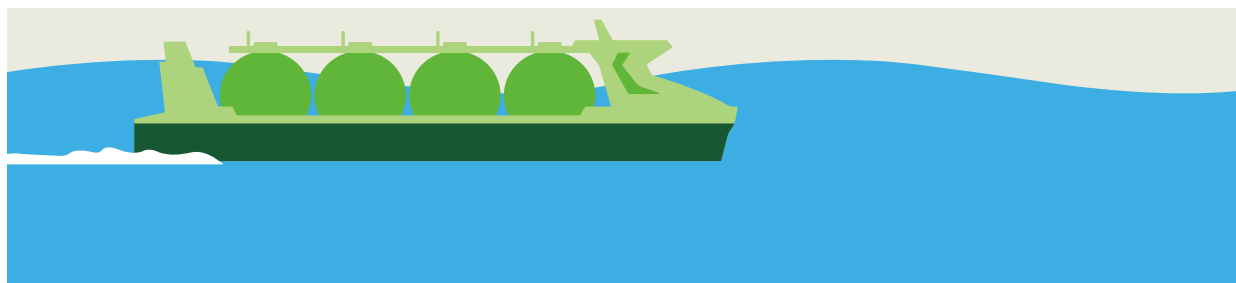
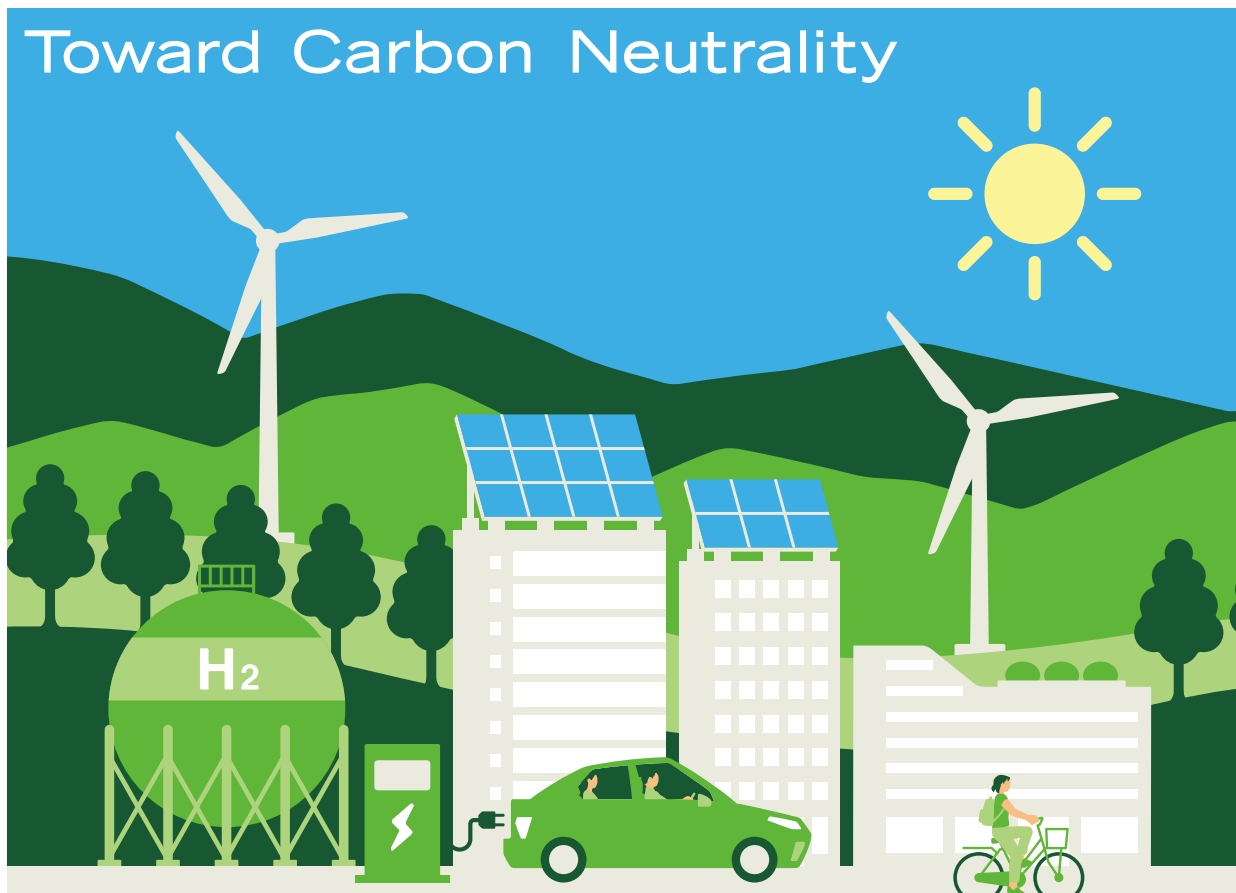


KIZUNA

Autumn
2021

Linking Japan and the World

Toward Carbon Neutrality



JAPANGOV
THE GOVERNMENT OF JAPAN



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.

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*.

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Autumn 2021

Cover illustration by KATO Yutaka



The Fukushima Hydrogen Energy Research Field (FH2R), located in Namie Town in Fukushima Prefecture, is one of the largest production facilities of hydrogen from renewable resources in the world.

JAPAN'S GREEN GROWTH STRATEGY WILL ACCELERATE INNOVATION

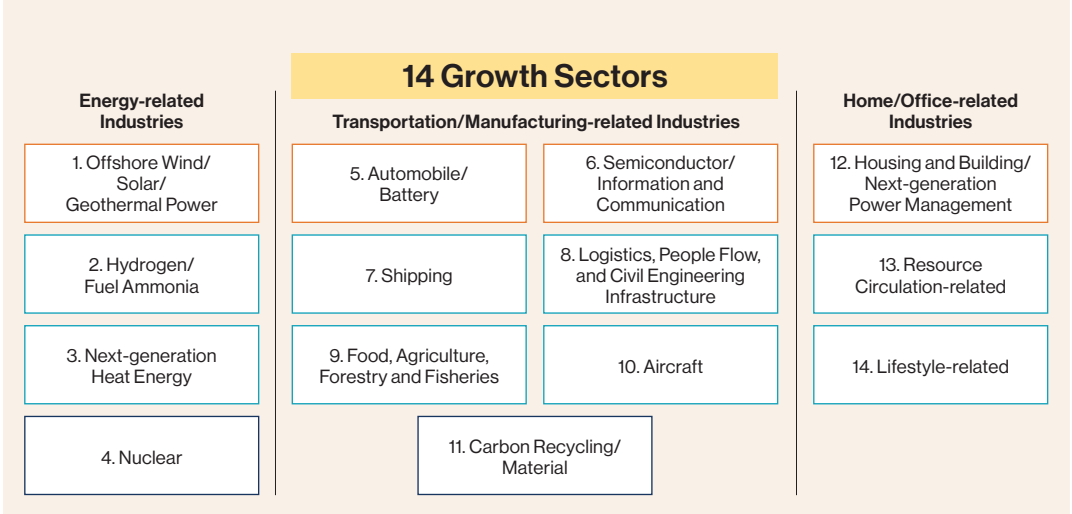
Japan has set out an ambitious plan to lead the world in decarbonization. What exactly is Japan's Green Growth Strategy?

In October 2020, the Japanese government announced its plans to achieve net zero carbon emissions by 2050. Moreover, in April 2021, it raised its previously set goal of reducing emissions by 2030 to an ambitious 46% from its 2013 levels, stepping up its efforts to reach carbon neutrality. Tackling global warming is no longer seen as a cost, but more as a great opportunity whereby such proactive measures will bring about strong economic growth. To create such a “virtuous cycle of economy and environment,” the government launched the “Green Growth Strategy through Achieving Carbon Neutrality in 2050”.

“The pillars of Japan’s strategy for reducing carbon emissions are twofold: decarbonization of the electric power sector and electrification of other sectors,” says KAWAHARA Kei, director, Environmental Policy Division, Carbon Neutral Action Plan Promotion Office, at the Ministry of Economy, Trade and

Industry. For the electric power sector, the strategy has proclaimed the goal of pursuing all avenues—including renewable energy and hydrogen power—to promote the decarbonization of power generation. For other sectors, such as manufacturing, transportation and housing, the strategy’s main approach is to further propel a shift in power sources toward electricity. To curtail the growing electricity demand associated with that shift, however, the strategy also calls for the advancement of energy saving through digital technology, such as the automated, optimal control of the power network, along with a leaner, more efficient use of energy.

The Green Growth Strategy sets out 14 promising fields (see chart) in which future growth is expected, and where efforts are essential for achieving the reduction of greenhouse gas emissions. All available policy measures—from budget and taxation to regulatory reform—will be called upon to stimulate innovation



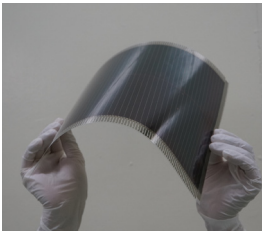
in each of the different fields. Notable among these measures is the establishment of a 2-trillion-yen (18.2-billion-dollar) Green Innovation Fund, which will provide continuous support for a series of efforts from ambitious R&D to social implementation over the next 10 years. “We will provide continuous supports, but at the same time we can call on companies to aspire toward high-reaching goals for 2030 and a strong commitment to them. By introducing such supportive mechanisms, and using 2 trillion yen of governmental funds as pump priming, private companies are expected to increase their R&D and capital investment,” explains Kawahara.

Concrete action plans have also been drawn up for each of the 14 fields to demonstrate realistic pathways toward their goal in 2050, thereby allowing steady progress to be realized in each field. For example, for the hydrogen industry, the strategy lays out several steps. It focuses first on increasing the volume of hydrogen introduced in the society. Bringing hydrogen power generation turbines and fuel cell trucks into marketable products are some of the urgent issues specified in the strategy. It also puts emphasis on measures to strengthen hydrogen supply including transportation and storage. Through these steps, the strategy aims to bring down the price of hydrogen and to expand the volume of domestic introduction up to 3 million tons in 2030 and 20 million tons in 2050.

