



Federal Ministry
of Education
and Research

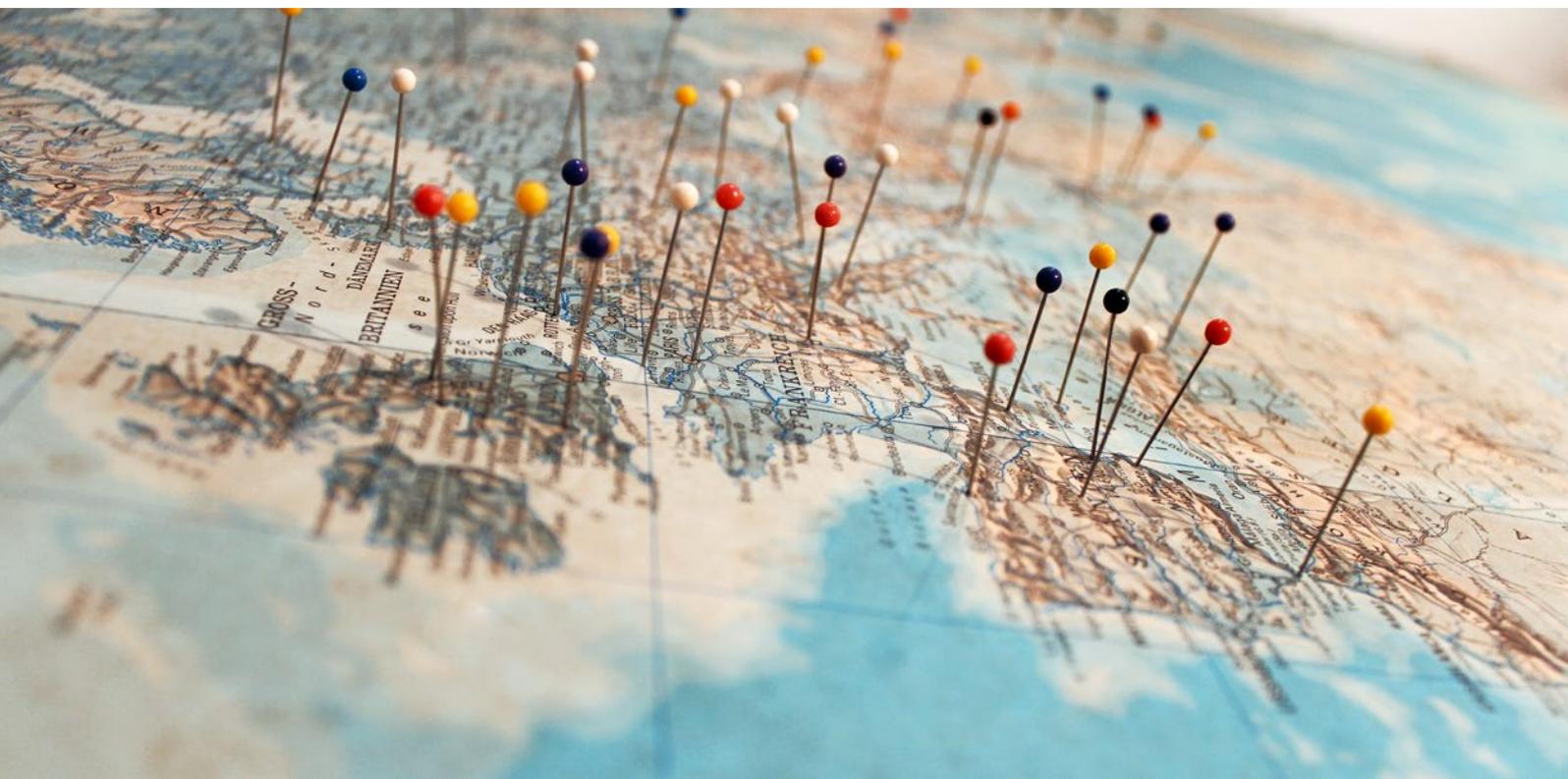
Federal Government Report on International Research Cooperation in Education, Science and Research 2019–2020

Political summary



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Political summary

Adopted in 2017, the Federal Government Strategy for the Internationalisation of Education, Science and Research (Internationalisation Strategy) forms the basis for international cooperation in these fields. Since the strategy was launched, the Federal Government has used the Report of the Federal Government on International Cooperation in Education, Science and Research to regularly report on the progress made in achieving the goals contained in the Internationalisation Strategy and in implementing the Strategy on the European Research Area (ERA Strategy).

The Federal Government presented its first report on international cooperation in education, science and research in June 2017, summarising the progress made in the period from 2014 to 2016. The second report, published in November 2019, outlined the key activities of the federal ministries and the respective research and intermediary organisations from 2017 to 2018, placing particular focus on cooperation with Africa.

This third report covering the reporting period 2019 to 2020 contains a spotlight chapter dedicated to the German EU Council Presidency in the second half of 2020. The first chapter serves as a policy brief, summarising the main trends in international cooperation in 2019 and 2020 as well as the key activities involved in implementing the Internationalisation Strategy.

1. Major trends in international cooperation

With the activities conducted as part of its Internationalisation Strategy, the Federal Government underscores its belief that education, research and science are key factors in achieving and securing democracy, freedom and social cohesion – both in Germany and worldwide.

