Book of Japan's Practices for SDGs

- Creating Shared Value by STI, Business and Social Innovation -

(2018)

SUSTAINABLE DEVELOPMENT GOALS

This Book illustrates examples of the Japan's practices that could contribute to implementation of the SDGs.

This Book aims
- to share Japan's practices for implementing the SDGs with other national and international stakeholders,
- to encourage further engagement and
- to stimulate new partnerships and collaboration among a variety of stakeholders for creating shared value

These practices have been edited based on those currently open to the public or voluntarily submitted by enterprises, universities, research organizations and other organizations.

INDEX ：

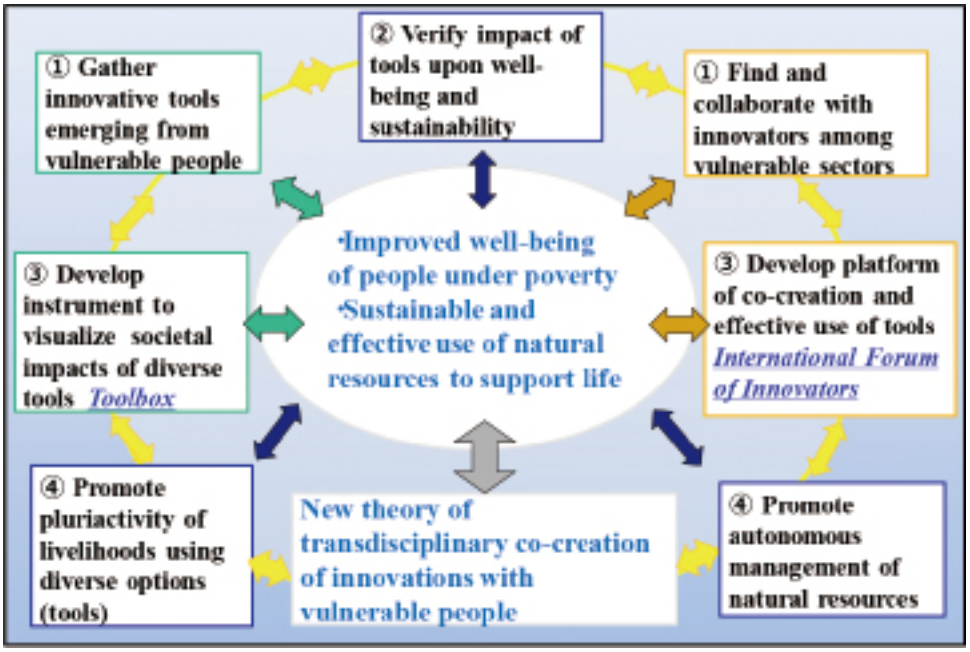
Japan's Ecosystem for Implementing SDGs

Transdisciplinary Research and Practice Partnering with Vulnerable People Under Poverty

Project name:

Transdisciplinary Study of Natural Resource Management under Poverty Conditions Collaborating with Vulnerable Sectors (TD-VULS project: 2017-2019)

By transdisciplinary collaborations with vulnerable people under poverty in 6 countries in Asia and Africa, the project identifies innovative tools emerging from vulnerable people themselves to improve their well-being and sustainability. These tools are summarized into a toolbox and an international forum of these innovators and transdisciplinary scientists is established to co-create innovations to end poverty.



Japan Science and Technology Agency

RISTEX Research Institute of Science and Technology for Society

brown: build trust
green: visualize innovations
blue: implement outcomes

Lake Malawi(Malawi):
Establishing autonomous fisheries resource management and value-adding supply chains with small-scale fishermen, traders, traditional chiefs and other local actors.

Polewali (Indonesia):
Improving well-being of cacao farmers by skill development and advanced farm management with local farmers, NGOs and actors of local and international markets.

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RISTEX (Research Institute of Science and Technology for Society)

RISTEX conducts R&D programs with the aim to produce and promote innovative solutions to the issues that human society confronts. Such issues include the eff ects of global warming, aging population and declining birthrate, and improvement of safety and security.
To gain practical wisdom and methods that will lead to solutions to social issues, RISTEX values transdisciplinary research, which is carried out by researchers from various fields, practitioners and other stakeholders. In addition to the R&D programs , RISTEX runs programs to support implementation and outspread of the R&D results into society.

Reference: https://ristex.jst.go.jp/en/index.html

Creating Rice Varieties and Cultivation Technology Tailor-made for Kenya's Environment

Project name:

The Project on Rice Research for Tailor-made Breeding and Cultivation Technology Development in Kenya

Developing superior rice varieties and cultivation methods that maximize each variety's potential

In many sub-Saharan African countries, a pressing issue is boosting rice production because the growth in domestic rice production is insufficient for the increase in consumption. Kenya is executing a policy to double rice production, but has to address impediments such as drought, cold weather at high elevation areas, low soil fertility and rice blast disease. By using technologies such as molecular breeding and DNA marker-assisted selection, the project advances the development of rice varieties carrying useful genes to overcome stress conditions in Kenya. After assessing current cultivation practices, the project aims to develop cultivation technologies that maximize the potential of individual rice varieties and ensure sustainable rice production.

Fostering both rice and researchers to address food shortages in sub-Saharan Africa

Combining tailor-made rice varieties suitable to Kenya's cultivation environments with optimum cultivation methods lead to an improvement of productivity and stability in rice production. The project contributes to achieving the goal of CARD*, a consultative group of bilateral donors and regional and international organizations working in collaboration with rice-producing African countries. It will also assist the development of human resources for rice research both in Kenya and Japan.

* CARD: Coalition for African Rice Development

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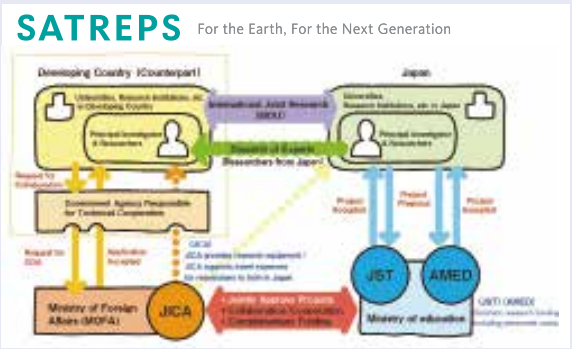
http://www.jst.go.jp/global/english/kadai/h2406_kenya.html

SATREPS (Science and Technology Research Partnership for Sustainable Development)

SATREPS is a Japanese government program that promotes international joint research. The program is structured as a collaboration between the Japan Science and Technology Agency (JST)and the Japan Agency for Medical Research and Development(AMED) and the Japan International Cooperation Agency (JICA). The program aims;



1. International Cooperation
Enhancing international cooperation in science and technology between Japan and developing countries

2. Addressing Global Issues and Advancing Science
Acquiring new knowledge and technology that lead to the resolution of global issues and the advance of science and technology, and through this process, creating innovations

3. Capacity Development
Boosting self-reliant research and development capacity in developing countries through international joint research, constructing sustainable research systems that can contribute to resolving issues, coordinating networking between researchers, and training future human resources in developing countries and in Japan.

http://www.jst.go.jp/global/

Weather Index Insurance in Southeast Asia

Sompo Holdings, Inc. offers agricultural insurance products in South East Asia to reduce climate related risks to agriculture. It launched a weather index insurance in Northeast Thailand in 2010 to alleviate losses borne by rice farmers when their crops were damaged by drought, and the sales area has steadily expanded over the years. In 2014, it launched Typhoon Guard Insurance in Mindanao Island, the Philippines, which aims to alleviate the losses borne by agricultural producers when they were affected by typhoons. Also, it developed new insurance products, including one which alleviates agricultural losses in Myanmar due to drought in the central dry zone, and similar products for Indonesia.

Contact Information
Sompo Holdings, Inc.
Corporate Social Responsibility Department
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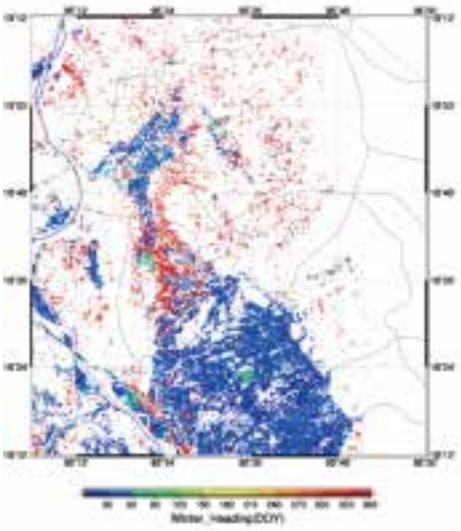
URL: http://www.sompo-hd.com/en/csr/

Satellite Data for Agriculture

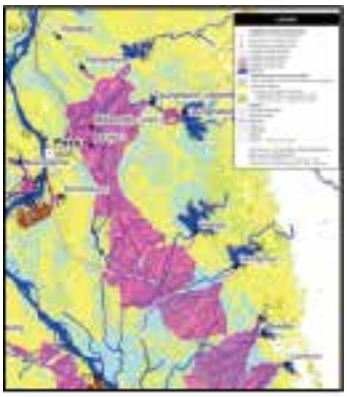
Project Title:

The project research of Satellite Data Application for Agricultural Effective Indicator's Collection in Myanmar

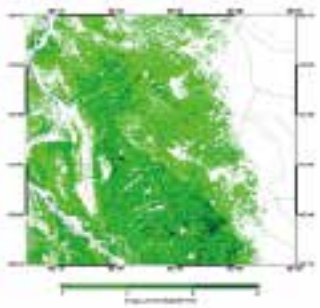
Contents:
Agricultural statistics information such as land use types, cropping pattern, crop growth is important for agricultural development. In this research, JICA and JAXA grasped the information by utilizing satellite data (MODIS, ALOS-2, Landsat and Rapid Eye) at Bago region in Myanmar. JICA will employ this method for future activities related to agricultural development which will contribute to SDG Goal 2.



Estimated crop luxuriant data in winter season



Irrigation area map



Estimated crop intensity data in 2010 / 2011

Contact Information
Japan International Cooperation Agency (JICA)
e-mail: pdtsp@jica.go.jp
Japan Aerospace Exploration Agency (JAXA)
URL: http://www.eorc.jaxa.jp/en/about/

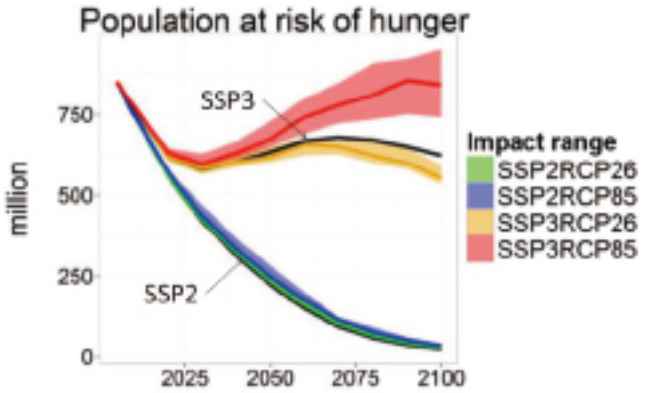
Assessment of hunger and health impacts due to climate and environmental changes using AIM (Asia-Pacific Integrated Model)

National Institute for Environmental Studies has been developing an integrated assessment model, AIM (Asia-Pacific Integrated Model), to assess the greenhouse gas emission reduction actions and climate change impacts in collaboration with researchers in Asia. By using the AIM, hunger, health and other impacts due to climate change as well as climate policies are assessed in the global and local scales under the various socio-economic scenarios.

Contact Information
National Institute for Environmental Studies
URL: http://www-iam.nies.go.jp/aim/index.html

National Institute for Environmental Studies

AIM ASIA-PACIFIC INTEGRATED MODEL



Estimation of global population at risk of hunger under different socio-economic (SSPs) and climate (RCPs) pathways
Source: Hasegawa et al. (2016)
Climatic Change, 136(2), 189–202

Nutrition Improvement of Children in Africa

Ajinomoto Group started Ghana Nutrition Improvement Project (GNIP) in 2009. It is a project to improve the nutrition of children aged 6 months to 24 months by providing complementary food supplement “KOKO Plus” which contains protein/amino acids and micronutrients necessary for the growth of children. KOKO Plus was proven to be effective in preventing stunting and anemia. GNIP’s goal is to establish a model of “Social Business” to achieve nutrition improvement of mothers and children in collaboration with various stakeholders. GNIP has been transferred to newly established “The Ajinomoto Foundation” in April 2017.

Ajinomoto Group also has a project in Malawi to develop an innovative RUTF (Ready to Use Therapeutic Food) for the treatment of Severe Acute Malnutrition, using locally available ingredients with amino acid supplementation.

Contact Information
URL: http://theajinomotofoundation.org
The Ajinomoto Foundation

Creating plant that can grow in adverse environmental conditions

RIKEN Center for Sustainable Resource Science (CSRS) contributes to Japan's sustainability efforts by better understanding nature's cycles and using the knowledge to create greener solutions to the world's environmental issues.

RIKEN CSRS,as one of its contributes to sustainability effort, is working on creating plants that can grow in tough conditions such as droughts and environmental stresses and with limited nutrients and fertilizers.
During drought, plants accumulates metabolite (galactinol) and protects their cells from the effects of a lack of water. In collaboration with other related research institutes, JIRCAS and CIAT, RIKEN CSRS developed rice plant with enhanced drought tolerance by introducing an Arabidopsis galactinol synthase gene (AtGolS2) into non-transgenic rice. This transgenic rice withstood severe drought conditions, including a no-rain period of more than 30 days, while maintaining a high crop yield.

Contact Information
RIKEN Center for Sustainable Resource Science
http://www.csrs.riken.jp/en/ e-mail: csrs@riken.jp
Reference:Selvaraj et al. Plant Biotechnol J. 2017 doi: 10.1111/pbi.12731

Special committee formed at the Science Council of Japan (SCJ) for implementing the SDGs

The SCJ held an international symposium, "Promoting Transdisciplinary Research and Multi-stakeholder Collaboration for Achieving the Sustainable Development Goals", on January 27, 2017, as a part of the International Conference on Science and Technology for Sustainability 2016. Sharing the importance to make researchers aware of the SDGs and role of Science and Technology for achieving the SDGs, the Committee for Science and Society of SCJ launched a special committee for implementing the SDGs in April, 2017.

Contact Information
http://www.scj.go.jp/en/index.html

SCIENCE COUNCIL OF JAPAN

Challenges for rice production with limited soil nutrients

- Endeavor to increase yield under harsh conditions

SATREPS For the Earth, For the Next Generation

Project name:

Breakthrough in Nutrient Use Efficiency for Rice by Genetic Improvement and Fertility Sensing Techniques in Africa (2017-2022)

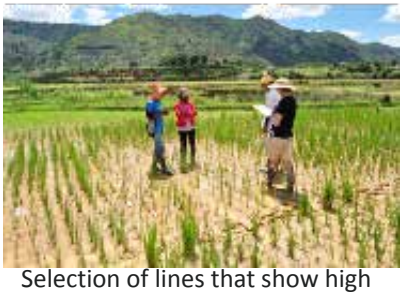
To increase the rice yield under low fertility conditions through rapid diagnosis of soil fertility and the development of nutrient-use-efficient breeding lines

Madagascar is one of the largest rice producers in Africa with a per capita rice consumption twice as high as that of Japan. Its rice productivity, however, remains stagnated to date because of the lack of fertilizer input and nutrient-poor soils occurring in many areas of Africa. The project aims to develop rice production techniques to realize high yield even under low fertility conditions by combining fertilizer application techniques suited to the soil nutrient characteristics of the field and new breeding lines with high nutrient use efficiency. It will also evaluate the impact that the adoption of such techniques has on the income and nutritional status of local farmers.

Rapid and extensive monitoring of geographical conditions of rice fields and nutrition status of rice plants using a drone

Toward the stabilization of African food production and a paradigm shift in agriculture

The project will contribute to stabilizing food production in Africa by disseminating rice production techniques suited to the poor fertility soils common in Madagascar and elsewhere in Africa. Furthermore, the development of techniques to raise crops with high nutrient use efficiency is expected to help promote the conversion from resource intensive to a resource-saving and sustainable agriculture.



Selection of lines that show high productivity in a local paddy field lacking phosphorus

Contact Information
Japan International Research Center for Agricultural Sciences (JIRCAS)
https://www.jircas.go.jp/en
Project website: https://www.jircas.go.jp/en/satreps

JIRCAS (Japan International Research Center for Agricultural Sciences)

JIRCAS was established in October 1993, through the reorganization of its predecessor, the Tropical Agriculture Research Center (TARC), in order to include overseas forestry and fisheries research in its mandate. It was again restructured in April, 2001 as an Incorporated Administrative Agency under the Ministry of Agriculture, Forestry and Fisheries (MAFF)..
It has been helping improve technologies for agriculture, forestry, and fisheries in tropical and subtropical areas, as well as in other overseas developing regions, by performing technical trials and research.

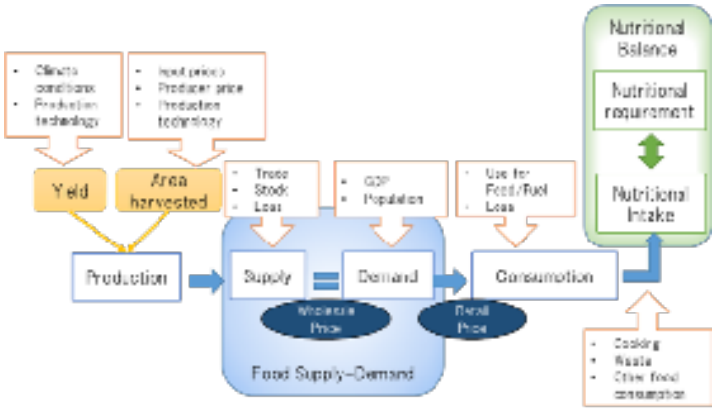
Reference: http://www.jircas.go.jp/en/about/jircasl

Global Food supply and nutritional balance under uncertainty

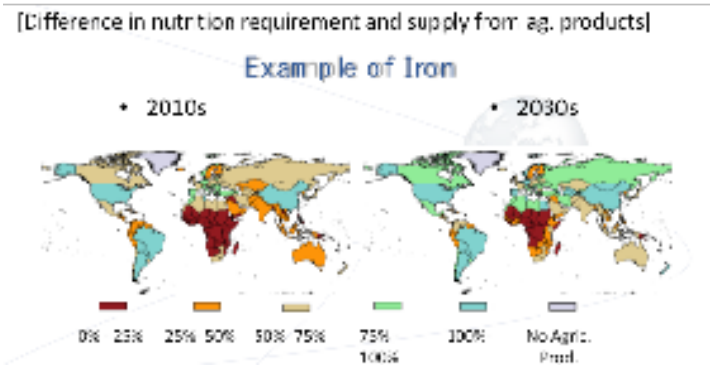
One person in four is in hunger in the Sub Saharan Africa region. Deficiency of micronutrients such as vitamins and minerals (“hidden hunger”) is also a serious problem.

In JIRCAS’s “Food and Nutritional Balance” project, we analyze the current nutritional balance in some countries and try to figure out how to fill the gap. In addition, we make outlook of global food supply and demand to see how the nutritional balance will change in the future, considering several factors such as technological development and climate change.

We aim to contribute to the development of an effective strategy in agricultural research and technological innovation for global food security and nutritional improvement.



Outline of the Food and Nutritional Balance Project



Estimation of nutrition supply using the world food model

Contact Information
Japan International Research Center for Agricultural Sciences (JIRCAS)
https://www.jircas.go.jp/en
Project website: https://www.jircas.go.jp/en/satreps

Tokyo International Conference on African Development **(TICAD)**

In 1993, Japan launched TICAD to promote high-level policy dialogue between African leaders and development partners on the issues facing Africa, such as economic development, poverty and conflict. TICAD has evolved into a major global framework to facilitate the implementation of measures for promoting African development under the dual principles of African “ownership” and international “partnership”. TICAD is co-organized by the government of Japan, the World Bank (WB), the United Nations Development Programme (UNDP), the United Nations (UN) and the African Union Commission (AUC). Its stakeholders include all African countries and development partners including international / regional organizations, donor nations, Asian countries, the private sector and civil society organizations. The sixth conference (TICAD VI), the first occasion in Africa, was held in Kenya on August 27-28, 2016.

(Photo: Cabinet Public Relations Office)

Reference; http://www.mofa.go.jp/region/africa/ticad/index.html

Support Health Improvement for Mothers and Children in China

Daiichi Sankyo is supporting activities in the areas which have particularly high number of children suffering from developmental disorders for cultivating healthcare workers capable of contributing to better healthcare for children and mothers and for providing healthcare education to local residents. Together with Plan International, this project is carried out over a five-year period through collaboration with government health authorities and mother–child healthcare institutions.

Target	To improve health and nutritional conditions of children under the age of five in impoverished areas where ethnic minorities reside through improvement of the healthcare system.
Intiatives	The following initiatives will be implemented in six townships (approximately 60,000 households) in Guangnan County, Yunnan Province. (1) Developing medical professionals in community healthcare through training on integrated management of childhood illnesses (2) Offering education to improve the capability of local pediatric care by establishing a community center.

Photograph provided by Plan International

Contact Information Daiichi Sankyo Co., Ltd.
URL: http://www.daiichisankyo.com/index.html

Long-lasting insecticidal mosquito net (Olyset™ Net)

Sumitomo Chemical is expanding its R&D to develop a full range of innovative vector control technologies, with the goal of helping to eliminate malaria and other vector transmitted diseases. Sumitomo Chemical has been making substantial contribution to preventing malaria by supporting countries in Africa and Asia with Olyset™ Net, a long-lasting insecticidal mosquito net it developed in-house to protect people from malaria-carrying mosquitoes. The company has since launched Olyset™ Plus which is effective in controlling insecticide-resistant mosquitoes. The company is also developing and supplying new insecticides for the control of mosquitoes that transmit other infectious diseases, such as de dengue or Zika fever. Olyset™ Net production operations have been established in Africa, thereby creating and maintaining local jobs while contributing to the growth of the regional economy.