To spread these new technologies and boost the competitiveness of Japanese industries, the Green Growth Strategy also focuses on international cooperation. Japan will encourage domestic companies to collaborate with overseas firms, promoting bilateral and multilateral ties so as to lower the barrier to overseas markets, while also actively working to formulate international rules. In 2021, separate agreements were

reached with the United States and EU to create new frameworks to reinforce such cooperation. Meanwhile, the Japanese government has proposed the Asia Energy Transition Initiative, a support measure for the gradual reduction of carbon emissions in the region, to Asian countries. The initiative encourages a realistic energy transition through the use of a wide range of energy sources and technologies in line with the industrial and social structures and geographical conditions of each country where demands for energy are expanding. “We should bring together the best technologies and make the most of what they offer. While increasing Japan’s industrial competitiveness, we will make our contribution to the world by spreading Japanese technology overseas,” says Kawahara.

With the Green Growth Strategy, Japan will promote decarbonization, which is one of the most critical and global challenges for the future of humanity. Taking the challenge as an opportunity for growth, Japan will push forward with efforts to realize a truly sustainable society by promoting innovation, fostering new industries, and sharing its achievements with the world. ●



Top Left: The automated control of electric power networks using digital technology has reduced energy consumption in Kashiwa-no-ha Smart City in Chiba Prefecture.
 Top Right: Aichi Prefecture’s Toyota City provides a car sharing service utilizing ultra-compact electric vehicles.
 Left: Film-type perovskite solar cells developed in Japan can potentially be installed on the sides of buildings.

Toshiba Corporation

HARNESSING HYDROGEN

TO REALIZE A CARBON-FREE SOCIETY

Hydrogen is garnering attention as a crucial energy resource in achieving carbon neutrality since it does not emit carbon dioxide (CO₂) when combusted as an energy source. As a global pioneer in utilizing hydrogen, Japan is striving to achieve decarbonization by further promoting hydrogen energy.

With the effects of global warming-induced climate change becoming an increasing threat, many countries and regions are accelerating their efforts toward carbon neutrality for the sake of sustainable development. One of the keys identified for realizing the important goal of achieving carbon neutrality is energy produced through hydrogen, the combustion of which produces no CO₂ emissions. In the “Green Growth Strategy,” formulated in response to Japan’s pledge to become carbon neutral by 2050, hydrogen-use was positioned as one of the top priorities. Up to JPY 370 billion (USD 3.4 billion) of Japan’s 2-trillion-yen fund to support the development of decarbonization technology has been allotted to hydrogen projects.

In addition to producing no CO₂ when combusted, hydrogen’s advantage is that it offers various applications, including power generation and heating.

The Government of Japan has been an early mover in the field, drawing up a hydrogen utilization roadmap in 2014 and formulating the Basic Hydrogen Strategy in 2017, the first of its kind in the world. Japan has also backed the development of fuel cells, which generate electricity and heat by combining hydrogen with oxygen. In 2014, Toyota Motor Corporation released the Mirai, the world’s first mass-produced fuel cell

Left: The Toyota Mirai, the world’s first mass-produced fuel cell vehicle, was released in 2014. Right: Fuel cells are also being developed for heavy-duty trucks, which account for a high proportion of CO₂ emissions by commercial vehicles.

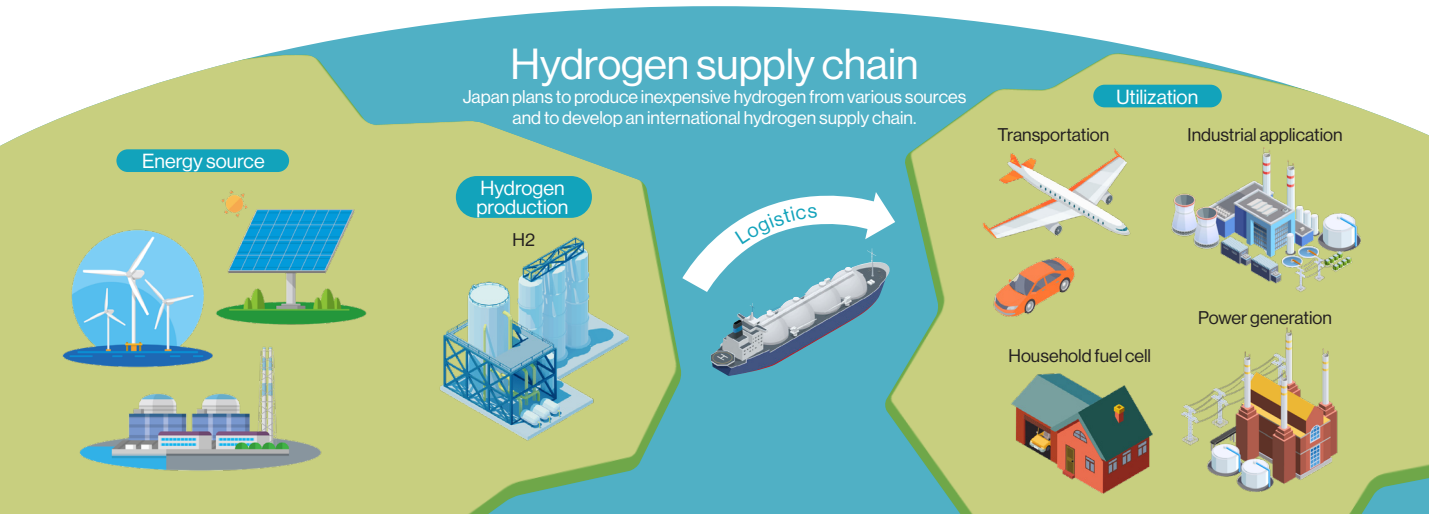


Developing hydrogen carriers is critical to creating an international supply chain. Shown in the photo is the Suiso Frontier, the first-ever liquid hydrogen carrier.



Hydrogen supply chain

Japan plans to produce inexpensive hydrogen from various sources and to develop an international hydrogen supply chain.



vehicle. Further development will produce synthetic fuels for use in aircraft and maritime vessels, which are made by reacting hydrogen with CO₂ captured from factories and elsewhere.

Although hydrogen is rarely found naturally on Earth as an isolated substance, it can be produced from various raw materials. One method is to make hydrogen from fossil fuels and capture the CO₂ released as a byproduct. Another is to use renewable energy to extract hydrogen from water through electrolysis. In addition, since liquefying hydrogen through ultra-low temperatures (below -253°C) reduces its volume, allowing compact storage and transportation, renewable energy could be widely distributed if kept in that form.

KASHIWAGI Takao, a leading researcher on energy systems and the chairperson of the Council for a Strategy for Hydrogen and Fuel Cells (established by the Ministry of Economy, Trade and Industry), has been involved in Japan's hydrogen policymaking for many years. Kashiwagi says, "It's essential to make the widespread shift to hydrogen by 2030, but to decarbonize thereafter, we need cleaner hydrogen produced from renewable energy. At present, however, producing such hydrogen tends to be expensive, and the issue is how to reduce its cost. Having acted early to utilize hydrogen, Japan has the technical prowess to create solutions to this problem."

One possibility is the development of an international hydrogen supply chain. Kawasaki Heavy Industries, Ltd. has developed the Suiso Frontier, the world's first liquid hydrogen carrier. As early as this fall, Kawasaki Heavy Industries will

conduct a verification test in which hydrogen—produced in Australia from the country's affordable and abundant lignite with carbon capture and storage technology—will be liquefied and then carried to the port of Kobe, Japan. If hydrogen can be transported by sea, then places that can generate large amounts of affordable renewable energy could supply hydrogen for shipment across the globe. The use of hydrogen in sectors such as transport, industry, and power generation would contribute to decarbonization.

Meanwhile, Kashiwagi says that community-level approaches to steadily promoting the local production and consumption of hydrogen are also vital to accelerating the creation of a hydrogen-based society. For example, the town of Namie in Fukushima Prefecture uses solar power to produce hydrogen in a pilot project to provide electricity to households in the area.

"No country can build a hydrogen society by itself," Kashiwagi said, adding, "Japan will work with the international community to build a global society that can enjoy the benefits of hydrogen energy, thereby contributing to the achievement of carbon neutrality around the world." ●



KASHIWAGI Takao, emeritus professor at the Tokyo Institute of Technology and chairperson of the Council for a Strategy for Hydrogen and Fuel Cells, says, "Because of its powerful chemical industry, Japan could become an energy exporter by producing carbon-free synthetic fuel."

ZERO-CARBON CITIES

HERALD CARBON NEUTRALITY

Zero-carbon cities, at the forefront of a vision to make Japan carbon neutral by 2050, are generating a wave of innovative changes across the country. Taking advantage of its geographical features, Goto City is looking to reduce carbon-dioxide emissions while revitalizing the community.

Goto



A floating offshore wind turbine off the coast of Goto City. Utilizing its favorable conditions—the strong winds that blow throughout the year and the waters' depth—the city began Japan's first demonstration project for such a turbine in 2010. It was also the earliest to operate the turbine commercially, starting in 2016.

Hoichi Nishiyama

Every morning before going to work, the commuter looks at her smartphone to check the amount of charge left in her electric car. Everything in her home—from the air conditioning to the water heater—is optimally controlled by digital technology, reducing operating costs and making housework easier. She then leaves for her office, driving along the stunning coast while gazing at an offshore wind farm. Her office building, distinguished by a solar panel facade, gets all of its electricity from local renewable energy sources.

This is what the lives of the residents of Goto City, consisting of more than 150 islands in Nagasaki Prefecture, will be like in 2050.

Goto is one of Japan's "zero-carbon cities" whose governments have declared that they will reduce their greenhouse gas emissions to net zero by 2050.

The Japanese government, which aims for the entire country to achieve carbon neutrality by that year, is providing various types of assistance to zero-carbon cities, including planning, capacity building, and equipment installation. The number of local governments signing on to the initiative has been increasing rapidly—from four in September 2019 to 444 by August 2021—representing 111.4 million people, some 88% of Japan's population. The aim is to trigger a "decarbonization domino effect" in which such local initiatives will catalyze similar efforts in their neighbors, leading to a nationwide movement toward carbon neutrality.

The way in which a particular municipality pursues the zero-carbon city initiative will be designed carefully to take advantage of its unique local characteristics. Goto City is surrounded by ocean and has strong



Kyuden Mirai Energy Co., INC.

