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Federal Department of Economic Affairs,
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**State Secretariat for Education,
Research and Innovation SERI**

EU Framework Programmes

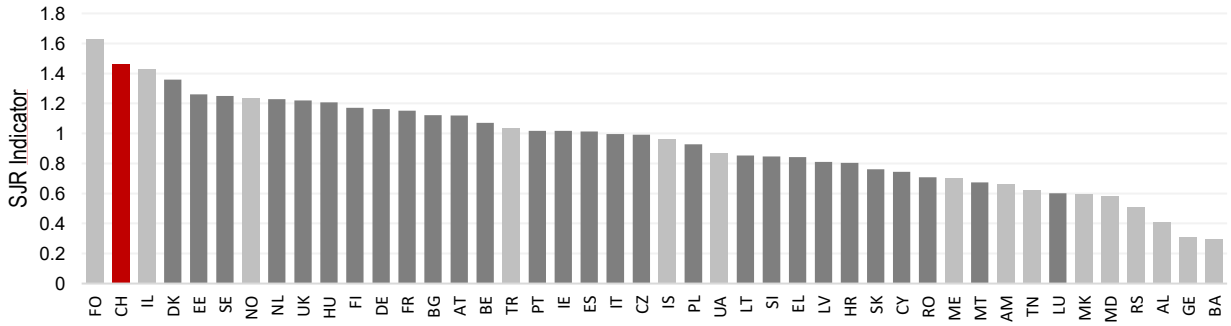
Added Value of Swiss Participation in the EU Framework Programmes for Research and Innovation

Swiss participation adds cutting-edge advantages to EU R&I projects

Swiss participation in the EU Framework Programmes for R&I increases the programme impact and strengthens the European research and innovation landscape.

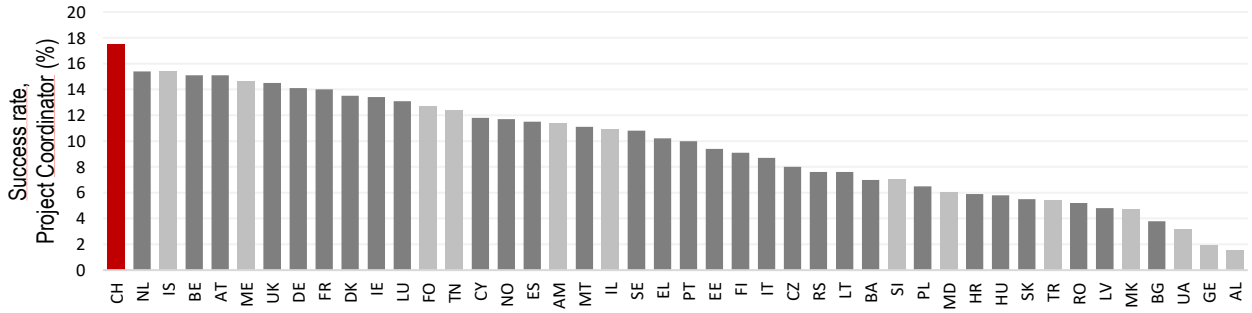
- Projects with Swiss participation rank amongst the ones with the highest publication impact. Swiss participation has thus enhanced the scientific quality of funded projects in Horizon 2020.

Figure 1: Quality of Horizon 2020 publications by country (measured through the SCImago Journal Rank SJR); EC data: eCorda database, August 2021.



- Projects with Swiss coordination have the highest success rate across Horizon 2020. They thus augmented the excellence and impact of their project partners (windfall effect) and contributed to the excellence of European R&I as a whole.

Figure 2: Share of successful projects by coordinator nationality across the Horizon 2020 participating countries (EC Data: eCorda database, August 2021).



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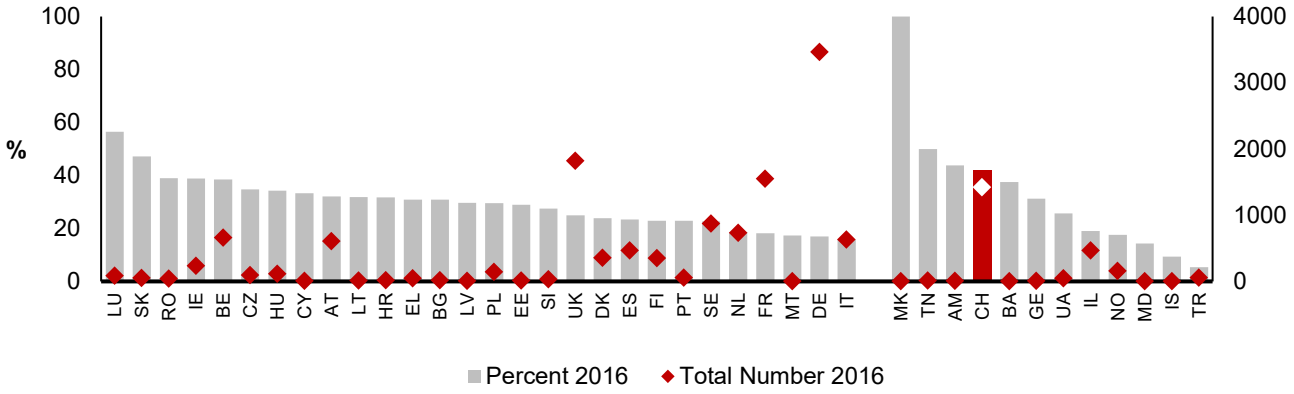
Switzerland creates impact and value for Europe

Switzerland fosters cross-border innovation ecosystems and contributes to tackling European societal challenges and reaching political goals.

