

KIZUNA

Early Spring
2021

Linking Japan and the World



JAPANGOV
THE GOVERNMENT OF JAPAN



Welcome to KIZUNA, the official magazine of the Government of Japan.

This bold work of calligraphy is 絆 (*kizuna*) written in Japanese. *Kizuna* means the enduring bonds between people—close relationships forged through mutual trust and support.

Originally describing the rope used to tether domestic animals such as horses and dogs, the meaning of *kizuna* has evolved over the years. A passage in *The Tale of the Heike*, compiled in the 13th century, uses the term to refer to the bonds of love between a father and his children. More recently, *kizuna* has gone beyond bonds tying together family and close acquaintances; it is now used in a broader sense of human ties and connections. Of particular note is the *kizuna* born among people during natural calamities, which fosters feelings of solidarity and serves as the underlying strength to overcome hardships.

Similarly, the *kizuna* cultivated among the countries of the world has the power to deepen cooperation for a better future. By reporting on a wide variety of topics concerning Japan, we hope that this magazine will provide opportunities for Japan and the rest of the world to connect and build strong *kizuna*.



KANAZAWA SHOKO
Calligraphy Artist

Born in Tokyo in 1985, she started learning calligraphy from her mother when she was five years old. One of the notable young calligraphers of today, her solo exhibitions have been held throughout the world, in cities such as New York, Singapore, and Prague. She was selected as one of the official poster artists for Tokyo 2020.

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HARA Yukari, the founder & executive director of the NGO MYDREAM.org, is seen in the village of Bognayili in Northern Ghana, where her activities have their base. Through promoting the development of sustainable businesses, she is aiming to create an environment that enables local children to have dreams for the future as well as the means to realize them. (see page 10)

THE WORLD'S LARGEST HYDROGEN- PRODUCTION FACILITY ON THE PATH TO ZERO EMISSIONS



The Fukushima Hydrogen Energy Research Field, the world's largest hydrogen-production facility, began operation in 2020 and constitutes a giant leap towards the realization of a hydrogen society.

Hydrogen, unlike petroleum or coal, produces no carbon dioxide when used. It can also be produced from a variety of resources, allowing renewable energy sources, such as solar, wind, and biomass, to be used. Thus, the entire process, from production to utilization, can be nearly carbon-free, which is indispensable for achieving the Sustainable Development Goals (SDGs) of climate action and affordable and clean energy.

Amid calls for a global conversion to clean energy, Japan is leading the world by applying its technological strengths, such as introducing the world's first commercially viable fuel-cell vehicle (FCV), moving forward to the realization of a hydrogen society. Japan is also showing leadership in other ways, such as through the action plan known

as the Basic Hydrogen Strategy, established in 2017, and by hosting the Hydrogen Energy Ministerial Meeting, which in 2018 was the world's first cabinet-level discussion devoted to the issue.

In those efforts, a vital role is played by the Fukushima Hydrogen Energy Research Field (FH2R), completed in March 2020. Equipped with a 10,000 kW class hydrogen production facility, the plant is producing hydrogen by utilizing electricity generated from solar panels arrayed around its perimeter. Enough hydrogen fuel can be produced at the facility every day to supply power for about 150 households (monthly consumption), or to fill 560 FCVs.

Achieving a hydrogen society requires promoting the total integration of the making, storing, and



The world's largest facility for producing hydrogen using renewable energy is the Fukushima Hydrogen Energy Research Field (FH2R).



When automobiles fueled by hydrogen generated by renewable energy become more widespread, it will contribute greatly to reducing CO₂ emissions.

using of hydrogen. A particularly critical issue is responding to fluctuations in electrical power when the hydrogen is made from renewable energy sources that vary according to the weather and other factors. FH2R uses information from a hydrogen demand-and-supply forecasting system for predicting the market demand for hydrogen, and additional data from a power grid control system, so as to maximize the use of electricity from renewable sources. The goal is to develop the most efficient hydrogen energy management system.

Compared to conventional energy, hydrogen offers new possibilities for storing and transporting energy, necessitating the development of appropriate methods. Accordingly, based on an understanding of hydrogen's properties as a fuel, verification of the safest management and transportation methods is being carried out. The operation of FH2R, where verification tests can be run on the entire process—from making to storing—is a giant leap towards realizing a hydrogen society.

In Japan, the stage of using hydrogen began prior to the stage of making and storing. Iconic examples are the Ene-Farm fuel cell (for residential use), Mirai (the world's first FCV), and the introduction of fuel-cell buses on Tokyo's metropolitan bus lines

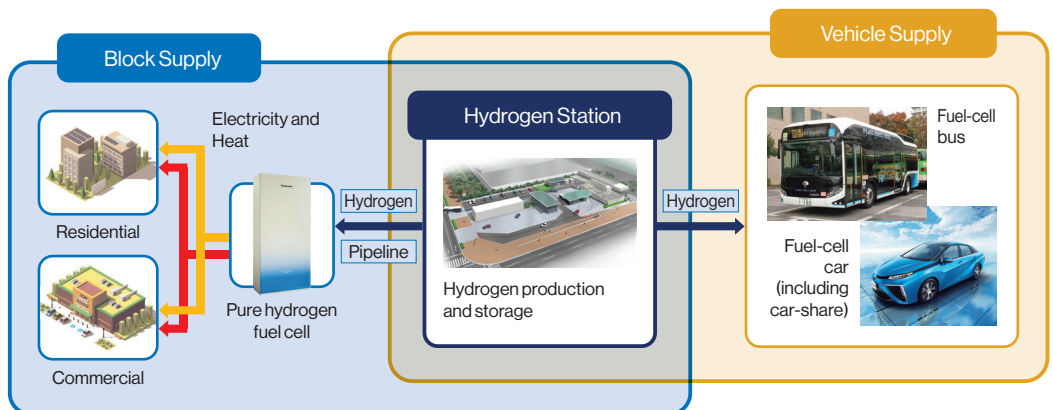
and elsewhere. Moreover, the Olympic Village area in Tokyo will be furnished with a hydrogen station, a hydrogen pipeline, and pure hydrogen fuel cells. When the Olympic and Paralympic Games Tokyo 2020 finally end, the area will be designated for residential and commercial use, and will utilize the electricity generated from these facilities. Buses and automobiles equipped with hydrogen fuel cells are being introduced as a legacy of the Tokyo 2020 Games, enabling Tokyo to be a model of an environmentally advanced city transitioning towards a carbon-free society.