Left: The widespread use of electric vehicles is an inevitable step for Japan as it aims to decarbonize its automobile industry. Goto plans to introduce 200 such vehicles by 2030. Right: A large tidal generator was installed in the offshore waters of Naru-Seto in January 2021. With an output of 500 kW, it generated about 80,000 kWh of electricity in some three months from the start of the experiment, equivalent to the monthly power consumption of 360 ordinary households.

offshore winds. These conditions made it ideal for the city to become the first in Japan to introduce a floating offshore wind energy system. While an offshore wind turbine is usually installed at sea by driving a monopile into the seabed, a floating wind turbine sits on the water, much like a vessel, and is moored by three chains. This makes it relatively easy to install and move, with a minor impact on the environment. Since the structure can be set up in deep-water locations, there is much anticipation regarding its introduction across parts of Asia that are surrounded by deep seas. Another key feature of the system is its resilience to typhoons. Even if tilted significantly by strong winds, it is designed to return to its original position. “Although Goto is said to lie directly in the path of typhoons, our floating system has yet to be damaged by one,” says MURAI Yasutaka, director of the city’s Renewable Energy Promotion Office.

The single floating wind turbine currently in operation in Goto has a maximum power output of 2,000 kW (equivalent to the annual power needs of 1,800 ordinary households). More than 51% of the city’s electricity is already produced by renewable energy sources, which include not only offshore wind power but also others such as solar power. The city plans to build the offshore wind farm by 2023 by expanding the number of floating wind turbines to about 10, which is estimated to result in over 80% of the city’s electricity demands being met by renewable sources.

With the aim to decarbonize the entire region, Goto is also pioneering demonstration projects for tidal power generation and a hydrogen fuel cell ship. The city is also committed to raising the ecological awareness of its residents in order to promote the use of electric vehicles and reduce waste. These efforts

have already brought about some positive results: renewable energy is often a topic when local issues are discussed in high school classes, and students have used drones to survey coastal marine litter.

Initiatives for carbon neutrality have already created new employment opportunities in the renewable energy field in Goto, invigorating the city. Recently, many people in their 20s and 30s have been moving to the city, resulting in a positive net migration rate for two consecutive years since 2019. “I want to make a community where each and every industry thrives, and where people will want to continue living, both for the job opportunities and for the sustainable environment,” says Murai. Utilizing local strengths and cutting-edge technologies to create societies that protect and nurture both the environment and people, zero-carbon cities are on the cusp of generating a wave of change across the country. ●



Goto regularly holds tours of the floating offshore wind turbine and seminars on renewable energy for students and the public, in an effort to raise awareness of the need to build sustainable communities that care for the environment.



Left: Staff inspect a photovoltaic power generation facility in the Cook Islands. Solar power is an efficient way to generate electricity for the countries of Oceania located near the equator.

Bottom: Fiji installed a retractable wind power generation system similar to the one on Okinawa's Hateruma Island.



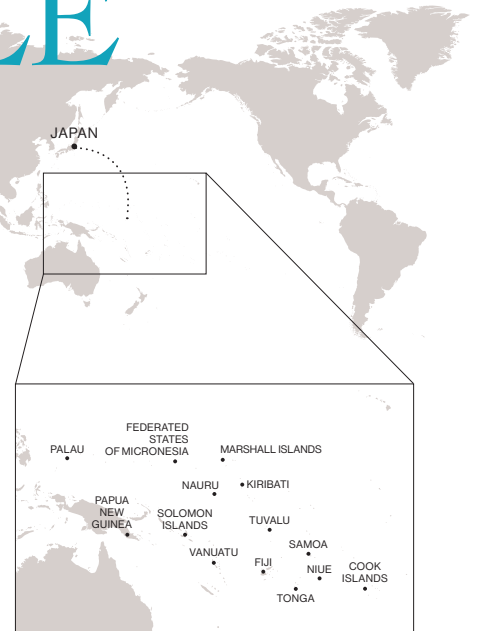
JAPAN AND THE PACIFIC: GENERATING SECURE AND SUSTAINABLE ENERGY SOLUTIONS

The shift to renewable energy in the Pacific island countries has progressed, with the support of Japan, in order to reduce greenhouse gas emissions and secure a stable supply of energy.

With climate change posing a huge threat to sustainable development worldwide, countries around the globe are now advancing efforts towards decarbonization through the introduction of renewable energy. However, various challenges are faced in its adoption. The Pacific island countries have long relied on diesel generation, which incurs high fuel transportation costs and causes a substantial environmental impact. Although those countries have also been striving to introduce renewable energy, they

have been unable to stabilize the amount of power generated given its vulnerability to the effects of fluctuating seasonality and weather conditions.

In 2017, the Japan International Cooperation Agency (JICA) launched the Project for Introduction of Hybrid Power Generation System in the Pacific Island Countries to find solutions to this region's problems. The project aims to reduce emissions and secure a stable supply of electricity by introducing renewable energy



systems matching the climate and environment of each area, while operating existing diesel generators efficiently and at the minimum level necessary. The project is part of the Hybrid Islands Initiative proposed by Japan at the 7th Pacific Islands Leaders Meeting (PALM7) held in 2015, and was initiated

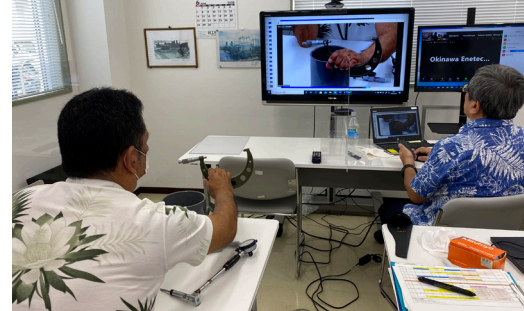
with the participation of Fiji, Tuvalu, Kiribati, the Federated States of Micronesia (FSM), and the Marshall Islands. “We place the highest importance on the capacity development of local personnel, enabling them to design plans themselves and advance the project while verifying its appropriateness,” says OGAWA Tadayuki, JICA Senior Advisor and the project’s chief advisor. “The situations of each country, along with the issues they face, are diverse. The project has progressed from the perspective of those local personnel who best understand the circumstances.”

The project utilizes the technology and expertise cultivated in Japan’s Okinawa Prefecture, which is made up of nearly 160 islands situated in a subtropical climate zone. The shift to renewable energy on the islands has been advanced using the surplus solar energy generated during the daytime to power heat-pump water heaters, as well as groundwater pumping systems. Okinawa has also adapted a wind power generation system that allows the wind turbine to be folded to the ground to prevent it

from collapsing or being damaged by typhoons. By combining this system with motor generators and storage batteries, Okinawa’s Hateruma Island succeeded in meeting its entire power demand through wind-generated electricity alone for about 10 days last year.

The Pacific island countries project shares Okinawa’s efforts and knowledge through lectures and hands-on instruction. At the same time, the project provides support for the planning of hybrid power generation systems tailored to each country’s particular power facility situation and environment. As both the proper maintenance and operation of the power facilities significantly affect their efficiency, the project emphasizes on-site and online guidance in that area. According to Ogawa, “After participating in study tours in Okinawa and seeing how carefully the equipment was maintained, many said that they wanted to learn how to carry out the same careful maintenance.” The Marshall Islands reduced its annual consumption of diesel fuel in 2020 by 360,000 liters compared to that of 2016, through such improvements in maintenance. A plan is also underway to establish a regional training center—located within an existing training facility in Fiji—for people across the Pacific to study, helping them overcome the shortage of engineers who can operate and manage the systems.

“Securing a stable supply of sustainable energy is a prolonged and daunting challenge. That’s



Amid the coronavirus pandemic, online training was conducted in the technologies necessary for the management and operation of power generation facilities with the cooperation of companies that had introduced hybrid power generation systems in Okinawa.

why we want to support the people of the Pacific islands in building a fully sustainable energy system that they can maintain by themselves. We also would like to learn creative new approaches from their initiatives, building a win-win relationship,” says Ogawa. “The share of power generated from renewable energy sources is already increasing in some other island nations, such as Tuvalu and FSM. In Samoa, at the request of the government, JICA has started to provide technological support for the efforts towards realizing 100% renewable energy. Going forward, we would like to focus on such initiatives as well.”

At PALM9, held online in July 2021, Japan and the other participating nations announced a policy of promoting technology and innovation to further reduce greenhouse gases. As part of a joint action plan, Japan has pledged to help achieve a stable and low-carbon supply of power by providing technical cooperation, building renewable energy facilities, and developing energy-efficient power grids, among other activities. As partners forging the path to sustainable growth, Japan and the Pacific island countries will continue to take on challenges together. ●



JICA’s OGAWA Tadayuki (far right) holds a training session for government officials and electric power corporation staff. The focus is placed on not only classroom study, but hands-on training as well.

Photos courtesy of JICA

DISCOVER
**THE GIFTS
OF NATURE**
AND THE FLAVORS OF THE SEASON

Blowing through the streets, a cool breeze announces the arrival of a new season. Autumn in Japan, with its pleasant climates, offers a variety of elegant scenery. Appreciating the blessings of the earth and admiring its beauty, people find joy in the workings of nature.

HARVEST MOON

The waxing and waning of the moon have been used in Japan as a calendar since time immemorial, so folkways attuned to the beauty of the moon have deep roots in the country. The Mid-Autumn Moon, in particular, heralds a time for the grateful appreciation of the autumn harvest, and is enjoyed by many even in the present day. In combination with another poetic icon of the fall—silver grass—the scenery is imbued with an elegant Japanese sentiment.



CRIMSON FOLIAGE

As the heat of summer is gradually replaced by cool and crisp air, the Japanese archipelago turns brightly hued in reds, oranges, and yellows. Since ancient times, the Japanese have appreciated the depth of autumn and admired the changing leaves, bidding farewell to the season. In the traditional tourist mecca of Nikko, Tochigi Prefecture, the Kegon Waterfall is an unforgettable sight, with its drop of nearly 100 meters surrounded by mountains deeply covered in crimson foliage.



AUTUMN DELICACIES

“Autumn, the season of appetite,” is a famous phrase in Japan. Out of the four seasons, the fall is especially known as a time when people can get their fill of abundant fresh fruits and vegetables—squashes, sweet potatoes, mushrooms, grapes, persimmons, and more—thanks to its relaxing cool weather. Not only is the season filled with such delicious flavors, but the visual appeal of ripeness also stimulates the appetite.



The Digital Agency offices have a different ambiance from that of traditional Japanese bureaucracy: the offices are colorful and provide free-address workstations.



The new Digital Agency began operation on September 1. It will serve as a control tower of the country's digital transformation, including the provision of administrative services by the government online. HIRAI Takiyu, on the right, minister of Digital Agency, shown with ISHIKURA Yoko, the first chief officer of the Agency.