- Switzerland connects innovators across borders: It produces a high number of foreign co-inventions fuelling sustainable economic growth all over Europe.

Figure 3: Share (%) and total number of patents with foreign co-inventor(s) in 2016 (EC data by DG Research and Innovation, based on OECD International co-operation in patents data).



- Switzerland contributes to the Green Deal: Swiss partners participate in various projects addressing climate change and environmental pollution. One example is Daphne Technology, a Swiss spin-off, with a strong collaboration with European partners (FR, DK, SE, NO) and the only European company with a state-of-the-art solution to remove NO_x and SO_x from marine vessel's engines and boilers exhaust to reduce the environmental impact of shipping.
- Switzerland provides key technologies to ITER: The Swiss Plasma Center operates one of only three medium size tokamaks selected by EUROfusion. Furthermore the SULTAN testing facility at the Paul-Scherrer Institute is the only facility for qualifying the superconducting cables of ITER under real conditions.
- Swiss partners contribute key knowledge in quantum technologies: Switzerland is a pioneer in quantum research and provides decisive building blocks for the European development of quantum technologies. Following Switzerland's recent exclusion, certain EU projects will experience delays of several years without Swiss technology.

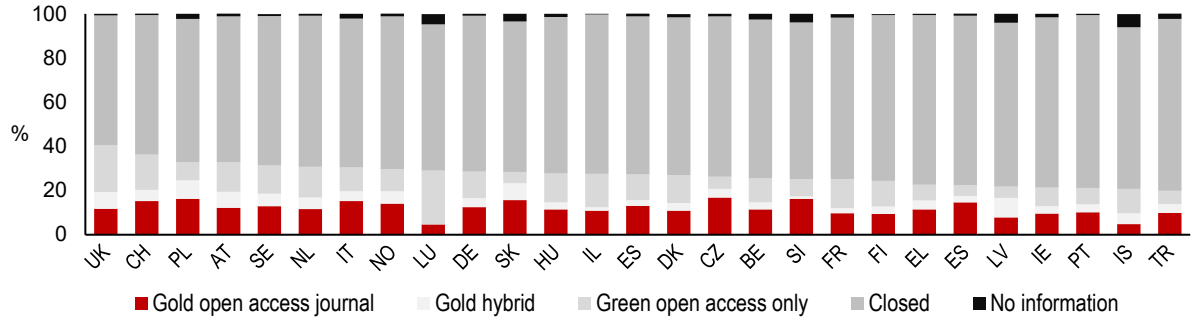
Figure 4: Inside view of the tokamak at the Swiss Plasma Center

Figure 5: The 100th launch of Ariane 5 carrying a dual payload of telecommunication satellites protected by Swiss payload fairings.

- Switzerland contributes key technology to European space activities: Switzerland is a founding member of the European Space Agency (ESA) and contributes, among others, key technology to the Ariane launch vehicles by providing the payload fairings protecting satellites, without which European access to space would not be possible.
- Switzerland contributes key knowledge for European supercomputers: Switzerland is contributing to the joint procurement of supercomputers in Europe, thus keeping pace with powers like the USA and China. Namely, it is involved in the procurement of LUMI in Finland, one of the most powerful high performance computing systems in the world.

- Switzerland fosters free flow of research data and access to infrastructure: A comparably high share of publications of researchers based in Switzerland are open access. This helps accelerating the pace of research and is for example significantly contributing to the fight against the COVID-19 pandemic.

Figure 4: Open access of scientific documents from a given country as a percentage of a random sample of 100 000 documents (OECD calculations based on Scopus Custom Data, Elsevier, 2017).



Switzerland is deeply embedded in the European Research Area

Switzerland shares and lives the European values in Research and Innovation and contributes significant resources to the advancement of European knowledge.

- Switzerland was strongly involved in the development of several European initiatives and declarations towards strengthening European values. Recent examples include the Bonn declaration on "Freedom of Scientific Research", the adoption the European Charter & Code for Researchers by Swiss Universities, and the Ljubljana declaration on "Gender Equality in Research and Innovation".
- Switzerland is contributing around 100 mio. EUR each year to European research infrastructures. It is member of all major European research infrastructures like CERN, EMBL, ESO, ITER, ESRF, ILL, XFEL and ESS.
- Switzerland contributes significantly to the budget of EU programmes, having been the non-member state country with the highest contribution to the EU budget 2014–2020, notably to Horizon 2020 (European Court of Auditors data, 2021).
- Switzerland contributes to reaching the EU R&I goals and provides important investments in these domains. With R&I investments equalling 3.15% of its GDP, Switzerland complies with the recommendations of the European Research Area. Two thirds of these investments come from Swiss industry, which also invests significantly into R&D outside of Switzerland.
- Switzerland serves as hub for international exchange in research and innovation in Europe, ranging amongst the countries with the strongest inward and outward mobility of researchers according to the OECD STI report 2017.

Figure 3: International mobility of scientific authors across European countries (OECD calculations based on Scopus Custom Data, Elsevier, 2017)