Hydrogen, a clean fuel that can be stored and transported, provides flexibility and new possibilities to society beyond what was previously available with conventional energy sources. With humanity facing so many problems in need of solutions, great hopes are being placed on the switch to hydrogen. ●



The Olympic Village area for the Tokyo 2020 Games is designed as a model of advanced urban planning, utilizing hydrogen fuel.

Utilization of hydrogen in the Olympic Village area. Not only is the hydrogen supplied from a hydrogen station used as bus and automobile fuel, but plans also include broadening the extent of practical applications for utilization in residential and commercial facilities.



ARTIFICIAL PHOTOSYNTHESIS:

A STEP TOWARD A CARBON-FREE FUTURE

Dr. FUJISHIMA Akira, the discoverer of photocatalysis, is working to produce fuel by combining the hydrogen produced from solar energy with greenhouse gases.

It is not widely known that the glass pyramid in the courtyard of the Louvre Museum in Paris has a transparent coating that exhibits an antifouling effect upon exposure to natural light. Dr. FUJISHIMA Akira, a Japanese researcher, pioneered the discovery of that photocatalysis reaction, which involves the principle of breaking down dirt without using any energy or

incurring any cost. Although photocatalysis has been widely developed and put into practical use in the areas of antifouling and antifogging, research on artificial photosynthesis—the process of extracting hydrogen through photocatalysis—has also been garnering significant attention in recent years as a technology with the potential to contribute to a decarbonized society.

It was in 1967, while he was at a graduate school under the supervision of the late Dr. HONDA Kenichi, that Dr. Fujishima, alongside his supervisor, discovered the photocatalysis reaction. This phenomenon produces hydrogen and oxygen when titanium oxide is exposed to light under water, in effect reproducing the redox (or oxidation-reduction) reaction similar to that of photosynthesis in plants. So excited was Dr. Fujishima with his discovery—the knowledge that oxygen could be extracted simply through exposure to light—that he was

Dr. FUJISHIMA Akira is the director of the Photocatalysis International Research Center at the Tokyo University of Science. He discovered photocatalysis reaction using titanium oxide while enrolled at the University of Tokyo Graduate School. That discovery was later called the Honda-Fujishima effect, with research on artificial photosynthesis then being initiated around the world.

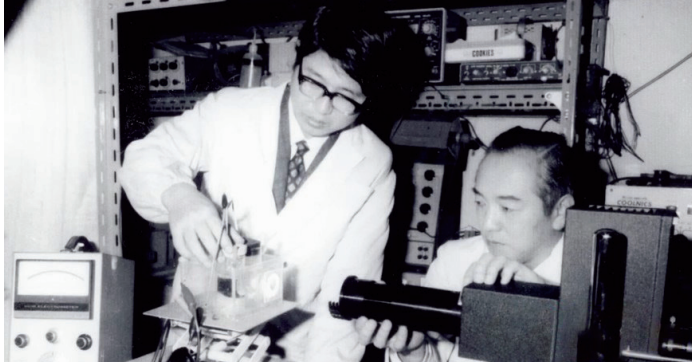


Photocatalysis acts as an antifouling and antifogging effect simply by the irradiation of light. It has also been used in the glass covering the pyramid-shaped entrance of the Louvre Museum. The glass maintains its transparent beauty by decomposing dirt.

unable to sleep for some time.

Dr. Fujishima's paper, written jointly with Dr. Honda, was published in the journal *Nature* in 1972, following which the photocatalysis reaction became known as the Honda-Fujishima effect. Ever since the oil crisis of the 1970s, the process of being able to extract hydrogen through photocatalysis has been greatly anticipated as a source of alternative energy to replace oil, and researchers around the world have been working on an efficient means to extract hydrogen via artificial photosynthesis using that principle.

With the United Nations Sustainable Development Goals (SDGs) aiming to reduce greenhouse gases, research on artificial photosynthesis has been increasingly gaining pace, though many challenges still remain. Dr. Fujishima says, "To achieve the practical applications of hydrogen production using artificial photosynthesis, the high efficiency of hydrogen extraction is, of course, the basic key factor. However, the other key factors are



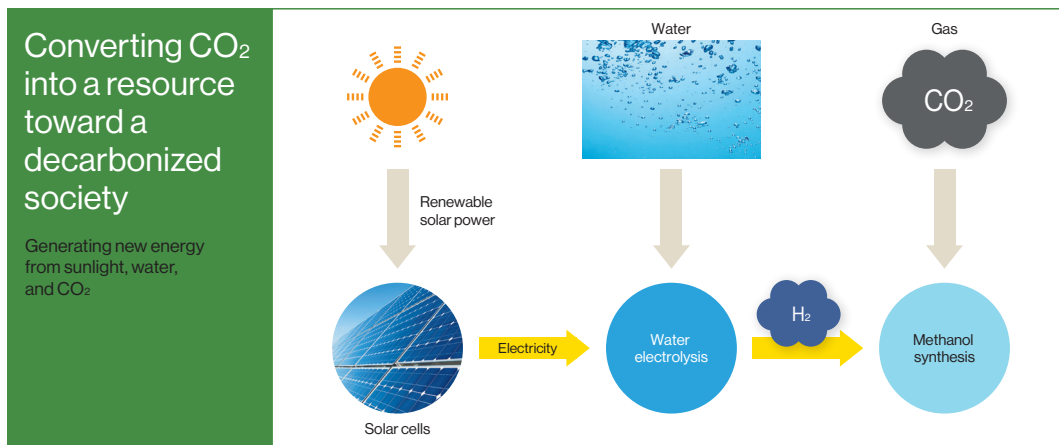
Fujishima (left) conducting an experiment with Dr. Honda in 1967. Initially, nobody believed the pair's findings, namely, that water could be broken down with light energy alone.

whether we can find a catalyst that satisfies the remaining various conditions; this includes whether the materials used as catalysts can be easily obtained, whether a large surface area photocatalyst can be manufactured, and whether any harmful substances are contained in the material. We are waiting for a breakthrough for those things in the future."

