

About JST

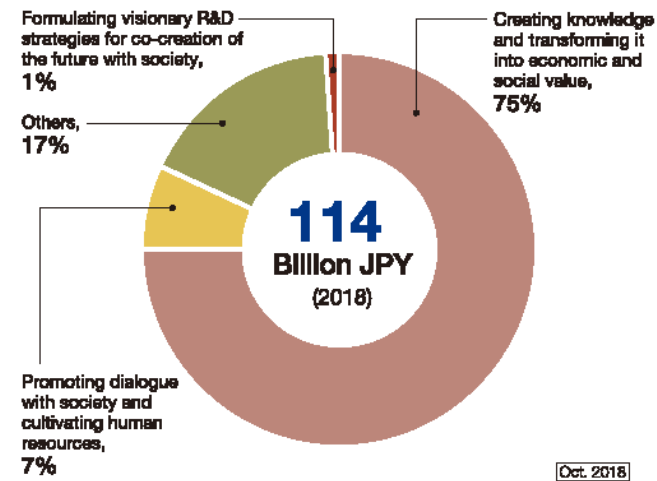
(Japan Science and Technology Agency)



JST, an advanced network-based research institute that promotes the state-of-the-art R&D projects, boldly leads the way for creation of innovation for tomorrow's world together with society.

JST contributes to the SDGs.

- Founded in 1998
- Number of employees 1,251 (2018)
- Budget



SUSTAINABLE DEVELOPMENT GOALS



Operations

JST formulates plans and promotes various programs based on goals established by the Government of Japan.

Formulating visionary R&D strategies for co-creation of the future with society



Through dialogue with various stakeholders and objective analysis of data, JST formulates research and development strategies with a view to the future.

124 Number of Proposals for STI policies from JST (2004-2017)

STI for SDGs — JST's Initiatives to achieve the Sustainable Development Goals —

As JST promotes not only research and development (R&D) but also plans R&D strategies as well as enhances science communication, science education and open data, we are taking inclusive initiatives nationally and internationally for achieving the SDGs.



Michiaki HAMAGUCHI, President of JST giving a speech at expert group meeting of STI for SDGs Roadmap in May 2018

Creating knowledge and transforming it into economic and social value



Promotion of research and development



Establishment of a system with a positive cycle for capital, knowledge, and human resources



Promotion of internationalization



Strengthening of information infrastructure



Promotion of Impulsing paradigm change through disruptive technologies

As a network-based research institute, JST takes the initiative to promote research and development activities linked to innovation, and tackles economic and social issues through the practical application of its research output as well as international collaborative research.

Creating Knowledge

307

Number of Projects (2017)

16.05*

Number of Citations for a Paper (2017)
* Aggregated data based on Scopus, targeting for papers published in the past 5 years (Average of Japan) 6.65

Database

45 million

Number of Research Articles Recorded (J-GLOBAL) (-2017)

2,584

Number of Hosted Electronic Journals published by 1,348 Japanese academic societies (-2017)

Transforming into Economic and Social Value

265

Number of Projects (2017)

3,604

JST's Patents in the world (2017)

10 billion

Attracting Private-Sector Funding (2017)

75

Number of JST's Patent Application (2017)

Promoting dialogue with society and cultivating human resources



Dialogue and cooperation with society



Cultivation of next-generation human resources



Cultivation of human resources who can contribute to the creation of innovation

To develop and secure human resources and promote their active roles in SAT fields, JST is implementing the programs for developing post doctorate, young researchers, program manager candidates and children, who will lead the next generation.

203

Number of Designated High Schools focusing on STEM education supported by JST (2017)

6,611

Number of Students in International Exchange Programs (SAKURA Exchange Program in Science) (2017)

1.4 million

Visitors for Mirakan -The National Museum of Emerging Science and Innovation (2017)

179,433

Number of Students Participating in JST's operations (2017)

JST's Contribution for the SDGs through Science, Technology and Innovation (STI)

JST's Basic Policies to Harness STI for the Achievement of the SDGs (STI for SDGs)

JST set the following three pillars as its action plans for playing a leading role in harnessing STI for the SDGs in Japan and for promoting the establishment of a robust innovation ecosystem to co-create the future society in Japan and across the world.