NEW DIGITAL AGENCY PURSUES INCLUSIVE DIGITALIZATION

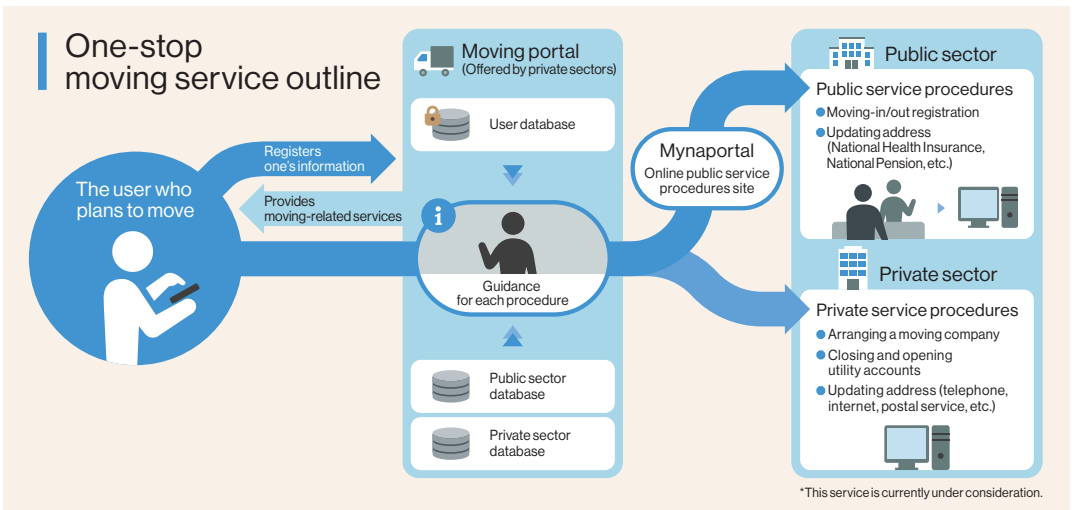
The Japanese government has established a new Digital Agency with a view to overcoming inefficiency in public administration. An expert with years of experience in promoting the ICT of governmental organizations talks about the Agency and its mission.

It is frequently pointed out that Japan has been laggard in digitalizing the governmental administrative functions both at the national and local level. A specific example of this has been the response to the ongoing COVID-19 pandemic: applying for cash benefits was felt to be unduly complicated and payments were slow in arriving, highlighting the problems of a system that is unfriendly to users and in which data is inadequately linked. The Digital Agency came into being on September 1, charged with the mission of fundamentally solving such issues through the digitalization of public administrative procedures, and promoting the standardization and coordination of data systems.

“Japan is far from lagging behind other nations in information technology since it is equipped with the necessary infrastructure for nationwide communication,” says ZAMMA Toshiyuki, who worked for many years as an executive advisor to the government CIO in both the Ministry of Finance and the Cabinet Secretariat. He has just assumed the post of head of International Strategy at the Digital

Agency. “In fact, Japan ranked 14th last year in the United Nations’ E-Government Survey, putting it in the ‘Very-High’ class. However, the story changes when it comes to optimizing ‘digitalization’ in such a way as to provide good administrative services by the government, which often involves joint efforts with the private sector. Even when individual systems are competent, they will not be user-friendly unless they are properly linked, and it is also important to coordinate with private services that are used on a day-to-day basis. The Digital Agency will play a critical role in overcoming these issues,” he asserts. Zamma himself was previously a systems engineer from the private sector and a long-time consultant at global consulting firms.

One of the missions of the Digital Agency is to break down silos (vertical segmentation) within administrative systems. The Agency aims to strongly improve data linkage across the boundaries of separate government organizations, leading to increased efficiency in their services and operations. It also focuses on capitalizing on expertise from the



private sector. By actively employing professionals, it assumes a more flexible and speedy approach, including utilizing the agile methodology, than had been done in the past. In that manner, the Digital Agency is expected to function as a “lubricant” and an engine of reform to push the government forward—both nationally and at the local level—and improve its performance.

Zamma declares that the focal point of the Agency’s agenda lies in “improving people’s day-to-day lives.” He says, “Let’s say you are moving house. This involves a great deal of work, such as de-registering and registering at various offices, signing up for electricity and gas, and engaging a removal service. You are obliged to write the same address over and over and the whole procedure is very inefficient. We are aiming for a one-stop service that involves less effort and improves citizen’s experiences.”

The idea of a one-stop moving service draws on a similar method, Service Design Thinking, promoted earlier in the U.K. “We are eagerly referencing foreign experiences and methods where we can. Singapore introduced something similar to a digital agency five years ago, and we have also learned from countries such as Finland, Denmark, Estonia and more. But

different countries have different problems and social settings, so simply copying solutions from elsewhere will not work. We must understand Japan’s needs correctly, pick and choose cases and methods, and then make further improvements to provide feedback to the rest of the world. That is international collaboration in digital age.”

In some instances, however, foreign nations are looking to Japan as the leader. The Earthquake Early Warning System is one such example. Japan has a unique system whereby every cellphone carrier is able to emit an earthquake alert with remarkable speed when a quake occurs. Also highly regarded is the use of real-time hazard maps—which are being improved every day—to aid in times of disaster.

This year, the Vaccination Record System (VRS), which was developed based upon continuous feedback from municipal governments, the system’s main users, made progress in streamlining processes by data linkage. The Digital Agency bears the responsibility of abolishing inefficient practices of the past and thoroughly focuses on the value of “improving people’s day-to-day lives.” Guaranteeing the security of data and systems while providing a platform for collective administrative endeavors, the Agency aims to speed up digitalization in a user-driven manner.

The Digital Agency has just begun the challenge of getting the message out regarding solving social problems through digitalization, and that will eventually help realize a society where all can enjoy the benefits of digitalization in a way that best fits everyone’s individual needs.



ZAMMA Toshiyuki, the newly appointed head of International Strategy, hails from the private sector. By relaying information to the world about Japan’s experience in digitalization, he hopes to “pay back” those countries that presented him with knowledge and insights, contributing to international discussions.



STRONGER TOGETHER, FOR SAFE AND SECURE GAMES

The Tokyo 2020 Games are being held under the unprecedented circumstances of the COVID-19 pandemic. With many people worldwide facing enormous hardships, these Games strive to bring the world together as one.

The Olympic and Paralympic Games—said to be viewed on television by 4 billion people around the globe—have the power to unite the hearts of people the world over. To send out the message of the world’s potential to come together and of being able to overcome the enormous hardship of COVID-19, the Tokyo 2020 Olympic Games commence at last

on July 23.

The context of the COVID-19 pandemic presents an unprecedented challenge to this year’s Games, setting them apart from those held until now. However, that is exactly why all involved in Tokyo 2020 have been striving to succeed in holding safe and secure Games, and bring to full fruition a historic event that

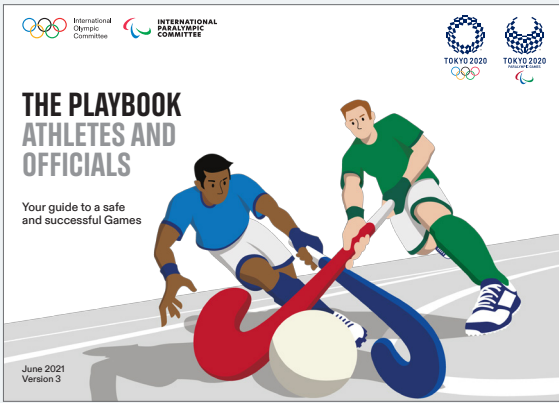
gives hopes and dreams to the children of today who will be the pillars of the future.

Under the guidance of the World Health Organization and scientific experts, Olympic officials have come together to formulate safety measures, known as the “Playbooks,” representing the culmination of the efforts of all those involved in realizing Games that are safe and secure. The Playbooks for each group of stakeholders contain specific rules for the safety and health of all the participants and host-country



The Australian women's softball team was the first group of overseas athletes to arrive in Japan.





The Playbooks contain rules for infection control measures. In addition to the Playbook for athletes and officials, other editions have been designed specifically for broadcast and media personnel, the general Olympic workforce, and other groups, including international federations.

residents alike.

To prevent infection via droplets, all participants in the Games are to wear masks at all times, except when eating, drinking, training, competing, and sleeping. Furthermore, thorough infection control measures have been put in place to minimize interaction with other people. These include avoiding the Three Cs—closed spaces, crowded places, and close-contact settings—along with frequent handwashing and ventilation, as well as the maximum avoidance of using shared items.

Participants from overseas are required to submit a certificate of a negative COVID-19 test before coming to Japan, and are subject to retesting upon arrival in the country. Routine testing is also carried out during the Games. A smartphone app “OCHA” has been created to manage daily reports on a person’s physical condition and trace instances of close contact with infected persons. In addition, athletes and other personnel, instead of using public transport, must use dedicated Games vehicles operated according to hygiene protocols.

These strict rules also apply to

broadcast and media personnel, as well as all other people involved with the Games, with separate rules for each group. Minimizing these individuals’ movements also ensures the safety of all the participants and the people of the host country, Japan.

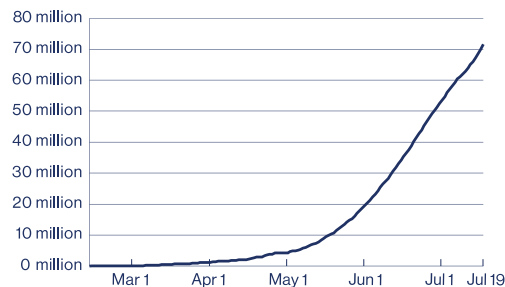
According to the International Olympic Committee as of June 15, over 80% of athletes and personnel staying at the Olympic Village are expected to be fully vaccinated, as will 70% to 80% of broadcast and media personnel. Japan’s vaccination rollout has similarly been accelerating rapidly, with 71.9 million doses administered as of July 19, which will certainly lead to safer, more secure Games.

The whole world’s attention this

summer is focused on a festival of sport that is being conducted in accordance with thorough safety measures. It has been decided that most of the competitions are to be carried out without spectators, making it difficult for the public to show their support for the athletes by cheering directly from the stands. However, the feats of the dauntless athletes, who have continued to train under challenging conditions, are being broadcast on live TV and online streaming, serving as a beacon of hope for 4 billion viewers across the globe. By all means, heartily shout out your support to the athletes this year remotely, be it through your television or other device. ●



COVID-19 vaccine doses administered in Japan



While the athletics test event in May was held without spectators, it was carried out successfully, and top athletes participated with excitement.