Along with the shift to replace fossil fuels with renewable energies such as hydrogen, another important measure to achieving a decarbonized society is carbon recycling, effectively using CO₂ as a resource. In consideration of that viewpoint, Dr. Fujishima has proposed the following method; first, extract hydrogen through water electrolysis using the electricity produced from highly efficient solar cells. Next, combine

the extracted hydrogen with the CO₂ emitted from power plants and factories to produce methanol, which can be used as an energy source. If this process is realized, gases containing carbon, such as CO₂, will no longer contribute to the greenhouse effect. Rather, those gases will become "resources" to replace oil and natural gas.

Dr. Fujishima currently heads the Photocatalysis International Research Center at the Tokyo University of Science, where he is leading research on further progress of photocatalysis in the fields of the environment and energy. "I think it's important for science to contribute to the world," he says. Based on his discovery, a decarbonized society, where even CO₂ is used as a resource, will soon be realized. ●





“Kehi no Matsubara” is a scenic spot of Japan. The contrast between the vast sandy beach of about 400,000 m² and the pine forest of 17,000 trees has long been loved by the people.

COMING TOGETHER IN THE FIGHT AGAINST OCEAN WASTE

Visit Tsuruga, where the local community and the municipal government have collaborated in launching bold initiatives to clean their beloved sea and beaches.



“Mizushima” is an uninhabited island located at the tip of Tsuruga Peninsula. This small island, about 500 m in length, is a popular sightseeing spot with clear, blue, shallow waters and white sandy beaches.

The Tsuruga Bay in Fukui Prefecture faces the Sea of Japan to the north, with mountains in every other direction. Located deep in the bay, the Port of Tsuruga has thrived since long ago as a gateway to mainland Asia. It is also known as a “port of humanity” for accepting Polish orphans after the Russian Revolution and Jewish refugees during World War II. In addition, the bayside is home to the beachside pine groves at “Kehi no Matsubara,” whose majestic scenery has a longstanding reputation. The sandy shore here is a popular swimming spot in summer. Members of the local community have a special place in their hearts for the quaint beaches running along the bay.



For many years, local residents have been working to preserve their beaches.

In recent years, however, this beautiful bay has been plagued by marine debris. Because of the way the deep bay brings in water from the Sea of Japan, it produces high waves in winter that carry an especially large amount of trash. The amount of trash washing up onto the bay's east side, in particular, has grown at an alarming rate. Meanwhile, much of the dramatic increase in plastic waste over the past decade has been originating from other nearby countries. In the fiscal year ending in March 2021, over 400 m³ of plastic trash will be processed in the city of Tsuruga.

At the G20 Summit in June 2019, countries agreed to swiftly take action both nationally and internationally, in partnership with relevant stakeholders, to prevent and significantly reduce discharges of plastic litter and microplastics to the oceans. In addition, the "Osaka Blue Ocean Vision," which aims to reduce additional pollution by marine plastic litter to zero by 2050, was shared. There is a recognition now that the problem of ocean waste is a global issue that transcends borders.

Despite the G20 agreement, Tsuruga's residents are in dire straits. Along the bay, which once had a thriving salt production industry as part of its history, the people have a long-held custom of keeping the beaches clean, and for many years, local volunteers and fishermen have joined cleanup efforts. Due to the ceaseless stream of trash that the currents cast onto the shore in winter, the major cleanups happen in early summer, when the beaches open to swimmers. Elementary school students also pitch in, but with the birthrate falling and the population aging, there is a limit to what the community can do. At present, Tsuruga municipal government has stepped in to help organize a framework for certain designated

businesses to routinely clean up the beaches. Since 1992, the city has also participated in the Clean Up Fukui Drive, a prefecture-wide environmental beautification project. These two efforts exemplify how the government and the business community are taking on the never-ending fight against marine litter together.

"We cannot stop the trash from coming ashore. Just like reducing CO₂ emissions, I believe that marine debris is a problem that countries and people around the world need to tackle together." So said a resident who has dealt with the waste for many years in an area where an especially large amount of trash washes up. The community is doing what it can, holding various activities to offer the children, who are tomorrow's leaders, opportunities to interact with the sea. Their hope is that by having a closer connection to this beach, those children will develop a love for beautiful Tsuruga Bay and a desire to preserve it. ●

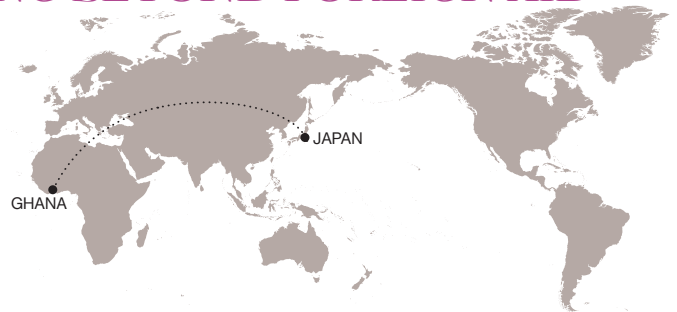


A large quantity of plastic waste with labels in other languages washes ashore in Tsuruga Bay, where the environment is influenced by the Sea of Japan's currents.

SUSTAINABLE BUSINESS

AS A MODEL FOR THINKING BEYOND FOREIGN AID

A Japanese woman has been supporting the activities of villagers in the Republic of Ghana under the slogan “Go beyond aid and be self-sustainable by 2022.”



MY DREAM.org is a non-governmental organization (NGO) operated by members of the village of Bognayili in Ghana. The NGO's aim is to increase proceeds earned through local businesses and improve the environment in which children grow up and pursue

their dreams without relying on donations. HARA Yukari is a joint representative director of the NGO, sharing the responsibility with village resident and leader Zakaria Sayibu.

Hara previously worked for Japan's Ministry of Foreign Affairs, during which time she undertook post-graduate studies in global health at a university in the United States. In 2012, while still a post-graduate student, Hara interned at an NGO in Bognayili. Despite her confidence that she “surely could contribute somehow,” it was rather she herself who was helped by people in the village, as she could not speak their language, nor even make her own meals. Nevertheless, the villagers helped Hara by warmly welcoming her. Wishing to reciprocate their goodwill, Hara helped the village establish a kindergarten schoolhouse that had been long wished for. She created a website to explain the project and collect donations, and

consequently the schoolhouse was built. It was from that endeavor that MY DREAM.org originated.