International cooperation comprises a broad spectrum of activities and initiatives led by a wide range of ministries, research institutes and intermediary organisations. In many cases, it relies on the enthusiasm and commitment of the numerous individuals and organisations that provide the all-important impetus needed in putting the spirit of education and global understanding into practice, thus helping to tackle global challenges by working together as one. This latest report showcases the vibrancy and diversity that abounds in international cooperation effort.

One of the core objectives of the Internationalisation Strategy 2017 is to place stronger strategic focus on international cooperation, not least to make the myriad activities and initiatives more visible and more effective, and give them common direction and a common goal. This report shows how, in working with research and intermediary organisations, the Federal Government has made significant progress towards achieving that objective.

The international cooperation landscape is currently undergoing change due to a number of external influences, such as the COVID-19 pandemic, the restrictions imposed in some countries on freedom of research and teaching, and in some areas the risk of knowledge outflows to the detriment of German science institutions' standing and the innovation chains connecting to them in the field of international competition.

The major trends seen in recent years are as follows:

1. The impact of the COVID-19 pandemic

The pandemic is affecting international cooperation in education, science and research. As a result of the associated travel and contact restrictions, scope for personal meetings, business trips and face-to-face conferences is severely limited in both the short and medium term. To an extent, these effects can be cushioned by virtual meetings such as video conferences, provided that the technical prerequisites are in place, including adequate access to the Internet and adequate availability of bandwidth. Direct contact, including of an informal nature, is currently lacking in international cooperation. This has a particularly negative impact on the expansion and rebuilding of the networks so important to research, which in turn would have a detrimental effect on cooperation, especially where longer-term mobility restrictions are concerned. But then the shift to virtual formats also has its positive effects – different committees and partners can now connect with one another more often and meet more quickly when needed. Other impacts involve cooperation-related issues – international cooperation in vaccine development is intensive, as is exchange on topics such as crisis management, crisis prevention and resilience. In addition, the pandemic highlights both the importance and the role of science and research per se, and particularly of international cooperation in science and research.

While mobility programmes are particularly affected by the travel restrictions that have been introduced, research projects conducted as part of international cooperation activities are also subject to restrictions and delays as a result of the pandemic, some of which mean additional costs.

2. Academic freedom

The Federal Government sees international research cooperation as a central issue. In the 2019 to 2020 reporting period, freedom of research was restricted in many countries around the world. One example was the massive state pressure placed on students and researchers to stay away from the protests in Belarus. This is also a key topic at European level, as shown by the Bonn Declaration on Freedom of Research, the corresponding focus during the German EU Council Presidency and the monitoring of violations as part of the Bologna Process, complete with a dedicated working group and dialogue forums involving all 48 participating states. German institutions, such as the German Rectors' Conference (Hochschulrektorenkonferenz, HRK), also address both this issue and other fundamental questions concerning international cooperation. For example, in 2020 the HRK adopted guidelines on international cooperation.

3. Further strategic development of international cooperation and new cooperation forms

The strategy for international cooperation in education, science and research was further developed during the 2019 to 2020 reporting period. This includes the implementation or initiation of larger-scale, longer-term projects. The new forms of cooperation include reform partnerships with African partner countries.

4. The role of shared-value partnerships

Cooperation with shared-value partners will be made more visible; this includes cooperation with Australia on green hydrogen and with Japan on artificial intelligence. The Global Partnership on Artificial Intelligence (GPAI) was founded on 15 June 2020. Membership is open to all interested states that share and support the GPAI's values and recognise the AI principles set out by the Organisation for Economic Co-operation and Development (OECD). It does not, however, confer any binding national or international rights or impose any binding obligations. The idea of the GPAI was developed in 2018 and 2019 under the Canadian and French G7 presidencies, and was subsequently fostered and driven forward by both Canada and France. As a founding member of the GPAI, Germany intends to use its membership to advance the expansion of international cooperation in line with the Federal Government's AI Strategy.



2. Activities and initiatives 2019–2020

Based on the Internationalisation Strategy's five objectives, the key activities and initiatives in 2019 and 2020 are outlined below. In addition, the main aspects of the spotlight topic – the German EU Presidency – are summarised along with an outline of outstanding bilateral and EU-level collaborations. A detailed, comprehensive description of all activities can be found in Chapters 2 to 5 of the full report (available in German), while an account and an analysis of key figures on international cooperation are provided in Chapter 6 of the full report.

Federal funding for international cooperation has increased continuously in recent years. In 2020, the Federal Ministry of Education and Research (BMBF) alone provided **some €1.283 billion**, including contributions towards international R&D infrastructures and programmes. In the reporting period, the Federal Foreign Office (AA) allocated funds amounting to around €471 million for internationally focused funding measures targeted at tertiary education. And to promote EU-level networks, in 2020¹ the Federal Government made a total of €100.8 million available for public-public partnerships.

The Internationalisation Strategy's Five Objectives

Objective 1: Strengthening excellence through worldwide cooperation

Objective 2: Developing Germany's strength in innovation on the international stage

Objective 3: Internationalising vocational training and qualification

Objective 4: Working with emerging and developing countries to shape the global knowledge-based society

Objective 5: Overcoming global challenges together

¹ Preliminary data, as at June 2021. Source: ERA-LEARN



Objective 1: Strengthening excellence through worldwide cooperation

International exchange is an important aspect of scientific excellence, and the Federal Government has a variety of thematic networks which it operates to promote exchange via central agencies and departmental coordination. For example, the Federal Government has a number of mobility programmes in place to strengthen international exchange along all career phases of science and research work. Specially tailored scholarship programmes, internationally oriented research training groups, improved legal framework conditions and comprehensive assistance and information services at the various universities are all used to attract foreign students and doctoral candidates to either study in Germany or apply for a research stay.