SURFING

IGARASHI Kanoa, who represents Japan at the Tokyo 2020 Games. Surfing is a unique sport in which athletes ride the waves in an ever-shifting natural environment. Watch how the surfers display their skills so effortlessly that they seem to be one with the wave.

EXCITING NEW SPORTS TO DEBUT AT TOKYO 2020

Four new events have been added to the Tokyo 2020 Games, all of them showcasing the power and grace of movement. The Japanese martial art of karate and the aquatic sport of surfing are two of the additions bringing a fresh sparkle to the Summer Games.



Karate



Skateboarding



Sport Climbing



Surfing

Starting with the Tokyo 2020 Games, a new policy has been inaugurated that allows host cities to propose additional sports for the Olympic programs. At this year's Games, karate, sport climbing, surfing, and skateboarding will make their Olympic debuts. All four of these sports feature graceful agility and dynamic maneuverability.

Spectators will be dazzled by the skateboarders' spectacular aerial moves and the physical prowess of the climbers.

With the splash of rolling waves comes the feel of summer. The sport of surfing involves athletes riding waves on shortboards 170 to 190 cm in length, competing with one another on such criteria as technique and originality. Surfing

is not only a sport, but an entire culture of beach music, art, and fashion, and is especially popular with the younger generation.

The surfing event at the Tokyo 2020 Games has athletes in the water for 20 to 30 minutes, during which they catch as many as 10 waves or more. Points are scored for each wave caught, with the best two performances determining

the winners. The waves are forever changing with the wind and tides, so no surfer ever rides the same kind twice. In addition to showing off their skillful maneuvers atop the board, surfers also have to pick the right wave to seize, a talent that requires a winner's instincts. The event at the Tokyo 2020 Games will have a four-person heat structure, where four surfers ride it out in the water at a time and the best two of each heat advance to the next round. As only one rider can ride a surge at any given time—a common rule among surfers—a big highlight of the event is watching the surfers jostle for position to catch the best wave.

While surfing is all about maneuvering a surfboard on a wave, karate fascinates audiences with its impressive control of the body. This Japanese martial art is thought to have originated from the self-defense techniques developed by the warrior class of the Ryukyu Kingdom, which ruled over the

Okinawa Islands until the end of the 19th century. Today, karate is practiced in more than 190 countries. A key element of karate in Japan, reflecting its origin as a form of self-defense, is its focus on training the mind. For this reason, taking karate lessons is popular as an extra-curricular activity.

Remarkable for its mental toughness is the discipline of *kata*, a set of offensive and defensive movements. Competitors, or *karateka*, choose the *kata* they wish to demonstrate from among the 102 that are recognized by the World Karate Federation. The *karateka* then demonstrate these *kata* as if they are fighting an adversary. Their punches and kicks are judged on a range of criteria, from conformance and timing to strength and speed. The fluid motions of the *karateka* are a thrill to see.

For those who want to see *karateka* actually fighting it out with each other, the more

competitive discipline within karate is that of *kumite*. While in *kata*, the two competitors score points for the quality of their movement, in *kumite*, they gain points when landing punches, kicks, or strikes on their opponent, and win by amassing more points than their adversary. Karate at the Tokyo 2020 Games is based on a traditional style that observes *sundome* (non-contact) rules, which impose penalties if a *karateka* should make full contact with his or her opponent. The speedy exchanges of blows attempting to catch one another off guard, as well as the stunning agility of their high kicks and other bold moves, are a sight not to be missed.

New events brimming with youthful energy and traditional skills should bring a fresh breath of air to the Olympic spectacle and take it to a new stage. All eyes will be on these exciting competitions. ●



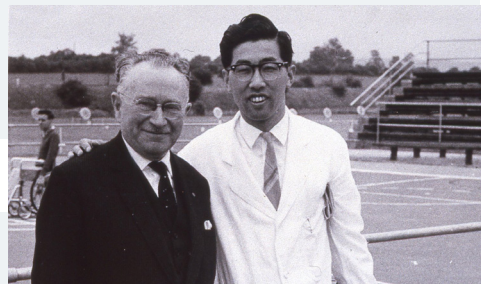
KARATE

SHIMIZU Kiyou (left), representing Japan in *kata*, and SAGO Naoto (top, on the right), representing Japan in *kumite*. Karate features two disciplines; *kata* is a choreographed pattern of moves against an invisible adversary, while *kumite* involves two fighters sparring with one another to decide the winner.



Top: The Opening Ceremony of the 1964 Tokyo Paralympic Games in which para athletes from 21 countries participated. The Japanese team proceeded into the stadium by wheelchair.

Right: When he visited a hospital in England in 1960, NAKAMURA Yutaka learned how sports can be integrated into rehabilitation. After he returned to Japan, he put this knowledge into practice. In this photo, he is with Dr. Ludwig Guttmann, who organized a sporting event for physically impaired athletes that became the predecessor to the Paralympics.



EMBRACING INCLUSIVITY:

A SPIRIT ROOTED IN THE TOKYO 1964 PARALYMPICS

With the Paralympic Games opening on August 24, Tokyo is the first city in the world to host the Games twice. The ideas of a Japanese physician, who spared no effort to organize the 1964 Paralympics, have lived on as a legacy of inclusivity, aiming for a society where everyone can express their individuality and lead a full life.

Sustaining the excitement of the Tokyo 2020 Olympic Games, the Tokyo 2020 Paralympic Games begin on August 24. This year the Games, hosted by Tokyo for a second time, convey the spirit of “barrier-free.” They contribute toward bringing about an inclusive society in which everyone, regardless of age or ability, can help one another and live in harmony. Even as the compelling nature of sport captures our attention, what moves us is the para athletes’ courage and tenacity.

One physician who helped make the first Paralympic Games in Tokyo a reality in 1964 also laid the foundation for progress toward an inclusive society in Japan. NAKAMURA Yutaka, an orthopedic surgeon from Oita Prefecture in western Japan, traveled to England in 1960 to study rehabilitation at Stoke Mandeville Hospital. There, he witnessed spinal injury patients engaging in sport as part of their therapy. After half a year, many of these patients had reintegrated into society. More than anything else, Nakamura found it refreshing to see the enthusiastic smiles of the patients who had regained their self-confidence through sport.

Nakamura decided to create an environment where physically impaired people in Japan could also receive rehabilitation through sport. While there were critics who said the patients should rest, Nakamura convinced his peers to put sports therapy into practice. In 1962, he took two wheelchair athletes to the International Stoke Mandeville Games in England, a multi-sport competition for athletes with disabilities. Japanese para athletes had now participated in an international competition. Nakamura then recruited supporters to help organize an international sporting event for physically impaired athletes after the Tokyo 1964 Olympic Games, which led to the holding of the International Stoke Mandeville Games outside of Europe for the first time, in Tokyo. This international sports event for disabled athletes, held in the same year as the Olympics, was later recognized as the second-ever Paralympic Games, the first having taken place in Rome in 1960.

Even after the Games were over, Nakamura didn’t stop his endeavors. He devoted himself to helping the physically impaired reintegrate into society, and in 1965 he established Japan Sun Industries, where disabled

people can work and become members of their local community. Enlisting aid from companies, Nakamura created many employment opportunities for physically impaired people across Japan. Today’s parasports and the accompanying progress toward an inclusive society would not be possible without his conviction and effort.

Nakamura’s hope for a society that is inclusive of physically impaired people continues to have an impact today and has inspired new ingenuity. Tactile paving, or braille blocks, for the visually impaired is one example. Laid on sidewalks, at train stations, in public facilities, and elsewhere, tactile paving provides visually impaired people with an essential tool for safe mobility. It was a Japanese inventor, MIYAKE Seiichi, who came up with the idea, and in 1967 the first tactile paving was laid at a crosswalk in Okayama Prefecture.

Another example is the “Asuchalle” Challenge for Tomorrow School. Sponsored by The Nippon Foundation Paralympic Support Center, which promotes parasports, it was started in 2016 and provides para athletes as instructors for classes where children can try out these sports. Through a simulated experience of physical impairment, children gain an understanding of those conditions and learn to respect diversity. In the five years since the classes began, over 1,000 schools have participated. Children who have taken the classes have offered feedback that is suggestive of their broadening mindsets: “A physical disability is not the impairment. It is society and people who create the impairment. We learned that people can take action to remove impairments.” These changing attitudes lead to the understanding an inclusive society needs and cultivate a barrier-free spirit in people’s hearts.

The zeal of a single physician helped create the 1964 Paralympic Games, whose legacy today is the progress being made toward an inclusive society. The Tokyo 2020 Paralympic Games carry us another step further on the path toward social inclusion.



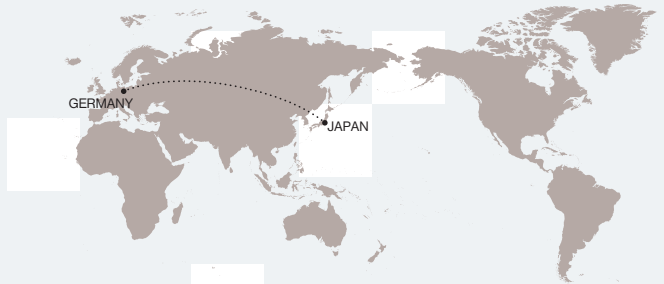
The “Asuchalle” Challenge for Tomorrow School is an educational program for children to experience sports with para athletes. Awareness of diversity is the first step toward fostering a barrier-free spirit.



Tactile paving, or braille blocks, which guides people with visual impairments as they walk, was created by a Japanese inventor. It can be found on sidewalks, at train stations, in public facilities, and elsewhere throughout the world.

COMRADESHIP BRINGS POWER TO PARA ATHLETES

A gold medalist for Germany in para athletics, Heinrich Popow now serves as a technical coach to the Japanese team for the Tokyo 2020 Games. With extensive experience and knowledge as a para athlete, he has been striving to support Japanese athletes for the event.



At the World Para Athletics Championships held in Dubai in 2019, the Japanese long jump team delivered outstanding performances. Heinrich Popow—who won a gold medal in the 100-meter sprint at the London 2012 Games and another one in the long jump at the Rio 2016 Games—supported their success. As a technical adviser, he has been working alongside Japanese athletes as they aim for the Tokyo 2020 Games.