Since then, the villagers of Bognayili have undertaken more projects to improve the village's health, sanitation and education environments. Hara, who was posted to the Japanese Embassy in Ghana following her studies, also applied her knowledge and experiences to assist those projects, visiting the village one weekend each month. For the first two years, the funding for these projects was entirely sourced from donations, but the villagers argued, “If we rely on donations, we can't continue the activities.” Then, in 2014, the NGO commenced Income-Generation Activities, a project aimed at creating funding through local businesses. Hara proposed to add values to and selling the shea butter which had been traditionally produced in the village, and provided guidance to the village women on improving their sewing skills to create



Top: The board members of MY DREAM.org. From left, Cecilia Dei-Anang, Zakaria Sayibu and HARA Yukari. Bottom: MY DREAM School began holding lessons before it even had desks. Today the children learn at desks as they chase their dreams.



Part of Proudly from Africa's fine selection of fashion items and cosmetics.

garments and bags from African Print. By selling products with true appeal and quality rather than charity items, the mindset of Bognayili villagers has gradually changed.

In 2015, Hara left the Ministry of Foreign Affairs and in 2018 founded SKYAH Co., Ltd., a company that operates the shopping site “Proudly from Africa.” Exclusively showcasing the highest quality merchandise carefully selected by Hara and curators across Africa, the site provides the Bognayili women

with the aim to someday have their own products of their original brands showcased at Proudly from Africa. “Recently, even the children in Bognayili are getting inspired by the women’s enthusiasm and declaring their own dream: ‘I want to be a seamstress too!’ One of the objectives of MY DREAM.org is to create an environment in which the village children can discover and live their dreams. It is therefore important that they find people around them whom they can admire as role models. You could say that Proudly from Africa is one of the exit strategies for MY DREAM,” Hara explains.

If the local children are encouraged to study with dreams in their hearts, further sustainable businesses might sprout up in the village in the future. Hara says that the frequency of her visits to Bognayili is gradually decreasing, and her goal is for one day to be told by the residents of Bognayili, “We can now manage without



HARA YUKARI

Founder & CEO of SKYAH Co., Ltd., and joint representative director of MY DREAM.org, a Ghanaian NGO. She joined the Ministry of Foreign Affairs in 2009. In 2012, she started activities in Bognayili Village, Ghana, and founded MY DREAM.org. After leaving the Ministry of Foreign Affairs in 2015, she continued NGO activities while working in the Johannesburg Branch Office of Mitsui & Co., Ltd. She became an independent entrepreneur in 2018.

you coming to the village.” When that day arrives, we can certainly treat it as the achievement of one of the Sustainable Development Goals (SDGs). ●



Women sewing at the MY DREAM Factory in Bognayili village. The women find various ways to recycle fabrics and save on sourcing materials.

INTERNATIONAL COOPERATION TO SECURE THE HEALTHY LIVES OF CAMBODIAN MOTHERS AND BABIES

For over two decades since the end of Cambodian civil war, Japan has been providing support to the country in an effort to improve healthcare for both mothers and newborn infants.



In Cambodia, childbirth is referred to as *chlong tonle*, meaning “to cross the river.” The expression compares giving birth to crossing a large river, in that you never know when you might lose your life in the depths and fast-flowing waters of the river. By the end of the Cambodian civil war, many medical facilities had fallen into disrepair, and many healthcare

professionals and midwives had lost their lives. A large number of expectant mothers in Cambodia thus had no choice but to give birth at home, and as the name *chlong tonle* implies, childbirth was a life-threatening event for them.

With one of the lowest maternal and neonatal mortality rates in the world, Japan was quick to reach

out to Cambodia, a country that has been rebuilding its maternal and child health system ever since its collapse during the civil war. Japan sent a medical adviser to Cambodia’s Ministry of Health in 1992, one year after the war ended. And in 1997, it provided grant aid for the construction of the National Maternal and Child Health Center (NMCHC) in the capital city of Phnom Penh. The NMCHC currently has a clinical function with about 150 beds in its obstetrics and gynecology and neonatal departments, along with an administrative function that manages maternal and child health, as well as a teaching function that provides necessary training for midwives, doctors, and students from all over the country. With all these functions



Doctors learn how to use ultrasound to check the baby’s heart in the Neonatal Care Unit at the NMCHC. Midwives, doctors, and students from across the country have been trained there.

combined, the NMCHC plays a central role in maternal and child healthcare in Cambodia today.

Japan's support, however, is not limited to just the construction of the NMCHC. It started running a technical cooperation project in 1995, before the facility was built, to improve hospital management, clinical services, and training in Cambodia, with the aim of developing systems and human resources for the NMCHC. Since then, Japan has been continuing to provide such support, while understanding the needs of the local people. This support has contributed to a drop in the maternal mortality ratio in Cambodia, which was 1,020 per 100,000 live births in 1990, falling to 437 in 2000, and to 170 in 2014. It thereby achieved, ahead of time, the goal of reducing maternal deaths to 250 per 100,000 live births by the year 2015, as set out by the United Nations Millennium Development Goals. Currently, over 80% of expectant mothers in the country give birth with skilled birth attendants such as trained midwives, and awareness regarding giving birth in health facilities is growing, even in rural areas where many babies have hitherto been delivered at home.

Moreover, a project was launched in Cambodia in 2016 to encourage continuum of care for mothers and their babies. The project provides training about necessary care for newborn infants, such as teaching adequate timing of cord clamping and giving



A mother with her baby after giving birth at the NMCHC. About 7,500 babies are born each year at this health center.

advice on initial breastfeeding just after birth. It also provides training about treatment methods for premature and sick babies, as well as follow-up care for mothers and their children after leaving the health facility. The project's chief advisor, Dr. IWAMOTO Azusa, talks about the importance of the project. "The problem about giving birth is that we don't know when a normal birth will become abnormal. That's why continuum of care before and after birth is needed, not just during labor."

