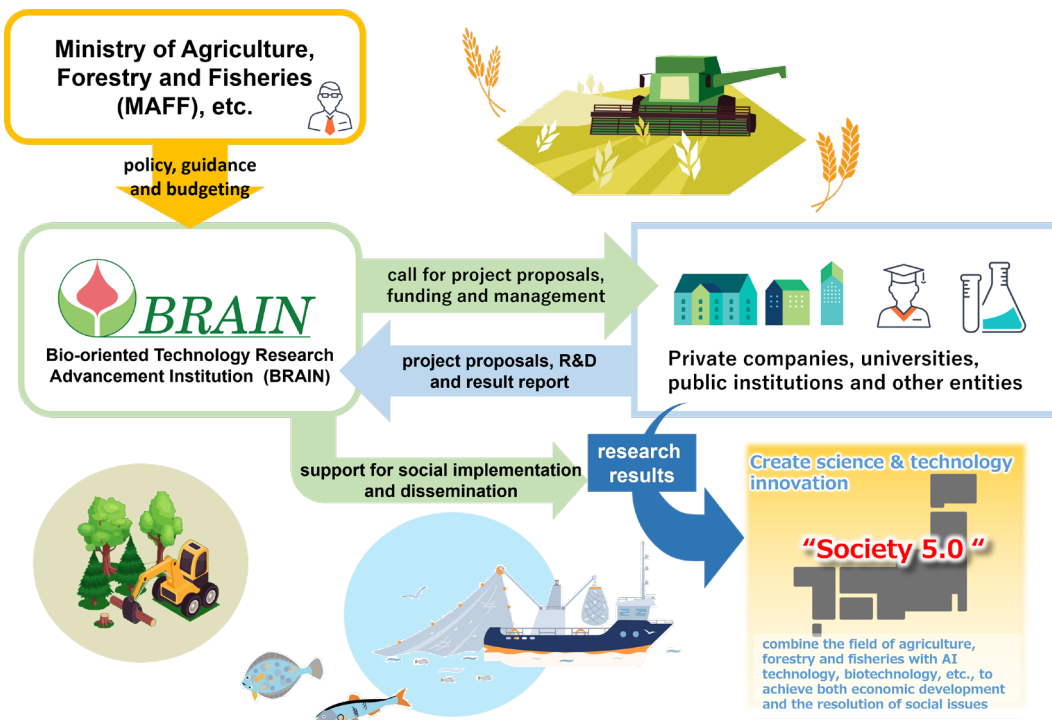


# Bio-oriented Technology Research Advancement Institution (BRAIN)

– For creating innovation in agriculture, forestry, fisheries and food industry –

## Overview

Bio-oriented Technology Research Advancement Institution (BRAIN) is the only funding agency in Japan to support research and development (R&D) in the fields of agriculture, forestry, fisheries and food industry. BRAIN calls for excellent R&D proposals from private companies, universities, public research institutions, etc., provides them with research funds and support for their project management, and leads the research results to social implementation.



### Intro to Tech Achievements

The research results obtained in the previous projects are introduced in an easy-to-understand manner.



<https://www.naro.go.jp/laboratory/brain/english/press/stories/index.html>

## Bio-oriented Technology Research Advancement Institution (BRAIN)

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YouTube

BRAINchannel



# Research Programs

## The Moonshot R&D Program for Agriculture, Forestry and Fisheries

### Support for the research toward "sustainable food supply for 9 billion people"

BRAIN aims to create disruptive innovation originating in Japan and promotes challenging research and development efforts ("Moonshot"), based on bolder ideas that go beyond the extension of conventional technology. The agency is conducting research and development projects aimed at achieving Moonshot Goal 5, i.e., "Creation of the industry that enables sustainable global food supply by exploiting unused biological resources by 2050."



#### Research Cases

- Bio-Economical Food Production System Using Circular Cell Culture of Algae and Animal Cells
- Realization of Zero Pest Damage Agriculture by Fully Utilizing Advanced Physical Methods and Unused Biological Functions
- etc.

## Cross-ministerial Strategic Innovation Promotion Program (SIP)

### Support for the research on "Building a Resilient and Nourishing Food Supply Chain Management for a Sustainable Future"

The Council for Science, Technology and Innovation allocates budgets beyond the boundaries of ministries and fields and promotes efforts from basic research to practical application or commercialization. BRAIN supports the operation of SIP as a research promotion agency in charge of the task of "Building a Resilient and Nourishing Food Supply Chain Management for a Sustainable Future" in the SIP (Phase 3) R&D plan.



#### Research Cases

- Building a Breeding Platform and Establishing Cultivation Techniques for Plant-Based Proteins (Soybeans)
- Building a Next-Generation Aquaculture System for Animal-Based Proteins (Aquatic Products)
- etc.

## Research and implementation promotion program through open innovation

### Support for a variety of research conducted through collaboration among industry, academia, and government

BRAIN promotes fundamental research for creating innovative research seeds as well as R&D at the practical stage for social implementation of the results of such fundamental research, etc. The agency strives to create innovations that contribute to the promotion of important national policies and the resolution of on-site issues, and it accelerates social implementation of such innovations in the fields of agriculture, forestry, fisheries and food, where industry, academia and government work together.



#### Research Cases

- The World First Development of Wood Brews and Liquors Made from Trees
- The Establishment of Labor-Saving Cultivation Systems and a Producer Network Using ICT for Nationwide Promotion of the Seed Propagation Strawberry Variety "Yotsuboshi"
- etc.

## Startup Supporting Program (supporting SBIR(Small/Startup Business Innovation Research))

### Support for R&D-based startups in the fields of agriculture, forestry, fisheries and food industry

In order to solve policy and social issues in the fields of agriculture, forestry, fisheries and food industry, BRAIN provides step-by-step support for start-ups aiming for creating new businesses. Involving accompaniment by program managers with extensive experience in commercialization, BRAIN assists start-ups for establishing innovative technology seeds and proof of concept or conducting feasibility studies and research and development for commercialization including technical improvements.



#### Research Cases

- Research and Development of "High-Performance Biochar" that Enables both Carbon Sequestration into Farmlands and Conversion to Organic Cultivation
- Creation of a Genome-Editing Breeding Platform for Aquatic Species
- etc.

## Development and improvement program of strategic smart agricultural technology

### Support for the development and improvement of smart technology integration in agriculture

BRAIN promotes the development and improvement of smart agricultural technology for reduction and replacement of labor required to maintain a stable food supply base and the shift to cultivation systems suitable for smart agricultural machinery.



#### Research Cases

- Research and Development for Practical Application of AR Agricultural Work Assistant App for Smart Glasses
- etc.