With Germany's **Excellence Strategy**, the federal and Länder (state) governments jointly and continuously promote research excellence at German universities. The Excellence Strategy is the logical successor to the highly effective Excellence Initiative, which triggered a new dynamic in Germany's standing as a science and research location, thus strengthening its competitive ability on the international stage. The associated clusters of excellence and universities

of excellence cooperate internationally in a variety of ways, and a large share of their staff is recruited from abroad. In the predecessor Excellence Initiative, some 30 per cent of the researchers funded by means of institutional strategies (Zukunftskonzepte) had previously worked abroad.

Large-scale research infrastructures are a key instrument which the Federal Government uses to strengthen research excellence via worldwide cooperation. While globally renowned scientific infrastructures and large-scale facilities attract top international researchers, the resources required mean that in many cases research infrastructures can only be built and operated jointly by several partner states. The Federal Government is thus working to strengthen Germany's role in the creation, operation and use of research infrastructures through targeted measures implemented at national, EU and international level. The Federal Government also plays an active role in the European Strategy Forum on Research Infrastructures (ESFRI).

Objective 2: Developing Germany's strength in innovation on the international stage

As a location for research and innovation, it is essential for Germany to be integrated into global knowledge flows and value chains. With the **internationalisation of Germany's High-Tech Strategy 2025**, the Federal Government is promoting excellence through world-wide cooperation, strengthening Germany's innovative power and tackling the global challenges of the day. In all of these endeavours, the European Union (EU) remains the central pillar of Germany's international engagement.

In addition to the internationalisation of national funding instruments, the Federal Government closely links national-level innovation funding to EU innovation funding. The EU's Horizon 2020 Framework Programme for Research and Innovation has played a special role in this through its Europe-wide innovation funding programmes, such as the Joint Technology Initiatives (JTI). Another such programme involves the Knowledge and Innovation Communities (KICs) operated by the European Institute of Innovation and Technology (EIT). These various instruments will be continued and expanded under the new framework programme, Horizon Europe, which is scheduled to start in 2021.

Maintaining and expanding technological sovereignty is one of the Federal Government's central goals. The focus here is on securing German system competence in key technologies of the future and being able to shape these from a strong position in line with its own values, not least by promoting technology development and technology transfer, and through co-determination of corresponding standards. International cooperation is a crucial success factor in this regard. Thus, in many fields of technology, cooperation with European partners is needed, both to achieve the appropriate scales and to provide the necessary infrastructure. The Federal Government is therefore funding Important Projects of Common European Interest (IPCEI) in microelectronics and battery cell production, as well as in cooperation in supercomputing and the provision, exchange and analysis of data. The Federal Government also participates in various EU-level public-public partnership initiatives – such as ERA-NET and the promotion of EUREKA clusters – which enable transnational R&D projects in

strategic areas. Development of common standards also calls for international cooperation, both under bilateral and multilateral research projects, and in international standardisation bodies. Fitting examples of this include initiatives involving artificial intelligence, quantum technologies and Industry 4.0. These and other current initiatives are examined in more detail in Sections 4 and 5.

Launched in 2014, the BMBF funding programme for the Internationalisation of **Leading-Edge Clusters**, Future Projects and Comparable Networks promotes the internationalisation of existing clusters and networks operated by research institutes, universities, private companies and other actors involved in technology and innovation development, as well as the implementation of research and development projects. Currently, funding is provided for 32 German clusters and networks from sectors such as smart technology systems, sports/health research, automotive, aeronautics, organic electronics, medical technology, bioeconomy and lightweight construction.

The “go-cluster” programme run by the Federal Ministry for Economic Affairs and Energy (BMWi) also supports international cooperation between its 85 member clusters and clusters from neighbouring EU countries. Particularly worthy of note here is BMWi's active participation as co-organiser of the European Cluster Conference and the close exchange it maintains with the European Cluster Collaboration Platform, which brings together clusters Europe-wide.

As a joint platform on which to showcase German science organisations, the German Centres for Research and Innovation (DWIH) also play an important role.

Objective 3 – Internationalising vocational training and qualification

In recent years, Germany's dual system of vocational education and training has moved more into the global spotlight. Given the increased demands of the labour market, a great deal of innovative pressure is being exerted on both state vocational education and training systems and the training and qualification activities in companies. Many governments around the world are looking to see how they can use German VET as a blueprint to further develop their own vocational education and training systems in a needs-oriented, future-proof approach. BMBF is currently involved in 15 bilateral VET cooperation projects worldwide to support partner countries in their reform efforts. Bilateral VET cooperation with EU countries thus makes an important contribution to cohesion in the EU. Another objective of international cooperation on VET is to support German companies abroad in the training and further development of skilled workers.

As the lead ministry for VET cooperation, BMBF is committed to ensuring that the activities of German governmental and non-governmental actors in VET cooperation are harmonised and coordinated jointly. One important step in this regard was the revision of the Federal Government's 2013 Strategy for Integrated International VET Cooperation in May 2019. The Strategy forms the common framework for the diverse activities of the federal ministries and their subordinate organisations, the German Länder (states), the economic and social partners and other actors. The **Round Table for International Vocational Education and Training Cooperation** established under the original strategy in 2013 serves as a forum for coordination between the various actors and has met regularly in different constellations at both management and working level.