Dr. Iwamoto describes the relationship between the Cambodian staff members who have been working to improve maternal and child health in response to local needs, and the Japanese staff members who have been helping them with technical support, as "colleagues who have worked hard together." She continues, "We share the idea of cooperating to improve Cambodian maternal and child health, rather than the idea of supporting or being supported.

We are working together on projects so that mothers and their babies can live a better life together." The strong bond that has been built across borders in hope of a healthy life for mothers and children will no doubt continue to bridge the river for many years to come. ●



Top: Built in 1997, the NMCHC has been affectionately nicknamed "the Japan Hospital" by locals.

Bottom: Dr. IWAMOTO Azusa (front row, right) with Cambodian doctors of the Neonatal Care Unit at the NMCHC.

RESEARCH THAT SAVES US FROM INFECTIOUS DISEASES: FIGHTING TB THROUGHOUT THE WORLD

Tuberculosis is counted as one of the major infectious diseases threatening global health. A drug developed by a Japanese pharmaceutical company constitutes the first effective new anti-TB drug in about 40 years, paving the way to help conquer the disease completely.



On World TB Day, March 24, 2017, Otsuka Pharmaceutical, in cooperation with South Africa's Ministry of Health and a non-governmental organization, launched an access program for delamanid (trade name Delyba) that is still in progress. The top right image shows one of the first patients to have received the drug.

Tuberculosis (TB), which spread profusely in the countries of Western Europe during the industrial revolution, was once a threat to the entire world. However, from the 19th century onwards, improvements in living standards and healthcare led to a decline in the number of persons afflicted with the disease. Now, TB is considered by people in those countries to be a disease of the past. That assumption, however, is incorrect. According to the Global TB Report 2020, an estimated 2 billion people are

infected with the bacteria that causes TB worldwide. Even now, 1.4 million people die from the disease each year, making it one of the top 10 causes of death in the world. In fact, outbreaks sporadically occur not only in developing countries, but in Western countries as well.

Exacerbating the problem in recent years has been the appearance of multidrug-resistant tuberculosis (MDR-TB) strains that show resistance to existing TB drugs. At the Kyushu-Okinawa Summit in 2000,

Japan made combating infectious diseases, including TB, one of the summit's major agenda topics. Driven by Japanese initiatives to tackle infectious diseases, the Global Fund to Fight AIDS, Tuberculosis, and Malaria was formed in 2002. Amid renewed awareness of TB as a global health problem, an anti-TB drug developed by a Japanese pharmaceutical company is offering new hope. The drug in question is delamanid, which was developed by Otsuka Pharmaceutical Co., Ltd., and received regulatory approval in the EU and Japan in 2014. As the first new anti-TB drug in about 40 years, it is proving to be effective against resistant strains and its use is increasing throughout the world.

When a standard treatment for TB was established in the 1970s, the development of anti-TB drugs came to a standstill around the world, but Otsuka Pharmaceutical continued its development. "Patients must receive TB treatment over a much longer time compared with other infectious diseases. In quite a few cases, treatment is halted because the side effects are too severe, and without administering continuous treatment, its elimination becomes difficult. We believed that this was a therapeutic field that showed the promise of improvement from a quality-of-life perspective as well," says KAWASAKI Masanori, Global TB Project leader. "If no one else was going to do it, we felt that we must continue the research, and that ultimately led to the development of delamanid."

Rather than being administered by injection or drip, delamanid is taken orally. That is a huge advantage because oral medicine is much easier for patients to manage versus injectable drugs. Another benefit of delamanid is that there are few drug interactions with the treatments for HIV/AIDS or diabetes, meaning it could also be effective for patients with coexisting medical conditions.

After earning its first approval in Europe in 2014, delamanid has since been approved in 15 countries, including South Africa and India. In the Russian Federation, the major pharmaceutical company R-Pharm was granted licensing rights in 2017 as part of the Eight-Point Cooperation Plan. Furthermore, as of the end of 2019, the use of delamanid is now possible in over 100 countries, thanks to an agreement in 2016 between Otsuka Pharmaceutical and the



When Otsuka Pharmaceutical began drug discovery in 1971, it selected TB as one of its first research themes. Its untiring research efforts yielded fruit, realizing innovation that has spurred new drug development.

Stop TB Partnership, an organization established in collaboration with WHO and other partners.

The development of a drug to defeat bacteria that cause TB strains, which are difficult for antibiotics to act on, was not easy. The development team at Otsuka Pharmaceutical was exhaustively selective when deciding which candidate compounds to choose as the starting point of the drug discovery process. Through repeated trial and error, such as adopting unorthodox drug synthesis methods, the team finally achieved its goal.

Presently, the team is developing a next-generation drug candidate that will work by a different mechanism of action from delamanid. In February 2020, Otsuka Pharmaceutical joined hands with the Bill & Melinda Gates Foundation, Gates Medical Research Institute, Johnson & Johnson, Evotec SE, and GlaxoSmithKline plc, to set up the "PAN-TB collaboration," a consortium established to accelerate new treatments for TB on a global scale. The company is providing its knowledge gained so far through TB research. Assuring us that his team will continue to direct their efforts toward fighting TB, Kawasaki says, "As demonstrated by the novel coronavirus crisis, it is important that all countries cooperate in treating infectious diseases as a global issue. As part of that, our mission is to create an environment where treatment can be administered to patients easily and more effectively." ●



Left: Otsuka Pharmaceutical is cooperating on a project to improve TB treatment in developing countries. In Indonesia, it is working with a local university to support the evaluation of treatment for TB and MDR-TB.

Right: The Global TB Project, driven by Otsuka Pharmaceutical, is comprised of members from various countries (photo taken at the Princeton office in the United States).

PROMOTING UNDERSTANDING ON TERRITORY AND SOVEREIGNTY WITH AN ENHANCED EXPERIENCE

The National Museum of Territory and Sovereignty communicates the facts of and Japan's position on territory and sovereignty. In order to enhance understandings of these issues, various additions to the displays—from antique postcards to cutting-edge exhibitions that use projection mapping and AR—have been introduced.



The National Museum of Territory and Sovereignty opened in 2018 as a communications resource for accurate comprehension of facts about Japanese territory and sovereignty, as well as the Japanese position on those areas. The museum is located in a convenient location: just a one-minute walk from the Toranomon subway station, and close to the Imperial Palace and the National Diet Building.