Photograph(c)M.Hallahan/Sumitomo Chemical

Contact Information
Sumitomo Chemical Company, Limited
http://www.sumitomo-chem.co.jp/english/

Using mobile phones to contain arbovirus outbreaks!

SATREPS For the Earth, For the Next Generation

Project name:

Development of Rapid Diagnostics and the Establishment of an Alert System for Outbreaks of Yellow Fever and Rift Valley Fever in Kenya (2011-2016)

We apply diagnostic technology developed in Nagasaki University to produce affordable and rapid diagnostic kits including point-of-care (POC) test kits to be used in peripheral healthcare facilities and local communities. These kits facilitate early identification of disease outbreaks. An outbreak early warning system through the use of mobile phones (mSOS) was established to effectively and rapidly relay information from peripheral areas to the central government in collaboration with WHO and other international partners.

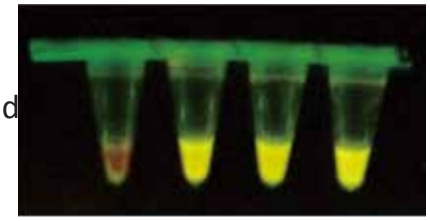
Contact Information
Nagasaki University Institute of Tropical Medicine
(Dr. Kouichi Morita)
http://www.tm.nagasaki-u.ac.jp/virology/paper%20eng.htm

Develop low cost rapid diagnostic method and implement it in Zambia

Project name:

Establishment of the model for controlling neglected tropical diseases based on the development of rapid diagnostic methods and risk analysis (2015-2020)

Building on the previous SATREPS project, a research project have been launched under “International Collaborative Research Program for Tackling the NTDs (Neglected Tropical Diseases) Challenges in African countries”. Zambia (Zambia University and University Teaching Hospital) and Japan (Hokkaido University) have started a joint project for developing comprehensive control measures for tackling leprosy and trypanosomiasis based on the LAMP method.



Contact Information
Hokkaido University Research Center for Zoonosis Control (Dr. Yasuhiko Suzuki)
http://www.czc.hokudai.ac.jp/en/index.html

Development of a Novel Diagnosis System for Malaria Elimination

- Eliminating malaria, a mosquito-borne infectious diseases (212 million clinical cases and 429,000 fatalities in 2015), is a critical mission for economic development of Africa. (WHO also made proposals for the goal.)
- AIST is developing a novel diagnosis system using microfabrication technology, which meets severe requirements for a field-use in endemic countries, such as 1) highly sensitive, 2) accurate, 3) rapid, 4) quantitative, 5) battery-operated, and 6) fully automated.
- Field tests had been already started in Uganda and Kenya to show the potential of this diagnosis system, and it will contribute to malaria elimination.

Japanese technology contributes to malaria elimination through the development of diagnosis system. Developed diagnosis system (A). From research work in Japan (B) to field test in Africa (C, D). Malaria-infected erythrocytes can be detected (E, yellow arrow).

Contact Information
National InstituteofAdvanced Industrial Science and Technology (AIST)
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https://unit.aist.go.jp/hri/en/group/2015_ba-4/index.html

Cloud Enabled Primary Healthcare Center in India

Hewlett-Packard Enterprise (HPE) supports SDGs. HPE CSR ”Living Progress” has been declared to contribute to solve the world’s most difficult social problems by using HPE technologies and human resources.

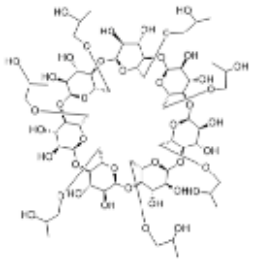
In India, HPE have more than 90 telemedicine clinics named “eHealth Center”. Access to healthcare has drastically changed by connecting patients in rural areas with doctors at city hospital.
We have developed cloud system only for eHealth Center and all medical records are remains there by network. Data can be accessed by Doctors and staffs in every site.

Contact Information
eHealth Center team：jpn_ehc_volunteer-team@hpe.com

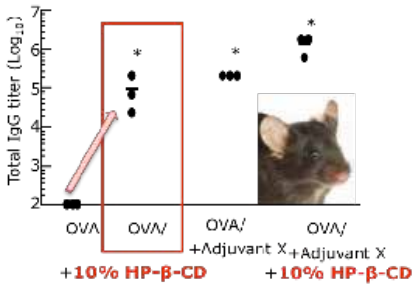
3 GOOD HEALTH AND WELL-BEING

More Effective and safer Flu Vaccine with an adjuvant

Is there any more effective but safer vaccine for seasonal Flu? Yes, Cyclodextrin (CD): a safe and multi-functional additive for foods, cosmetics, and drugs was revealed to be a potent vaccine adjuvant recently.
Now a clinical trial with seasonal influenza vaccine with HP-b-CD are underway.



Increasing of the vaccine effects by HP-b-CD



Crab eating monkey

Contact Information
Lab Vaccine Science/WPI IFReC, CVAR/NIBIOHN In collaboration with Dr. Nishida, Dr. Watanabe, Dr. Kumanogoh in Osaka U. Hospital
hhttp://www.nibiohn.go.jp/adjuvant/index-e.html

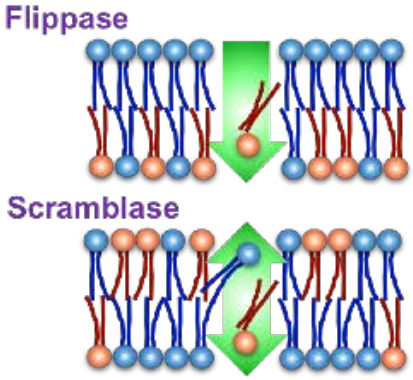
WPI (World Premier International Research Center Initiative)

The World Premier International Research Center Initiative (WPI) was launched in 2007 by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) in a drive to build within Japan “globally visible” research centers that boast a very high research standard and outstanding research environment, sufficiently attractive to prompt frontline researchers from around the world to want to work in them. These centers are given a high degree of autonomy, allowing them to revolutionize conventional modes of research operation and administration in Japan.

http://www.jsps.go.jp/english/e-toplevel/index.html

Lipid Biology on Plasma Membranes for Understanding and Treating Diseases

In the Institute for Integrated Cell-Material Sciences (iCeMS) in Kyoto University, we are analyzing how the transmembrane-containing proteins on plasma membranes regulates lipids. The lipids on plasma membranes play critical roles for the many biological systems such as recognition of dead cells, activation of coagulation factors, cell fusion and so on. Mutations in the specific genes involved in these systems develop variety of diseases in humans. To reveal how lipids are regulated by membrane proteins, we have tried to identify the specific genes regulating lipid dynamics based on the unbiased screening. After identifying genes, we carefully analyze the characteristics of the identified genes and think how defects in these genes contribute to diseases and how the disease can be cured. Our motto: Basic science beside human diseases.



Contact Information
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https://www.icems.kyoto-u.ac.jp/
(Jun Suzuki, email: jsuzuki@icems.kyoto-u.ac.jp)

A Wearable Device as Dialysis Replacement

Kidney dialysis is the most common treatment for patients with kidney failure. It involves the use of machines in the hospital, that help filter waste product toxins from a patient's blood, in replacement of normal kidney function. There is a need to develop a simple, cheap, and accessible method of treating patients with kidney failure, especially in resource-limited environments such as disaster areas and the developing world due to the inaccessibility of conventional hemodialysis treatments. We have been developing a nanofiber mesh for the removal of toxins from the blood, which they are hopeful may be incorporated into wearable blood purification systems for kidney failure patients. This technique could prove useful as a cheap, wearable alternative to kidney dialysis.

Contact Information
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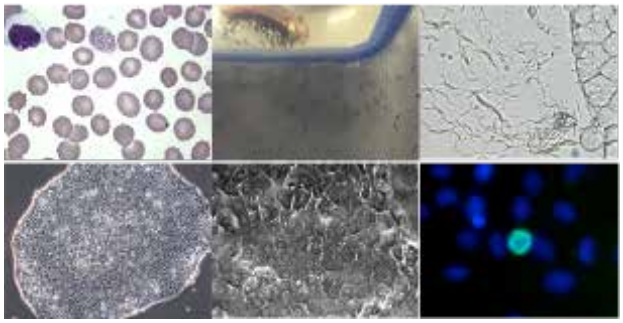
Regents for Malaria P. vivax Liver Stage

Vivax malaria is a global heath issue challenged by undetectable dormant forms responsible for multiple relapses, growing drug resistance and host-genetic factors affecting drug efficacies. Despite an obligatory liver-stage in the plasmodium life cycle, lack of suitable models of hepatocytes permissive to P. vivax infection is responsible for limited knowledge of relapse mechanisms and unsuccessful high-throughput drug testing. Supplementing the complex P. vivax biology, genetic diversions and variable infectivity, vector susceptibility and latency periods, which is evident across spatiotemporal geographical locations, skews infectivity studies conducted without accounting for its geographical epidemiology.

To address this issue, iCeMS, Kyoto University has collaborated with National Centre for Biological Sciences, India and National Institute for Malaria Research, India, and been developing a robust in vitro liver-stage assay, employing P. vivax mono-infected patient blood-derived induced pluripotent stem cells (iPSCs) as an unlimited source of hepatocytes that are permissive to P. vivax sporozoites developed in an Anopheles mosquitos from the same geographical location of the patients. We are further optimizing the assay and applying the assay for drug screening in collaboration with an Indian NPO. This research and development would pave way for development of drugs targeting liver-stage malaria.



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Universal health coverage (UHC); "ENSURING HEALTH FOR ALL"

Quality, affordable health care is the foundation for individuals to lead productive and fulfilling lives and for countries to have strong economies. UHC is about ensuring that people have access to the health care they need without suffering financial hardship. It also helps drive better health and development outcomes.
UHC is an essential part of the Sustainable Development Goals (SDGs): SDG 3 includes a target to “achieve UHC, including financial risk protection, access to quality essential health care services, and access to safe, effective, quality, and affordable essential medicines and vaccines for all.” SDG 1, with the goal to end poverty in all its forms everywhere, is also in peril without UHC, as hundreds of millions of people are impoverished by healthcare costs every year.
UHC forum 2017 organized by World Bank, World Health Organization (WHO), UNICEF, UHC2030, Government of Japan, Japan International Cooperation Agency (JICA),was held on December 13-14 in Tokyo Japan. This forum aims to stimulate global and country-level progress towards UHC, including pandemic preparedness, through review of UHC progress at global, regional and country level and sharing of country experiences.

Reference; http://www.worldbank.org/en/topic/universalhealthcoverage#1
https://www.uhc2030.org/fileadmin/uploads/uhc2030/Documents/Upcoming_events/UHC_Forum_2017/Flyer_for_UHC_Forum_2017.pdf

Formation of International Center of Excellence for Promoting Teacher Education on ESD

- Education for Sustainable Development (ESD), in which UNESCO has taken the initiative since 2004, is now undertaken in the Global Action Program (GAP) on ESD, with the purpose of its worldwide spread.
- During this time, Okayama University has hold the only UNITWIN/UNESCO chair program on ESD in Asian countries and participates at the Okayama Regional Centre of Expertise on ESD authorized by the United Nations University, and has energetically promoted teacher education on ESD.
- This research project, supported by Japan Society for the Promotion of Science (JSPS), aims to collaboratively develop guidelines and recommendations to reorient teacher education in Asia to address sustainability, coordinating with core institutions on teacher education in East Asia (China, Korea, and Mongolia) and Southeast Asia (Indonesia, Laos, and Myanmar).

Contact Information
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http://esd.okayama-u.ac.jp/promotion_center/

Climate Change/Energy

Pre-service Teacher Training Program Focused on Renewable Energy, Woody Biomass (Japan)

Biodiversity

Trial of Junior High School Science Lesson on Ecological Pyramid (Indonesia)

Sustainability Science Journal

Published by Springer on behalf of UNU-IAS and the Integrated Research System for Sustainability Science (IR3S) of The University of Tokyo.

The journal:

- provides a platform for building sustainability science as a new academic discipline which can point the way to a sustainable global society, by addressing challenges that existing disciplines have not, and
- promotes science-based predictions and impact assessments of global change, and seeks ways to ensure that these can be understood and accepted by society. It encourages a transdisciplinary academic structure and discovery process that fuses the natural sciences, social sciences, and humanities.

Contact Information
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Learning Materials to Children in Asia-Pacific Emerging Countries

Fuji Xerox Co., Ltd. has been implementing an initiative to help eliminate the education gap among children in the Asia-Pacific emerging countries by offering learning materials to children who have limited access to primary education. It launched the activity in the Philippines in 2014 and in Myanmar and Thailand in 2015. Fuji Xerox calls for partners who donate content and financial sponsors who cover printing and other costs, then the materials are printed using Fuji Xerox production printers and presented to children through local NGOs and other partners in the community. By 2023, Fuji Xerox plans to distribute materials to 100,000 children.

Children delighted with their new workbooks (Myanmar)

Contact Information
Fuji Xerox Co., Ltd. CSR Department
Phone: 81-3-6271-5160
http://www.fujixerox.co.jp/eng/

Freely accessible Internet TV on market and economic analysis

Daiwa provides a free of charge Daiwa Internet TV service for the general public in Japan. This disseminates the latest information and in depth market and economic analysis by Daiwa's analysts, strategists and economists, whilst also often allowing viewers to directly ask questions. This means information previously available exclusively to institutional investors is now freely accessible by individual investors through personal computers and smart phones.

Contact Information CSR Group, Corporate Communication Dept., Daiwa Securities Group Inc.
e-mail : daiwacsr@daiwa.co.jp
http://www.daiwa-grp.jp/csr/

STEM Education Programs to enhance problem solving skills

Sony offers STEM* education programs for not only children and youth but all ages to enhance creative and logical thinking. Key skills that will become more important in future workplaces.

Sony Global Education products & services

- Global Math Challenge, STEM101 (China, India, etc.) - Focus on creative, logical thinking. The program enhances ones thinking strategies adopted by Sony engineers to develop their problem solving skills.
- KOOV™ – Robotic Programming education kit to introduce coding, robotics and design thinking to children aged 8-14. Colorful design is also intended to encourage girls to familiarize with STEM education.

*STEM: Science, Technology, Engineering, and Math

Contact Information
Sony Corporation
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A card game “2030 SDGs”

The 2030SDGs is a game that provides an experiential journey to learn how the world can accomplish the 17 aspirational goals between now and 2030. How can we realize the grand vision of SDGs in this world where a lot of different values and purposes, as well as different people and organizations coexist? Through the game play and reflection, the players not only discover what the ‘sustainable development’ is, but also find the critical factors for social changes through their own experience.

The game is designed for minimum 5 to maximum 180 participants. Just like the real world, the more players are involved, the more difficult it becomes to accomplish the goals.

A typical game play takes 1 hour and the reflection of the game takes minimum 30 to 60 minutes. Due to the short duration of the game play, players can spend sufficient time on reflection and dialogue.

ex) Playing at the Ministry of the Environment Government of JAPAN

イマココラボ
imacocollabo

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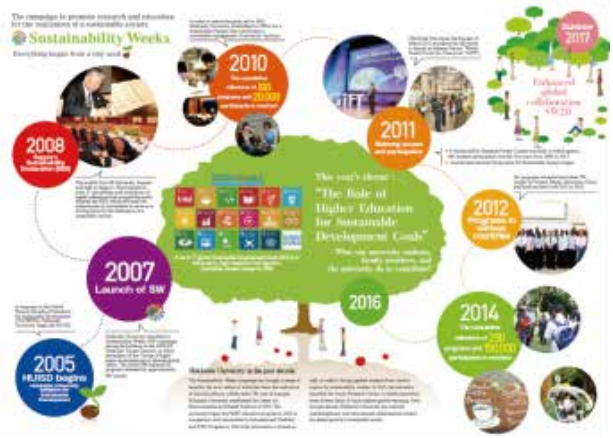
Promoting research and education to help create a sustainable society

Hokkaido University Sustainability Weeks



Sustainability Weeks (SW) is an annual campaign hosted by Hokkaido University since 2007. During the event, several thousands of researchers, educators, tudents, and citizens from Japan and beyond gather at the university to share and discuss the latest knowledge concerning sustainability and to identify the next actions to take towards a better future.

In 2016, SW focused on the role of higher education in achieving Sustainability Development Goals (SDGs). A series of international symposiums were held to commemorate the 10th Anniversary of the SW while other sessions discussed diverse topics including the challenges facing aging societies, the health sciences, applied ethics, and LGBTs. The event attracted nearly 3,000 participants.

The continued efforts in SW have significantly enhanced interdisciplinary collaborations and resulted in, among others, the establishment of international education programs to study sustainable development and the Arctic Research Center which works towards the sustainability and conservation of the Arctic.

Contact Information
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https://www.global.hokudai.ac.jp/about/contribution-to-a-sustainable-society/sw/

Support for Female Students in Choosing Science Courses

This program encourages girls to choose science courses and provides activities to help girls understand potential career paths after graduating university. It provides junior high and high school girls with opportunities to exchange opinions and information with woman researchers and engineers, including hands-on lessons and visiting lectures.

Contact Information
Department for Promotion of Science Education, JST
E-mail: cpsejst.go.jp

Innovative Water Desalination and Reclamation Systems

Project title:

Global Aqua Innovation Center for Improving Living Standards and Water-sustainability (2013-2021)

Securing safe water supplies is becoming a worldwide challenge. Looking ahead to the future when the world population reaches 8 to 9 billions, this project brings together people form academia, industry, and government organizations across Japan to develop and deploy innovative desalination and water reclamation systems based on robust reverse osmosis membranes composed of nanocarbons.

Project members:
Shinshu University, Hitachi, Ltd., Toray Industries, Inc., Showa Denko K.K., National Institute for Materials Science (NIMS), RIKEN, Research Organization for Information Science and Technology (RIST), Kitagawa Industries co., Ltd., Toclas Corporation, Kurita Water Industries, Ltd., Nagano Prefectural Government, Japan (JAMSTEC), Sony Computer Science Laboratories, Inc., Chuo UniversityAgency for Marine-Earth Science and Technology

Contact Information
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Center of Innovation Science and Technology based Radical Innovation and Entrepreneurship Program (COI STREAM)

It is necessary for Japan to constantly create radical innovation in order to achieve economic recovery as well as continue to survive in international competition in the future. COI STREAM was launched in 2013 by the Ministry of Education, Culture, Sports, Science and Technology (MEXT).
For COI STREAM, MEXT (i) sets visions by using a backcasting method with the aim of realizing a desirable society and way of life, (ii) identifies R&D challenges along the visions, (iii) breaks out the frameworks of traditional research fields and existing organizations, and (iv) provides intensive support for industry-academia collaboration from basic research to practical application. COI STREAM intends not only to realize radical innovation which is difficult to be accomplished by industry or academia alone, but also to establish innovation platforms in Japan.

Vision 1 Smart Life Care, Ageless Society
function:Medical health, Mental health, Motivation, Sports, Food, Ties

Vision 2 Smart Japan
function: ing thinking, Active thinking, Serendipity, Six senses

Vision 3 Active Sustainability
function:Personalization, Resilience, Sustainability, Functionalization, Flexibility - Waste

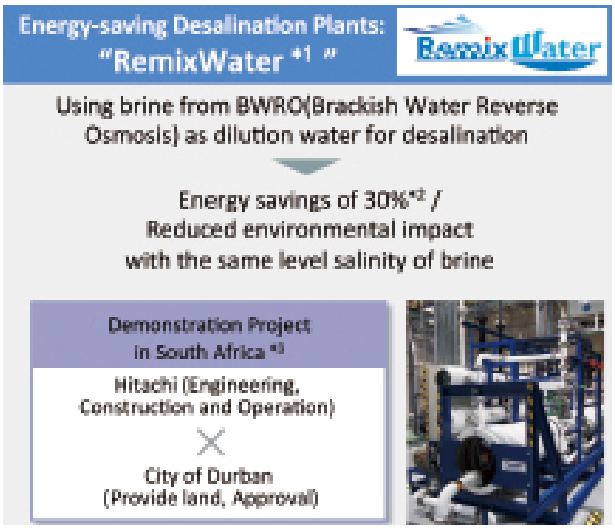
http://www.jst.go.jp/coi/index.html

Seawater desalination system "RemixWater"

HITACHI
Inspire the Next

As demand for water increases with progressive urbanization, the social infrastructure relating to a safe, secure water supply is important in order to protect the basis of human life.

As a comprehensive water service provider, Hitachi delivers optimized and streamlined solutions for water supply businesses including sewage systems and seawater desalination plants.



Contact Information Hitachi, Ltd.
http://www.hitachi.com/water/
Contact us http://www.hitachi.com/businesses/infrastructure/product_site/water_environment/inquiry.html

*1 "RemixWater" is a registered trademark of Hitachi, Ltd. (In Japan, Australia, South Africa, Saudi Arabia, Qatar, and other countries.
*2 Comparison of conventional desalination systems
*3 Study conducted prior to demonstration (April 2015 – March 2016) through NEDO subsidization

Provide a reliable supply of safe, secure water to the area surrounding Katmandu

JICA JST SATREPS For the Earth, For the Next Generation

Project name:

Hydro-microbiological Approach for Water Security in Kathmandu Valley, Nepal

Ensuring water security through an optimal treatment system based on water security diagnosis

This project is creating water security maps of the area surrounding Katmandu, which has limited energy and water resources, evaluating water by combining three factors—water quantity, quality, and microorganisms. Based on this information, researchers determine the type of water treatment equipment to use, and on what scale to deploy it. With the aim of constructing a small-scale, energy-saving, and highly efficient water treatment system suited to the local conditions of Katmandu, the project also aims to improve on the speed and functionality of traditional water treatment technologies, which use biofilm, constructed wetlands, and soil/sand filtration.