BMBF funds a wide range of initiatives such as the German Office for International Vocational Education and Training Cooperation (GOVET), the International Marketing of Vocational Education initiative (iMOVE: Training – Made in Germany) and a range of mobility programmes. While the EU's Erasmus+ programme supports learning stays in Europe, BMBF's *AusbildungWeltweit* (VET Worldwide) programme closes an important gap in the provision of funding for internships abroad in countries around the world.

BMWi flanks international VET cooperation with various foreign trade promotion instruments. These include the worldwide network of German Chambers of Commerce Abroad (AHKs), "skills experts" based at selected AHKs, the SME market development programme for companies in the education sector and the BMWi Manager Training Programmes. Key instrument goals are to secure skilled labour for German companies abroad and for their local partners, and strengthen the international competitiveness of the German education sector.

Vocational education and training is also an important prerequisite in ensuring successful implementation of the 2030 Agenda for Sustainable Development. Vocational education and training is thus a priority in German development policy. In 2019, funding allocations for the promotion of vocational education and training under the auspices of development cooperation were significantly increased over those of the previous year, to around €358 million. Germany thus remains the world's largest bilateral donor in vocational education and training. Important regional priorities are Africa and the MENA region.

At the invitation of the Saudi Arabian **G20** Presidency, a special meeting on COVID-19 was held on 27 June 2020 in addition to the subsequent, regular (virtual) meeting of G20 education ministers on 5 September. In their joint communiqué "Fostering 21st Century Human Capabilities", they declared their commitment to fair and equal access to education. The Federal Government sees multilateral forums like the G20 as being of outstanding importance, especially in times of crisis.

Objective 4 – Working with emerging and developing countries to shape the global knowledge-based society

With its strong education, science and innovation system, Germany is a sought-after partner worldwide – including among emerging and developing countries. To achieve the global education goal and also other global development goals, the 2030 Agenda for Sustainable Development explicitly calls for the expansion of universities and research. The expertise of German research institutions is especially in demand with regard to global challenges such as resource scarcity, climate change, food security and the spread of epidemics. In return, Germany has a great interest in helping to build capacities in the respective countries, both by creating opportunities on the ground and by combating the causes surrounding refugeeism and flight. The Federal Ministry for Economic Cooperation and Development (BMZ) thus aims its funding measures at the integrated improvement of education and science systems in developing and emerging countries. Special focus is placed on Africa and the least developed countries, on strengthening higher education in relation to the labour market and on promoting development-related research.

The Federal Government's cooperation with emerging and developing countries covers a wide range of topics. Structurally, cooperation with developing and emerging countries takes place through a variety of bilateral and multilateral programmes and individual measures. These range from joint funding programmes and the establishment of joint scientific institutions to joint knowledge production, advisory services and capacity building, scholarships, demand-driven funding instruments, regional student loan programmes and the development of application-focused curricula in the partner countries. The measures conducted with developing and emerging countries are described in Section 5.3 of the full report and include the activities described below:

- The BMBF “**CLIENT II – International Partnerships for Sustainable Innovations**” funding programme continues and enhances long-standing cooperation with selected emerging and developing countries in climate, environment, resource management and energy research.
- The **Arab-German Young Academy of Sciences and Humanities (AGYA)** promotes excellent young researchers from Germany and the Arab partner countries. Here, focus is placed on exchange on joint research interests, the development of interdisciplinary and transnational research projects, and consulting at the interface of science, business and society.
- Working with partners from eleven countries in West Africa and five in Southern Africa, BMBF has established two regional centres of excellence for climate change and sustainable land management – the **West African Science Service Centre for Climate Change and Adapted Land Use (WASCAL)** and the **Southern African Science Service Centre for Climate Change and Adaptive Land Management (SASSCAL)**. The aim of these centres is to better equip both people and the environment to cope with the impacts of climate change.
- As part of the EU's **Central Asia Strategy**, which was revised in 2019, and with the relaunch of the EU's policy towards the **Eastern Partnership (EaP)** countries in May 2020, BMBF promotes research cooperation with these countries in a variety of ways. In these efforts, one particularly important instrument is the regularly issued funding announcement for “Partnerships for Sustainable Problem Solving in Emerging and Developing Countries – Research for Development” (most recently published in 2019), which aims to boost research cooperation on development-related topics in the respective countries.

