

Outline of the Science, Technology, and Innovation Basic Plan

Recognition of the Current Situation

Changes in the Situation at Home and Abroad

- Beginning of a reorganization of the world order and increasingly intense leadership competition among countries surrounding science, technology, and innovation (STI)
- Manifestation of global agenda threats such as the climate crisis
- Information monopoly by IT platformers and uneven distribution of great wealth



Expansion of the Novel Coronavirus Infection

- Major Changes in the International Community
 - Rapid social changes in order to prevent the spread of the infection and to maintain economic activities
 - Disruption of the supply chain pressing each country to review the sustainability and resilience of its economy
- Rapidly Changing Life in Japan
 - Transition to a new lifestyle such as work-from-home and online education

Review of STI policies

- Digitalization for digitalization's sake and relative decline in research capabilities
 - Digitalization focuses on improving efficiency of existing operations and the original power of ICT is not being fully utilized.
 - Decline of international standing for research papers and severe research environment continues
- Revision of the Basic Act on Science and Technology
STI policies should contribute to comprehensive understanding and problem solving of human beings and society through the "convergence of knowledge" that fuses the natural sciences with humanities and social science

Balancing **response to global issues** with the **reform of social structures in Japan** is essential

Society That Japan Aims for (Society 5.0)

Sustainable and Resilient Society That Ensures the **Safety and Security of the People**

[Securing Sustainability]

- Realization of a **sustainable global environment** with a focus on achieving the SDGs
- Realization of a society in which **future generations can live in abundance while satisfying the needs of the present generation**

[Securing Resilience]

Realization of **comprehensive security** against threats such as disasters, infections, cyber terrorism, increasingly severe security environment, and disruption of the supply chain

Incorporate **traditional Japanese values** of trust and sharing into this vision for society and transmit it to the world as **Society 5.0**.

A Society in Which **Each Individual Can Realize Diverse Happiness (Well-Being)**

[Realization of Economic Affluence and Qualitative Affluence]

- Realization of an educational, labor, and employment environment that enables everyone to **develop their own abilities** and **diverse work styles** that utilize such abilities
- Realization of an environment that allows people to **participate in society in health throughout their life** in an age of a 100-year lifespan
- Realization of a society that allows people to continue to have their dreams and always **participate in society with a positive view of their presence**

Contribute to the international community and attract global **human resources** and **investment**

What is Necessary to Realize Society 5.0

Transformation into a **sustainable and resilient society** through the fusion of cyberspace and physical space

Creation of "knowledge" as a source of value creation by designing a new society

Development of **human resources** to support a new society

Push through **social transformation** and advance **investment** looking ahead into the **future (knowledge and human resources)**

STI Policy for the Realization of Society 5.0

- Draw up policies based on **backcasting** from the future vision and **forecasting** from the current situation while utilizing **convergence of knowledge** and **evidence**, and flexibly improve them through evaluation.
- Aim for a total government R&D investment of approximately **30 trillion yen** and a total public and private R&D investment of approximately **120 trillion yen**.

Transformation into a **sustainable and resilient society** that ensures the safety and security of the people

- (1) Creation of new value through the **fusion of cyber space and physical space**
 - Digitalizing the government, launching a Digital Agency, and completing a data strategy (developing a base registry, etc.)
 - Maintaining and developing next generation infrastructure and technologies for Beyond 5G, supercomputers, space systems, quantum technologies, semiconductors, etc.
- (2) Advancement of social changes and discontinuous innovation aimed at **overcoming issues on a global scale**
 - Promoting R&D (utilizing funds, etc.) and reducing costs of innovative environmental innovation technologies and transitioning to a circular economy
- (3) Building of a **resilient, safe and secure society**
 - Identifying and R&D of important technologies for responding to threats and advancing social implementation and technology outflow countermeasures.
- (4) Formation of an **innovation ecosystem** that is the foundation for creating new value-sharing industries
 - Advancing an SBIR system and entrepreneurial education, forming start-up hub cities, and strengthening a co-creation system through industry, academia, and government collaboration
- (5) Urban and regional development (development of **smart cities**) as the foundation for succeeding to the next generation
 - Creating smart cities and super cities, their nationwide spread through a public-private collaboration platform, and international deployment at expos.
- (6) R&D for **solving various social issues**, advancement of **social implementation**, and utilization of **convergence of knowledge**
 - Social implementation through the utilization of convergence of knowledge, review and formulation of evidence-based national strategies, and advancement of R&D
 - Advancing SIP and moonshot R&D, market gain through the utilization of intellectual property and standards, and advancing new science and technology diplomacy

* AI technologies; biotechnologies; quantum technologies; materials; space; ocean; environmental energy; health and medical care; food; agriculture, forestry, and fisheries; etc.

Development of frontiers of **knowledge** and strengthening **research** capabilities as sources of value creation

- (1) Rebuilding the environment to produce **diverse and outstanding research**
 - Improving the treatment of doctoral students and expanding their career paths and securing posts for young researchers
 - Promoting active participation of female researchers. strengthening basic research and academic research, and advancing joint international research and international brain circulation
 - Strengthening the humanities and social sciences and creating convergence of knowledge (strengthening funding and DX of research in the humanities and social sciences)
- (2) Construction of new research systems (promotion of **open science** and **data-driven research**, etc.)
 - Managing and utilizing research data and acceleration of research utilizing smart labs, AI, etc.
 - Maintaining and sharing research institutions, facilities, and equipment and fostering of new research communities and environment cultivated by research DX
- (3) Promotion of **university reform** and expanding functions for **strategic management**
 - Developing diverse and unique university groups (transition to a true management entities and further growth as research universities that are on par with top international universities)
 - Creating a 10 trillion yen university fund

Education and human resource development to realize diverse happiness for each individual and ability to face challenges

Transition to an education and human resources development system that enhances people's **ability to explore** and **attitude to continue learning**

- Advancing STEAM education from the elementary and secondary education stage and the GIGA School Concept, and reducing teachers' burden
- Providing diverse curricula and programs at universities, etc. and fostering an environment and culture that promotes recurrent education

Demand from society and Injection of knowledge and human resources