Turning the Katmandu model into a global water business!

Moving forward with this research will make it possible to provide a stable supply of safe, secure water to Katmandu at low cost. Furthermore, if the 'Katmandu model' established by this research spreads within Nepal and throughout Asian nations with similar regional conditions, it can be developed as a new brand into a global water business.

Contact Information
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http://www.jst.go.jp/global/english/kadai/h2502_nepal.html

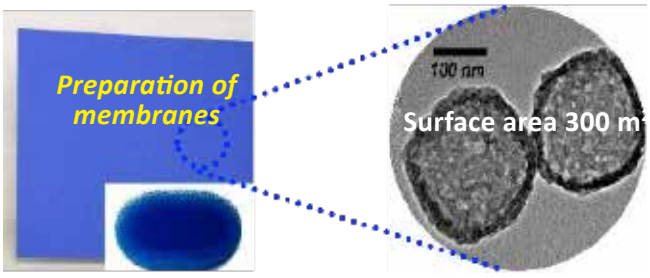

Monitoring local well water


People gathering at a communal water fountain. This is an important place for residents, because even when water is available, the fountains only supplies water for a few hours each day. During the dry season, it is commonplace for lines to form every day.

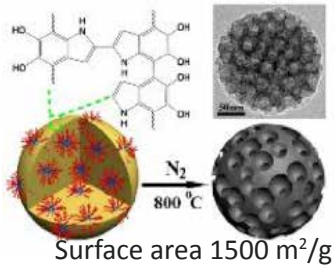
Water purification using porous materials

Nanoporous Prussian Blue for Cs collection

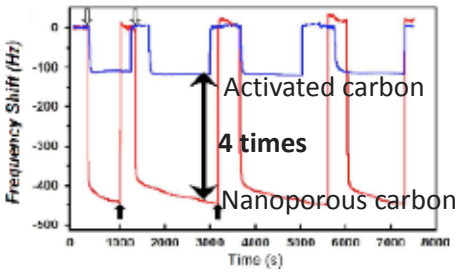
Securing access to clean water resources is very important for keeping healthy life in both of developed and developing countries. Through exploitation of mesoporous materials that can adsorb harmful metal ions such as Cd, CN, Cr, Hg, Pb, As and volatile organic compounds (VOC) contained in sewage, we are tackling realization of human society with sustainable water resources.



Functional nanoporous carbon materials



Surface area 1500 m²/g



Contact Information
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Generating reliable and useful electricity from waste heat and body heat

NIMS, MANA Thermal Energy Materials Group is developing advanced materials and technology suitable for the first wide-scale applications of thermoelectric power generation. Thermoelectrics reliably utilizes the Seebeck effect which generates electricity from temperature differences. The efficiency of thermoelectrics has been low, but the group is overcoming traditional limitations by developing new nanostructuring methods to achieve properties in rare earth-free materials which potentially can reach over 15% efficiency in converting waste heat to electricity. New principles such as utilizing magnetism for enhancement are also being developed. To achieve sustainability, the group has also been investigating new device fabrication strategies to enable radically less expensive processes. This is vital for the technology to spread widely throughout the world, enabling myriad flexible and wearable applications which can harvest ubiquitous and body heat to power sensors, etc.

Contact Information
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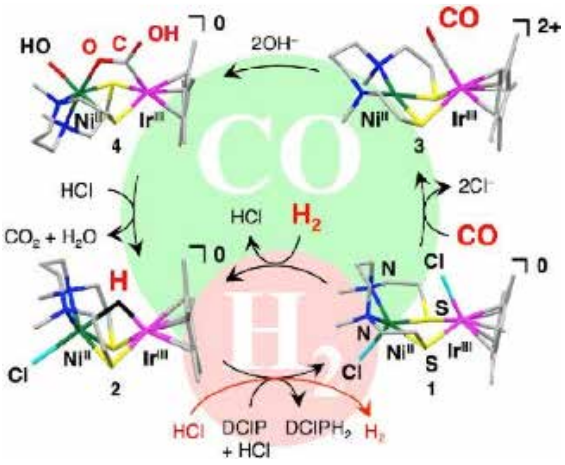
Multifunctional Catalyst for Poison-resistant Hydrogen Fuel Cells

Demand for eco-friendly fuel sources is increasing as the goal of weaning off our reliance on fossil fuels becomes commonly recognized. Hydrogen represents a possible sustainable fuel source when it is produced from water and burned with oxygen because only water is released as a by-product. The oxidation of hydrogen to release energy and water using fuel cells containing catalysts is being researched intensively. However, catalysts used in hydrogen oxidation generally suffer from poisoning by carbon monoxide, which is present as a contaminant in commercial hydrogen gas. Thus, the ability to oxidize both hydrogen and carbon monoxide in the same reaction system is an attractive prospect to avoid catalyst poisoning and increase the efficiency of energy production from hydrogen.



The researchers at the International Institute for Carbon-Neutral Energy Research (WPI-I²CNER) developed a catalyst that can oxidize both hydrogen and carbon monoxide in fuel cells. As a result, the catalyst is resistant to poisoning by the contaminant carbon monoxide in commercial hydrogen gas, which is a common limitation of current fuel cell catalysts. The action of the multifunctional catalyst resembled that of two enzymes: a hydrogenase and carbon monoxide dehydrogenase. This catalyst is promising for use in high-performance hydrogen fuel cells.

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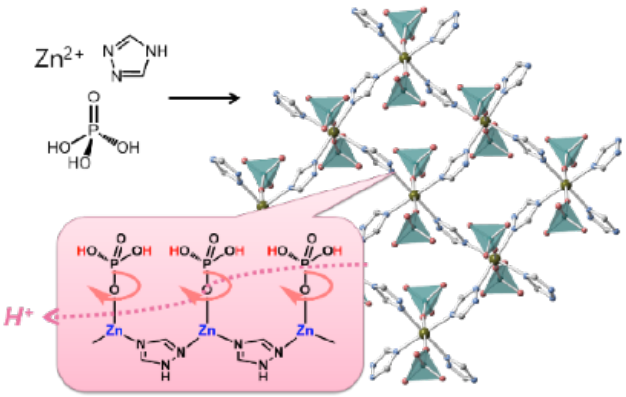
Materials for Fuel Cell Vehicle



- Decrease amount of precious catalyst
- More safety and compact vehicle
- Improvement of energy efficiency

Contact Information
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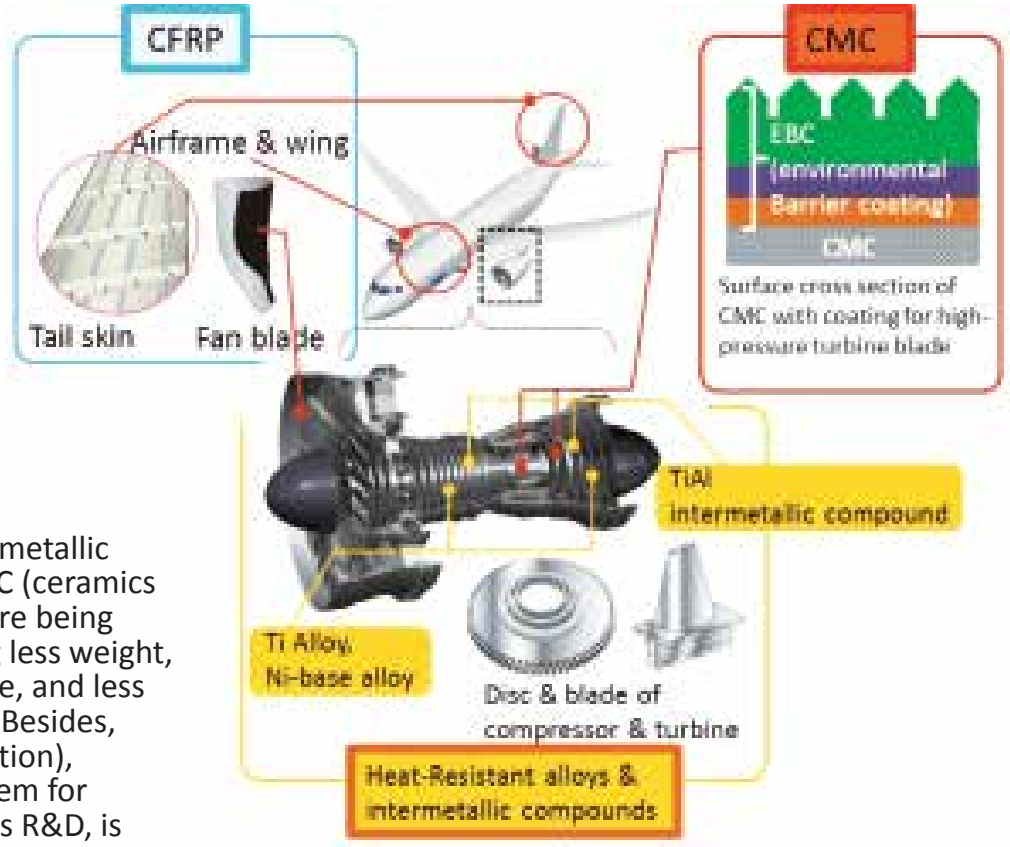
Innovative Structural Materials for improving efficiency of energy generation and consumption

Project name:

Structural Materials for Innovation (FY2014-2018)

SIP Cross-ministerial Strategic Innovation Promotion Program

In order to improve the efficiency of energy generation and consumption mainly in transportation and energy industries such as aviation and electric power, CFRP (carbon fiber reinforced plastics), alloys, intermetallic compounds, and CMC (ceramics matrix composites) are being developed, achieving less weight, higher heat resistance, and less manufacturing cost. Besides, MI (materials integration), a computational system for accelerating materials R&D, is being developed.



Contact Information
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e-mail: sip_structuralmaterial@jst.go.jp

SIP (Cross-ministerial Strategic Innovation Promotion Program)

SIP was established by the Council for Science, Technology and Innovation (CSTI) of the Cabinet Office in order to realize scientific and technological innovation strategically under its initiative. In SIP, industry-academia-government collaboration is emphasized to link between fundamental scientific research and applied technology development.

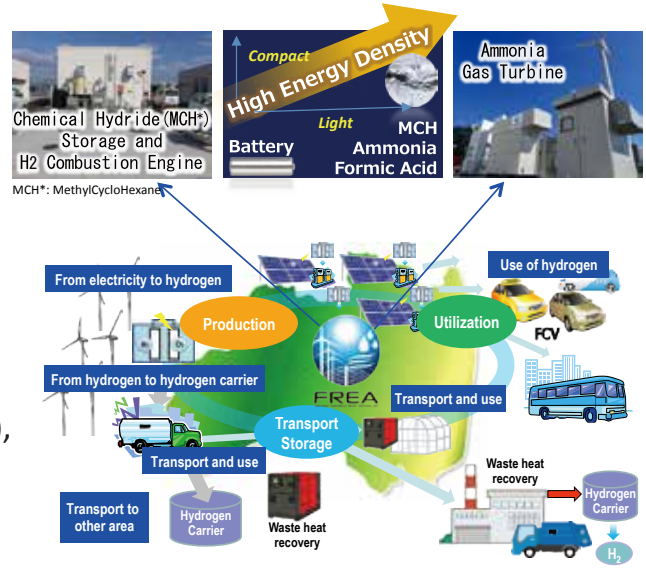
<Features of the SIP>

- The Council for Science, Technology and Innovation(CSTI) selects projects that answer critical social needs and offer competitive advantage to Japanese industry and the economy.
- Cross-ministerial Initiatives.
- Promote focused, end-to-end research and development, from basic research to practical application and commercialization. Utilize results in regulations, systems, special wards, government procurement, etc.
- Intellectual property management system facilitating strategic corporate use of research results.

http://www8.cao.go.jp/cstp/gaiyo/sip/

Large-scale Research and Demonstration of Carbon-free Hydrogen Infrastructure

- Fukushima Renewable Energy Institute, (FREA)/AIST was established in 2014 to conduct cutting-edge researches for renewable energies, and to contribute to the economic restoration in disaster area.
- Storing and carrying hydrogen in liquid-form is the key to the "hydrogen society" by using existing infrastructure.
- FREA is conducting researches as follows:
  (1) producing hydrogen from solar/wind power,
  (2) chemical conversion from electricity to hydrogen carrier (MCH/Ammonia/Formic Acid),
  (3) long-term storage and transportation, and
  (4) hydrogen utilization (hydrogen engine, etc.).
- These technologies will be demonstrated in 2020 Olympic/Paralympic games in Tokyo.



Using Liquid Form Hydrogen

Contact Information
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http://www.aist.go.jp/fukushima/

Solar Kiosk Service for Off-grid Areas

"WASSHA"
provides a new experience for people in off-grid areas with affordable, accessible and safe electricity through Solar Kiosks based on Digitalgrid technologies developed in the University of Tokyo.

By indicating social system which utilize mobile money and local kiosks, "Wassha" has been broadly accepted up to 800 locations and over 240,000 people in 2016. This project is highly recognized for its contribution to the regional education and economy. WASSHA received invitation to summer Davos meeting Idea's lab in 2014.

Contact Information
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Digital Grid Inc.
e-mail : wassha@digitalgrid.com

Environmental Energy Innovation (EEI) Building: Realizing smart power generation

Tokyo Tech

The EEI Building is designed under the basic concept of reducing CO_2 emissions by more than 60% compared with other buildings of similar scale at Tokyo Tech.

Photovoltaic power generation system
About 4570 solar panels, utilizing six types of solar cells and providing 650 kW in total power, are installed on the building exterior.

Fuel cell power generation with waste heat utilization
High-temperature waste heat from the building's 100kW phosphoric-acid fuel cell is utilized by an absorption refrigerator to power an air conditioning system. Low-temperature waste heat is also used by a desiccant air conditioner to control humidity.

Smart energy system
To date, 738 kW of solar cells, 105 kW gas engines, and 96 kW lithium ion secondary batteries have been installed in the EEI Building. All components are controlled by a state-of-the-art smart energy system named "Ene-Swallow ver. 3".

Solar panels on the building exterior

(a)

(b)

(a) Fuel cell unit,
(b) chiller, and
(c) desiccant air conditioner

(c)

Contact Information
Institute of Innovative Research, Tokyo Institute of Technology
http://www.titech.ac.jp/english/research/stories/eei_building.html
http://www.titech.ac.jp/english/news/2015/030251.html
eei.kanri@jim.titech.ac.jp

Towards An Energy Efficient Society beyond LED

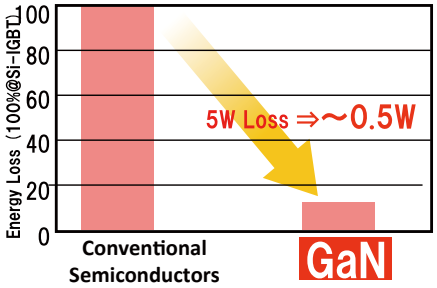
Change the world by the power of materials:

The material of the blue LED, which brought a renewed supply of light and energy savings all over the world, is a semiconductor called "gallium nitride (GaN)".

GaN, with its energy conversion efficiency higher than other semiconductors, can thereby advance energy conservation in areas other than lighting, such as when used in power conversion in car motors, and when used in electronic components of communication equipment.

What is required now is the technology to stably produce higher-quality GaN reliable enough for cars, illuminations and electronic components of a communication equipment, etc.

A project is underway through a collaborative team effort among universities, enterprises, and the MEXT, ranging from material creation by utilizing theories and simulations, to turning them into devices, and implementing in system applications.



Contact Information
Ministry of Education, Culture, Sports, Science and Technology (MEXT)
Environment and Energy Division Research and Development Bureau
kankyou@mext.go.jp

Realization of Low-Carbon Society by creating Game Changing technology

As emission of the Carbon dioxide occupies the cause of large part of the Global Warming, constructing a low-carbon society is expected world wide. To this end, Japan Science and Technology Agency (JST) had started two research fund : Advanced low Carbon technology Research (ALCA) and JST-MIRAI. ALCA aimed at 2030 and JST-MIRAI aimed at 2050 to realize Low-carbon society.

Fig.1
Thermo-acoustic translation system

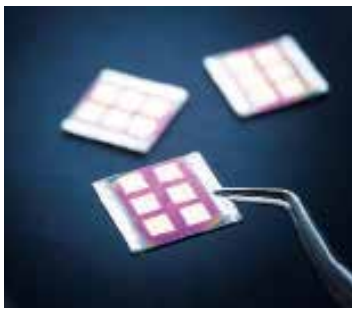


Fig.2
Perovskite solar cells

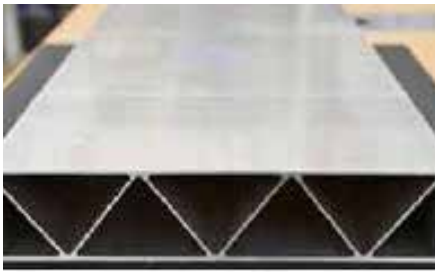


Fig.3
Extruded Mg-based Alloys with Hight Mechanical Properties

Three breakthrough results from ALCA are shown as follows.

- Thermo-acoustic translational system by using waste heat from factory(Fig.1)
- Easy fabrication solar cells(Fig.2)
- Mg alloy composite which has both endurance and light weight(Fig.3).

Contact Information
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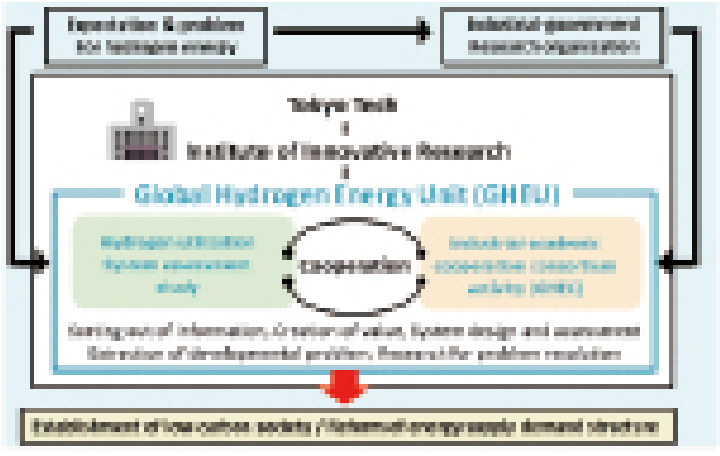
e-mail: alca@jst.go.jp

Toward a hydrogen energy society starting at Tokyo Tech

GHEU

Hydrogen is a secondary energy source with major potential to change our energy structure and contribute to realizing a low-carbon society.

The **Global Hydrogen Energy Unit** was established with the purpose of collaborating with industry, government, and academia to investigate energy-related issues, identify bottlenecks in problem solving, and determine development goals related to the technology and systems required to realize a hydrogen energy society.



In FY 2016, we performed an assessment of energy supply and demand, greenhouse gas reduction, and economic impact associated with a full-scale introduction of hydrogen energy. The analysis covered the total supply chain from production and storage to transportation and utilization of hydrogen.

Tokyo Tech

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http://www.ghe.iir.titech.ac.jp/index-e.html
gheu@ssr.titech.ac.jp

Canning energy with all-solid-state lithium batteries

Tokyo Tech

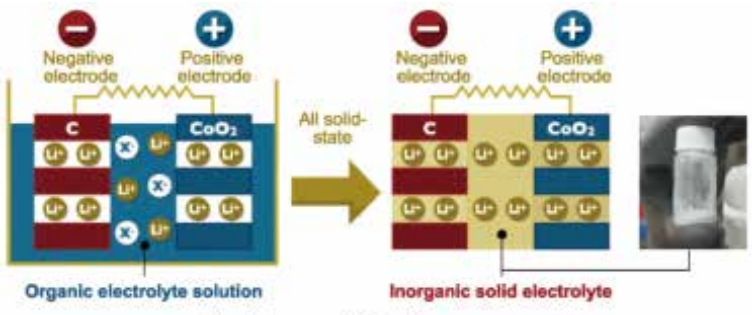
7 AFFORDABLE AND CLEAN ENERGY

- **Merits of all-solid-state lithium batteries**

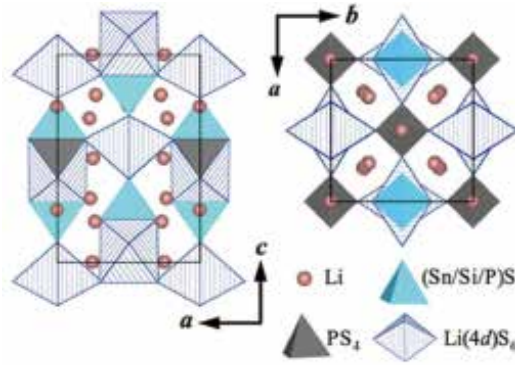
The batteries use an inorganic solid material that offers reduced combustibility, thereby improving safety. They also function over a wide range of temperatures and easily pass current to provide increased power. Quick recharge is another feature.

- **New solid electrolyte LSSPS shows high ionic conductivity rivaling liquid electrolytes**

LSSPS showed an ionic conductivity of 1.1×10^{-2} S cm^{-1}. The germanium (Ge) of earlier designs is replaced with lower-cost and more versatile tin (Sn) and silicon (Si).



All-solid-state lithium battery system



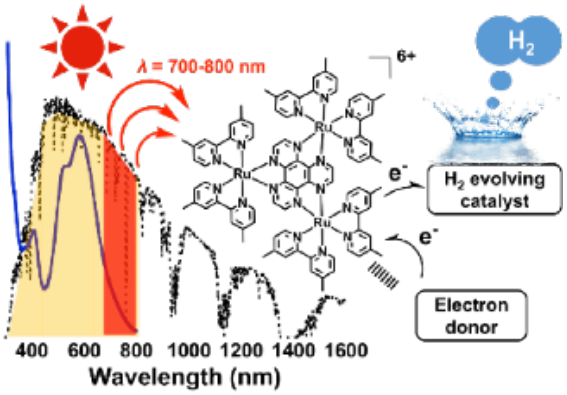
Atomic arrangement in different views of LSSPS. The material is Ge-free, with structure $Li_{10.35}[Sn_{0.27}Si_{1.08}]P_{1.65}S_{12}$ ($Li_{3.45}[Sn_{0.09}Si_{0.36}]P_{0.55}S_4$).