- Through its own Centres of Excellence, the German Academic Exchange Service (DAAD) uses funds provided by the German Federal Foreign Office (AA) to promote cooperation in developing and emerging countries. In doing so, it works with outstanding foreign partners involved in teaching and research who have especially close ties to Germany, both professionally and culturally, and who work closely with German higher education institutions and scientists.
- As part of the International Climate Initiative (IKI), the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) supports and strengthens a wide range of initiatives to build science and research capacity in developing and emerging countries and also to strengthen international cooperation, especially with regard to climate and biodiversity protection. Examples include measures to **strengthen scientific capacities for rolling out the work programme of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)**. The **WABES** project run by the University of Bonn promotes the establishment of a comprehensive **network of experts on biodiversity and ecosystem services in West Africa**. Based on the IPBES reports, the **Biodiversity and Ecosystem Services Network (BES-Net)** initiative implemented by the United Nations Development Programme (UNDP) is helping to promote dialogue and cooperation between science, policy and practice to aid effective management of biodiversity and ecosystem services in over 20 countries worldwide.
- Under the auspices of the World Meteorological Organisation (WMO), which has operated under the German presidency of Professor Adrian (President of the German Meteorological Service) since June 2019, international research cooperation is being promoted by Global Atmosphere Watch, the World Weather Research Programme (WWRP) and the World Climate Research Programme (WCRP). German researchers play a leading role in all of these programmes, in which strengthening innovation in emerging and developing countries is an absolute priority.
- The departmental research institutions of the Federal Ministry of Transport and Digital Infrastructure (BMVI) also support and promote the global knowledge society.
- For the Federal Highway Research Institute (BASt), international cooperation is an indispensable part of its work, serving both the exchange of scientific experience and the formation of strategic alliances. Connected worldwide with international institutions, BASt has entered into a wide range of cooperation agreements with partner institutes as a basis for intensive collaboration. The oldest cooperation agreement with the Transportation Research Institute/Technion in Israel dates back to 1978. The goal was and still is to increase road safety in both countries. In the meantime, 19 cooperation agreements have been signed with partner institutes from twelve different countries. The most recent cooperation agreements on roads and transport were signed in February 2020 with the Russian Road Scientific Research Institute (ROSDORNII) and the Mongolian Road Association. To ensure high standards, BASt scientists hold places on more than 200 committees of some 30 international organisations covering a broad range of disciplines. Most committees, including those most strongly staffed, serve standardisation. BASt's portfolio also includes cooperation in numerous EU projects, the reception of foreign guests at BASt (including many delegations with experts from public administration and industry as well as university representatives), study visits by visiting scientists and university interns, and regular participation in international congresses and specialist events.



- The Federal Maritime and Hydrographic Agency (BSH) relies on regional, European and international cooperation in the further development of its scientific expertise, continuous improvement of its services and the advancement of the safety and flow of maritime traffic, hydrographic and nautical services, and marine environmental protection. Its scientific network includes basic research institutions such as national and international universities and non-university research institutions, along with companies and departmental research institutions that conduct applied research in the maritime sector. BSH represents Germany in several international organisations and networks which coordinate, among other things, global sustainable observation and research networks. For BSH, the most important organisations are the EU's Copernicus programme for global maritime remote sensing and ocean modelling, the International Hydrographic Organization (IHO) for marine surveying and the Intergovernmental Oceanographic Commission of UNESCO (IOC) for marine research and observation. The Global Ocean Observing System (GOOS) with its core component ARGO and the Global Sea Level Observing System (GLOSS) are particularly worthy of mention in this regard. IOC's remit also includes coordinating activities under the UN Decade of Ocean Research for Sustainable Development as well as German representation in various networks, such as EuroGOOS. BSH coordinates German contributions to those networks and is also involved in their scientific development. As a departmental research institution, BSH also assists international-level regulation with targeted research work, for example in relation to underwater noise, shipping emissions and cybersecurity.
- Through networks such as the Managing Global Governance programme run by the German Development Institute (DIE), the Global Development Network, the European Association of Development Research and Training Institutes (EADI), and the Poverty Reduction, Equity and Growth Network, BMZ promotes sustainable, joint knowledge generation with African science networks such as the African Economic Research Consortium on development-relevant topics in the economic and social sciences.

Objective 5 – Overcoming global challenges together

The COVID-19 pandemic was the overarching global challenge faced in the reporting period. The Federal Government saw addressing the various challenges posed by the spread of the coronavirus as a joint and shared task and has provided more than €1 billion in additional funding for COVID-19 research. In addition to national-level vaccine and drug development, BMBF also provides priority support to the Coalition for Epidemic Preparedness Innovations (CEPI) – a global partnership launched in 2017. CEPI develops vaccines against pathogens with the potential to cause pandemics and is guided by the priorities set by the World Health Organization (WHO). Given the extensive preliminary work that had already been conducted (also on other coronaviruses), CEPI was able to respond quickly and build up its own development portfolio of nine vaccine candidates by November 2020 (status: November 2020).

The **Federal Government's Round Table on Internationalisation of Education, Science and Research** has so far dealt with various global challenges as part of three thematic cycles. Like the first, the Round Table's third cycle has a regional focus. The Latin America Cycle, which is chaired by the BMBF and co-chaired by the Federal Foreign Office (AA), addresses the exchange of information and cooperation potential.

The Federal Government is engaged in **multilateral research and education dialogue**. This is intended to help identify urgent scientific action areas for global tasks, develop conditions for global research cooperation and devise concrete implementation scenarios. Multilateral forums such as the G7 and the G20, and also organisations like the Organisation for Economic Co-operation and Development (OECD) and the United Nations Educational, Scientific and Cultural Organization (UNESCO), provide suitable platforms for transnational dialogue of this type.

Joint Programming is an EU instrument to improve research and innovation cooperation between Member States. Here, focus is placed on the major societal and global challenges of our time. On the basis of joint research strategies, the participating Member States set up transnational funding programmes for research and innovation, known as Joint Programming Initiatives (JPIs). Germany participates in nine JPIs.

A United States-chaired virtual meeting of G7 science and technology ministers was held on 28 May 2020. In their final declaration, the ministers acknowledged the important role of science and technology in the fight against the coronavirus and its impacts, and in the prevention of future pandemics. They also expressed their commitment to international cooperation on COVID-19 research, providing public access to research results (such as research data), use of supercomputers and the Global Partnership on Artificial Intelligence (GPAI).

