

FOCAL POINT ON THE SUSTAINABLE DEVELOPMENT GOALS IN JAPAN

HOW SCIENCE AND INDUSTRY ARE DRIVING JAPAN'S SUSTAINABLE DEVELOPMENT

Japan has made strides on some Sustainable Development Goals, but in other areas it needs to hit the accelerator. [SCIENTISTS, UNIVERSITIES AND COMPANIES HAVE SOME SMART SOLUTIONS.](#)

In 2015, the world's nations came together under the auspices of the United Nations (UN) and agreed on a plan for building a better global future — the 17 Sustainable Development Goals (SDGs). We are now half way to the 2030 deadline set for achieving them, and there is much debate on progress so far and whether the world is on track to realizing the bold plan.

Japan is currently ranked 21st out of 166 nations that have comparable data for their progress. As of 2023, it has achieved and is on target to maintain 42 of 87 trackable indicators within the 17 wider goals. Many of these subgoals were in the goals of Good Health and Well-being (SDG 3), Industry, Innovation and Infrastructure (SDG 9), and Peace, Justice and Strong Institutions (SDG 16).

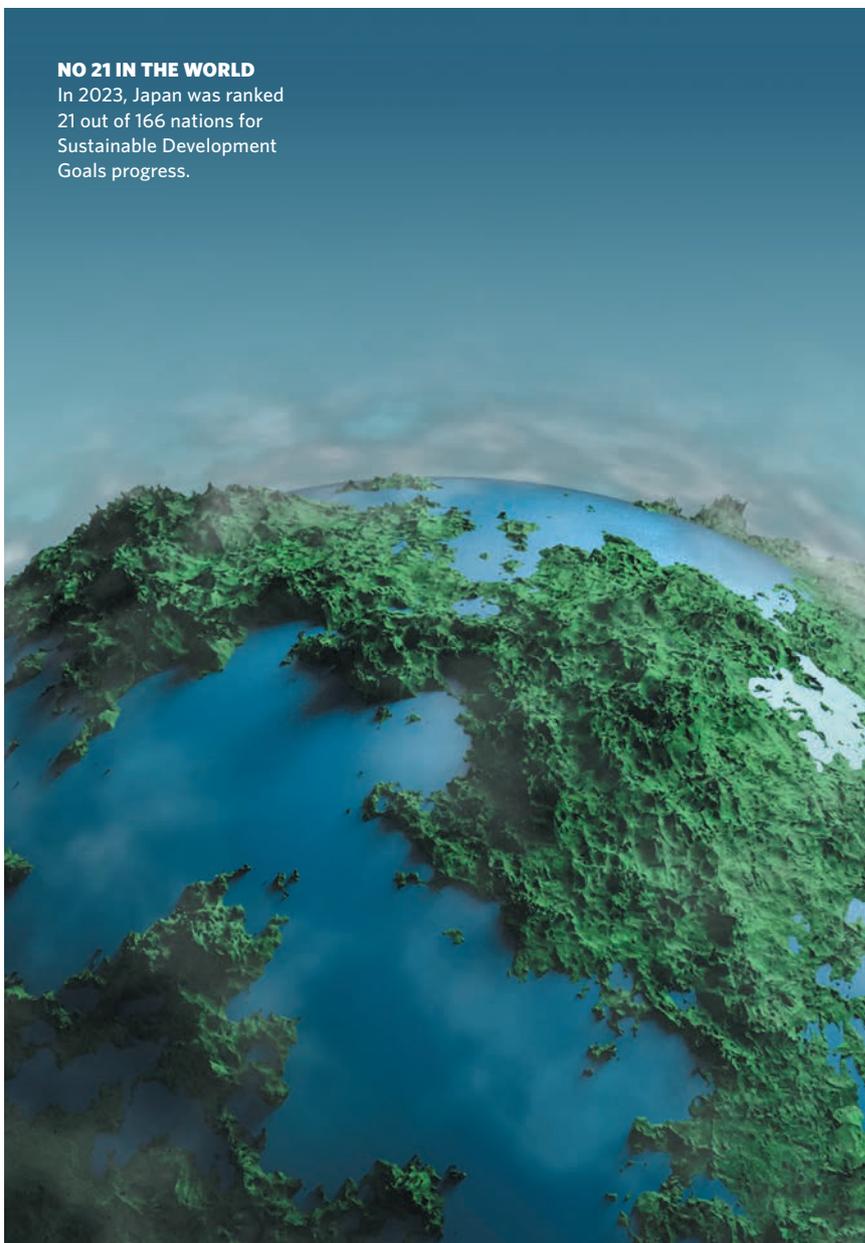
But while Japan is performing admirably in some areas, it has been gradually dropping in the global SDG rankings, falling from 11th place in 2017. According to the nation's report card in the *Sustainable Development Report 2023*, the five SDGs it most needs to focus on are Gender Equality (SDG 5), Responsible Consumption and Production (SDG 12), Climate Action (SDG 13), Life Below Water (SDG 14), and Life on Land (SDG 15).

