U N	**G o a l**	**9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation**
	T a r g e t	**9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending**
	Indicator	**9.5.1 Research and development expenditure as a proportion of GDP**

I. National indicator   〈Type 1〉

Indicator	Research and development expenditure as a proportion of GDP
Definition	Research and development expenditure as a proportion of GDP is calculated by dividing total annual R&D expenditure in the public sector and the private sector such as businesses, public research institutes, and universities, by the year's GDP. Research and development comprise creative and systematic work undertaken in order to increase the stock of knowledge including knowledge of humankind, culture and society and to devise new applications of available knowledge(OECD Frascati Manual, 93)
Calculation method	$$\frac{\text{Total R\&D expenditure}}{\text{The year's GDP}} \times 100$$ * GDP from National Accounts data in the reference year(2015)
Unit	Percent (%)

II. National indicator's source

Data sources	▌Source: *Research and Development Activities Survey* ▌Collection method: Complete survey of research institutions that have performed national research and development activities, where data are collected through post surveys (administrative data collection)
Calendar	▌Frequency: Annually (time scope of the survey: Jan 1 - Dec 31, survey conducted from Apr 1 to May 31) ▌Data release: November in the following year
Organizations	S&T Information and Division(Tel. 044-202-6964), Ministry of Science and ICT
Related International Agency	N/A

III. Comparison with UN SDG indicator

① Indicator		② Definition		③ Data value	
Same	Different	**Same**	Different	Same	**Different**

Note	▌The UN SDG 9.5.1 indicator is based on the seventh edition of the Frascati Manual published in 2015 ▌Data converted using purchasing power parities (PPP) for international comparison
Global indicator link	▌Metadata: https://unstats.un.org/sdgs/metadata/files/Metadata-09-05-01.pdf ▌Data: https://unstats.un.org/sdgs/indicators/database/

SUSTAINABLE DEVELOPMENT GOALS