The **OECD's** research bodies provide BMBF with a platform for regular multilateral exchange on research, science and innovation policy. In May 2019, future work priorities were defined in an orientation meeting of high-ranking state representatives (covering, for example, artificial intelligence, digitalisation in the science sector and framework conditions for international cooperation).



Since 2001, the German Academic Exchange Service (DAAD) has been funding study programmes offered by German higher education institutions abroad. The range of projects funded to date extends from the creation of individual degree programmes offering a degree recognised in both Germany and the partner country to the founding of faculties and institutes and the establishment of entire universities. The **Trans-national Education Programme (TNB)** finances the German share. German higher education institutions are involved in just under 300 TNB degree programmes worldwide, with over 32,000 students in 35 countries (as at 2018). They serve as beacons of German academic cooperation in the partner countries.

Through the German Secretariat for UNESCO's International Hydrological Programme (IHP), the World Meteorological Organization's Hydrology and Water Resources Programme (HWRP) and UNEP's Global Environment Monitoring System for Freshwater (GEMS/Water) located at the International Centre for Water Resources and Global Change (ICWRGC), Germany contributes to research, education and capacity development by means of its research network and work with other countries.

Education and Science Diplomacy (ESS) is a central component of the Federal Government's Strategy for the Internationalisation of Education, Science and Research in which Germany declares its commitment to a connected, open and global knowledge society and to promoting the freedom of science and research worldwide. This is demonstrated, among other things, by BMBF's long-standing, intensive research cooperation with numerous partner countries in the form of Scientific and Technological Cooperation (STC). ESS is also a supporting pillar of Germany's cultural relations and education policy, which is designed to spark interest in Germany as a modern, cosmopolitan country, and as a hub for creativity, knowledge and innovation, by means of dialogue and exchange-based promotion of education, science and research. The Federal Foreign Office and BMBF work closely together as lead ministries on this cross-sectoral topic.

Given the central importance of agricultural research in ensuring sustainable, climate-proof food security in emerging and developing countries, BMZ has continuously supported the Consultative Group on International Agricultural Research (CGIAR) – an international agricultural research network which currently comprises 15 research centres on four continents – by providing reliable funding contributions ever since it was founded in 1971. The structural reform initiated in 2020 under the “One CGIAR” motto was largely driven by Germany.

3. Focus on Germany's Presidency of the Council of the European Union 2020

In the second half of 2020, Germany held the Presidency of the Council of the EU under the slogan "Together for Europe's recovery".

The German Presidency took place during extremely challenging times for Europe. The goal was to work together to sustainably contain the pandemic and manage its impacts, shape the major transformation processes of our time (such as climate change and digitalisation), strengthen the EU's ability to act globally and lead it out of the crisis stronger and better prepared for future crises. The pandemic highlighted the important role that education, research and innovation play in overcoming challenges and crises of global scale.

Overcoming the crisis also highlighted the value of excellent science and scientific advice for policy-making. Findings from science and research form the basis for effective strategies to contain the pandemic. In the search for ways to combat the pandemic, international research collaborations have become especially prominent in the public eye.

Under the German EU Council Presidency, the following topics were central in relation to education, science and research:

- The aspiration for education, research and innovation is to make Europe more **resilient, sovereign and sustainable** by means of excellent education and research. In this connection, the Federal Government also placed particular emphasis on achieving a new quality in cooperation between the presidency trio, meaning between Germany and the subsequent EU presidencies of Portugal and Slovenia.
- The three countries jointly set themselves the goal of **strengthening the European Research Area (ERA)** and making it more dynamic. With concrete initiatives such as the new ERA approach and the adoption of corresponding Council conclusions, a resilience and crisis-preparedness initiative, joint citizen science projects and a research-driven initiative on green hydrogen, the foundations have been laid on which to achieve that goal before the Trio Presidency comes to an end in 2021.
- These long-term initiatives ensure that research and innovation contribute to a sustainable recovery in Europe. A ministerial conference on the European Research Area held in October 2020 focused on the freedom of research as a fundamental value that should additionally guide cooperation with international partners. By signing the "Bonn Declaration on Freedom of Scientific Research", the EU Member States made a strong commitment to protecting research freedom, both in the ERA and as a component of international cooperation.
- Another focus of the German EU Council Presidency was the repositioning of European VET cooperation with the adoption of a corresponding Council Recommendation. In particular, this includes the **Osnabrück Declaration on vocational education and training** initiated at the informal meeting of education ministers in Osnabrück on 16–17 September 2020. By adopting the Osnabrück Declaration, the EU Member States are underpinning their VET systems with concrete measures and targets – for example, with the aim of increasing participation in VET stays abroad and directing VET focus towards the green digital transformation.
- To expand and establish digital education across educational sectors – not least as a consequence of the COVID-19 pandemic – and thus promote high-quality education, the Council of the EU, in response to an initiative of the German Council Presidency, also adopted a set of conclusions on the topic of **digital education** in November 2020.