Popow had his left leg amputated above the knee as a result of osteosarcoma (a bone cancer) at the age of nine. A very sporty child, he began playing para-sports after the amputation, and achieved remarkable success, including breaking world records in both the long jump and 100-meter sprint. However, as an amputee, he was disheartened by the lack of prosthetic products available for sports use. That is why, after retiring in 2018, he became a qualified

prosthetist. He says, “I am always looking for ways to create an environment in which we can play sports without any worry about prosthetic products.”

Popow’s decision to accept the role of Japanese national team coach in 2019 was driven by his friendship with Japanese para athlete YAMAMOTO Atsushi. The 39-year-old Yamamoto won silver medals in the men’s long jump at both the Beijing 2008 Games and the Rio 2016 Games, and is going to compete in the upcoming the Tokyo 2020 Games as well. Popow says, “Atsushi and I shared our experiences as para athletes, giving advice to each other after competitions. Rather than rivals, we were fellow professional athletes. We both still have a responsibility to keep pushing the development of the Paralympic movement.” Since the COVID-19 pandemic prevented him from visiting Japan to coach players in person, Popow has continued to actively give the Japanese athletes technical advice



Left: Popow adjusts prosthetic legs to fit the athletes’ bodies at a running clinic: “My job is to adjust the prosthesis to the muscle mass that changes with training, so that athletes can use their bodies to their maximum ability.”

Right: In order to spark an interest in prostheses, when visiting Japanese elementary schools, Popow tells the children to feel free to touch his own prosthesis.

HEINRICH POPOW

Born in Kazakhstan in 1983, Popow moved with his family to Germany at the age of seven. He competed in his first Paralympic Games in 2004 (Athens), and has since won two gold medals. He started working as a prosthetic limb manufacturer in 2007, and in recent years, began holding running clinics around the world.



At a running clinic, Popow teaches people how to run using prosthetic legs. Most participants do not believe they are able to run at first, but after the clinics, they discover that they can.

by watching videos of their performances via the Internet and giving them feedback. Through those endeavors, he has been teaching the athletes to maintain their individual performance goals while helping each other out, just as he and Yamamoto have done. “Unlike any other team, the Japanese team is one in which everyone tries to support fellow team members who may be in trouble.”

Another mission Popow has committed to with passion is the running clinics he holds around the world. At those clinics, he teaches amputees how to run using sports prostheses. “Sports helped me to accept my disability and live positively. I want other people to have that experience.” Popow himself also often learns from the participants. “In Japan, people of all ages—even those in their 70s—actively participate in the clinics. Thanks to those older participants, I have come to realize that sport is open to everyone, regardless of age or ability.”

The Tokyo 2020 Games are fast approaching. While Popow has high hopes for his athletes and is looking forward to meeting them directly and supporting them in their competitions, he is also envious that they will experience the Games in their

home country. “Participating in the Olympics or Paralympics in your home country is a wonderful experience and they will go down in history.” Though the COVID-19 pandemic continues to threaten the world, limiting the freedom to take part in sports, Popow believes that sports are needed now more than ever. “Sports have immeasurable power, and during such difficult times, there is a profound significance in sharing joy and passion through them. I look forward to seeing that happen at the Tokyo 2020 Games.”



Comradeship with YAMAMOTO Atsushi (left) encouraged Popow to start coaching the Japanese team. They continue their efforts to develop the Paralympic movement.

DELIVERING 3D-PRINTED PROSTHETICS TO ALL IN NEED



A Japanese startup is using 3D printing to develop high-quality prosthetic legs at a lower price, contributing to quality-of-life improvements for amputees living in the Philippines.

With Tokyo as the first city ever to host the Paralympic Games for a second time, Japan seeks to create an inclusive society and remove obstacles that prevent people from demonstrating their full potential. However, many people worldwide who have lost a leg due to illness or an accident, have had to put up with their disability as they cannot afford prostheses, which tend to be high priced. In the Philippines, for example, where diabetes is prevalent owing to a sugar-rich diet, countless poor people, unable to pay for a hospital visit, suffer from increasingly severe symptoms that force them to have a leg amputated. According to a survey commissioned in 2017 by the Japan International Cooperation

Agency (JICA), there are 1.23 million people in the Philippines who need a prosthetic leg.

TOKUSHIMA Yutaka, CEO of the Japanese startup Instalimb, Inc., founded his company to give disabled people—including those in the Philippines—affordable prosthetic legs through 3D printing. After a career working for manufacturers of IT components and medical devices, Tokushima joined the Japan Overseas Cooperation Volunteers. When he visited the Philippines at that time, he noticed many people who had lost their hope along with a leg.

Because a prosthetic leg must be manually fitted, mass production is difficult. Hence, prostheses become expensive, and the poor have no choice but



A verification test was conducted in 2018 in collaboration with the University of the Philippines General Hospital. Shown here with the hospital staff, TOKUSHIMA Yutaka, the CEO, is in the middle of the front row. On his left is prosthetist KOBAYASHI Yoshiaki.



to go on living without one. Since many such people are manual laborers, they may lose their jobs, making them even more impoverished.

Tokushima then had an idea: “I believed that if I leveraged my knowledge, I could change the situation. I wanted to give prosthetic legs to the people who needed them.” He developed 3D design software for prosthetic legs, and in 2018, started up Instalimb basing it in Tokyo. After several attempts developing various prototypes, the company finally succeeded in designing a prosthetic leg costing only 20,000 Philippine pesos (PHP), equivalent to about USD400—the average monthly salary for a recent college graduate in the Philippines—or just one-tenth the normal price. Instalimb was also able to significantly reduce the time needed to produce prosthetic legs, which typically take more than three to four weeks to make. According to Tokushima, a 3D printer, carrying out production overnight, can perform the whole process, from measurement to completion, in as little as 24 hours.

In 2019, Tokushima established a local subsidiary in the Philippines, where he began selling his company’s prosthetic legs. The production process begins by taking a cross-section 3D scan of the customer’s leg, based upon which Tokushima’s self-developed 3D modeling software then corrects the shape before printing. Once a preliminary mold is created, the next step is a test fitting. If any parts hurt, or any other problems arise, a prosthetist makes the necessary adjustments and applies them to the data. The finalized data is then sent to the 3D printer to



Many people in the Philippines have suffered amputations owing to such diet-related diseases as diabetes.



Top left: On a street in Manila, a patient who was fitted with a prosthetic leg says he has been able to return to his normal life.

Top right: Instalimb’s prosthetic leg, made from polylactic acid carbon—a reinforced material consisting of plastic mixed with carbon—is both lightweight and comfortable to wear.

Bottom: 3D printers have significantly shortened the time needed to complete a prosthetic leg tailored to each person.

create a mold.

To provide prosthetic legs to those people who need them, Tokushima thought up his simple process for creating custom-made prosthetics that are nevertheless affordable and quick to produce. Speaking about the advantages of 3D-printed prosthetic legs, KOBAYASHI Yoshiaki, the company’s prosthetist, says, “Because we can produce the item in a short time, the patient can start relearning how to walk soon after their leg is amputated, before the muscles begin to atrophy. This allows them to return to society early.”

Instalimb is now focusing on developing automatic designs with AI. If data on a prosthetic leg can be digitized after a prosthetist has made adjustments, the company might be able to create designs in the future even in locations where there are no prosthetists. With the COVID-19 pandemic making it difficult for people to move around and contact each other, AI offers greater promise in such cases. Henceforth, the company is considering expansion to other developing countries facing similar issues, as well as to conflict areas where many people have lost legs.

Instalimb’s policy is to “create a world where everyone in need can access prosthetics.” Tokushima says, “I hope more people will be able to newly dream of returning to their former lifestyle by obtaining a prosthetic leg and regaining their independence.” ●

SHARING HOPE AND THE JOY OF LIVING THROUGH MUSIC

Pianist TSUJII Nobuyuki has enchanted audiences worldwide ever since his triumph at the 13th Van Cliburn International Piano Competition in 2009. He also has continued to take on new endeavors in the face of hardships through music.

The Tokyo 2020 Paralympic Games are set to start on August 24. Audiences across the world will watch in fascination as para athletes compete for top honors in 539 events in 22 sports categories. Meanwhile, the world of music is graced by the presence of a Japanese pianist who also overcame a disability to perform in venues across the world, bringing hope and heartfelt moments to many listeners. TSUJII Nobuyuki, who was born blind in 1988, first encountered music when he was eight months

old. His mother noticed that he enjoyed listening to Chopin's "Heroic" Polonaise, and began to play the CD for him every day. Applying himself to music with extraordinary fortitude and passion, his talents bloomed at an early age and he won the top prize at the 13th Van Cliburn Piano Competition at the age of 20, playing masterpieces including Chopin's *12 Études op.10*. In the dozen years since then, he has toured the globe, maturing as a performer. And this year, he took the great step of undertaking a

tour in which he once again played Chopin—this time all 27 of the composer's *Études*, an impressive feat. "It was an enormous challenge. But I decided to take

TSUJII NOBUYUKI

Born in Tokyo in 1988, Tsujii showed great promise at the piano from an early age despite his disability, and decided at age 10 that he wanted to play professionally. In 2005, he became the youngest person to compete in the International Chopin Piano Competition, where he was granted the critics' award. Since winning the top prize at the Van Cliburn International Piano Competition in 2009, he has performed on stages the world over.





Left: When Tsujii triumphed at the Van Cliburn International Piano Competition in 2009, he received the gold medal from Cliburn himself (left front). The encounter is one of his most treasured memories. ©Van Cliburn Foundation



Right: Many maestros and world-class musicians, including Russian conductor Valery Gergiev (center), have praised Tsujii and opened doors to him as a performer (photo taken in St. Petersburg, Russia, 2012).

advantage of this stasis (imposed by the pandemic) to work on the *Études* more thoroughly than ever,” Tsujii reflects.

Tsujii is revered both for the purity and beauty of his notes and for his outstanding playing technique, but rather than allowing his own musical personality to dominate, he faithfully seeks to express the enticing depths and complexities of whatever masterpiece he is playing. More than anything, he finds joy in sharing the music with his audience, and this truly comes across in his performances. This straightforwardness makes him so beloved by audiences of all nations. “I loved to perform for people when I was very young, and that passion has never once wavered. Whenever I play, I try my best to be as one with the audience.”