Contact Information
School of Materials and Chemical Technology, Tokyo Institute of Technology
http://www.titech.ac.jp/english/research/stories/faces16_kanno.html
http://www.titech.ac.jp/english/news/2017/038792.html

Near-infrared Light-driven Hydrogen Production from Water:
Expanding Wavelength Range for Solar Energy Conversion

7 AFFORDABLE AND CLEAN ENERGY

Hydrogen gas is a promising "green" fuel. The lightest chemical element, hydrogen is an efficient energy store and could potentially replace gasoline in vehicles. However, the element does not exist in large amounts in nature, and must be produced artificially.
Now, researchers at the International Institute for Carbon-Neutral Energy Research (WPI-I²CNER) has successfully synthesized a compound that absorbs near-infrared light to produce hydrogen from water. The compound contains three ruthenium atoms connected by an organic molecule. The absorbed light stimulates electrons to "jump" into orbitals that do not exist in other, similar compounds. This is the first successful use of infrared light to reduce water into hydrogen, which can be used for energy conversion and storage, and other industrial purposes in a future sustainable energy society.



wpi World Premier International Research Center Initiative
I²CNER

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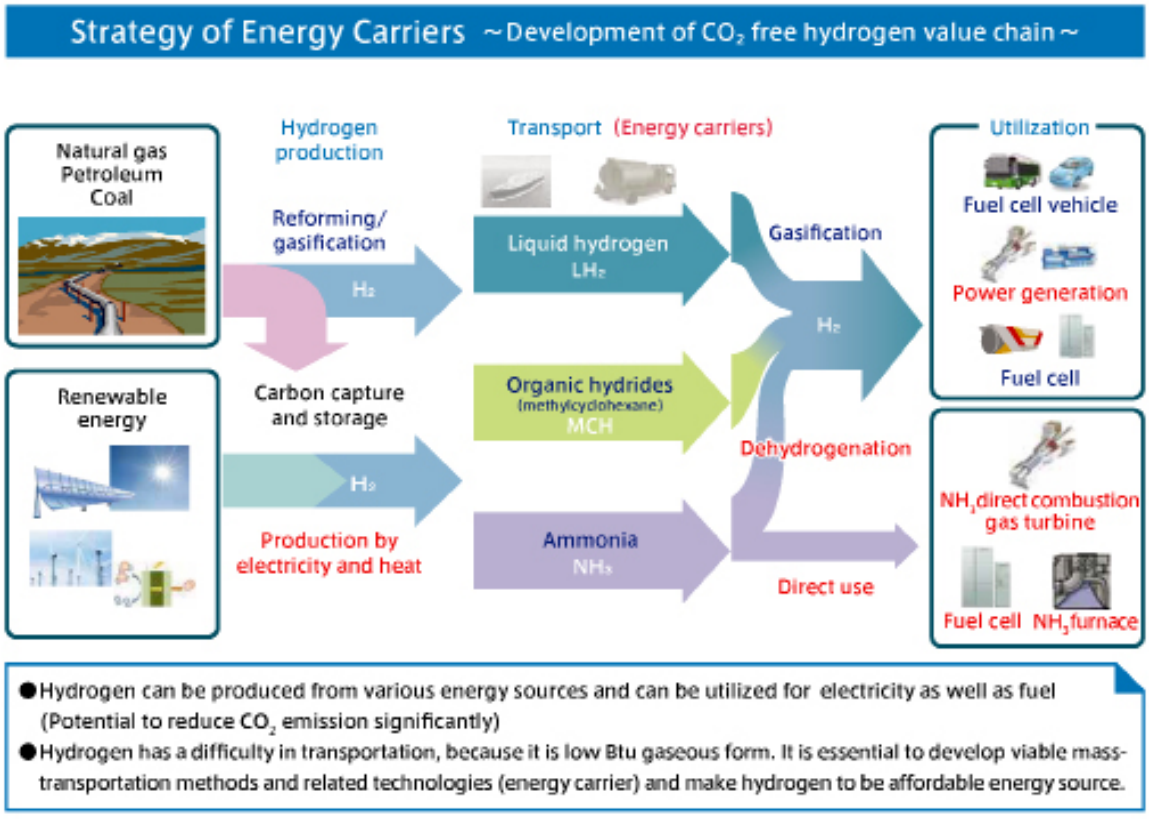
Development of CO_2 free hydrogen value chain

SIP Cross-ministerial Strategic Innovation Promotion Program

Reducing CO2 emission is a global issue. For Japan, a country poor in energy resources, it is necessary to construct a low-carbon society as well as to promote a stable energy supply through the diversification. We have large expectations for the role of hydrogen energy. However, towards the large-scale use of hydrogen, there remains a lot of issues to overcome technology barriers and high cost. Proceeding the research, development and demonstration of hydrogen technologies with industry-academia-government collaboration under the leadership of government will contribute significantly to solve energy and environment problems in Japan. And it will eventually bring Japan a world leader in hydrogen utilization and the related industries.

Under these circumstances, “Energy carriers", a technology development program toward the realization of hydrogen society has been launched as one of the 10 themes of the Cross-ministerial Strategic Innovation Promotion Program (SIP) spearheaded by the Council for Science, Technology and Innovation in 2014. “Energy carriers“ is the method to efficiently store and transport hydrogen as liquid, while hydrogen, gaseous at normal state, is difficult to handle.

In this program, we aim to build CO2 -free hydrogen value chain by focusing on the developments of technologies for CO2 -free hydrogen production, conversion to energy carriers; liquid hydrogen, organic hydride and ammonia, and storage, transportation and utilization.



Reference;
Global Hydrogen Energy Unit,
Institute of Innovative Research, Tokyo Institute of Technology
http://www.jst.go.jp/sip/pdf/SIP_energycarriers2016_en.pdf

Build safe cities through disaster risk assessment and thorough preparation

SATREPS For the Earth, For the Next Generation

Project: Development of a Comprehensive Disaster Resilience System and Collaboration Platform in Myanmar

Assess the risk of urban disasters and prepare for disasters in the future

With Myanmar and its cities under large-scale development, the risk of disasters increases due to expansion of the urban population and climate change. This project monitors changes in the ground, terrain, and urban environment associated with the development process, and develops a system for assessing vulnerabilities to potential disasters in Myanmar. The project aims to identify disaster risks in advance to contribute to the formulation of regional development planning and disaster prevention countermeasures as well as to support the strengthening of the Myanmar government's disaster response capabilities.

Disseminate research outcomes and contribute to improvement of disaster response capabilities throughout Asia

New building at YTU where the Research Center for Urban Safety will be establishedDam)

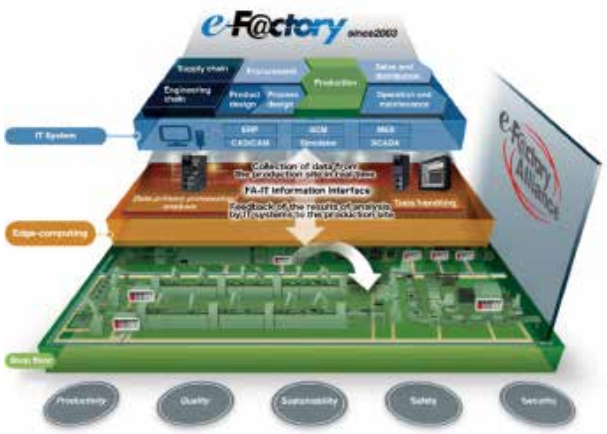
Field survey to observe flood risk countermeasures (Wagadok Dam)

Collaboration among government, industry and academia is indispensable for building safe cities. It has already been decided to establish the Research Center for Urban Safety (provisional title), which will serve as the core of a consortium to promote such collaboration. The solutions for the issues in Myanmar promise to serve as a model that can be applied to other Asian countries to improve their disaster response capabilities.

Contact Information
International Center for Urban Safety Engineering, Institute of Industrial Science, The University of Tokyo
http://www.jst.go.jp/global/english/kadai/h2607_myanmar.html

Delivering devices, equipment, and solutions that help reduce energy usage during production to customers around the world

Mitsubishi Electric Corporation proposes the "e-F@ctory" integrated factory automation solution. Various data collected in real time from a production site go through preliminary processing according to usage, and then data to be used onsite is fed back immediately to the production site, while the data required for higher levels of information utilization is supplied to IT systems. In this way, Mitsubishi Electric provides overall environment that is optimized to the fullest for Monozukuri (manufacturing). Mitsubishi Electric is also contributing to energy savings by continuing to promote improvements using such a manufacturing environment.



Contact Information
Mitsubishi Electric Corporation
http://www.mitsubishielectric.com/fa/sols/efactory/index.html

Sendai Framework for Disaster Risk Reduction 2015-2030

The present post-2015 framework for disaster risk reduction was adopted at the Third World Conference on Disaster Risk Reduction, held from 14 to 18 March 2015 in Sendai, Miyagi, Japan, which represented a unique opportunity for countries to:

(a) Adopt a concise, focused, forward-looking and action-oriented post-2015 framework for disaster risk reduction;
(b) Complete the assessment and review of the implementation of the Hyogo Framework for Action 2005-2015: Building Resilience of Nations and Communities to Disasters;
(c) Consider the experience gained through the regional and national strategies/institutions and plans for disaster risk reduction and their recommendations, as well as relevant regional agreements under the implementation of the Hyogo Framework for Action;
(d) Identify modalities of cooperation based on commitments to implement a post-2015 framework for disaster risk reduction;
(e) Determine modalities for the periodic review of the implementation of a post-2015 framework for disaster risk reduction.

Photo: Cabinet Public Relations Office

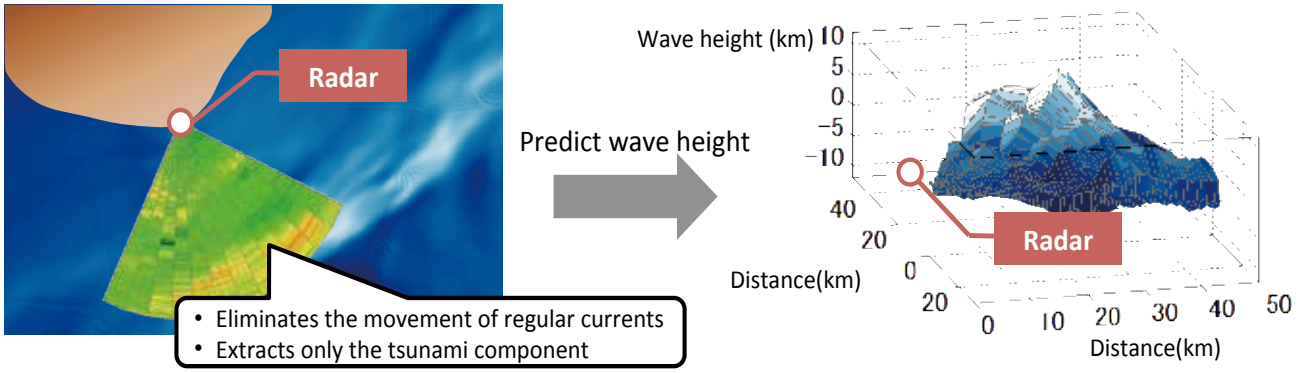
Photo: Cabinet Public Relations Office

Contact Information
http://www.bousai.go.jp/kokusai/kaigi03/index.html http://www.mofa.go.jp/mofaj/ic/gic/page3_001128.html

Contributing to disaster prevention and mitigation in coastal areas with radar-based tsunami monitoring

In recent years, the occurrence of tsunamis triggered by large earthquakes has become a concern in the coastal areas of Japan. To ensure efficient evacuation and response to such tsunamis, it is necessary to detect them as quickly as possible before they reach the coast. Mitsubishi Electric has developed a tsunami monitoring technology that uses ocean surface radar by observing ocean currents from a distance beyond what a human can see.
The radar can monitor long distances ranging from 30 to 200 km from the coast. If, for example, a tsunami in waters at an average depth of 300 m can be detected more than 30 km offshore, that information can be obtained 10 to 15 minutes before the arrival of the tsunami.

MITSUBISHI ELECTRIC
Changes for the Better



Contact Information Mitsubishi Electric Corporation
http://www.mitsubishielectric.co.jp/corporate/randd/list/info_tel/b196/index.html

Partnership to build and operate a new global database in the Global Centre for Disaster Statistics

United Nations Development Programme (UNDP), International Research Institute of Disaster Science, Tohoku University (IRIDeS), and Fujitsu Limited have agreed to form a partnership to build and operate a new global database, in the Global Centre for Disaster Statistics (GCDS), that will aim to reduce the damage caused by major natural disasters around the world. In this project, Fujitsu will not only use its overall capabilities in ICT to support the construction of the global database, free of charge, it will also support its operation and the improvement of disaster prevention administrative capabilities in developing nations through donations.

Through the activities of this partnership, the three organizations are contributing to the building of societies that are prepared for major natural disasters especially in Asia-Pacific developing countries.

Contact Information Fujitsu Limited, CSR Division
email: fj-csr-members@dl.jp.fujitsu.com
http://www.fujitsu.com/global/about/resources/news/press-releases/2017/0309-01.html

Progress of national disaster loss database development in Asia (2015)Copyrightc UNDP Bangkok Regional Hub

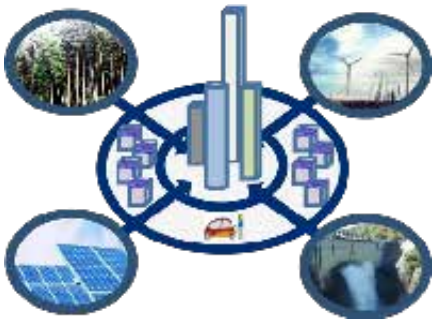
Industry, academia and government work in tandem to create innovation for disaster resilience

Following the Kumamoto Earthquake of April 2016, there are still many places within the prefecture that are at risk of sediment disasters. In view of this, an industry-academia-government collaborative initiative involving private companies from Kumamoto Prefecture, NIED, local universities, research institutes and local municipalities is aiming to produce a low cost landslide disaster surveillance system. NIED's technical knowledge and the linkage between local industry and academia will help create a new regional disaster resilience system that contributes to the local economy.
By transferring to other countries including South East Asia like Malaysia, this "local production for local disaster resilience" system that utilizes local technology to address local disaster resilience issues, other countries can also draw on their regional technologies to develop regional disaster resilience systems.

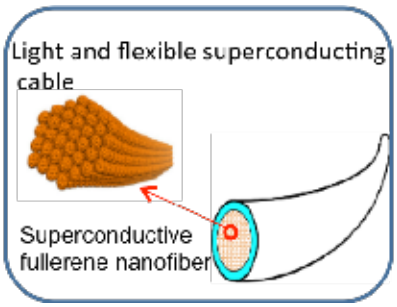
Contact Information National Research Institute for Earth Science and Disaster Resilience (NIED)
Innovation Center for Meteorological Disaster Mitigation
e-mail: ihub_nied@bosai.go.jp

Superconducting technology promoting 'smart city'

National Institute for Materials Science (NIMS) is conducting fundamental research on superconductivity not only material search but also superconducting wire and magnet application. Superconducting technology is an indispensable infrastructure that supports future smart cities. Smart city is realized by constructing a smart grid in natural energy generated by solar, wind, water and biomass. In addition, fuel cell, electricity storage and hydrogen bus, superconducting car etc. are connected. Superconducting electric cables can be used for direct current transmission network without energy loss. NIMS is promoting research on various superconducting materials such as Nb_3Al, MgB_2, Bi-oxide, iron-pnictide system, fullerene nanofiber, etc., for application to superconducting wire and superconducting device toward building smart city.



Superconductive electric path / Smart city



Contact Information
International Center for Materials Nanoarchitectonics(WPI-MANA),
National Institute for Materials Science(NIMS)
e-mail: mana@nims.go.jp
http://www.nims.go.jp/mana/

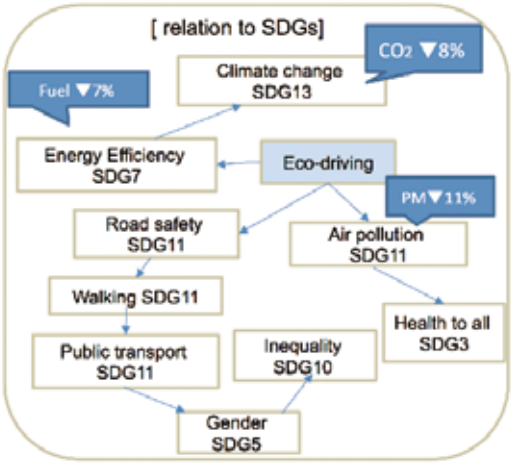
wpi World Premier International Research Center Initiative
mana Nano Revolution for the Future
MANA International Center for Materials Nanoarchitectonics

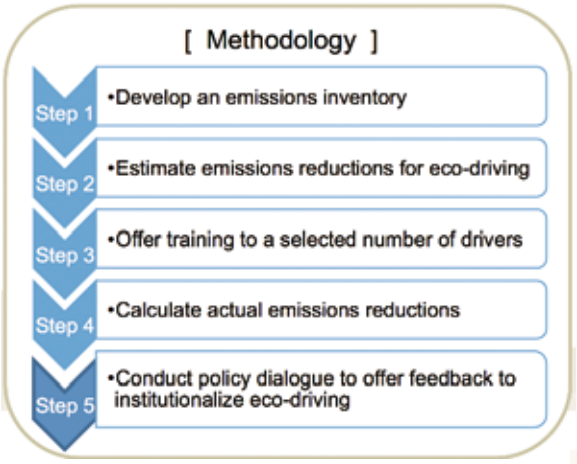
Promoting Eco-Driving in Bandung, Indonesia

Project name: Co-benefit Air Pollution Measures in China and other Asian Countries (funded by the Ministry of Environment, Japan)

Project duration: 2015-2016

Project outline: A pilot project introducing the eco-driving concept to Bandung, Indonesia





Project result:

Eco-driving can reduce GHG emissions, air pollutants, fuel consumption, and help achieve multiple SDG targets.

IGES AIT CLEAN AIR ASIA

Contact Information
sgc-info@iges.or.jp

Enhancement of Societal Resiliency against Natural Disasters

The Cross-ministerial Strategic Innovation Program(SIP) is a national project handled by Council for Science, Technology and Innovation(CSTI). As one of the output of the project ,it is expected that Resilient Disaster Information System for sharing disaster information in real time is built to prepare for earthquakes, tsunami, heavy rains, and other natural disasters.

Prediction

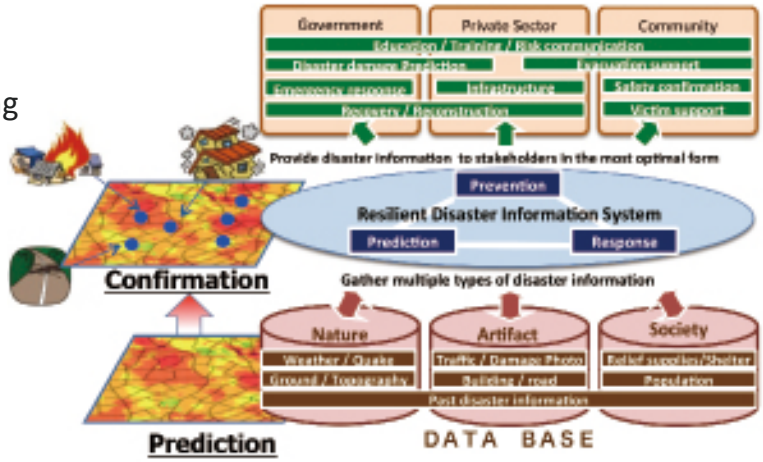
Predict the scope and nature of disasters
- Tsunami landfall prediction
- Heavy rain and tornado forecast

Response

Improve response capabilities by sharing and applying information related to disasters
- Information sharing
- Real-time earthquake damage Prediction
- Disaster information distribution
- Disaster regional cooperation

Prevention

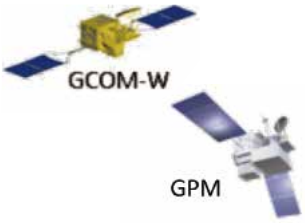
Improve earthquake resistance
- Liquefaction diagnose and prevention



SIP Cross-ministerial Strategic Innovation Promotion Program

Contact Information
Japan Science and Technology Agency (JST) substitute for Cabinet Office
e-mail: sip_disasterprevention@jst.go.jp
http://www8.cao.go.jp/cstp/panhu/sip_english/sip_en.html

Water Management: Reduce Flood Damage



Satellite data and in-situ data are merged to predict flood of lower river region several days before. Based on this information, the warning and evacuation call are sent to residents directly.

Global satellite data is effective to grasp the situation on water level of International cross-border rivers. In Bangladesh, flood forecasting made it possible to take measures in advance of damages. Now, the residents have several days for save their lives and property such as crops, cattle and etc. from total loss while the flood occurred at upper river flows down to lower areas.

Contact Information
Japan Aerospace Exploration Agency

Partners: ICHARM, UNESCO, ADB

(System will be organized)

International Demonstration projects with the aim of realizing “Smart Communities”

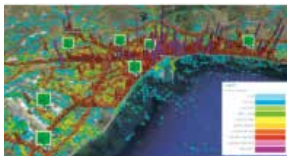
NEDO has been conducting 16 international technology demonstrations since 2010 to address global challenges on energy and environment. NEDO believes that efficient energy use through ICT on the demand side such as transportation system, housing and office / commercial buildings enables more reliable use of renewable energy, and contributes to establishing sustainable social systems and preventing global warming. Those projects are carried out not only from a technological perspective but also from a social perspective to understand human behavior based on a variety of regional characteristics such as weather, lifestyle, policy, regulation and business custom. Findings from those case studies can be shared among interested parties all over the world.