- 1) Promoting public awareness of and advocating the importance of "STI for SDGs" (SDGs for all, STI for all)
- 2) Implementation of programs contributing to the achievement of the SDGs (STI for SDGs)
- 3) Operating programs from "STI for SDGs" perspectives (SDGs for STI)



1 NO POVERTY Transdisciplinary Research and Practice Partnering with Vulnerable People Under Poverty

The project promotes integrated research to produce and implement knowledge and skills contributing to end poverty through transdisciplinary collaborations of researchers from multiple fields and vulnerable people under poverty in Asia and Africa. This goal is achieved by extracting challenges facing people under poverty and visualizing innovative wisdom and ideas they create in their everyday life.



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.

Future Earth

- Research Project: Transdisciplinary Study of Natural Resource Management under Poverty Conditions Collaborating with Vulnerable Sectors
- Principal Investigator: Tetsu Sato, Professor, Faculty of Collaborative Regional Innovation Ehime University
- http://www.jst.go.jp/ristex/en/e_exam/future_earth/future_earth.html
- <http://td-vuls.org/> (Japanese only)

7 AFFORDABLE AND CLEAN ENERGY Development of a next generation solar cell with less environmental impact

A solar cell using crystal structure material called perovskite has high conversion efficiency and is expected as a next-generation solar cell. In ALCA, Dr. Wakamiya developed a lead-free perovskite solar cell with the original material purification technology and film formation method. This perovskite solar cell is easy to fabricate, light, and flexible, and contributes to the dissemination of renewable energy.



A lead-free perovskite solar cell

Advanced Low Carbon Technology Research and Development Program (ALCA)

- Research Project: Development of High Performance and Environmentally Friendly Perovskite Type Solar Cells
- Principal Investigator: Atsushi Wakamiya, Professor, ICR, Kyoto University
- <http://www.scl.kyoto-u.ac.jp/~wakamiya/english/index.html>
- <https://www.jst.go.jp/alca/en/index.html>

Center of Innovation (COI) Program

- COI site: The Last 5X innovation RD Center for a Smart, Happy, and Resilient Society
- Research Promotion Institute: Kyoto University
- Project Leader: Tsuyoshi Nomura, Special Adviser, Panasonic Cooperation
- Research Leader: Hidetoshi Kotera, Program-Specific Professor, Kyoto University
- <http://www.coi.kyoto-u.ac.jp/en>

12 RESPONSIBLE CONSUMPTION AND PRODUCTION 13 CLIMATE ACTION 14 LIFE BELOW WATER Multi-purpose Biodegradable Plastic

While plastic has exceptional usability in our daily lives, serious environmental pollution is arising as a social issue due to its persistence for an extended period of time in the nature. For the purpose of ensuring environmentally friendly and workability, purification and production methods of biodegradable plastic from plant-derived materials have been developed using the microorganism fermentation technology. Such non-petroleum-based plastic can contribute to countermeasures against global warming and can be deployed globally.



Multi-purpose films for agricultural use to support the growth of crops with their moisturizing and anti-weed effects

Development of Creative Technology Seeds, contract Development (now Nex-TEP- A Type and NexTEP General Type)

- Research Project: Plant-derived biodegradable resin
- Representative Researcher: Yoshiharu Doi (President, Japan synchrotron Radiation Research Institute(JASRI))
- Development and implementing company: Kanaka Corporation
- https://www.jst.go.jp/EN/research/pdf/yoshiharu_doi2018.pdf

2 ZERO HUNGER Using Japanese technologies to develop rice varieties and cultivation technologies tailor-made for Kenya's environment

In Kenya, a pressing issue is boosting rice production, which is however suppressed by impediments such as drought and cold weather. By using cutting-edge Japanese technologies, such as DNA marker-assisted selection, the project developed a number of rice promising lines carrying useful genes to overcome stress conditions in Kenya. The project also verified the effect of improved cultivation technologies such as fertilization and water-management customized to Kenya's cultivation environment. The project ensures the further development of the rice research base established in Kenya as a hub for rice breeding and cultivation technology development in sub-Saharan Africa.



Soil sampling at the Rice Experimental Field in Mwea, Kenya

Science and Technology Research Partnership for Sustainable Development (SATREPS)

- Research Project: The Project on Rice Research for Tailor-made Breeding and Cultivation Technology Development in Kenya
- Principal Investigator: Akira Yamauchi, Graduate School of Biocultural Sciences, Nagoya University
- http://www.jst.go.jp/global/english/kadai/h2406_kenya.html

SUSTAINABLE DEVELOPMENT GOALS



14 LIFE BELOW WATER For Rich Ocean in the Next 100 Years

In 2011, the Sanriku coast renowned for its oyster cultivation was devastated by the Great East Japan Earthquake. Mr. Kojima, who developed an iron device combining iron and carbon materials, thought to apply his technology to re-cultivate oyster and initiated a collaboration with the Fisheries Cooperative of Yamada Town (Iwate Prefecture) under the support of JST. His effort with local parties to verify a shape and materials of this iron device allowed re-cultivation of oysters. This technology has now spread nationwide and its demonstration conducted in Kumamoto affected by the earthquake and in Western Japan where devastated rain and landslides happened. Today, many countries are interested in this technology as this iron device is environmentally friendly and sustainable as well as adaptable to the others.