The spacious exhibition area

of about 700 m² includes three main sections for the Northern Territories, Takeshima, the Senkaku Islands and other areas. Noteworthy features include the objective evidence and the displays of the allegations made by other nations and Japan's refutation—a perfect place to review the facts and deepen your understanding. Through the use of projection mapping and AR (augmented reality), key aspects, such as historical and present conditions on the islands, are portrayed vividly. The main contents in the Museum are available on the website. (https://www.cas.go.jp/jp/ryodo_eg/taiou/index.html)

The Northern Territories section has panels to introduce the history of territorial determination between Japan and Russia and the details of the negotiations between the two countries, including those held during the Soviet era. The projection mapping, which projects images onto a three-dimensional map, visualizes the process of the 1945 Soviet Union invasion and occupation of the Northern Territories. At the same time, daily commodities used by residents of the Four Northern Islands during the prewar period are exhibited, showing how the actual life of the islanders was.

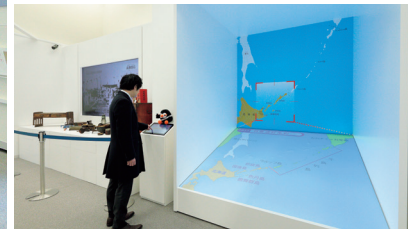
Display panels, a monitor showing video images, a diorama of the territory, and other exhibits comprise the Takeshima section. Evidence and documents substantiating the Japanese refutation are presented alongside the claims made by ROK.





Visitors are welcomed by Erica-chan, the mascot for the Northern Territories. Admission is free. Located at 3-8-1 Kasumigaseki, Chiyoda-ku, Tokyo.

The section for the Northern Territories utilizes projection mapping, helping spectators visualize the process of the Soviet Union invasion and occupation of the Northern Territories. There are also displays showing the life of Japanese islanders before the war.



The Four Northern Islands have remained occupied by Russia up until the present day, without any legal ground. The Government of Japan intends to continue to persistently negotiate with Russia, in order to conclude a peace treaty through the resolution of the Northern Territories Issue.

In the Takeshima section, evidential documents of Japan's territorial sovereignty over Takeshima prior to World War II are exhibited in a clear way, together with claims made by the Republic of Korea (ROK) and Japan's counter-arguments. In addition, there are written materials which show the recognition of the SF Peace Treaty that Takeshima is territory of Japan as well as the illegal occupation by the ROK side that is still proceeding.

Takeshima is indisputably an inherent part of the territory of Japan, in light of historical facts and based on international law, but the illegal occupation by ROK continues. Japan will continue to seek the settlement

of the dispute over territorial sovereignty over Takeshima on the basis of international law in a calm and peaceful manner.

In the Senkaku Islands section, panels introduce facts about the history of the incorporation of the Senkaku Islands into Japanese territory prior to World War II, and show that, after a postwar period of administration by the United States, administration rights to Okinawa including the Senkaku Islands returned to Japan. The fact that Chinese and Taiwanese claims are groundless is clarified.

There is no doubt that the Senkaku Islands are clearly an inherent part of the territory of Japan, in light of historical facts and based upon international law. There exists no issue of territorial sovereignty to be resolved concerning the Senkaku Islands. Japan will act firmly and calmly to maintain its territorial integrity.

The last display space is titled "A parting thought," giving visitors an opportunity to pause and reflect

on whether the claims of Japan or other nations are correct. This is a learning resource for gaining a better understanding of complex situations regarding territory and sovereignty and Japan's response respecting law and order in the international community. ●

Top: Tablet computers lent at the Museum gratuitously provide in English translation of main parts of the exhibition. Also on the tablets, Etupirka, a puffin that lives in the North Pacific Ocean, makes an appearance thanks to AR (augmented reality).

Bottom: In the Senkaku Islands section, the situation surrounding the Senkaku Islands is introduced using animated computer graphics from the perspective of the short-tailed albatross, a bird that lives on Minamikojima Island and Kitakojima Island.



LOCAL WOMEN DRIVE COMMUNITY REVITALIZATION



Across the Tsugaru Strait, known as Japan's best tuna-fishing ground, energetic women are working hard to revitalize the communities of their hometowns.

The Tsugaru Strait runs between Aomori and Hokkaido Prefectures in the northern part of the Japanese archipelago. It is known for its fishing grounds, and the town of Oma, Aomori Prefecture is home to one of the most preeminent brands of bluefin tuna. The Tsugaru Strait Tuna Women's Club, who named themselves after this local specialty, are engaged in activities to revitalize their communities. These women with a vision, residing in Aomori and

southern Hokkaido Prefectures, banded together in 2014. They have since added to their numbers and now have nearly 100 active members.

“Each of us women has our own personality, but we got together like a school of tuna to start up this group. Our membership comes from every local community near the Tsugaru Strait, and we publicize each one of those place's appeal. In addition to creating more energy and wealth for our communities, our group's

The Tuna Women's Club is a group of women who have diverse backgrounds and a passion for community revitalization.





Top: The Tuna Women's Club has designed *bento* box meals prepared with local specialties.
Right: They also organized tours where participants wear kimono as they visit neighborhoods with historical buildings.



purpose is to pass on our wonderful hometowns to the next generation.”

This is how founding members SHIMA Yasuko and SUGIMOTO Natsuko describe the group. Shima runs a lumbermill in Oma, while Sugimoto is the proprietress of a traditional Japanese hot-spring inn in the town of Matsumae, Hokkaido that has been running for around 80 years. Both spent some time living away from their hometowns, but then came back to take over the family business. The reason for their focus on stimulating their towns is a major issue affecting regional locales: “The Hokkaido Shinkansen (bullet train) opened in 2016, providing direct high-speed rail access between Tokyo and Hokkaido, but there are no flows of people connecting the Shinkansen to the towns where we live. The Tuna Women’s Club is trying to encourage those flows.”

The core of their work is a major project to hold various types of experience programs and events in more than 10 municipalities over several months. Examples of the activities include tastings of food favored by the feudal lords who once ruled these

lands centuries ago, tours led by chief monks into temples normally closed to the public, and exercise sessions playing a traditional stringed instrument from the Tsugaru region. The original itineraries the women designed have earned rave reviews from both tourists and local residents alike.