- Great importance was placed on better access to and exchange of **health-related data** to improve health-care, research and development. EU Member States agreed on key requirements for the **European Health Data Space (EHDS)** and the associated access to and exchange of health data in the EU. In particular, in its measures to establish the EHDS, the European Commission was asked to consider the governance options developed in the Joint Action “Towards the European Health Data Space”, which is to be launched in 2021. Worthy of note in this regard is the virtual high-level conference “Digital Health 2020 – EU on the Move” held on 11 November 2020, where the Presidency and the European Commission expressed their intention to collaborate closely to ensure secure, patient-oriented use of health data.
- **In the spirit of strengthening both the social dimension and social cohesion** “for a just Europe”, the Federal Ministry of Labour and Social Affairs (BMAS) has focused on continuing education and training as a central labour market policy response to digital and green structural transformation, and has initiated more intensive exchange between the Member States on continuing education and training; this also ties in with the publication of the updated Skills Agenda by the European Commission. In the course of the digital and green transformation, vocational education and training must prepare people for the jobs of the future so as to create prospects for both young people and long-standing employees and to combat the shortage of skilled workers.



Together for Europe’s recovery

Programme of Germany’s Presidency of the Council of the European Union in the Fields of Education, Research and Innovation

<p>Pandemics research and pharmaceutical research for resilience and global health</p>	<p>Digital and vocational education and training for better opportunities and justice in education and for jobs of the future</p>	<p>Putting the European Green Deal into action with education, research and innovation</p>	<p>Cross-border, dynamic and value-based cooperation in the European Research Area</p>	<p>Technological Sovereignty and “AI made in Europe”</p>
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<p>21/07 Informal Meeting of Research Ministers</p> <p>September</p> <p>16–17/09 Informal Meeting of Education Ministers</p> <p>21–22/09 Innovative Universities – Third Mission Possible</p> <p>25/09 Competitiveness Council/Research</p> <p>29–30/09 Presidency Conference on the Marie Skłodowska-Curie Actions (MSCA)</p>	<p>October</p> <p>6–8/10 University: Future Festival – Learning and Systems in a Digital Society</p> <p>13/10 Europe: Unite Against Cancer</p> <p>14–15/10 The Citizen Science SDG Conference: Knowledge for Change</p> <p>20/10 Ministerial Conference on the European Research Area</p> <p>21–22/10 beyondwork2020 – European Conference on Labour Research</p> <p>27–28/10 Industrial Technologies 2020 – “Transition to Sustainable Prosperity”</p> <p>27–28/10 Carbon2Chem</p>	<p>November</p> <p>9–12/11 European Vocational Skills Week</p> <p>19–20/11 Global Bioeconomy Summit</p> <p>27/11 Competitiveness Council/Research</p> <p>30/11 Education, Youth, Culture and Sport Council/Education</p>
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Negotiations on EU education and research programmes 2021–2027

Even before the outbreak of the COVID-19 pandemic, the expectations placed on the German Council Presidency were great, to say the least. The Presidency fell in the period in which major decisions were being made on the future of the European Union, with a new Multiannual Financial Framework 2021–2027 and the major education, research and innovation programmes it is designed to finance. As a mediator between the different positions within the competent Council formations as well as between the Council of the EU and the other EU institutions, the German Presidency held major responsibility for the future-focused design of those programmes – the most important being the new “Horizon Europe” Framework Programme for Research and Innovation, and the Erasmus+ programme on education and mobility. Other important dossiers involved the European Institute of Innovation and Technology (EIT), the draft decision on EU funding for the ITER international fusion research project and the Research Fund for Coal and Steel (RFCS).

• Horizon Europe

After intensive consultations within the circle of the Member States, the European Parliament and the European Commission, it was possible under the German Council Presidency to reach agreement on the legislative package for Horizon Europe, the ninth EU Framework Programme for Research and Innovation.

With a budget of around €95.5 billion at current prices, Horizon Europe is the world’s largest research and innovation programme, and its various programme areas cover the entire innovation chain. Compared to Horizon 2020, the new framework programme demonstrates great continuity. A new feature involves the institutionalisation of the European Innovation Council aimed at promoting pioneering, market-creating technologies and innovation. Horizon Europe also introduces “missions” for the first time. Missions are EU-wide instruments for research and innovation (R&I) which set ambitious goals to tackle today’s societal challenges in Europe using an interdisciplinary approach. They are intended to run as highly visible, clearly time-limited instruments alongside the regular calls for proposals announced under the framework programme.

• Erasmus+

Thanks to the political consensus reached on Erasmus+ under the German Council Presidency, and with the Member States, the European Parliament and the European Commission, the personal, social and professional development of all people in all areas of society are being promoted while strengthening both social cohesion and the European idea.

With a budget of around €26.2 billion, the programme is more inclusive, innovative, digital and green. It is mostly characterised by a high degree of continuity. New components involve the promotion of virtual and blended mobility; a stronger focus on inclusion and the new initiatives of the European University Networks, which as virtual alliances contribute to the quality, attractiveness and competitiveness of higher education institutions in the EU); the “Centres of VET Excellence”, which promote networking between institutions from the vocational education and training, industry and research/university sectors; and the “DiscoverEU” initiative aimed at bringing young people closer to European culture and history by giving away train tickets valid for travel throughout Europe.

Although the German Presidency of the Council of the EU ended on 31 December 2020, this also marked the start of the joint Trio Presidency of Germany, Portugal and Slovenia. In collaboration with its Trio partners, Germany will continue the work it has started on the path to achieving a resilient, sovereign and sustainable Europe.

4. Europe

Beyond the German EU Council Presidency, Germany also provided important stimulus for the further development of European cooperation during the reporting period.

In addition to the further development of the ERA as outlined earlier, Germany moved forward with the successful implementation of its **ERA Strategy**.