In his programs, Tsujii generally includes well-known pieces that everyone can enjoy,

and experiments eagerly with new ideas, such as concerts that pair music with projections of world-famous masterpiece paintings. This attitude was driven in part by a conversation that he once had with Van Cliburn, the legendary American pianist who gave his name to the competition in which Tsujii won the top prize. “I met with him shortly before he passed away, and he said to me: ‘Be a pianist who can draw in an audience of those even without any knowledge or interest in classical music.’ That is what I keep in mind every time I play at a concert.”

During the decade that Tsujii climbed to the heights as a concert pianist, Japan and the world faced enormous predicaments, such as the Great East Japan Earthquake of 2011, and the current COVID-19 pandemic. Distressed by these events, Tsujii explored ways to contribute with his music. In 2012, he participated

in the production of “Lights of Japan,” a video message to the world regarding Japan’s post-earthquake reconstruction. He performed with a piano that had been restored after serious damage from the tsunami. Transmitting hope and determination for the reconstruction, the video message was shown to world leaders assembled at the Davos Forum.

In 2020, in the midst of the COVID-19 pandemic, Tsujii presented a new composition, entitled “We will smile together again,” in hopes of offering comfort to others through music. He has also experimented with new ways to communicate through music, including launching a YouTube channel and giving his first online concerts. “I feel that we need music the most when times are hard. Music knows no national boundaries and has magnificent power. I myself would not be where I am today without it,” he says. Keeping these thoughts in mind, Tsujii will continue to meet new challenges. “I will work harder than ever to be a pianist who stays in people’s hearts. To always play with joy—that is something I will never forget.” ●



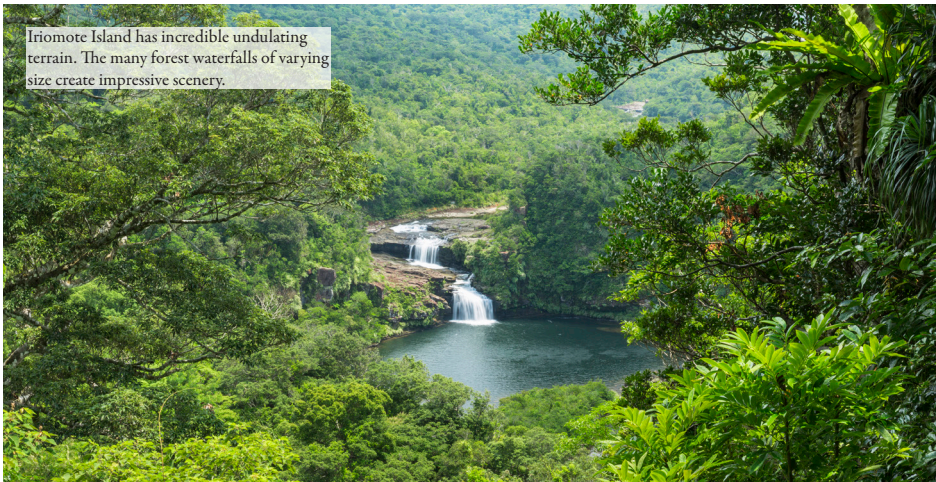
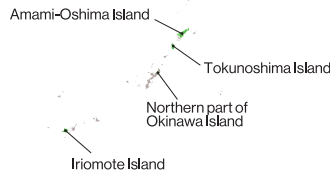
Top: A scene from Tsujii’s first online concert in 2020. “Through online streaming, people can watch my hands as I play, and they can enjoy music in the comfort of their own homes. These are advantages that live performances lack,” he says.

Right: Since 2016, Tsujii has been regularly holding concerts where audiences can enjoy a fine selection of impressionist, ukiyo-e, and other art projected onto giant screens during the performance. ©Hikaru☆



NEW WORLD NATURAL HERITAGE SITE SHOWS UNIQUE BIODIVERSITY

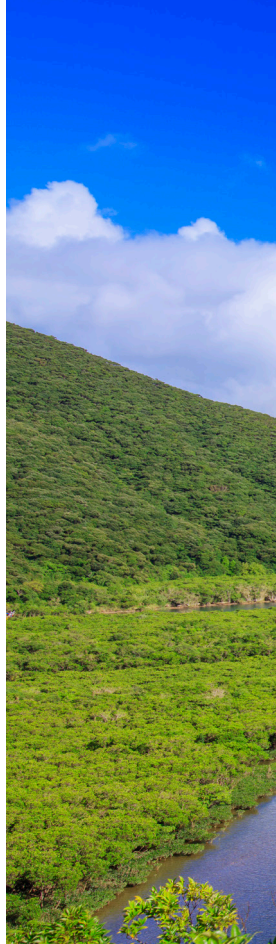
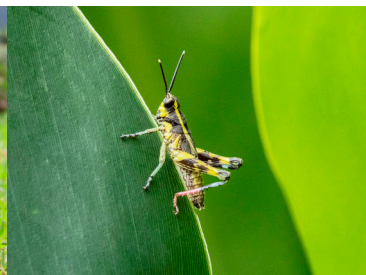
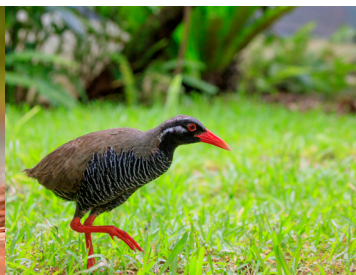
As of July 26 this year, a new site in Japan has been added to UNESCO's World Heritage List. The islands inscribed as Japan's fifth World Natural Heritage site support a diverse array of life that has evolved along a unique path within timeless forests.



Iriomote Island has incredible undulating terrain. The many forest waterfalls of varying size create impressive scenery.

The Ryukyu Islands are located at the southern end of the Japanese Archipelago, which arches from the northeast down to the southwest, covering a wide range of climate zones. Japan is already one of the world's invaluable biodiversity hotspots, but these islands are particularly known for that trait. The region, which is influenced by the warm Kuroshio Current and subtropical high-pressure systems, is warm and humid year-round. Evergreen broadleaved subtropical rainforests stretch across the islands. With a thick growth of giant trees, stepping into the rainforests feels like entering the age of the dinosaurs.

The islands' magnificent trees are treasure troves of biodiversity. Because of their unique biota, which includes





The vast virgin mangrove forest on Amami-Oshima Island. People can enjoy activities such as canoeing in the forest.

numerous rare endemic and threatened species, “Amami-Oshima Island, Tokunoshima Island, Northern part of Okinawa Island, and Iriomote Island” have been inscribed as UNESCO World Natural Heritage site as of July 26, 2021.

The islands were created millions of years ago when they split from the Eurasian continent. Over the long intervening years, the life here has evolved along its own path. The result is that the islands, which account for only 0.5% of Japan’s total land area, are home to an incredibly large share of the plant and animal species that inhabit the country. For example, one can see over 60% of Japan’s entire range of bird species on these islands.

The isolated environment on the islands has also led to the evolution of numerous unique species. There are nearly 2,000 such species, including over 1,600 insects and 71 vertebrates. Also, over 80% of the frogs and other amphibians inhabiting the islands are found nowhere else. Furthermore, 144 of the islands’ plants and animals are on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species, which is 40% of all such species in Japan. The islands originally separated from the continent around 12 to 2 million years ago, and some of the species still retain their original appearance. A notable example is the Amami rabbit with its short ears and legs, which is one of the world’s oldest rabbit species.

Local governments and residents have joined together to safeguard those rare species as part of continuing efforts toward environmental protection and biotic conservation. Their initiatives to protect irreplaceable nature will be widely publicized through the Fifteenth meeting of the Conference of the Parties (COP 15) to the Convention on Biological Diversity (CBD) summit, scheduled for this October, and will drive the global trend toward a sustainable planet in the future. ●



Some of the unique species on the islands.
From left: Iriomote cat, Ryukyu black-breasted leaf turtle,
Okinawa rail, Iriomote locust, Amami rabbit.

Sannai Maruyama is the site of a settlement that was maintained for two thousand years. Diverse facilities including large, pillar-supported buildings and roads were arranged methodically to form the infrastructure of a large-scale community.



NEW WORLD HERITAGE SITES HIGHLIGHT THE CHARM OF THE PREHISTORIC JOMON PERIOD

On July 27, several valuable prehistoric sites were newly added to the UNESCO's World Heritage List. They bear a unique testimony to the development over millennia of the pre-agricultural yet sedentary Jomon culture.

The northern end of the Japanese archipelago is a verdant region abundantly blessed by nature. It is also the location of many valuable archaeological sites, indicating how people settled and lived in the area more than 10 thousand years ago. In July 2021, a number of these sites were registered as a UNESCO World Heritage cultural property under the title “Jomon Prehistoric Sites in Northern Japan.”

Japan's Jomon Period lasted for more than 10 millennia, from approximately 13,000 B.C.E. to 400 B.C.E. That lengthy span of

time coincides with the period in Europe stretching from the end of the Paleolithic age to the establishment of the Roman Empire. The Jomon Prehistoric Sites comprise 17 excavations scattered across four prefectures: Hokkaido, Aomori, Iwate, and Akita. It is a region of abundant water sources in the form of lakes, marshes, and rivers, with rich forests covering the terrain. In a bountiful land with stable food sources amenable to gathering, fishing, or hunting, people began to live together in communities and establish permanent settlements.

One reason that the remains of Jomon settlements were deemed worthy of recognition as World Heritage sites is the rare evidence they provide of the development of non-agricultural sedentary societies.

Professor Simon Kaner, executive director of the Sainsbury Institute for the Study of Japanese Arts and Cultures in the U.K., where he also heads the Centre for Archaeology and Heritage, and director of the Centre for Japanese Studies at the University of East Anglia, speaks of the appeal of the Jomon sites. “A remarkable thing about the Jomon

Photos courtesy Jomon Archives



A large cemetery is believed to lie under the stones of the Oyu Stone Circles. Numerous ritual implements such as stone daggers have been unearthed at the site.



Simon Kaner is executive director of the Sainsbury Institute for the Study of Japanese Arts and Cultures in the U.K., where he also heads the Centre for Archaeology and Heritage, and director of the Centre for Japanese Studies at the University of East Anglia. His choice of Jomon culture as a research subject began with the *dogu* clay figures that have fascinated him since he joined an archaeological dig in Japan during his college days.

Period is the diversity of its pottery culture, from its earliest stages to its last. Pottery shards have been found at the Odai Yamamoto Site in Aomori Prefecture that date back 16 thousand years, which makes the site one of the most ancient pottery-using places in the world.” The pottery found in Africa, the second most ancient pottery-using area in the world, is from approximately 11 thousand years ago.