The Tuna Women’s Club essentially engages in volunteer work only. Because their organization does not seek to turn a profit, there are no conflicts of interest or status, allowing members to concentrate simply on discussions about making their towns better. “However, it is important to take action after discussing. We are willing to work as leaders and will do our best in any difficulties,” said Shima and Sugimoto, smiling.

The Tuna Women’s Club has been an inspiration to others. Local high school students have started up town-revitalization projects, while university students have contacted the club about internship opportunities. This shows that their work is impacting the younger generation. Furthermore, the club’s actions have been commended for increasing interaction of people traveling between Aomori and Hokkaido Prefectures. This attention has led to invitations to talk at speaking engagements across Japan. And just like the tuna in the Tsugaru Strait that have to constantly continue swimming, the Tuna Women’s Club will keep up their work in a strong, energetic and brilliant fashion. ●



SHIMA Yasuko (left) was born in the town of Oma, Aomori Prefecture. After graduating from university, she worked in Tokyo, but later returned to Oma, where she took over the family lumber mill. SUGIMOTO Natsuko is from Matsumae, Hokkaido. After working elsewhere, she returned to her hometown and took over the family business, a traditional Japanese hot-spring inn visited by guests coming from as far away as other countries.



HANS KOGA

Born in Stockholm, Sweden, in 1972. After working for a yacht builder in Sweden, he moved to Japan in 2011. He studied at a Japanese sword studio in Tokyo before moving to Kumamoto Prefecture in 2015, where he learned the technique of *Higo-koshirae*. Today, he works as a *koshirae* craftsman devoted to both production and restoration.



THE SWEDE INHERITING THE SOUL OF JAPANESE SWORDCRAFT

Hans Koga, a Swedish craftsman of koshirae (outer sword components) in Kumamoto, is not only helping preserve traditional techniques but also conveying the soul of the samurai to the world and future generations.



Japanese swords vary in style depending on the region. The *Higo-koshirae* is a style that marries function with beauty. It was established by a local lord who was also a master in *sado* (Tea Ceremony).

The Japanese sword, which was once a samurai weapon, now attracts many overseas enthusiasts as a piece of art. In addition to being appreciated for its functionality on the battlefield, it is also revered for its aesthetic value. The two major factors that determine this beauty are the cylindrical *saya* (sheath), which houses the blade, and the *tsuka* (hilt). Those components of the sword are collectively called *koshirae*, and one of the few craftsmen still actively producing *koshirae* is a Swede by the name of Hans Koga.

“When I was a boy, I had the opportunity to watch a demonstration of *iaido* (martial arts using Japanese swords) in Stockholm, and I was completely fascinated by the Japanese swords. With their extraordinary power, they really seemed to possess the soul of the samurai,” he recalls.

After graduating from a polytechnic high school, he worked as a ship carpenter. But when a major injury forced him to quit that line of work, his interest in Japanese swords was reignited. He moved to Japan and while studying at a sword studio, he learned about the various

regional styles of *koshirae*. Among them he became particularly attracted to the *Higo-koshirae* of Kumamoto Prefecture in Kyushu, southwestern Japan (Higo is the old name for Kumamoto).

“The *Higo-koshirae* have robust and functional structures with no tolerance for the unnecessary. But, at the same time, they have an aesthetic quality as refined as any tea ceremony. And the proportions of the hilt and the blade are excellent.”

Koga moved to Kumamoto in 2015. While receiving guidance from a retired senior craftsman, he also expanded his skill and knowledge by studying old masterpieces and materials. Even after his house was destroyed in the 2016 Kumamoto earthquake, he says he had no plans to leave the area.

“I want to continue working to pass on this wonderful culture. I also love the people and nature of Kumamoto, and I admire everyone’s tenacity in the face of natural disaster.”

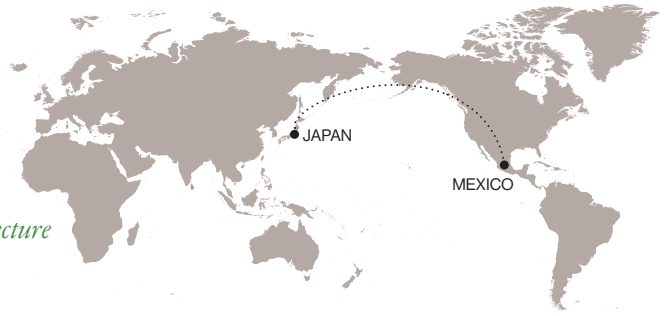
After the earthquake, Koga built a workshop in a corner of a traditional house that is over 300 years old. Benefiting from active promotion using social media, he

has a constant backlog of orders from both Japan and overseas. He must work hard to keep up, but he never lowers his standards. “The *koshirae*, which are made using the same natural materials and traditional techniques as in the olden days, are guaranteed to last for more than one century. They are labor-intensive, but I hope to continue putting all my care into making high-quality pieces as my lifelong work,” Koga says. His words clearly indicate that he shares the strong devotion of the Japanese craftsman who works hard every day at his craft without compromising on workmanship. ●



The process called *tsukamaki* (hilt wrapping) involves wrapping leather cord around the hilt to strengthen it and provide a better grip. The diamond-patterned *tsukamaki* is so solidly wrapped that it must have been indestructible on the battlefield.

THE JOY OF *CHADO* FOUND IN HANDBUILT TEAHOUSES IN MEXICO



A Mexican film director who became enchanted with the architecture of Japanese tea houses designed and built two teahouses himself, where he now teaches chado - the art of Japanese tea ceremony.

A pair of charming teahouses, Bosen-an and Sunkaraku, make you forget that you are in Mexico City. Here, Mexican film director Roberto Behar has helped to spread the practice of the Japanese tea ceremony in Mexico. It was over 30 years ago when he first began learning about the tea

ceremony. In 2014, during the 400th anniversary of a Japanese diplomatic delegation's journey to Mexico to negotiate direct trade between the two lands, Behar served an important role as "President of Chado Urasenke Tankokai Mexico" at a tea-offering ceremony performed by

the Grand Master of Urasenke Sen Genshitsu Daisoshō, one of the main schools of the Japanese tea ceremony. Speaking about the similarities between his work and the tea ceremony, Behar said, "There could be points in common between the road toward perfecting each art and



Behar teaches the Japanese tea ceremony in Sunkaraku.