Comparison of oyster cultivation without iron device (Left) and with iron device (Right)



Setting up the iron device in Yamada-machi, Iwate prefecture

JST Center for Revitalization Promotion: Program for Revitalization Promotion (promotion of matching)

- Research Project: Restoration of aquaculture areas of oysters in Sanriku utilizing sustainable iron supply material
- Principal Investigator: Akira Kojima, Chief Researcher of JST's Community-based R&D Programs/President of Maebaru General Technology Business College
- <https://www.jst.go.jp/fukkou/about/matching.htm> (Japanese only)

5 GENDER EQUALITY Challenge Lab for Junior High and High School Girls for the Future of Science ~ Let's Learn Diversified Opportunities with your Family and Teachers!!

Rikkyo University, under the program to "Support for Female Students in Choosing Science Courses", provides junior high and high school girls opportunities to meet women who pursued their active careers in both academia and private sectors including Aviation and IT companies after taking science courses, so that they get to know a broad range of carriers based on science. It also provides them have experienced leading-edge scientific researches through hands-on lessons and Challenge Lab, stimulating their intellectual curiosity.



Rikkyo University students support hands-on experiments and provide advices as RSS (Rikkyo Science Supporter)

Support for Female Students in Choosing Science Courses

- Institution: Rikkyo University
- <https://www.rikkyo.ac.jp/undergraduate/science/challengelabo/> (Japanese only)

6 CLEAN WATER AND SANITATION 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 11 SUSTAINABLE CITIES AND COMMUNITIES Safe Water for All ~ Innovative Seawater Desalination and Reclamation of Unclean Water ~

This center of innovation aims to develop and deploy innovative desalination and water reclamation systems based on robust reverse osmosis (RO) membranes composed of nanocarbons, which Shinshu University is good at. Such RO membranes system and highly functional inorganic crystals can also remove harmful substances such as fluorine contamination in groundwater, resolving water hazards across the world.



Underground water quality survey in Tanzania (left) and experiment of water purification by local students (right)

Center of Innovation (COI) Program

- COI site: Global Aqua Innovation Center for Improving Living Standards and Water-sustainability
- Research Promotion Institute: Shinshu University
- Project Leader: Koichi Tsuzuki, Technology Adviser, Water Business Unit, Hitachi, Ltd.

- Research Leader: Morinobu Endo, Distinguished Professor Institute of Carbon Science and Technology, Shinshu University
- <http://www.shinshu-u.ac.jp/coi/english/>

4 QUALITY EDUCATION 8 DECENT WORK AND ECONOMIC GROWTH 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 10 REDUCED INEQUALITIES 17 PARTNERSHIPS FOR THE GOALS SDGs-related Journals on J-STAGE

The latest journals published by Japanese academic societies are accessible on J-STAGE. Among all journals archived in J-STAGE, SDGs-related articles are summarized in the J-STAGE SDGs Library. Initiatives taken by researchers for realizing a sustainable society are available via this one-stop service site.



J-STAGE SDGs Library

Japan Information Platform for S&T Innovation

- <https://www.jstage.jst.go.jp/static/pages/j-stage-sdgs-library/-char/en>

SUSTAINABLE DEVELOPMENT GOALS Promotion of "Co-Creation" in View of a Future Society

Diversity of perspectives is inevitable for promoting innovation and for resolving comprehensive economic and social issues we face today. It is essential to consider the future of society and science and to create the future in a co-creative manner with a variety of stakeholders. As one of the efforts to promote "co-creation", JST holds Science Agora every year. It is an open forum where people from various sectors (academia, private sectors, media, and citizens) get together and have dialogues to activate the interaction between science and society.



A booth exhibition in Science Agora 2018
Promotion of Science and Technology Communication (* In April 2019, this program will be renamed "Program for promotion of science in society")

- <https://www.jst.go.jp/sis/> (Japanese only)
- <https://www.jst.go.jp/csc/scienceagora/en/> (About Science Agora)