EV as Distributed Energy Resources (DER) in Maui, HI, USA.

Microgrids in NM, USA.

Water heaters as DER in Manchester, UK.

Positive Energy Building in Lyon, France.



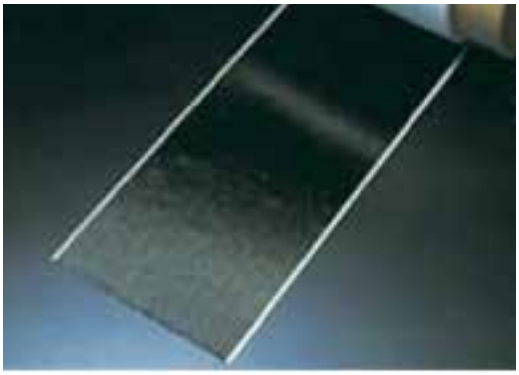
Inside city EV guidance in Malaga, Spain.

Advanced Metering Infrastructure in Panipat, India.

Contact Information
Smart Community Department,
New Energy and Industrial Technology Development Organization (NEDO)
e-mail: smartcommunity@ml.nedo.go.jp

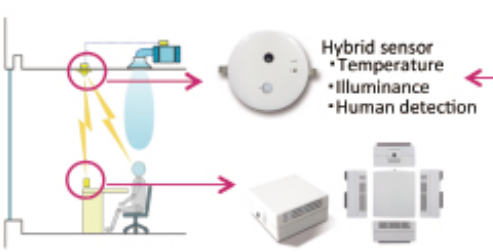
Replark™; Carbon fiber fabric for repair and strengthening of deteriorated structures

Based on carbon fiber application techniques and resin development, Mitsubishi Chemical Holdings has developed a carbon fiber fabric, "Replark™" for repair and strengthening of concrete structures. In view of the recent increasing need for repair and strengthening of deteriorated structures, Replark™ is highly commended for its high strength, light weight, excellent durability and ease of application to structures such as bridge columns, road deck slabs, columns, chimneys, etc. Dealing in High strength grade (Its strength is 10 times stronger than steel.) as well as High modulus grade (Its stiffness is 3 times stronger than steel) of carbon fiber achieves effective strengthening construction works.



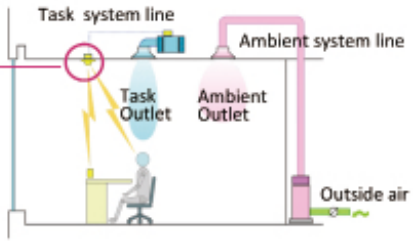
Contact Information
Mitsubishi Chemical infratec Co., Ltd
http://www.mp-infratec.co.jp/index.html/

Kajima Akasaka Annex of Kajima Corporation



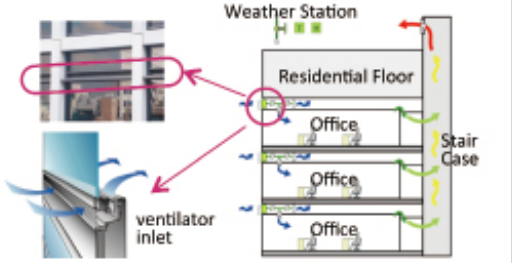
"Eco-module" to provide illumination and air conditioning where humans are present

Wireless remote thermostat



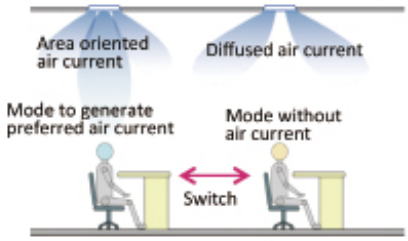
Optimum coordination control among solar radiation control, climate control, and illumination

Task and ambient air conditioning system



Task and ambient AC available for general-purposed application with multiple building air conditioners

Natural ventilation system



Variable air-current outlet, "Universal Comfort", which provides soft personal air current

"Universal Comfort"(task outlet)

Contact Information
KAJIMA CORPORATION, Public Relations Office
3-1 Motoakasaka,1-chome, Minato-ku, Tokyo, 107-8388, Japan
URL:https://www.kajima.co.jp/english/contact/index.html

ZEB Demonstration Building

Taisei Corporation constructed ZEB* demonstration building at the site of the Taisei Technology Center in June 2014. It aimed to reduce annual energy consumption by 75% in comparison with typical office buildings and to cover the remaining 25% by generating solar power energy. Considering an urban site, this was to be done within the building envelope. The monitoring results showed that through energy conservation, the energy consumption was 463MJ/m² per year while at the same time energy generation was 493MJ/m² per year, which means that a stand-alone building could achieve net zero annual energy consumption. Overcoming this extremely difficult obstacle enabled us to complete preparations to introduce ZEB anywhere within Japan.

*ZEB = Zero Energy Building that greatly reduced energy loads such that renewable energy can supply the remaining energy needs. (Ref: "Understanding Zero-Energy Buildings" By Paul A. Torcellini, Ph.D., P.E., Member ASHRAE; and Drury B. Crawley, Member ASHRAE, 2006)

Contact Information
Taisei Corporation
e-mail: kumagai@arch.taisei.co.jp
URL: http://www.taisei.co.jp/giken/topics/1353301853006.html

Closed Loop Integrated Recycling System

Recycling line on dismantling and sorting process

Fuji Xerox Co., Ltd. operates a “closed loop”, integrated recycling system for its products, in which products released to the market are collected back after use, and the parts are either reused or recycled, thus reducing waste sent to landfill. Fuji Xerox has introduced recycling systems and take-back programs across Japan, Thailand, Taiwan, China, South Korea, Australia, and New Zealand. Since2010, Fuji Xerox has maintained a recycling rate of at least 99.5% across its operations.

Contact Information Fuji Xerox Co., Ltd. CSR Department,
Phone: 81-3-6271-5160 URL: http://www.fujixerox.co.jp/eng/

Manufacturing high-quality feed from food waste to create a 'loop of recycling'

Japan Food Ecology Center, Inc. (J.FEC) produces the liquid fermented ‘eco-feed’ (animal feed produced from recycled food waste), and contracts 15 farmers to supply it. The food waste, received 33 tons/day as the ingredients of feed, is sorted to remove inappropriate materials, and shredded fine. After shredded, the food waste becomes liquid state. Then, through the processes of sterilization (at 80-90°C, 5-10 min.) and lactic acid fermentation (24-48 hours), the food waste transforms to ‘eco-feed’. The stock farm products with J.FEC’s eco-feed are processed into good quality meat and sold in department stores and supermarkets under the brand. The special characteristic of J.FEC is to form a 'loop of recycling' through the effort to reduce waste, and also to make new value with farmers, food manufactures, retail, consumers and other stakeholders. This effort is expected to lead to improved feed self-sufficiency. J.FEC’s business model is even getting attention from around the world.

Contact Information
Japan Food Ecology Center, Inc. (J.FEC)
e-mail: info@japan-fec.co.jp
http://www.japan-fec.co.jp/

Reduced use of plastic through refills

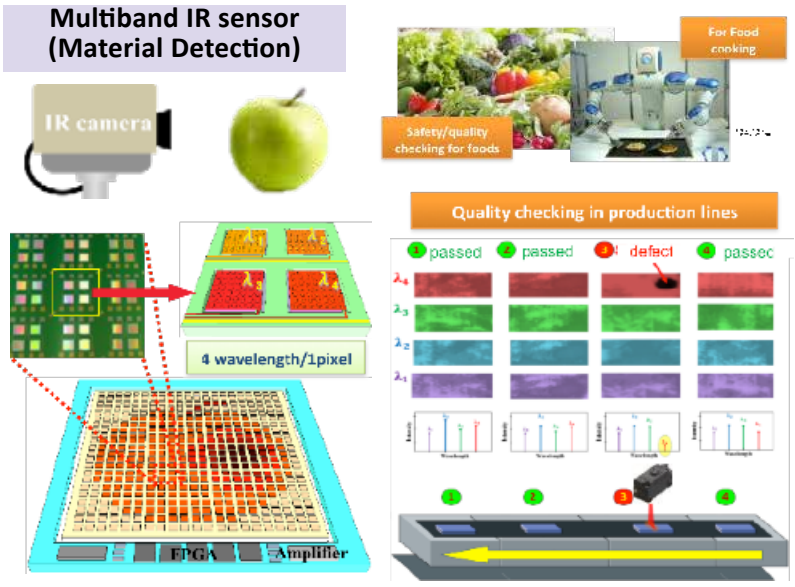
Ever since its first launch in Japan in 1991, Kao has been engaged in reducing use of plastic in packaging through development of refill packs. Continued research over the years have brought innovations to the category, making it useable for various types of product viscosity, and its easy-to-use features have helped establish use of refill packs a part of everyday life: as at Dec 2016, refills are available across 266 items in personal care, household and cosmetics products. This translates to over 80 thousand tons of reduced plastic by use of refills in comparison to use of original packaging. Kao will continue to enhance its commitment to sustainability in this area by seeking to adopt more renewable materials, as well as by stepping up research into recycling, an initiative that has already seen a start of collaborative experiments with local governments.

Enriching lives, in harmony with nature.

Contact Information
Corporate Communications, Kao Corporation
e-mail: pr@kao.co.jp

"Visualising" the infrared colors for better consumption and high-quality production

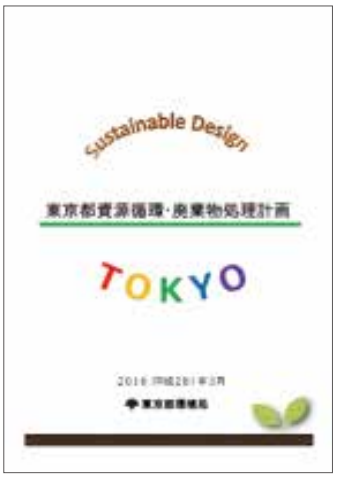
Infrared (IR) cameras can only detect the light intensity and cannot distinguish the light wavelengths.
We are developing new spectroscopic IR sensors that can distinguish the wavelength of the IR light, and can be used to judge the materials and conditions of the observed objects. Such sensors will be used for safety inspection of the foods, quality checking at the production lines in factories, and more.



Contact Information
International Center for Materials Nanoarchitectonics (WPI-MANA), National Institute for Materials Science (NIMS)
e-mail: mana@nims.go.jp
http://www.nims.go.jp/mana/

wpi World Premier International Research Center Initiative
mana Nano Revolution for the Future
MANA International Center for Materials Nanoarchitectonics

Tokyo's 5 Year-Plan on Sustainable Materials Management Aims for 2030 Based on SDG's



Under the strong recognition on the importance of the environmental impacts in the upstream and downstream sides of resource use, **Tokyo Metropolitan Government(TMG) announced Tokyo's New 5 year-plan on sustainable materials management in March 2016**. As a huge amount of resource consuming city, Tokyo aims to transform Tokyo's materials use into more sustainable from production processes, product and services. Tokyo has created this based on Goal12 of SDGs spirit. This plan has also considered the big change of our society, coming of super-aging society, and preparing disaster waste treatment.

Key Measures

1. **Reduction of Resource Loss**
   Reducing food loss, Change in lifestyle based on single-use materials etc.
2. **Promotion of Eco-Materials Use and Spreading Sustainable Procurement**
   Sustainable use of timber, Establishing sustainable procurement in the chance of Tokyo 2020 etc.
3. **Promotion of Further Circular Use of Waste**
4. **Appropriate Waste Treatment and Improving Waste Dischargers' Manners** Marine litter etc.
5. **Development of Capital sound and Reliable Venous Businesses**
6. **Countermeasures for Disaster Waste**

TOKYO METROPOLITAN GOVERNMENT

Tokyo Tokyo Old meets New

Contact Information
http://www.kankyo.metro.tokyo.jp/resource/plan/waste_treatment/index.html
e-mail: S0000635@section.metro.tokyo.jp

Bio-based PBS; Environmentally friendly polymer

Mitsubishi Chemical Corporation is under the process of commercializing the world's first bio-based PBS, an environmentally friendly polymer, at its joint venture with PTT Public Company Limited.

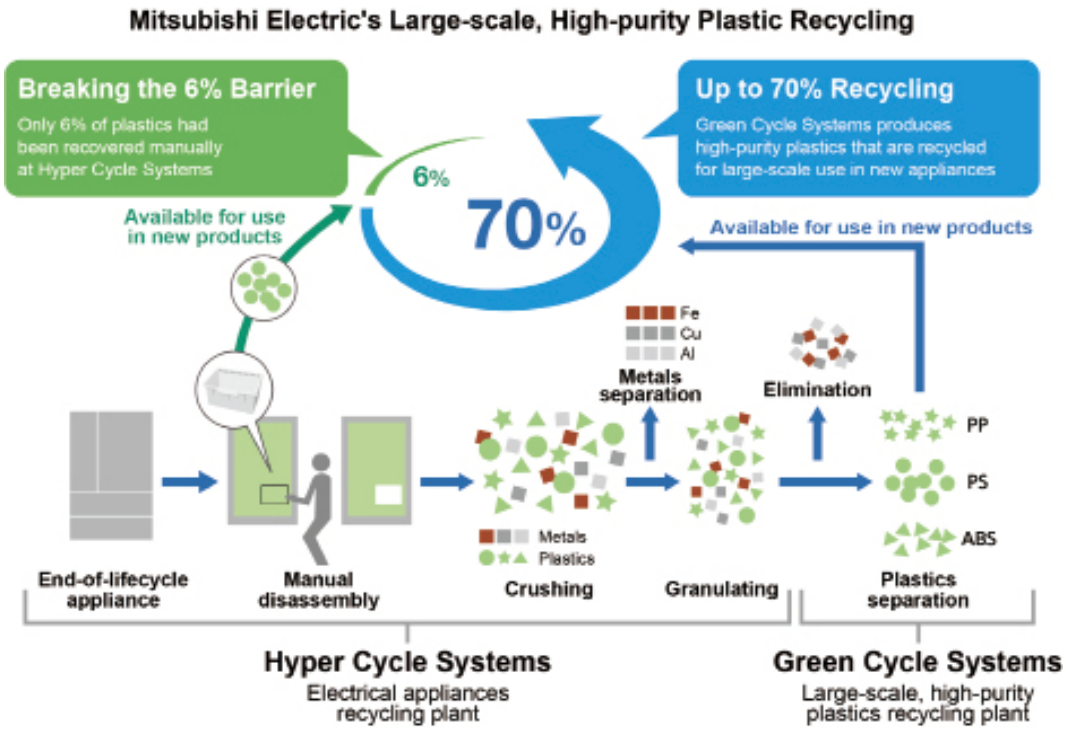
PBS, known for its superior bio-degradability, can add value to waste that would normally be landfilled or incinerated by allowing the waste to be turned into fertilizers through composting. Applications of PBS are growing rapidly, starting from item such as paper cups, cutlery, compost bags and mulching films for farming.

In addition, Mitsubishi Chemical's PBS could also be considered environmentally friendly as a bio-based polymer. Compared to the conventional fossil based polymer, bio-based polymers use sustainable resources which have a lower environmental impact and also provide new opportunities to the farming industry.

Contact Information Mitsubishi Chemical Corporation
https://www.m-chemical.co.jp/
PTT MCC Biochem Co., Ltd.
http://www.pttmcc.com/new/index.php

Large-scale, high-purity plastics recycling

Until recently, it was considered difficult to recycle plastics from used home electronics appliances for applying them to new home electronics appliances, as only 6% of the dismantled plastics could be recycled. However, Japan's first large-scale, high-purity plastics recycling system has raised its rate to 70%, more than 10 times the previous level.



MITSUBISHI ELECTRIC
Changes for the Better

Contact Information
Mitsubishi Electric Corporation
http://www.mitsubishielectric.com/company/environment/ecotopics/plastic_sp/index.html

SDGs Project of the Engineering Academy of Japan

The Engineering Academy of Japan Inc. (EAJ) represents Japan in the International Council of Academies of Engineering and Technological Sciences. Leaders and leading experts in academia, industry and governments in Japan who have achieved outstanding contributions to global engineering and technological sciences are nominated by the member nominating committee and approved by the Board of Directors to be EAJ members. EAJ, a non-government and non-profit organization, has officially established the SDGs project in April 2017. Its project leader, twenty project members, and other stakeholders outside EAJ from academia, industry and governments have intensively exchanged their views on SDGs from their own expertise and will give a proposal to the Japanese government and its institutions for them to lead SDGs by Science, Technology and Innovation.

Contact Information
The Engineering Academy of Japan
e-mail: academy@eaj.or.jp
https://www.eaj.or.jp/

公益社団法人 日本工学アカデミー THE ENGINEERING ACADEMY OF JAPAN

Developing and utilizing the Earth Obervation big data system

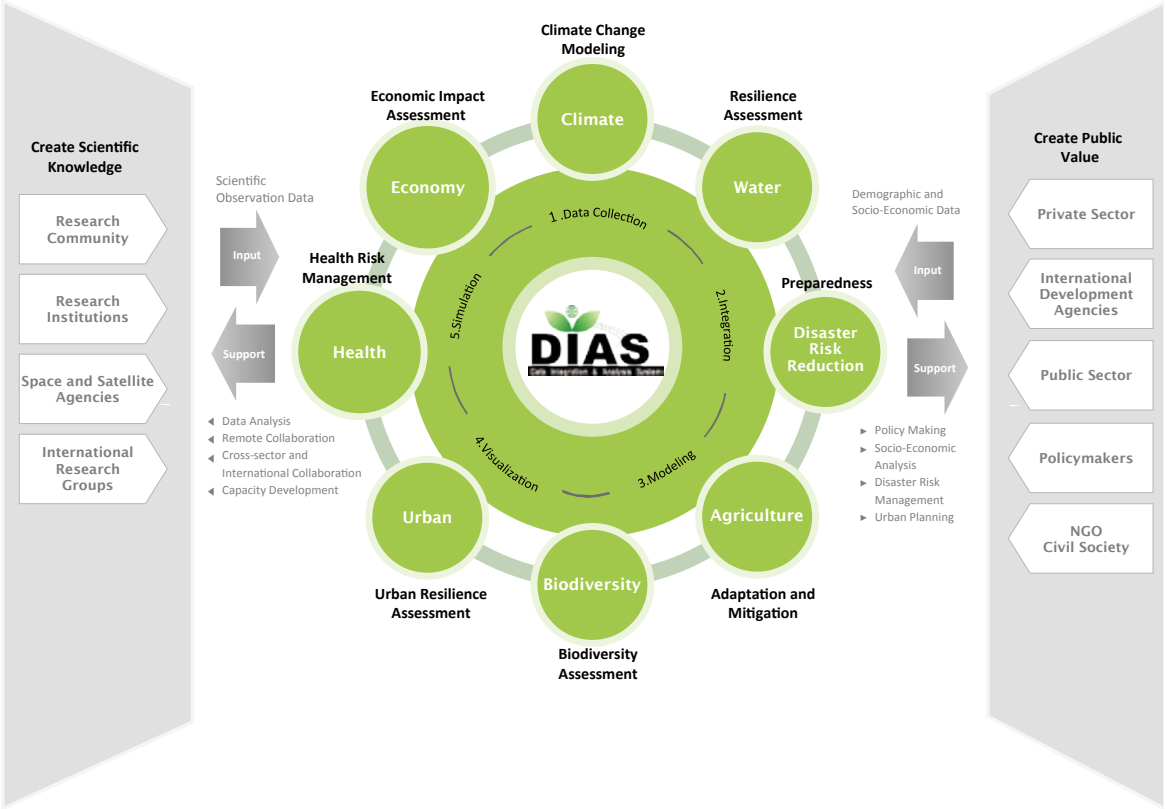
- DIAS (Data Integration and Analysis System) -

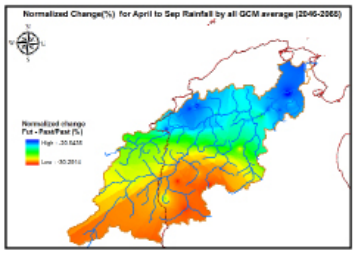
[Overview]

MEXT is developing Data Integration and Analysis System (DIAS), the Global Environmental Information Platform, to archive, integrate and analyze big data of Earth Observations(EO) and projections. Cooperating with private sectors, MEXT promotes to utilize DIAS for addressing global issues such as climate change, disaster risk management and infectious diseases.

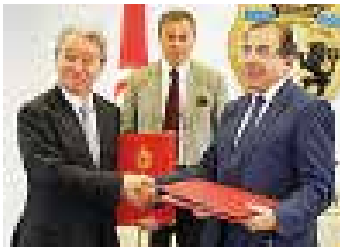
[Achievements]

DIAS provides EO information to all over the world through the framework of the intergovernmental Group on Earth Observations(GEO), which is promoting decision-making informed by EO information.
In addition, DIAS contributes to realizing evidence-based Quality Infrastructure. For instance, in Tunisia, we evaluated the impact of future climate change on flood risk and the soft loan project “Mejerda River Flood Control Project” was launched on the basis of the evaluation.





The changes of the spatial distributions of seasonal rainfall in future.
(Source:http://open_jicareport.jica.go.jp/pdf/12119954_01.pdf)



Signing ceremony of Japanese ODA Loan Agreements with Tunisia.
(Source: https://www.jica.go.jp/english/news/press/2014/140718_02.html)

Data Integration and Analysis System(DIAS)

Contact Information
Environment and Energy Division, Ministry of Education, Culture, Sports, Science and Technology (MEXT)
DIAS Office(Remote Sensing Technology Center of Japan)
dias-office@diasjp.net http://www.diasjp.net/

MEXT
MINISTRY OF EDUCATION, CULTURE, SPORTS, SCIENCE AND TECHNOLOGY-JAPAN

Hydro Shuttle; Packaged hydrogen refueling station

To promote the spread of fuel cell vehicles (FCVs), **Taiyo Nippon Sanso Corporation** is promoting the sale of the Hydro Shuttle packaged hydrogen refueling station it developed in August 2013, and strengthening R&D for further reducing the cost of hydrogen refueling stations.