SCIENTIFIC INITIATIVES

The Japanese government is funding cutting-edge science on some of these topics — while companies and universities are working hard to drive corporate and institutional change. But experts argue that more accountability and tangible targets are needed to

NO 21 IN THE WORLD

In 2023, Japan was ranked 21 out of 166 nations for Sustainable Development Goals progress.



kurosuke/iStock/Getty

1

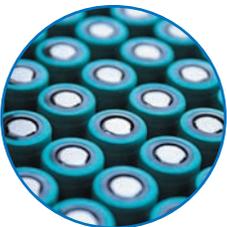
As of 2023, Japan has achieved and is on track to **MAINTAIN 42 OF 87 INDICATORS**, or subgoals, under the 17 wider SDGs.



Andriy Onufriyenko/Moment/Getty

2

ELECTRICAL WASTE and EXPORTS OF PLASTIC WASTE have been highlighted as areas where major challenges remain for Japan.



P5h/Shutterstock

hasten progress in these areas.

Japan got off to a good start. Private and social actors in Japan were quick to recognize the SDGs, explains Norichika Kanie, an expert in environmental policy and diplomacy at Keio University in Tokyo. Several cities have already integrated SDG policymaking units.

"Today, almost everyone in Japan has heard about the SDGs," agrees Ken Shibusawa, CEO of Shibusawa and Company, a strategic advisory firm based in Tokyo, Japan. "So Japan has been very successful in spreading the idea of SDGs in society."

Many Japanese companies that are engaged globally have always been sensitive to the environmental and social framework of the markets that they work in, adds Shibusawa. These entities had long extolled the idea of *sanpo yoshi*, which roughly means 'good for the seller, the buyer, and society'.

And while Japan lags behind some leading countries, it could also be better at promoting the advances it is making, says Shibusawa. "Some countries are better at expressing their SDG narrative," he says. "Japan needs to be more strategic about expressing the positive work it's doing globally."

This positive work could be far reaching. On the issues of responsible consumption, several public-private partnerships have been driving research on better methods to recycle electrical cables, optical fibres, batteries and plastics (see 'Better recycling for complex plastic products' and 'A new method for turning plastic into oil').

Significant government funding for research into degradable bioplastics should also help tackle the issue of plastics in the environment, as well as other problems related to SDGs 12 and 14, on responsible consumption and marine life (see box, overleaf, 'Japan's plans to combat plastics in the oceans').

Another government-funded initiative is driving research into solar cells that are transparent enough to be installed as or on windows (see 'Three Japanese technologies to watch'), which could help address the SDGs related to responsible

consumption and climate action, particularly for highly urban areas.

FOCUS ON TARGETS

Japanese multinationals are also working on important health initiatives (see 'Reducing the world's salt intake') and cutting emissions from manufacturing (see 'Sneakers that leave a smaller footprint').

Early recognition of the SDGs in Japan, says Kanie, was driven by the likes of Keidanren, Japan's largest business association. Soon after the SDGs were launched in 2015, Keidanren modified its charter of corporate behaviour to include proactively working towards them.

Nevertheless, while many groups have made progress, there is still work to be done around setting and tracking targets, Kanie says. Ninety percent of the population is aware of the SDGs, but "there is a huge gap in understanding of the actions needed" to address them, he notes.

Japan's government has also shown it is serious about some SDGs by funding national research initiatives on everything from bioplastics to lasers for low-emission manufacturing. Like other developed nations, it has committed to hitting net zero emissions by 2050, and it plans to eradicate marine plastic pollution emanating from Japan over the same period (see box, overleaf). But more needs to be done around other SDG targets, legislation and action — such as carbon pricing — Kanie says.

