop in Mauritius last December. MITSUI O.S.K. LINES LTD.

In partnership with YL Forest Co. Ltd. and under the guidance of the International Society for Mangrove Ecosystems (ISME), MOL supports the conservation of mangrove forests in Sumatra, Indonesia. MOL has also established the Mauritius International Fund for Natural Environment Recovery and Sustainability, and collaborates with Hokkaido University to support coastal ecosystem conservation, sustainable fisheries and local stakeholders' efforts toward sustainable blue economies in Mauritius. In partnership with Miura Co. Ltd., MOL developed and installed a new type of centrifugal microplastic (MP) recovery unit on one of its vehicle transport vessels in 2022. This innovation enables continuous recovery of microplastics and reflects MOL's contributions to combating marine plastic pollution.

Safety is a key component in sustainable maritime transportation. MOL places strong emphasis on developing skilled human resources to ensure safety in maritime operations. In 2018, it established the MOL Magsaysay Maritime Academy Inc. in the Philippine city of Dasmarinas. As of February 2024, 280 students had completed the four-year course and graduated.

"MOL works together with our partners and stakeholders to promote safe, secure, sustainable and inclusive maritime transport," said Toru Hikima, MOL's chief sustainability officer and deputy director general of its Headquarters of Safety Operations.

This article is sponsored by Mitsui O.S.K. Lines Ltd. (https://www.mol.co.jp/en/)

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