Contact Information
Taiyo Nippon Sanso Corporation
http://www.tn-sanso.co.jp/jp/index.html

Converting CO_2 to hydrocarbon fuels by artificial photosynthesis

NIMS MANA is challenging a high-efficiency artificial photosynthesis by nano-life science-inspired nanoarchitectonics of hybrid photocatalytic materials.

We have successfully developed new materials with the world's highest quantum efficiency (approaching that of natural photosynthesis) in photocatalytic water oxidation by a unique band structure engineering approach. Also, sophisticated control and integration of nano-metal/oxide by mimicking the nanoscale level structure of natural photosynthesis has enabled efficient light harvesting, charge separation, CO_2 gas diffusion/conversion to CH_4, making a big step towards realization of a high-efficiency artificial photosynthesis.

Contact Information
International Center for Materials Nanoarchitectonics (WPI-MANA), National Institute for Materials Science (NIMS)
e-mail: mana@nims.go.jp
http://www.nims.go.jp/mana/

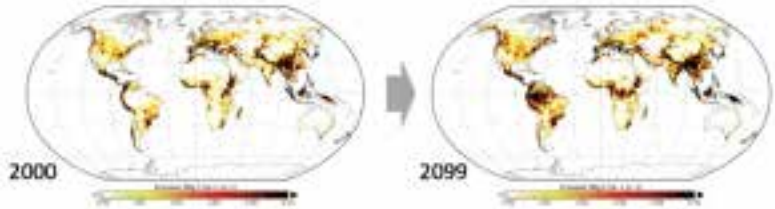
MANA International Center for Materials Nanoarchitectonics

Sustainability Assessments of Negative Emission Scenarios

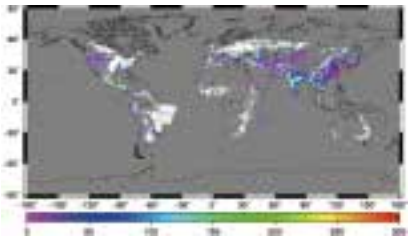
National Institute for Environmental Studies

Using indicators for the different SDGs, we are examining impacts of massive bioenergy (negative emission) land use scenarios for ambitious temperature targets.
Especially, we use ecosystem and water resource models to estimate the implications to ecosystem services. The results suggest that tradeoffs could exist between climate change mitigation, water resource availability and ecosystem functions. Irrigation water, biomass stock and vegetation cover, as well as other fundamental, provisional, and regulation ecosystem services could change.
However, the impacts depend on the regional biomass land use implementation strategies, so we are also exploring possible scenarios that could improve synergies among SDGs.

Biomass loss due to laud-use



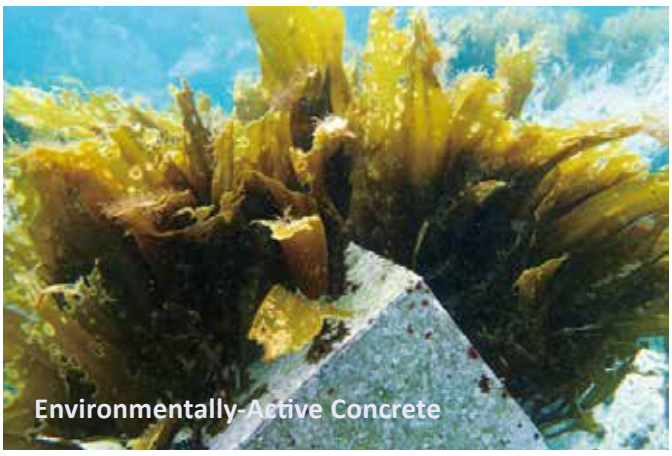
Deteriorated soil erosion


Change of irrigation water

Contact Information
National Institute for Environmental Studies
Yoshiki Yamagata, Akihiko Ito, Naota Hanasaki
http://www.nies.go.jp/ica-rus/index.html,
http://www.cger.nies.go.jp/gcp/magnet.html

Environmentally-Active Concrete containing Amino Acid

Aiming to reconcile disaster prevention and environmental protection of the sea and river


Environmentally-Active Concrete

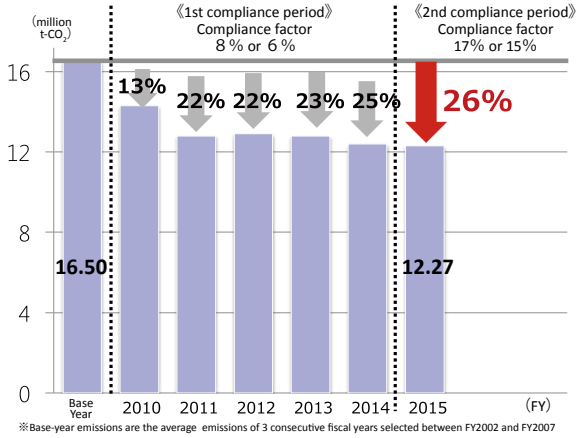
Arginine, one of amino acids, has the characteristic of dissolving into water from concrete surface slowly for a long time without damaging the strength of concrete.
Concrete containing arginine promotes the growth of micro-algae, which creates seaweed beds and nursey grounds for natural life and contributes to revitalize fisheries.
Environmentally-Active Concrete, jointly developed by Ajinomoto Co., Inc., Nikken Kogaku Co., Ltd., Tokushima University enriches the marine ecosystem and food chain.
Now it is used as wave-dissipating blocks and artificial fish reefs in more than 100 fishing ports and rivers in Japan.

Contact Information
NIKKEN KOGAKU Co.,Ltd. ; contact@nikken-kogaku.co.jp,
TOKUSHIMA University; st_kanrik@tokushima-u.ac.jp
https://www.nikken-kogaku.co.jp/English/

Japan's First Mandatory CO_2 Emissions Reduction and Trading Scheme: Tokyo Cap-and-Trade

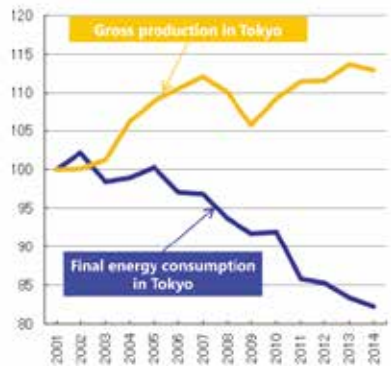
Total volume of GHG emissions in Tokyo is comparable to the national emissions of some Scandinavian countries such as Denmark or Norway. As one of the world's largest cities and sub-national government in Japan, **Tokyo Metropolitan Government(TMG) has launched mandatory CO_2 emissions reduction program** covers large facilities in Tokyo from April,2010.

Total CO_2 Emissions Reduction through Tokyo Cap & Trade



※Base-year emissions are the average emissions of 3 consecutive fiscal years selected between FY2002 and FY2007

Decoupled Energy Consumption and Economic Growth in Tokyo



***Achieved 26% reduction** (compared to base year) even amid an increase in total floor area of covered facilities.

Contact Information
http://www.kankyo.metro.tokyo.jp/en/climate/cap_and_trade.html
e-mail: S0213202@section.metro.tokyo.jp

TOKYO METROPOLITAN GOVERNMENT

Tokyo Tokyo Old meets New

Producing climate change projection information as the foundation of climate actions

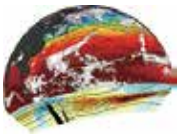
-Integrated Research Program for Advancing Climate Models-

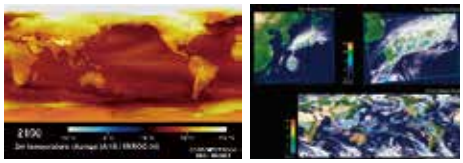
[Overview]

In tackling climate change, future change projections produced by climate models are essential to the establishment of the mitigation and adaptation plans. **MEXT** implements the climate change research program including the development of climate models to produce and distribute highly accurate projection information as the foundation of evidence-based climate actions.

MEXT
MINISTRY OF EDUCATION, CULTURE, SPORTS, SCIENCE AND TECHNOLOGY-JAPAN

"MIROC" (Japan's flagship global climate model)





Results of global warming projections by Japan's climate models
(left: temperature, right: precipitation)

[Accomplishments]

This program has been supporting the global actions to combat climate change and its impacts. As a matter of fact, the research results are cited in the IPCC assessment reports and are used as scientific evidence for the decisions at UNFCCC-COP and national decisions.
In addition, Japan's climate models are utilized to assist capacity-building in Southeast Asian countries

Collaboration with Indonesian experts on local warming projections

Contact Information
Environment and Energy Division, Ministry of Education, Culture, Sports, Science and Technology (MEXT)
Integrated Research Program for Advancing Climate Models
tougou-info@jamstec.go.jp

Power Savings by Railcar Traction Inverter with All-SiC Power Modules

Mitsubishi Electric Corporation, Inc has developed a VVVF inverter equipment made with all-silicon carbide (SiC) power module which enables great reduction of energy consumption in the railway operation through utilization of the achievement in the contract research from the New Energy and Industrial Technology Development Organization (NEDO). Main circuits featuring traction inverter made with all-SiC, which were installed in a 1000 series urban train operated by Odakyu Electric Railway, have been verified to achieve an approximate 40-percent savings in power consumption compared to a train using conventional circuitry. The company continues to develop the technology that contributes to reduce loads on the environment and to establish a sustainable society.

Retrofitted Odakyu 1000 series train

Railcar traction inverter with all-SiC power modules

Contact Information Mitsubishi Electric Corporation
Reference: http://www.mitsubishielectric.com/news/2014/pdf/0430.pdf
http://www.mitsubishielectric.com/news/2015/pdf/0622-a.pdf

The Uuniversity of Tokyo Future Society Initiative

The University of Tokyo (UTokyo) established the UTokyo Future Society Initiative (FSI) in July 2017, under the direct leadership of the university president. The aim of the Initiative is to promote effective collaboration and to contribute to the future of humanity and the planet, based on the University's mission of serving the global public as outlined in the University of Tokyo Charter.
With the UTokyo FSI as an overseer, the UTokyo will build a research and educational environment that enables diverse people to exercise their abilities by strengthening social and international cooperation. Moreover, the UTokyo shall utilize to the maximum extent possible the Sustainable Development Goals (SDGs), which are congruent with the University's mission, and promote SDG-oriented projects in a wide range of fields throughout the University, and showcases them as actions taken by the University as a whole. In particular, in regards to collaboration with the industrial sector, the University utilizes the SDGs as a basic common vision for new business growth.

Contact Information
The University of Tokyo Futuer Society Initiative
http://www.u-tokyo.ac.jp/adm/fsi/en/index.html

Biological Information System for Marine Life

BISMaL is an integrated information system on marine organisms around Japan.
BISMaL also contributes to international information exchange program as the main database for OBIS Japanese node.

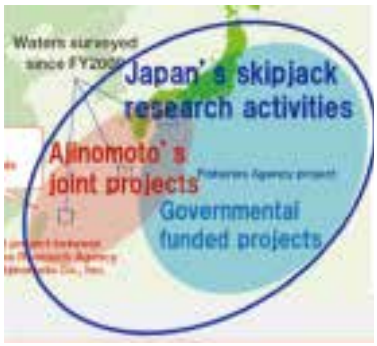
Japan Agency for Marine-Earth Science and Technology (JAMSTEC) is operating a database, named BISMaL (http://www.godac.jamstec.go.jp/bismal/). This is a major database on marine biodiversity in Japan, contributing to Ocean Biogeography Information System (OBIS) operated by UNESCO, IOC. BISMaL was used as the main data source when Ministry of Environment Japan identified Ecologically or Biologically Significant Areas (EBSAs) within EEZ of Japan. EBSAs will be utilized to conserve at least 10 per cent of coastal and marine areas based on the best available scientific information as SDG14 targeted.

A map of 31 EBSAs in the off shore sea bottom area around Japan. In addition, 270 coastal and 20 off shore surface EBSAs were defined within EEZ of Japan.

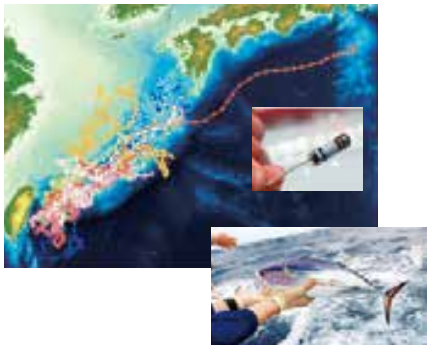
Contact Information
Japan Agency for Marine-Earth Science and Technology (JAMSTEC)
www.jamstec.go.jp/e/

Joint Tagging Survey of Skipjack off the Pacific Coast of Japan (2009-)

Skipjack Tuna Tagging Research has been conducted since 2009 to investigate migration of skipjack to the southwestern Pacific coast of Japan along the Kuroshio Current, under collaboration scheme by Ajinomoto Co., Inc. and National Research Institute of Far Seas Fisheries (NRIFSF). The aim of the project is to contribute to establishing inter-national sustainable fishery management and sustainable regional development. An unique pioneering case of basic research project targeting long-term social goals by the governmental research institute on fisheries and a private consumer goods company which is not directly involved in fishery-related industry, having an integral mission in the Japan's national skipjack research projects.



By using advanced technologies such as bio-logging and bio-telemetry, the project reveals astounding detail about skipjack biology & ecology. Since 2016, the joint collaboration has been widen with CREST (Hokkaido Univ., Kyoto Univ., Tokyo Univ.,Tokyo Univ. of Marine Science and Technology), as well as, research institutes of Taiwan Fisheries Agency.

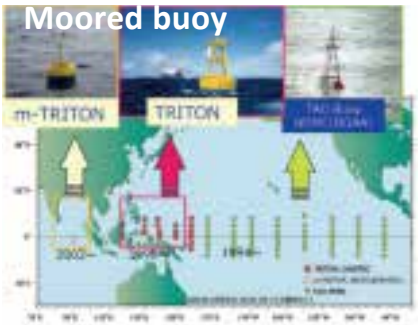


Contact Information Global Communications Dept., Ajinomoto Co., Inc.
Email: csr_info@ajinomoto.com
http://www.ajinomoto.com/en/activity

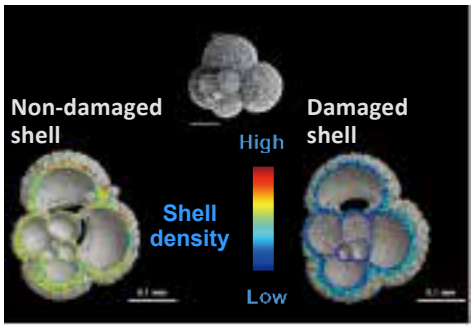
Address Impact of Ocean Acidification and Increase Scientific Knowledge to Improve Ocean Health

- JAMSTEC uses devices such as mooring systems, ships and floats together to accumulate data of ocean states. The data are essential for understanding ocean state and increasing scientific knowledge that contribute to improve the ocean health.
- In the IOC framework such as GOOS, the efforts on ocean observation are further promoted through international programs such as Argo Project.
- To accomplish the goal related to ocean acidification described in SDG14, much more ocean observation efforts are needed to archive data necessary to minimize and address the impact of ocean acidification on marine environment.
- JAMSTEC has carried out observation of the states and impact of ocean acidification on marine ecosystem in the Arctic Ocean to the northwest Pacific Ocean.
- JAMSTEC also has succeeded in developing a new technique to measure impacts of ocean acidification on marine organisms that have calcium carbonate shells.
- JAMSTEC is ready to share this technology with global community to enhance scientific cooperation on ocean acidification at all levels.

Observation by expansion of the Argo Float



Observation buoy network in the Pacific Ocean established in cooperation of NOAA, USA and JAMSTEC, Japan



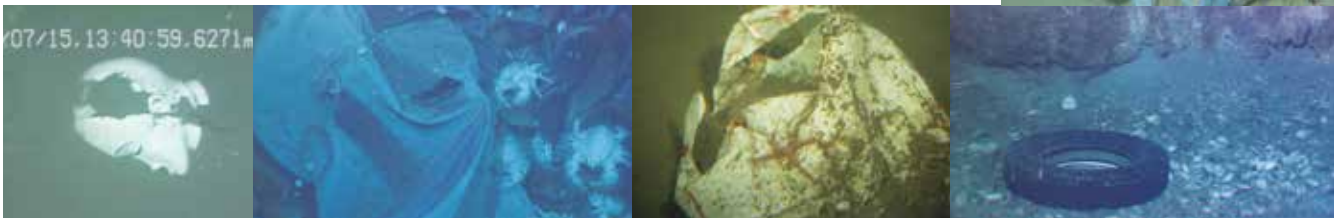
Impact of ocean acidification on the shell of planktonic Foraminifer *Globigerina bulloides*

Outline of observation in the last 10 years by ships such as R/V MIRAI

Contact Information
Japan Agency for Marine-Earth Science and Technology (JAMSTEC)
URL: www.jamstec.go.jp/e/

Marine Debris Database

JAMSTEC newly established a database on marine debris. Data were collected through visual sampling of deep-sea floor. This database will contribute to prevent and significantly reduce marine pollution from land-based activities as targeted in SDG14.



http://www.godac.jamstec.go.jp/catalog/dsdebris/e/

The Environmental Float Island "GREEN FLOAT"

Project name:

"GREEN FLOAT"
- GREEN Innovation + FLOAT Innovation -

Future City Concept utilizing the potential of the ocean that covers 70% of the earth's surface.

The population explosion and urban overcrowding generates environmental problems. Oceans Account for 70% of the earth's surface. Cities on the sea! Taking to the sea and tapping the sea's potential.

GREEN : Botanical City

Recognize the limits of industrialized civilization and learn from natural systems.

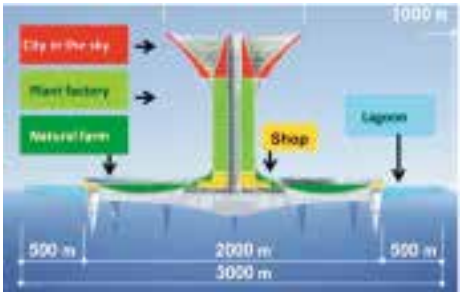
FLOAT : Floating City

Create new possibilities for city locations: the ocean surface

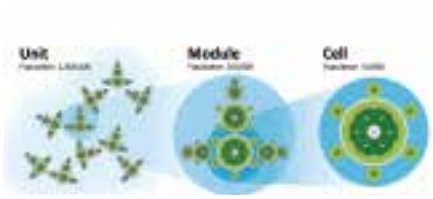
1. A Brand New "Location"

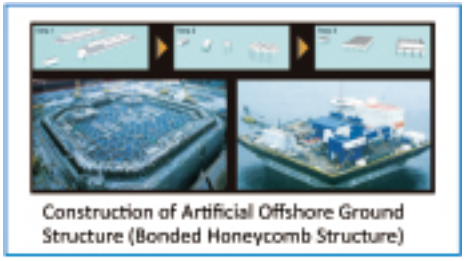
3. A Brand New "Environmental City"

2. A Brand New "Tridimensional City"



4. A Brand New "Construction Technologies"




Construction of Artificial Offshore Ground Structure (Bonded Honeycomb Structure)

Four (4) New innovation that Green Float brings

1. A Brand New "Location"
2. A Brand New "Tridimensional City"
3. A Brand New "Environmental City"
4. A Brand New "Construction Technologies"

Currently working of draft plans of a miniaturized "Green Float," and AIP(Approval in Principle) as "Ship-Classification" is planned to be acquired.

Contact Information
SHIMIZU CORPORATION Future Business Research Center
Contact Us; http://www.shimz.co.jp/toiawase/contact.html
http://www.shimz.co.jp/theme/dream/greenfloat.html

Raising Public Awareness on Marine Litter: Produce Short Educational Film with Children in Tokyo and New York City

As one of the world's largest and a huge amount of resource consuming cities, Tokyo is intimately linked to the marine litter problem, not an issue in a distant world. **To promote public awareness and education on this and status quo and day-to-day efforts , Tokyo Metropolitan Government (TMG) collaborated with elementary school children from Tokyo and New York** to produce a short film focusing on this issue.
Elementary school children learn about, **consider as a member creating waste in their community and society , and share their opinions** on marine litter.

TOKYO METROPOLITAN GOVERNMENT

Tokyo Tokyo Old meets New

*Producer: Tokyo Metropolitan Government (TMG)
*Collaborating Schools:
Hirai Public Elementary School, Edogawa-ku, Tokyo
District 15 Elementary School, Brooklyn, New York
*Collaborating NPOs:
Arakawa Clean-Aid Forum, Tokyo
Cafeteria Culture, New York
*Direction and Editing:
Atsuko Satake Quirk, Media Director, Cafeteria Culture

Contact Information
https://www.facebook.com/TokyoGov/videos/1738761866139361/
e-mail: S0000636@section.metro.tokyo.jp

Water Resource × Biodiversity × Youth
Azaone Camp's Satoyama ESD in Aone

"Azaone Camp" is a group linking students at Azabu University and citizens in Aone, a depopulated village in a rural part of Sagamihara City, Kanagawa Prefecture, where the headwaters of 3 major cities in Kanagawa Prefecture are found, and both endangered species and protected species inhabit the area. Based in a rice paddy field resurrected from idle farmland, Azaone Camp commits monitoring biodiversity, education for sustainable development (ESD), and local initiatives through both inter-generational and inter-regional activities.