Japan is not alone in finding it hard to work towards tangible targets, says Shibusawa, who is also a special advisor on Japan to the chair of the International Sustainability Standards Board, which regulates global standards for sustainability disclosures focused on the needs of financial markets.

"Guidelines on sustainability disclosures have been produced, but the key to action is a mechanism that assures that disclosures are accurate," he explains. "That has been under debate for years, and sometimes it feels like 2030 will come and go before it is established. It's a global problem that many SDG actors are struggling with, but one that must be overcome."

3

Most of the policy tools and frameworks in the UN's Agenda for Sustainable Development 2030 **HAVE BEEN IMPLEMENTED IN JAPAN.**



Richard Drury/DigitalVision/Getty

JAPAN'S PLANS TO COMBAT PLASTICS IN THE OCEANS

Reducing its contribution to marine **PLASTIC WASTE TO ZERO BY 2050** will help Japan move towards a sustainable future.

Japan aims to stop all dumping of its plastic waste into the ocean by 2050, as part of the 'Osaka Blue Ocean Vision', an international framework to address marine plastic litter put together at the G20 in 2019. This is part of Japan's efforts to meet the United Nation's Sustainable Development Goals (SDGs), particularly SDG 14, Life Below Water.

Japan has its work cut out, as it is the world's second largest consumer of disposable plastic per capita, producing 50,000 million tonnes of plastic a year, a significant proportion of which ends up in the oceans.

"Plastic is very strong, lightweight and durable, which are wonderful characteristics," says Tadashi Tokai, a professor in the Department of Marine Biosciences at the Tokyo University of Marine Science and Technology. "But these become a problem when plastic enters the ocean and remains in the environment without decomposing."

Tracking exactly how much plastic is in the ocean and how it reaches the sea has been a major stumbling block to making headway on meeting targets for reducing marine litter. The Japanese government is funding AI technology to address this issue (see 'How drones are solving the problem of marine plastic').

Once on the coastline or in the sea, larger pieces of plastic cause significant problems for wildlife. But smaller pieces of microplastics are also cause for concern, says Tokai. "When exposed to ultraviolet light, and when pummelled by waves and rocks, shards of plastic become thinner and smaller," says Tokai. "No matter how small plastic becomes, it's still plastic and will never disappear completely. Microplastics are a problem, and even finer, nanosized plastic particles are floating in the oceans."

Research is urgently needed to help answer questions about microplastics and nanoplastics. "We still don't know

the effects of nanosized substances entering the body of a living creature," adds Tokai. "We can't wait until we find out — we need to take precautionary measures now."

Another area that we know very little about is how much plastic sinks to the seafloor and what effect it has there. "Deep-sea surveys by the Japan Agency for Marine-Earth Science and Technology have found plastic bags and microplastics at depths of several thousand metres," says Tokai. "We don't know how much plastic is on the seafloor and whether we can just leave it there or not." This is an area that Tokai is actively exploring.

One way the Japanese government is tackling its 2050 commitment is by reducing plastic consumption. In fact, just before the 2019 G20 summit, Japan's Ministry of Environment made a series of commitments to reducing plastic waste as part of its 'Resource Circulation Strategy for Plastics'. Among its aims is a reduction of single-use plastic by 25% by 2030.

One example of an effective policy that has been introduced is a mandatory charge for plastic bags when shopping in convenience shops or supermarkets, a strategy many countries around the world have already implemented. "As a result of this policy, the number of people who refuse plastic bags when shopping has increased to 80% in Japan — more than double what it used to be," says Tokai.

An additional way to tackle the problem is creating alternative materials including bioplastics that are degradable in the sea. Japan has announced it will aim to introduce 1.8 million tonnes of bioplastic to the market by 2030. "But we will have to innovate to create bioplastics," says Tokai. The Japanese government is funding several national projects and public-private partnerships to develop bioplastics (for example, see 'Three Japanese technologies to watch'). ■

4

By 2050, it has been estimated that there may be **MORE PLASTICS THAN FISH IN THE OCEAN BY WEIGHT.**



Gary Bell/The Image Bank/Getty

"Deep-sea surveys... have found plastic bags and microplastics at depths of several thousand metres."