Professor Kaner continues, “Why was pottery made from

such an early time in the Jomon Period? Scholars all over the world are looking for a reason, but unfortunately, we have not yet arrived at an answer. Burnt food residue has been discovered on some of the shards, suggesting that Jomon people were interested in cooking. There is a great deal to tickle the imagination, which makes it fascinating.”

Professor Kaner is particularly attracted to stone circles, a number of which are part of the cultural property at the sites, including the Oyu Stone Circles and the Isedotai Stone Circles, both in Akita Prefecture. Numerous implements thought to have been used in rituals have been found at the same sites, suggesting that various rites and ceremonies were conducted across multiple generations during the Jomon Period. The Oyu Stone Circles is one of the clearest example of this idea, for they are composed of two

rows of regularly spaced stones in sundial formation, with buildings, storage pits, and graves arranged around the circular setting.

Professor Kaner is conducting a comparative study between the Jomon circles and the various circles found in Britain. He says, “It is quite rare to find stone circles among non-agricultural societies. Not only did the societies of the Jomon Period build permanent settlements despite them being fisher-gatherer-hunters; it seems likely that their societies were closely associated with particular places, or landscapes, too. Burying people who were destined to become your people’s ancestors in monuments is an effective way of ‘staking your claim’ over such places and landscapes, and performing rites in particular seasons was as important for them as it was for agriculturalists.”

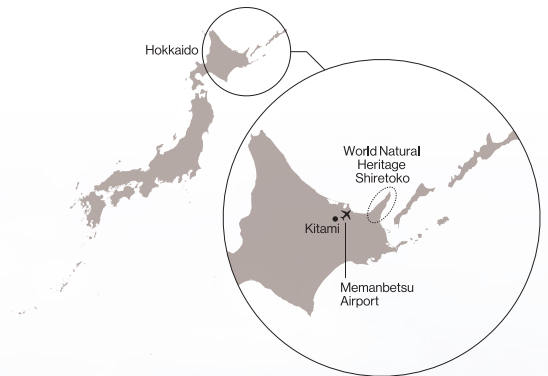
A visitor to these sites is sure to gain a sense of how life was lived in those days, so many millennia ago. Professor Kaner says with a smile: “They say that contemplating beautiful scenery contributes to a person’s well-being. What better way to travel than to nourish your soul by seeing an archaeological site surrounded by beautiful scenery, and then enjoying some delicious Japanese food!” ●

Left to right: A large “goggle-eyed” clay figure excavated at the Kamegaoka Burial Site in Aomori Prefecture; a decorated cylindrical earthenware pot from the Goshono Site in Iwate Prefecture; a wide variety of pottery from the Korekawa Site in Aomori Prefecture.



REMOTE WORK BRINGS PEOPLE TOGETHER IN A NORTHERN CITY

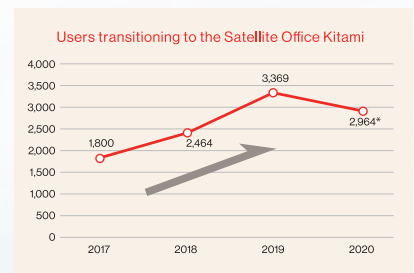
Already blessed by the rich natural environment of eastern Hokkaido, the city of Kitami has determined to attract IT businesses and build a robust teleworking environment. Amid the COVID-19 pandemic, teleworkers from diverse fields have come together to create a new community beyond their professional backgrounds.



Kitami, Hokkaido Prefecture, is a city of approximately 115,000 inhabitants. Looking out on the Sea of Okhotsk, the city boasts a thriving farming and fishing industry and proudly produces more onions and scallops than any other place in Japan. Close to Memanbetsu Airport, itself only a 90-minute flight from Tokyo, the city is easily accessible from the capital. Satellite Office Kitami—which opened in the city center in 2017—is a facility that provides workspace for a total of 3,000 teleworkers every year. In addition

to programmers and engineers from various firms based in the office itself, a wide variety of professionals—web media writers, manga artists, web designers, and more—take advantage of the venue and its facilities. Corporate workers who drop in during business trips are also on the rise.

One of the Office’s regular users is NISHIMURA Takako, who was born in Kitami’s neighboring town of Bihoro and now works remotely for a Tokyo accounting firm. After attending a university in Tokyo and pursuing her career in the capital for a number of years, she moved back to the area last summer with her two children to seek a better living environment. She is doing the same job as before, but online. “This city is very well balanced with regard to its urban functions and natural environment. One of its biggest draws is this satellite office, where people can work together. I’m not



Opened in 2017, Satellite Office Kitami boasts an increasing number of workers utilizing it. *The number decreased in 2020 when the Office was closed to the public in response to the COVID-19 pandemic.

alone here, and have the chance to speak with other teleworkers, which sometimes helps me to ease my stress,” she explains. Local businesses have begun to consult her as an accountant, and she is eager to contribute more to the region in her professional capacity in the coming years.

Kitami is the home of the Kitami Institute of Technology, Japan’s northernmost national university. However, like most provincial cities in Japan, it has been plagued by the outflow of young graduates toward Tokyo and other large metropolitan areas once they have finished



Satellite Office Kitami is a place where teleworkers from myriad sectors come together. They communicate with each other on a daily basis, opening up new vistas for their work. NISHIMURA Takako, who moved to Kitami from Tokyo last year, now enjoys a satisfying lifestyle combining work with parenting.



HIRATA Kosuke stands in front of the new curling rink that opened just last year. His ambition is to bolster Kitami's fame as a "Curling City."

their studies. By collaborating with IT firms, Kitami has been implementing a unique scheme to recover those human resources. The city extends support to people who wish to return after working for IT firms in large metropolitan areas for a number of years, having gained various skills and expertise. By providing such workers with a setting to which they can smoothly make the move back without any hesitancy, the city has already begun to attract numerous people with earlier connections. That, in turn, has led to the revitalization of the city itself.

One of the first people to take advantage of Kitami's human resource recovery plan was HIRATA Kosuke, an Olympic athlete who played on the Japanese curling team at the 2018 PyeongChang Winter Games. After finishing a graduate course at the Kitami Institute of Technology, Hirata took a job at a Tokyo IT firm that had a partnership agreement with the city of Kitami. He worked as a programmer there while continuing his activities as a

curler. After achieving his dream of participating in the Olympic Games, he moved back to Kitami while keeping his job with the IT firm. Hirata continues to work even as he trains for a second chance at the Winter Olympics, and Kitami has proved to be the perfect place for him to do that.

Last year, the city opened a second curling facility, which is equipped with an advanced system to analyze the motions of both the athletes and the curling stones. Hirata has been able to contribute data in his capacity as a top-class player, and he has also been working as the IT firm engineer with Kitami Institute of Technology Professor MASUI Fumito, his former mentor, to develop a system to improve curling performances.

"Very few athletes have successfully managed dual careers. I worried about this in the past, but Kitami provides me with an environment where I can achieve it, and there are also people around me to help. Though I live in a small municipality far from metropolitan areas, I want

to prove that even someone in my situation can be a world-class athlete while working in cutting edge technology. I would like very much to be a good role model for local kids who want to compete in the Olympics," says Hirata.

Kitami is surrounded by places of great natural beauty, including the World Natural Heritage Site of Shiretoko, and it is also the perfect place to both work and enjoy your days of leisure. Added to this is the bonus of the area's wide array of fresh seafood. Once the pandemic is over, what could be a more wonderful idea than visiting—and perhaps working in—this charming city and meeting its people. ●



Kitami produces more onions and scallops than any other place in Japan. The city is famous not only for its fresh seafood but for its grilled meat (*yakiniku*) as well, making it a great place to enjoy food.

KIZUNA

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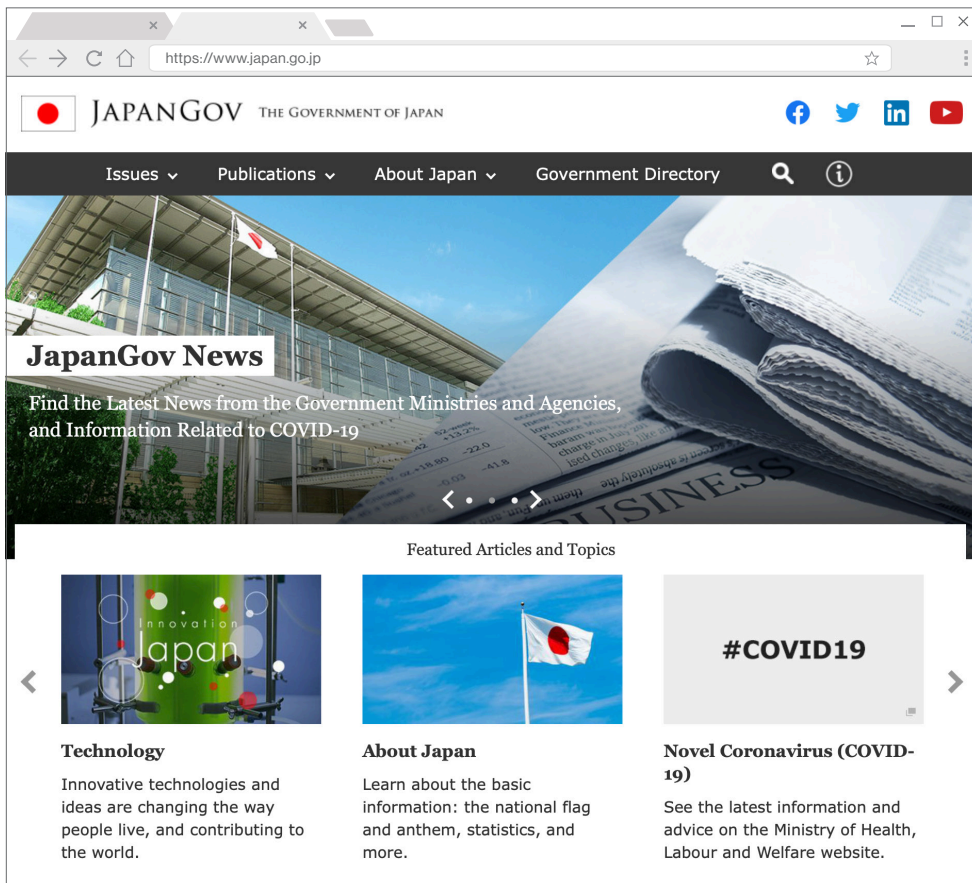
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