Participating Monitoring Site 1000 implemented by Ministry of Environment, Azaone Camp is monitoring Biodiversity of Aone focusing brown frog, harvest mouse, water environment as indicators for habitat diversity.
In addition, Azaone Camp makes "Satoyama Green-map" based on vegetation mapping.
About Green-map; http://www.greenmap.org/greenhouse/home

Contact Information
Azaone Camp mail@azaone.com
http://www.azaone.com/ https://mobile.facebook.com/azaonecamp/

Sustainable Forest Future Community; Shimokawa town

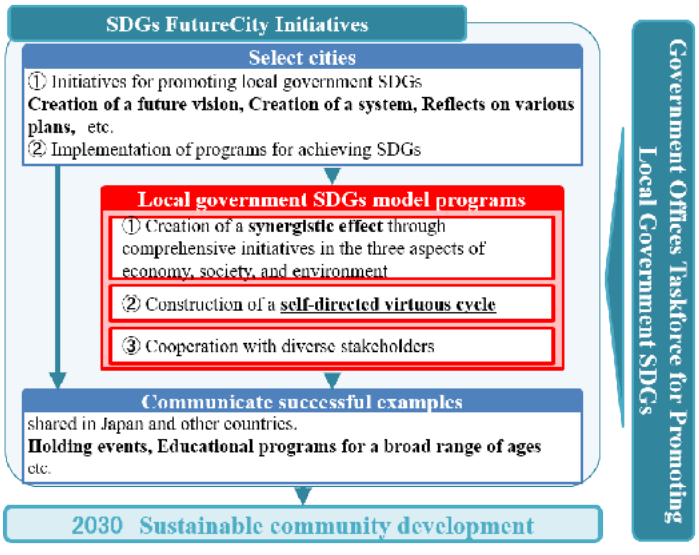
Shimokawa is an inland town located in northern Hokkaido, with a population of approximately 3,400. 88% of the town's area of 64,420 ha is covered with forest, with forestry and agriculture as its key industries.
To realize the sustainable society, Shimokawa has been developing the sustainable forestry and forest industry. Additionally, the district heat supply system of woody biomass has been implemented to many public buildings and a compact collective housing area. The benefit from the biomass boilers has been allocated to child care. Furthermore, the education program and health care program in forest are familiar to every generation.
Currently, Shimokawa proposed the sustainable community vision in 2030, which is line with the SDGs, and committed to realize integrated solutions of sustainable forestry industry, low-carbon society and super aging society. Such activities are highly recognized to receive the first Japan's SDGs award in 2017.

Contact Information
https://www.town.shimokawa.hokkaido.jp/
e-mail: k.nakano@town.shimokawa.hokkaido.jp

FutureCity Shimokawa

Promoting Local Government SDGs for Invigoration of Localities

Initiatives for achieving SDGs in local governments contribute to the realization of locality invigoration and promoting those initiatives is important.
Initiatives for achieving SDGs by local governments will be publicly sought and cities, up to approximately 30 proposing outstanding initiatives will be selected as an SDGs FutureCity and strong assistance will be provided by the Government Offices Taskforce for Promoting Local Government SDGs.
Among them, approximately 10 pioneering initiatives will be chosen as Local Government SDGs model programs and financial support provided.



Contact Information ; Cabinet Office Government of Japan
Office for Promotion of Overcoming Population,
Decline and Vitalizing Local Economy in Japan
e-mail: g.Local-governments-SDGs@cao.go.jp

Cabinet Office

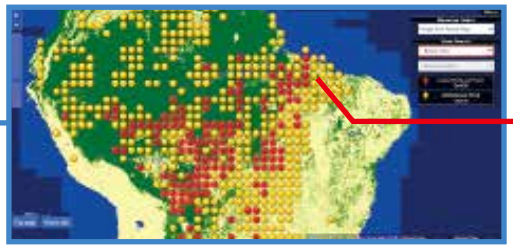
Save Tropical Forest

Broad Surface Observation in all-weather by Satellite

Manage forest sustainably using satellite data for detecting forest cover changes

JICA-JAXA **Forest Early Warning System in the Tropics (JJ-FAST)** service started from November 2016. Forest cover change area information analyzed from ALOS-2data is provided through the Web-site.
It is accessible by anyone with PCs or mobile devices easily.

Polygon data of deforested area



ALOS-2

Red;
Latest Deforest Point, Yellow;
All Deforest Point(1°×1°)

Contact Information
Japan International Cooperation Agency
Japan Aerospace Exploration Agency

Currently the information of Amazon area, Central & Southern Africa are available. The target area will be expanded to 77 countries in tropical areas in early of 2018.

2018 World Social Science Forum in Fukuoka, Japan

Sep. 25-28 2018
@ Fukuoka International Congress Center

Main theme: ***"Security and Equality for Sustainable Futures"***

In the Anthropocene, human activities are recognized to have a significant global impact on the Earth's geology and ecosystems. This in turn requires inclusive and coordinated actions to ensure security and equality for human beings. Equality is a basic human right and is built on recognition of diverse values. Security includes not just military and political security but environmental, resource and livelihood security. Security and Equality are prerequisites for stability and sustainability. Social sciences and humanities have a vital role to play in clarifying and developing principles, norms, rules and institutions to undertake actions and in participating in the dialogue among citizens and policy makers to achieve such a sense of security. This Forum seeks to create a platform for interdisciplinary and transdisciplinary research, to contribute to transformations to the sustainable world.

Contact Information
WSSF Secretariat, Kyushu University
E-mail:wssf2018@jimu.kyushu-u.ac.jp
http://www.wssf2018.org/

Building Justice, Trust and Fairness in Developing Southeast Asia

Project title:

Collaborative Research on Transitional Justice and Inclusive Economic Development in Developing ASEAN Countries
（Core-to-Core Program supported by JSPS）

This project is a medium-size study designed to explore possibility of fair and inclusive development of newly rising ASEAN countries, Cambodia, Laos and Myanmar. It aims to do so through interdisciplinary research on drastically changing political, economic and social conditions of those countries mainly through two international joint research projects and young scholar training events. As a hub of Southeast Asian studies, CSEAS expects this project to promote both broader and deeper academic exchange among scholars in ASEAN countries and Japan.

Contact Information
Center for Southeast Asian Studies, Kyoto University
https://kyoto.cseas.kyoto-u.ac.jp/

Raising Awareness of SDGs - leveraging the power of entertainment

Sony Pictures Entertainment partnered with the United Nations, UNICEF and the UN Foundation to raise awareness of the Sustainable Development Goals (SDGs).

“Small Smurfs Big Goals” campaign featured characters and talent from the upcoming movie “Smurfs: The Lost Village” who encouraged young audiences to “Join Team Smurfs” to learn that even one (small) person can help to end poverty, reduce inequality and protect our planet.

Sony Pictures Television Worldwide Networks aired Public Service Announcements over 4,000 times in 119 countries, reaching over 277 million Subscribers. **Sony Mobile Communications** launched smartphone Themes and received over 100,000 downloads in 10 days. **Sony group companies** around the world joined “Team Smurfs” to amplify the message across the globe. The campaign generated a total online reach of over 970 million.

Contact Information Sony Corporation
e-mail: Info-csr@jp.sony.com
http://www.smallsmurfsbigoals.com

Co-design future society through communicating science, technology and innovation

Science centres and science museums, as a whole field, are seeking more proactive roles and partnerships in the society for achieving the SDGs.

The second Science Centre World Summit (SCWS) was hosted by Miraikan – the National Museum of Emerging Science and Innovation in Tokyo, Japan from 15th – 17th of November, 2017. More than 800 participants including various stakeholders from outside of science center/museum attended the summit for finding strategy partners and discussing about the future collaborations to support the realization of SDGs.

As the organizer of SCWS, 6 major networks of science centers/museums agreed a new action plan called **Tokyo Protocol.** Tokyo Protocol extend the Mechelen Declaration agreed on the 1st SCWS in 2014 and encourage the science centers/museums around the world to further emphasize on the global sustainability, especially on the support of SGDs. A lot of examples of supporting SDGs can already be found in the daily activities of science centers/museums.

From November 10, 2016, science centers/museums, and their networks worldwide started to celebrate the **International Science Center and Science Museum Day (ISCSMD)** on the occasion of the World Science Day for Peace and Development in partnership with (UNESCO). On that day, science centers/museums around the world take a common action to offer a specific citizen science activities based on one (or more) of the 17 SDG goals. For example, the activity on ISCSMD of 2017 is a global investigation and mapping of mosquito habitats by a mobile-device app through collaboration with NASA.

More information about the ISCSMD and activities for supporting SDGs in the science center/museums around the world can be found in its website: http://www.iscsmd.org

Tokyo Protocol;
With Actions Set Forth:
The Parties to this Protocol will endeavour to –

1. Give priority consideration to the importance and urgency of expanding public awareness of, and engagement in actions that help achieve the SDGs;
2. Undertake actions relevant and appropriate to local communities with consideration for the SDGs;
3. Serve as platforms for discourse and exchange among all diverse actors in society on these critical issues - bridging ideas, cultures, and views, whether they are founded in indigenous knowledge and long-standing traditions or fashioned in the rapid pace of global change;
4. Establish new and strengthen existing partnerships and collaborations with other organisations and entities that share the commitment of science centres and science museums to raise public awareness and engagement toward timely success in achieving the SDGs;
5. Embrace and incorporate the contributions of technological innovation as tools to more effectively engage the public in these topics;
6. Serve as trusted links and valued communicators of both the progress being made and the challenges encountered by the scientific research community worldwide in contributing to the achievement of the SDGs;
7. Support advancement in the number, capabilities and efforts of science centres and science museums everywhere to achieve progress in meeting the SDGs;
8. Accept the responsibility to serve as catalysts for better understanding and coordinated actions within communities throughout the world by stimulating tolerance and critical thinking, distinguishing fact from belief, reinforcing the imperative for evidence-based decision-making, and inspiring a new generation to view the SDGs as foundations on which to grow a better world;
9. Support the organisation of collective worldwide public STEM activities, wherever possible, to include observance of an annual international science centre and science museum day, consistent with intent of action item #7 of the Mechelen Declaration, but modifying in scope from an international year to an annual international day.

Contact Information
Miraikan – The National Museum of Emerging Science and Innovation
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SCWS 2017

Japan: Taking Action for Sustainable Development

© OKINAWA INTERNATIONAL MOVIE FESTIVAL

What are the bold actions being taken by the private sector to achieve the Sustainable Development Goals in Japan

Gender equality is not only a fundamental human right, but a necessary foundation for peaceful, prosperous and sustainable world. Japan uses comedy as a means of promoting the importance of gender equality for achieving sustainable development.

Yoshimoto Kogyo, Japan's comedy-entertainment giant has joined forces with the United Nations Information Centre (UNIC) in Tokyo, to promote the importance of the 17 Sustainable Development Goals (SDGs). In March 2017, Yoshimoto Kogyo and UNIC Tokyo jointly organised an online campaign for International Women's Day under the new partnership. Several popular female comedians from Yoshimoto Kogyo shared their messages on gender equality with the Japanese public through websites and social media platforms showing solidarity with all women around the world. Their messages, based on their own experiences, deeply resonated with the Japanese public.

Led by Yoshimoto Kogyo, the partnership also expanded to the Okinawa International Movie Festival in April 2017 to raise public awareness of the SDGs.

Contact Information
un.org/sustainabledevelopment
/Facebook：GlobalGoalsUN　　twitter：GlobalGoalsUN

I believe that the purpose of every profession is to make the people we love happy. In other words, we all work for the well-being of people in Japan and across the world. As the saying goes, 'laughter brings forgiveness, and forgiveness brings laughter.' When there is laughter, we can muster the strength to bring happiness to others. By being involved in an activity to promote the SDGs, we wish to help inspire and create hope for the future with what little we can do as comedians and entertainers. We are committed to advancing the efforts toward actualising a global society filled with laughter.

Hiroshi Osaki
President and CEO
Yoshimoto Kogyo

Laughter can open up people's minds. Comedy and entertainment can break barriers. We really appreciate this great partnership with the creative community in the spirit of partnership crystallized in Goal 17.

Kaoru Nemoto
Director
UNIC Tokyo

Mr. Hiroshi Osaki, President and CEO of Yoshimoto Kogyo
© OKINAWA INTERNATIONAL MOVIE FESTIVAL

SDGs Implementation Guiding Principles (Government of Japan)

Japan is committed to make every effort both domestically and internationally to achieve SDGs. To this end, Japan has established the “SDGs Promotion Headquarters” that is led by Prime Minister Abe and consists of all Ministers, as well as the “SDGs Promotion Roundtable Meeting” as a multi-stakeholder framework in May 2016.

The SDGs Promotion Headquarters headed adopted the **SDGs Implementation Guiding Principles** on December 22, 2016.

Source: Official Website of the Prime Minister of Japan and His Cabinet

SDGs Implementation Guiding Principles

"Japan has established the following vision: “Become a leader toward a future where economic, social and environmental improvements are attained in an integrated, sustainable and resilient manner while leaving no one behind.”"

The Outline of the SDGs Implementation Guiding Principles (provisional translation)

- Vision: Set out a vision for Japan to be the champion of sustainable and resilient society in which “ no one is left behind.” Japan intends to be a leader in creating a better future, in which the three dimensions of sustainable development, namely, economic, social, and environmental are improved in an integrated manner.
- Implementation Principles: (1)Universality, (2)Inclusiveness, (3)Participatory, (4)Integration, (5)Transparency and Accountability
- Follow-up cycle: Expected to conduct a first follow-up by 2019

【Eight Priority Areas and Policies】

(1) Empowerment of All People

■Realization of Dynamic Engagement of All Citizens ■Promotion of Women’s Role in Society ■Measures against Child Poverty ■Assistance to People with disabilities for Social Participation and Self-reliance ■Promotion of Quality Education

(2) Achievement of Good Health and Longevity

■Measures against Antimicrobial Resistance ■Enhancing Developing Countries’ Health Sector and Improving Their Public Health and Measures against Infectious Diseases ■Tackling the Issues Associated with Aging Populations in Asia

(3) Creating Growth Market, Revitalization of Rural Areas, and Promoting Technological Innovation

■Creating Markets with Potentials ■Revitalizing Villages around Seas, Mountains, and Farmlands ■Improving Productivity ■Science and Technology Innovation ■Sustainable City

(4) Sustainable and Resilient Land Use, Promoting Quality Infrastructure

■Creating Resilient Land and Promoting Disaster Risk Reduction ■Water Resource Development and Measures on Water Circulation ■Promoting Quality Infrastructure Investment

(5) Energy Conservation, Renewable Energy, Climate Change Measures, and Sound Material-Cycle Society

■Introduction and Promotion of Renewable Energy ■Measures against Climate Change ■Establishing Recycling-based Society

(6) Conservation of Environment, including Biodiversity, Forests and Oceans

■Measures against Environmental Pollution ■Biodiversity Conservation ■Sustainable Use of Forest, the Oceans, and Land Resources

(7) Achieving Peaceful, Safe and Secure Societies

■Tackling Organized Crime, Human Trafficking, and Child Abuse ■Peacebuilding and Assistance for Reconstruction ■Promotion of the Rule of Law

(8) Strengthening the Means and Frameworks of the Implementation of the SDGs

■Multi-Stakeholder Partnership ■Mainstreaming SDGs in International Cooperation ■Assisting Developing Countries to implement SDGs

Contact Information
SDGs Promotion Headquaters
http://www.kantei.go.jp/jp/singi/sdgs/dai2/siryou1e.pdf

The outcome of the SDGs Promotion Headquarters
(4th meeting)　(Government of Japan)

The Headquarters formulated the "SDGs Implementation Guiding Principles" and created the **"Japan SDGs Award"** at its past meetings, and has just held its forth meeting on Dec. 26, 2017 with the following outcomes.

1. Core message of the meeting: Realize a rich and vibrant future through promoting the SDGs

- Japan intends to lead the promotion of the SDGs in the international community, building upon its strength in traditional wisdom, cutting-edge technologies and information as well as its conviction not to leave anyone behind. Especially, Japan will take initiative to demonstrate how to realize a rich and vibrant future amid of globalization and population aging as Japan's SDGs Model.
- The Government of Japan (GoJ) aims to communicate and outreach such SDGs Model to the world, taking the opportunities of hosting the G20 and Tokyo International Conference on African Development (TICAD) in 2019, the Tokyo Olympic and Paralympic Games in 2020 and others where Japan is expected to lead global agenda.
- At the Meeting, the Headquarters decided **"SDGs Action Plan 2018"** that includes the basic directions of Japan's SDGs Model and its major efforts that are mostly with their respective draft budgets and categorized by the eight priority areas of the SDGs Guiding Principles. Prime Minister Abe instructed all Ministers to steadily implement the Action Plan and to strengthen and expand their respective efforts by mid-2018.

2. Decide the three basic directions of Japan's SDGs Model

Source: Official Website of the Prime Minister of Japan and His Cabinet

(1) Promotion of Society 5.0 that corresponds to SDGs

Fully support the implementation of the revised Charter of Corporate Behaviors by the Japan Business Federation (Keidanren) that commits to the SDGs through promoting the Society 5.0.

e.g:

- Promote Society 5.0 and "Productivity Revolution" (that tries to materialize Society 5.0 with IoT, Big Data and AI) in order to respond to any challenges related to the SDGs.
- By mid-2018, will come up with concrete measures to support private companies who engage in the SDGs not only as a part of its CSR activities but also as its core business strategy. (e.g.: launching an initiative to promote the SDGs management including newly creating support for start-ups and drafting an international roadmap to promote "STI for the SDGs")

(2) Regional vitalization driven by the SDGs

Promote the SDGs in local areas making the most of their unique needs and strengths, and thereby vitalize local areas and create resilient, environmental-friendly and attractive communities.

e.g:

- Newly create a project "SDGs Models of Local Governments" through which the entire central government will intensively support selected local governments in their SDGs implementation, and then expand success and lessons learnt to other local governments.
- Raise awareness towards the SDGs and promote its implementation through preparing for the Tokyo Olympic and Paralympic Games and bidding for 2025 Expo.

(3) Empower next generations and women

Empower next generations who have rich creative and communication skills and women who are the SDGs goal.

e.g:

- Promote steadily the "work-style reform," women's active role and "a revolution in human resources development," all of which are the priority agenda for the Abe Administration.
- Foster next-generation leaders for implementing the SDGs through education.
- Based on the concept of Human Security, promote international cooperation in the major areas of the SDGs such as health (including Universal Health Coverage (UHC) which Japan takes initiative in) as well as gender, education and disaster risk reduction.

Contact Information
SDGs Promotion Headquaters　https://www.kantei.go.jp/jp/singi/sdgs/

The Results of the 1st Japan SDGs Award

<Outline>

- Companies, local governments and CSOs making outstanding efforts, either domestically or internationally, to achieve SDGs are eligible for the Award.
- The SDGs Promotion Headquarters decided award winners based on the opinions of a wide-range of stakeholders who have expertise in the SDGs.
- Selection criteria are universality, inclusiveness, participation, integration, and transparency and accountability, which are the main principles of the "SDGs Implementation Guidelines" stipulated by the Headquarters.
- The Award ceremony took place at the Prime Minister's Office on Dec. 26, 2017.

The UN Secretary-General's Message to the Award ceremony

In the message, the UNSG

- commended the Government of Japan for creating this award to raise awareness of the SDGs
- extended his congratulations to the winners of this year's SDG awards, having the initiative to become agents of change in their communities.

<Winners>

Chief's Award (by Prime Minister)

- Shimokawa-town, Hokkaido (Successfully realizing regional vitalization through the SDGs)

Deputy-chiefs' Award (by Chief Cabinet Secretary)

- NPO Shinsei (Supporting the employment of those with disabilities in the disaster-affected areas)
- Palsystem Consumers' Co-operative Union (Promoting ethical purchase and consumption)
- Kanazawa Institute of Technology (Fostering SDGs young leaders with concrete projects)

Source: Official Website of the Prime Minister of Japan and His Cabinet

Deputy-chiefs' Award (by Foreign Minister)

- Saraya.Co.Ltd (Promoting hand-washing campaign to improve health in developing countries)
- Sumitomo Chemical Co., Ltd. (Addressing infectious diseases with their cutting-edge mosquito net)

Special Award (SDGs Partnership Award)

- Yoshimoto Kogyo Co.,Ltd. (Raising domestic awareness of the SDGs through entertainment)
- ITO EN. LTD. (Making their entire tea-making value chain sustainable)
- Yanagawa Elementary School, Koto-ku, Tokyo (Leading education for sustainable development (ESD))
- Okayama University (Aligning its entire educational program with the SDGs)
- JOICFP (Comprehensively supporting maternal and child health in developing countries)
- Kitakyushu-city, Fukuoka (Supporting cities in developing countries to be more environmental friendly)

Contact Information
SDGs Promotion Headquaters
https://www.kantei.go.jp/jp/singi/sdgs/

Japan. Committed to SDGs

Recommendation for the Future“STI as a Bridging Force to Provide Solutions for Global Issues”

Four Actions of Science and Technology Diplomacy to Implement the SDGs

On May 12, Professor Teruo Kishi, Science and Technology Advisor to the Minister for Foreign Affairs, presented the "Recommendation for the Future (STI as a Bridging Force to Provide Solutions for Global Issues: Four Actions of Science and Technology Diplomacy to Implement the SDGs) (PDF) " to the Minister for Foreign Affairs Mr. Fumio Kishida.

- This recommendation aims to clarify what contributions Japan should make to the achievement of the Sustainable Development Goals (SDGs) through science, technology and innovation (STI) (“STI for SDGs”) in its future international cooperation.
- STI can contribute to the implementation of the SDGs as a deciding factor for making the best use of the limited resources.

<Four Actions to Mobilize “STI for SDGs”>

1. Change through Innovation: Global Future Creation through Society 5.0

By creating innovation with developing countries with the vision of Society 5.0 in mind, Japan can play a part in the achievement of the SDGs. Under this vision, Japan should contribute to the achievement of the SDGs in carrying out international cooperation.