Bosen-an is a teahouse that Behar spent many years constructing. Its name was given by Ejo Takata Roshi, the first person to teach Zen thought in Mexico. "Bosen" is a Zen term that means "do not misconstrue the means for the purpose."

their deep esthetics."

Since he was in his 20s, Behar has been interested in Japanese culture, such as Japanese gardens and the architectural styles seen in shrines and temples. While traveling in America in the 1980s, he came across a book on the tea ceremony. The book came with a free paper model of Taian, a teahouse believed to be a design by Rikyū, who had a profound influence on the Japanese tea ceremony. Behar was captivated by the beauty of the teahouse. "For someone like me, who loves Japanese architecture so much, the teahouse is incredibly alluring. Japanese carpentry has developed thanks to sophisticated, advanced techniques, and the teahouse is its pinnacle," he said. Later, he decided to actually build a teahouse based on the model. He spent eight years gathering suitable

materials from all over Mexico. "I went out to towns in the middle of nowhere, where I heard that there was an abandoned indigenous people's settlement. Dust-covered wood in a seasoned condition helps create the atmosphere." To replicate the design in the book, Behar collaborated with Mexican artisans to complete the Bosen-an teahouse.

After all the hard work creating the teahouse, Behar wanted next to give it its own "spirit." With that idea in mind, he started studying in 1987 under Higurashi Soho, a high-level instructor of the Urasenke school who, at the time, was teaching the tea ceremony in Mexico. Speaking about his first tea gathering, Behar said, "I was a novice who didn't understand anything about the profundity of the tea ceremony, but I was deeply impressed by the skill with which my teacher served as the host and the quiet yet meticulous care he took to treat his guests." Studying the tea ceremony under his teacher, Higurashi sensei, Behar gradually learned about its philosophy, too. "The Zen thought of the tea ceremony changed the way I view life. You could say it had a big impact on me spiritually, such as



ROBERTO BEHAR

Born in Mexico City, Roberto Behar is a film director and teaches the tea ceremony to younger practitioners. In the spring of 2018, he was conferred the Order of the Rising Sun, Gold and Silver Rays, a Japanese commendation conferred upon those who perform a great service for the country and the public, as recognition of his efforts in spreading the tea ceremony in Mexico.

learning kindness to others and controlling one's anger. That may be the biggest reason why I have continued to perform the tea ceremony for over 30 years."

For 13 years now, Behar has been teaching the tea ceremony to Mexicans. "My students are impressed by the tea ceremony's profundity and the beauty of Japanese culture." Though going on 80 years old, his passion for the tea ceremony shows no signs of diminishing. He said, "Maruoka Soyo, an Urasenke director and the teacher assigned to Mexico, is following in Higurashi's footsteps and is working to spread the tea ceremony with a new approach." Behar goes on, "As I did with Higurashi sensei, I hope that I can work with Maruoka sensei so that even more Mexicans can enjoy the tea ceremony." ●



Left: Behar said he collected his ladle, bowl and other tea ceremony implements from antique shops in Japan. Right: The inclusion of a rock garden enhances the Japanese ambience.

KIZUNA

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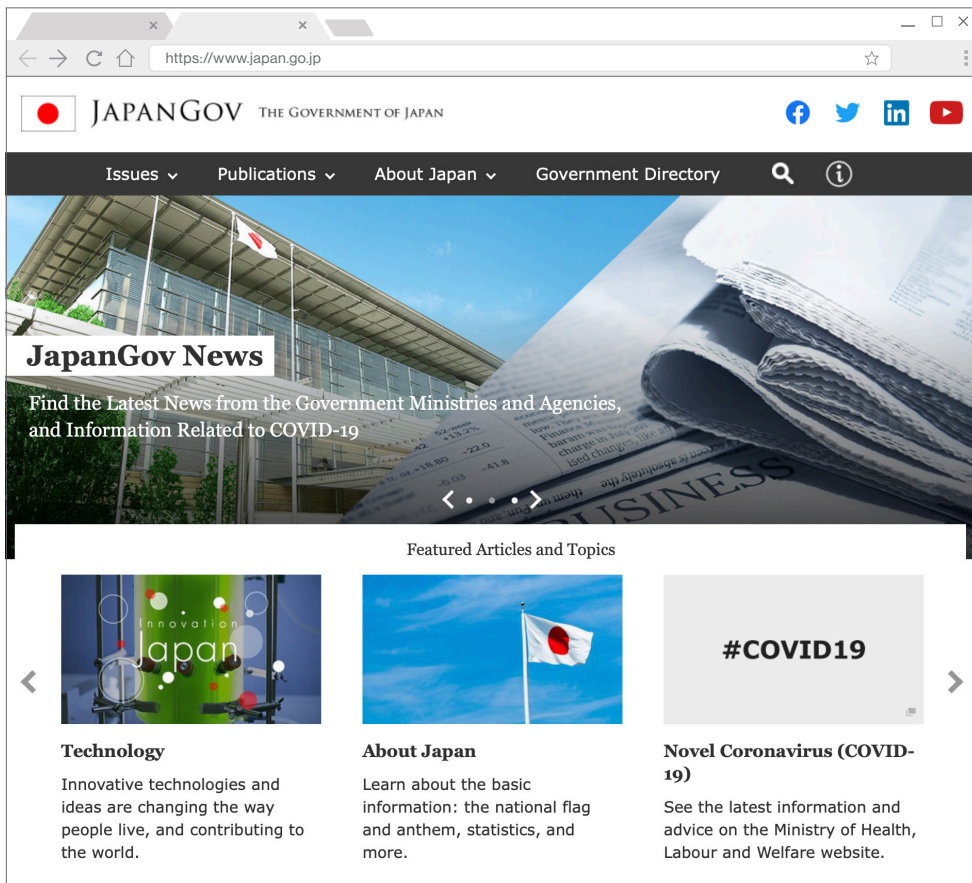
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