2. Grasp and Solve: Solution Enabled by Global Data

Observation data covering from the oceans to space and Japan’s big data system, DIAS, enable solving issues. Cooperative actions taken through international frameworks, including the Group on Earth Observations (GEO), IOC-UNESCO and G7, should be promoted further so that the “treasure trove” of observation data can be utilized globally in order to achieve the SDGs. In development cooperation, too, it is important to further promote the provision of solutions for the SDGs based on global data.

3. Link across Sectors, Unite across the Globe

The key is how to promote social changes through conducting R&D based on local needs and putting into practice and commercializing (scaling up) the achieved results. To this end, it is important to promote co-design, co-production and co-delivery between different sectors. Also important is as follows: cooperation with developed, emerging and developing countries in consideration of their different positions, collaboration with international development banks, and supporting cooperative activities through international organizations/forums (UN, G7, G20, etc.).On the diplomatic front, too, it is important to promote co-design and co-delivery with a view to promoting new public-private partnerships at the global level by linking and uniting diverse actors and countries/regions as well as sharing Japan’s experiences such as those under the Science and Technology Research Partnership for Sustainable Development (SATREPS) with the world.

4. Foster Human Resources for “STI for SDGs”

Assisting human resources development essential to promoting and disseminating technologies in a manner fortifying the sustainability of developing countries themselves is one of Japan’s fortes. The role of science communicators and ensuring gender balance are also important. Japan should make it a major policy pillar to continue to foster human resources for “STI for SDGs” both at home and abroad.

*This recommendation is a product of the Advisory Board for Promotion of Science and Technology Diplomacy, chaired by the Science and Technology Advisor to the Minister for Foreign Affairs of Japan.

Reference
http://www.mofa.go.jp/press/release/press3e_000105.html

Revision of the Charter of Corporate Behavior

-Delivering on the SDGs through the Realization of Society 5.0*-

Keidanren (Japan Business Federation) has always advocated that, to build an affluent and vibrant society led by the private sector under a fair and free market economy, corporations must behave with a strong sense of ethical values and responsibility and gain trust and rapport from the public. To this end, Keidanren established its Charter of Corporate Behavior in 1991, in which it has laid down the principles for responsible behavior by corporations.

In recent years, corporations are being urged to engage proactively in resolving social issues as members of society with the adoption of the Guiding Principles on Business and Human Rights (2011) and the Paris Agreement (2015). Further, in 2015, the United Nations adopted the Sustainable Development Goals (SDGs) as internationally agreed goals for realizing a sustainable society, and the private sector is being called on to exercise creativity and innovation to deliver on those goals.

In light of these developments, Keidanren is aiming for the realization of Society 5.0, a future society in which IoT, AI, robots, and other innovative technologies will be used to maximum effect for the optimization of individual lives and of society as a whole. In this future society, economic growth will become consistent with solutions to global and local challenges such as health and medical care, agriculture and food, the environment and climate change, energy, safety and disaster prevention, human and gender equality, and a society will be realized in which each and every individual can lead a comfortable life that is full of vitality. The creation of such a society is also in line with the principles of the SDGs of the United Nations.

To this end, Keidanren revised its Charter of Corporate Behavior with the primary aim of proactively delivering on the SDGs through the realization of Society 5.0 on November 8, 2017.

The ten principles of the charter are as follows:

1. Sustainable economic growth and the resolution of social issues
2. Fair business practice
3. Fair disclosure of information and constructive dialogue with stakeholders
4. Respect for human rights
5. Relationships of trust with consumers and customers
6. Reform of work practices and enhancement of workplace environments
7. Engagement in environmental issues
8. Involvement in community and contribution to its development
9. Thorough crisis management
10. Role of top management and implementation of this Charter

*The fifth and newest society in the history of human social development, following on from the hunter-gatherer society, agrarian society, industrial society, and information society.

Contact Information
http://www.keidanren.or.jp/en/policy/csr/charter2017.html

Keidanren
Policy & Action

Advancing SDGs is the main theme of the 2025 Expo proposed by Japan

Main Theme: **Designing Future Society for Our Lives**

Subthemes: How to Lead a Healthy life in a Diverse Manner
Sustainable Socioeconomic Systems

OSAKA-KANSAI-JAPAN
EXPO2025

World Expo 2025 Candidate

Outline

1. Location:
Yumeshima Island, Osaka, Japan

2. Duration:
May 3-November 3, 2025 (185 days)

* Four countries are now the candidates for 2025 Expo, and the final decision will be made in November 2018, by the votes of 170 countries. To win the nomination, Japan has planned to attract 400 thousands supporters world wide. Please join us!

A video speech by Prime Minister Abe at Bureau International des Expositions

Contact Information
http://www.expo2025-osaka-japan.jp/recruit-ind

Global Compact Network Japan: Industrial Transformation

Global Compact Network Japan (GCNJ) aims to promote the UN Global Compact's Ten Principles and the Sustainable Development Goals (SDGs) and encourage further efforts to strengthen corporate social responsibility in order to achieve an inclusive society in Japan.

GCNJ: SDGs Task Force

Launched to play a leading role in the holistic ecosystem, where not only private sectors but also other stakeholders collaborate each other for achieving "no one behind" of the SDGs

Global Compact Network Japan
グローバル・コンパクト・ネットワーク・ジャパン

Contact Information
Global Compact Network Japan
https://www.unglobalcompact.org/engage-locally/asia/japan

SHIP: SDGs Holistic Innovation Platform

Open innovation platform connecting corporate know-how and technologies with SDGs

SHIP is co-hosted by Japan Innovation Network (JIN) and the United Nations Development Programme (UNDP), that sees innovation opportunities in achieving SDGs and aims to solve SDGs-related issues and challenges with corporate know-how and technologies.

The platform forms SHIP Ecosystem consisting of corporations, governments, international organizations, financial institutions, start-ups, NGOs, academia and specialists from all over the world. Through workshops and SHIP Digital Platform which accumulates SDGs-related issues globally, SHIP assists its member corporations to develop innovative and profitable business models that contribute to the achievement of SDGs.

Contact Information
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United Nations Development Programme (UNDP)
Representation Office in Tokyo
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www.sdgs-ship.com/en

SDGs Japan

Japan Civil Society Network on SDGs (SDGs Japan) is a non-government organization carrying out the following efforts to accelerate the implementation of the SDGs in Japan.

- Activities towards the formulation of the Government "SDGs Promotion Guidelines"
  SDGs Japan participates in the SDGs Promotion Roundtable Conference under the SDGs Promotion Headquarters for the formulation of guidelines.Gathered voices of a wide range of Japanese NGOs / NPOs, SDGs Japan deliver such voices to the government.
- Work to build broad cooperation and cooperation toward SDGs promotion
  In order to create a broad cooperation and collaboration for achieving the SDGs in Japan, we are working on various sectors such as experts, trade unions, local governments, cooperatives, etc.
- Outreach to let more people know about the SDGs
  SDGs are not well known in Japan. We are putting lots of efforts to enhance the awareness and the support from citizen by letting then know about the SDGs.

JAPAN CIVIL SOCIETY NETWORK ON SDGs
SDGs 市民社会ネットワーク

Facebook;
https://www.facebook.com/Letters.from.SDGs.Summit/

United Nations University

UNU OVERVIEW:
- Global think tank for impartial research on the major issues facing mankind. We generate knowledge that creates solutions and makes a difference.
- 15+ institutes and programmes worldwide, coordinated by UNU Centre in Tokyo.

UNU WORK:
- Our research focus areas align with all 17 SDGs.
- In the 17 days leading up to the UN SDG Summit, UNU experts authored articles exploring the issues and realities underlying each of the 17 SDGs.

17 Days, 17 Goals
Research Commentary on the SDGs

THE GLOBAL GOALS
For Sustainable Development

Contact Information
Office of Communications, United Nations University — Tokyo, Japan
email: oc@unu.edu
URL: unu.edu/globalgoals

UNITED NATIONS UNIVERSITY

Policy-oriented research and capacity development on sustainability

UNU-IAS (Institute for the Advanced Study of Sustainability) research and policy engagement includes a focus on governance structures for effective implementation of the SDGs. It also promotes the integration of science–policy interfaces in policymaking for the SDGs, with a particular focus on global processes for follow-up and review, as well as assessment of the agenda.

SDGDIALOGUE
SHARING IDEAS & INSIGHTS FOR ACHIEVING THE GLOBAL GOALS

20 April 2017
Global Companies & the 2030 Agenda

28 October 2016
A Sustainable Future for Africa

17 October 2016
Resilience within Water Systems: The Quest for Strategies and Innovations in the Anthropocene

13 October 2016
Regional Institutions & the SDGs: Science, Policy & Capacity Building

Contact Information
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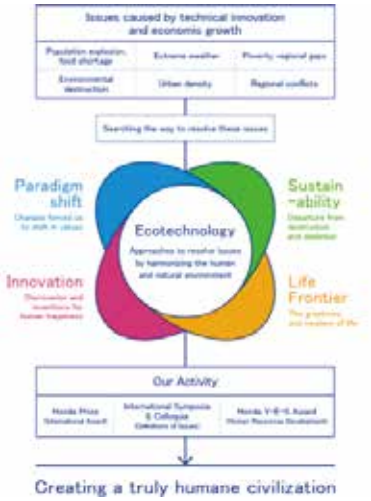
Contributing towards the creation of a truly humane civilization by enlightening on the concept of Ecotechnology



Honda Prize: Recognition of excellence across diverse fields regardless of nationality

It is an international award that acknowledges the efforts of an individual or group who contribute new ideas which may lead the next generation in the field of ecotechnology and add more value into people's life. Honda Foundation gives one award every year for a variety of research results.

International Symposia & Colloquia: A place for In-depth Discussions and a Gathering of Intellects

It is held for extensive discussions into various issues of modern society in order to search the way of resolution. We visit various countries with Japanese scientists in order to create a platform for discussing the issues facing in that country.

Honda Y-E-S Program: Presenting Infinite Potential to the Next Generation

We execute various programs for young talented scientists and engineers in five countries of Southeast Asia to aim at the development of human resources to inherit and promote dissemination of ecotechnology. Thirty-two students are selected each year and given the opportunity to pursue higher degree in Japan.

Y-E-S Forum

Started in 2015 to further promote the Honda Y-E-S Award program to contribute to the skill development and network enhancement

Purpose

1. Y-E-S Awardees to interact with each other as well as with Japanese students
2. Provide opportunity to meet with academic experts and researchers in Japan
3. Provide impact and feedback to their countries
4. Nurture the young scientists and engineers of Asia

Y-E-S Awardees to examine solutions to the issues that modern society faces, from their perspective as young scientist and engineers.
They implement the Forum from setting up the theme to every single items like contents details, designing the brochure and program, and so on.

Honda Y-E-S Forum 2016
Theme: "Achieving Energy Security through Ecotechnology"

Contents
- Presentation by the Y-E-S Awardees
- Presentation by the Y-E-S Awardees Specialized in Energy
- Industrial Exhibition
- Keynote Speeches
- Panel Discussion
- Research Poster Contest

< What is Honda Y-E-S Award? >

The Honda Foundation started the Honda Y-E-S (Honda Young Engineer and Scientist's) Award program to foster future leaders of science and technology fields in 2006 in Vietnam. It is now implemented in 5 countries, adding India, Cambodia, Laos and Myanmar, and many awardees come to study in Japan.

Contact Information Honda Foundation
6-20, Yaesu 2-chome, Chuo-ku, Tokyo 104-0028 Japan,
E-mail: h_info@hondafoundation.jp
http://www.hondafoundation.jp

公益財団法人 本田財団
HONDA FOUNDATION

Conducting Research for the Future and Happiness of Mankind

- Presenting our "findings" to the World, From Japan, from IIAS -

- Fundamental Philosophy

Humanity is currently facing many challenges posed by a range of factors that threaten our continued existence. It is not clear whether we or future generations can go on living on this planet in the same way and with the same values that we have held up to now.

Following its fundamental philosophy of "conducting research for the future and happiness of mankind," IIAS undertakes fundamental research into various problems such as how to address the issues facing the global society and what role and function should culture, science and technology have in the 21st century.

Research Activities-Key Programs-
Since its founding, we, IIAS, has been actively engaged in various research projects aimed at creating a sustainable society.

-Science and Technology in Consideration of the Global Community in the Future
-The Necessity and Measures of Building a Circular, Steady-State Economic Society
-Measures for a Peaceful Coexistence of States and Societies with Differing Values
-Advisory Panel on the Future of "Keihanna"(the Keihanna Science City: officially known as the Kansai Science City)
and more

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e-mail: kouhou@iias.or.jp

Future Earth:

Sustainable Development Goals Knowledge Action Network (SDG KAN)

SDG KAN * - Enhancing the contribution of research in achieving the SDGs
*KAN – Key device to materialize solution-oriented research

SynLink SDGs

(5-7 March 2017 in New York)
Research and Action Framework for Synergistic Natural and Institutional Linkages between the SDG Targets

This symposium aims to develop a research and action framework for securing effective implementation of actions to attain the SDG targets that are related to solving a problem in a sustainable manner. 20 researchers + 20 stakeholders (UN Secretariat, UN regional office, Government officials, WRI, UNEP, etc.) participated.

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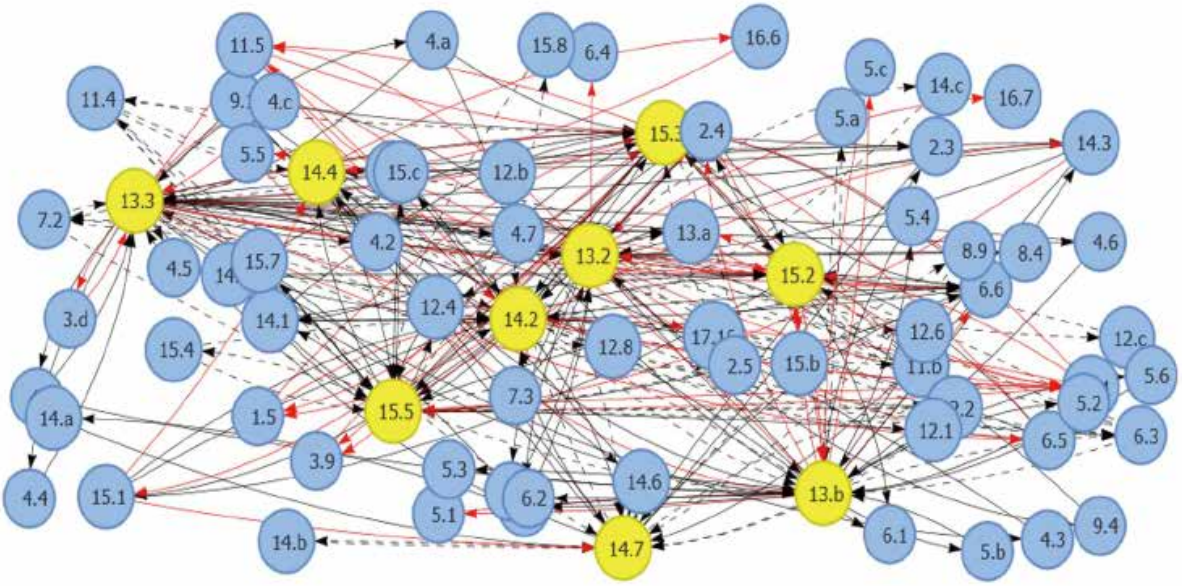
IGES SDG Interlinkages and Data Visualisation Web Tool

17 SDGs and 169 targets inherently connect with each other forming an indivisible network from a systemic perspective. Understanding the interlinkages between SDG targets is an essential prerequisite for practising policy integration which helps minimise conflicts, avoid trade-offs and seek synergies for making achievements inclusively across all 17 SDG areas.

The Strategic and Quantitative Analysis Centre of the Institute for Global Environmental Strategies (IGES) developed the SDG Interlinkages and Data Visualisation Web Tool (Version 1.0) as a practical tool supporting SDG integration and policy coherence.

The web tool, available online for free allows the users to visualise the interlinkages between SDG targets, explore and download indicator-level data for nine Asian countries (Bangladesh, Cambodia, China, India, Indonesia, Japan, Korea, the Philippines and Viet Nam), and compare performance over time.

https://sdginterlinkages.iges.jp/



Contact Information
Strategic and Quantitative Analysis Centre (QAC), IGES
E-mail: qac-info@iges.or.jp
https://sdginterlinkages.iges.jp/

List of Japan's Practices for Implementing SDGs

	Ajinomoto Co., Inc./ The Ajinomoto Foundation	Daiichi Sankyo Co., Ltd.	Daiwa Securities Group Inc.	Fujitsu Limited	Fuji Xerox Co., Ltd.	Hewlett-Packard Enterprise (HPE) Japan	Hitachi, Ltd.	Japan Food Ecology Center, Inc. (J.FEC)	KAJIMA CORPORATION	Kao Corporation	Mitsubishi Chemical Corporation	
1					P18							1
2	**P7**											2
3		**P11**				**P13**						3
4			**P18**		**P18**							4
5												5
6							**P22**					6
7												7
8												8
9						P13					P36	9
10						P13						10
11				**P33**					**P37**		**P36**	11
12	P47				**P38**			**P38**		**P39**	**P40**	12
13	**P44**									P39		13
14	P44 **P47**											14
15											P40	15
16												16
17	P44 P47			P33		P13						17

These are examples of the Japan's practices that could contribute to the implementation of SDGs.

List of Japan's Practices for Implementing SDGs

	Mitsubishi Electric Corporation	NIKKEN KOGAKU Co.,Ltd	SHIMIZU CORPORATION	Sompo Holdings, Inc.	Sony Corporation	Sumitomo Chemical Company, Limited	Taisei Corporation	Taiyo Nippon Sanso Corporation	Azaone Camp	Institute for Global Environmental Strategies (IGES)
1										
2				**P6**						
3						**P11**				
4					**P19**				P50	
5					P19					
6									P50	
7	P46						P37	P43		
8										
9	**P31**				P19					
10			P49							
11	**P32**		P49				**P37**			**P34**
12	**P41** P31									
13	**P46**	**P44**	P49					**P43**		
14		P44	**P49**							
15									**P50**	
16										
17		P44			**P53**					

**These are examples of the Japan's practices that could contribute to achievement of SDGs.*

	Shimokawa City	Tokyo Metropolitan Government(TMG)	Ministry of Education, Culture, Sports, Science and Technology (MEXT)	SIP (Cross-ministerial Strategic Innovation Promotion Program)	Hokkaido University	Kyoto University	Kyushu University	Nagasaki University	Okayama University	Osaka University	Tokyo Institute of Technology	
1												1
2			P42									2
3			P42		**P12**	**P15** **P16**		**P12**		**P14**		3
4									**P17**			4
5												5
6			P42									6
7		P45	**P27** P42	**P25** **P30**		**P24**	**P24** **P29**				**P27** **P28** **P29**	7
8	P51			P25								8
9		P40 P45	P27	P25 P35		P15						9
10												10
11	P51	P40 P45 P50	P42	**P35**				P12				11
12		**P40** P50										12
13	P51	P40 **P45**	P27 **P45** **P42**									13
14		**P50**	P42									14
15	**P51**	P40										15
16						**P53**						16
17												17

***There are more practices that could contribute to the achievement of the SDGs.**

List of Japan's Practices for Implementing SDGs

	The University of Tokyo	Tohoku University	Tokushima University	National Institute of Advanced Industrial Science and Technology (AIST)	National Institute of Biomedical Innovation, Health and Nutrition(NIBIOHN)	National Institute for Materials Science (NIMS)	National Research Institute for Earth Science and Disaster Resilience (NIED)	National Institute for Environmental Studies (NIES)	New Energy and Industrial Technology Development Organization (NEDO)	Japan Agency for Marine-Earth Science and Technology (JAMSTEC)	
1	P26										1
2								**P7**			2
3				**P13**	**P14**	**P15**		P7			3
4	P26										4
5											5
6						**P23**					6
7	**P26**			**P26**		**P23**	P46				7
8											8
9						P39	P33		P36		9
10											10
11		**P33**				**P34**	**P33**		**P36**		11
12						**P39**					12
13			**P44**			**P43**	**P46**	**P44**			13
14			P44							**P47** **P48**	14
15											15
16											16
17		P33	P44								17

**These are examples of the Japan's practices that could contribute to achievement of SDGs.*

	Japan Aerospace Exploration Agency (JAXA)	Japan International Cooperation Agency (JICA)	Japan International Research Center for Agricultural Sciences(JIRCAS)	Japan Agency for Medical Research and Development (AMED)	Center for Sustainable Resource Science (CSRS) , RIKEN	JSPS/ World Premier International Research Center Initiative(WPI)	Japan Society for the Promotion of Science (JSPS)	MIRAIKAN (National Museum of Emerging Science and Innovation)	MEXT/JST/ COI STREAM Program	Japan Science and Technology Agency (JST)	JST/AMED/JICA SATREPS	
1										**P4**		1
2	**P6**	**P6**	**P9 P10**		**P8**						**P5 P9**	2
3		**P12**	P10	**P12**		**P14 P15 P16**					**P12** P22	3
4							**P17**					4
5										**P20**		5
6	P35					**P23**			**P21**		**P22**	6
7					P8	**P23 P24 P29**				**P28**		7
8												8
9						P15 P39			P21	P28	**P31**	9
10												10
11	**P35**	P12				**P34**			P21		P12 P22 P31	11
12						**P39**						12
13	P35					**P43**				P28		13
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15	**P52**	**P52**			P8							15
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There are more practices that could contribute to the achievement of the SDGs.

Sustainable development goals - United Nations
URL: http://www.un.org/sustainabledevelopment/sustainable-development-goals/
Communications materials - United Nations Sustainable Development
URL: http://www.un.org/sustainabledevelopment/news/communications-material/

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