In 2019, Germany's gross expenditure on research and development amounted to 3.18 per cent of gross domestic product (GDP) or to €109.5 billion (preliminary figures). Some 69 per cent of that amount was borne by the private sector. In 2020, Germany adopted its funding programme on "The European Innovation Union – Germany's Commitment to the European Research Area". The programme aids research performance, both in Germany and Europe-wide, and is also designed to increase cooperation with states that are weaker in research terms (**ERA Priority 1**).

Germany's close interconnectedness with the EU is underlined by its financial commitment to the public-public partnerships with which the EU Member States coordinate their R&D tenders. In 2020, Germany provided €100.8 million in funding for such measures² (**ERA Priority 2.1**).

Germany also works closely with its European partners when it comes to research infrastructures. The main focus here is on coordination and approval within the European Strategy Forum on Research Infrastructures (ESFRI). Germany, in the form of German institutions, currently has stakes in the legal entities comprising 65 per cent of ESFRI Landmarks, meaning ESFRI projects that have entered the implementation phase (**ERA priority 2.2**).

The mobility of European researchers to and from Germany is assisted by a wide range of advisory and support services. These include the EURAXESS Germany coordination office (counselling office for internationally mobile researchers coming to Germany for academic work) introduced with the Sixth Framework Programme and the National Contact Point MSC introduced under the Third Framework Programme for the activities now known as Marie Skłodowska-Curie Actions. The office carried out over 2,800 consultations in the reporting period. The measures are proving successful – 25.1 per cent of the scientific staff at Germany's four largest non-university research institutions now come from abroad.³ This successfully implements **ERA Priority 3**, "Open labour market for researchers", which focuses on awarding positions using open, transparent, merit-based recruitment procedures, breaking down legal barriers to researcher mobility, and making extensive use of the EURAXESS network as a central information platform.



² Preliminary figures, as at June 2021, Source: ERA-LEARN.

³ As at 2017, Source: Wissenschaft weltoffen kompakt 2020: [wissenschaft-weltoffen.de/content/uploads/2021/09/wiwe_kompakt_2020_deutsch.pdf](https://www.wissenschaft-weltoffen.de/content/uploads/2021/09/wiwe_kompakt_2020_deutsch.pdf).

During the reporting period, continuation of the joint federal and state programme for female professors along with target quotas under the cascade model and according to the equality standards of the German Research Foundation (DFG) helped increase women's representation in positions of responsibility in the science system. The share of women professors at higher education institutions in Germany has risen and was around 26 per cent in 2019 (**ERA Priority 4**).

Exchange and transfer between science and society is supported, among other things, by the "The European Innovation Union – Germany's Commitment to the European Research Area" funding programme, which entered into force in 2020. To support science in its efforts to achieve open access, BMBF has continued to implement its open access strategy, underpinning it with measures such as the open-access.network competence and networking platform and a corresponding new BMBF funding line in June 2020 (**ERA Priority 5**).

Germany worked to further develop the international dimension of the ERA – both at the political level as part of the Strategy Forum for International Cooperation in Science and Technology (SFIC) and at the action level in, among other things, the Joint Programming Initiatives (JPIs) increasingly being used for cooperation with non-European countries such as Argentina, Canada, Japan and New Zealand (**ERA Priority 6**).

In the course of its seven-year lifecycle, the **Framework Programme for Research and Innovation**, "Horizon 2020", became firmly established as an essential component of project-based funding for German research institutions and universities. German institutions received around €9.2 billion in EU funding between January 2014 and December 2020. European research funding contributes significantly to the third-party funding income of many of Germany's research institutions.

The share of German participation in European projects amounted to 13.3 per cent in June 2020, and the German share of grants under Horizon 2020 was 16.4 per cent. Germany thus ranks above all participating countries in terms of grants received, ahead of the UK and France.

Until the end of 2020, the strategic framework for European cooperation in education and training (ET 2020) formed the primary working basis for **European cooperation in education**. In preparation for the development of the successor strategy, Germany, in conjunction with Croatia, hosted a workshop on the future strategy on 16 July 2019 in Brussels. On 20 September 2020, the EU Commission published the Communication "Achieving the European Education Area by 2025".

The foundation for the **European Higher Education Area** is provided by the Bologna Declaration, signed in 1999. Its implementation and further development is ensured by expert groups in which Germany actively participated during the reporting period. Germany was also a member of the Taskforce on Academic Freedom, which aims to promote academic freedom, the institutional autonomy of higher education institutions, and student and teacher participation in the governance of higher education institutions.

Erasmus+ is the European programme for education, training, youth and sport. It is designed to enable more than four million people across Europe to spend time abroad for learning purposes by 2020.⁴ In the 2018–2019 project period in the higher education sector, approximately 42,000 students from Germany received funding via Erasmus+.

Using funding from the Federal Foreign Office, the German Academic Exchange Service (DAAD) supports 20 interdisciplinary centres for German and European studies at outstanding foreign universities in twelve countries. The centres train experts on German and European issues and bring together academia, politics and the general public in the study of Germany and Europe.

⁴ Note: Final data on Erasmus+ in 2020 was not available when finalising this report.

5. Examples of bilateral cooperation

Bilateral cooperation in education, science and research occurs in numerous and diverse ways. In the reporting period, successful cooperation activities were continued and new projects initiated. The following examples illustrate the diversity of the various cooperations in place:

- **France** is Germany's most important partner of all the EU Member States. In a wide range of areas, intensive bilateral relations are maintained between ministries and research and science organisations, as well as in joint projects. This is underpinned by the Treaty of Aachen signed by Chancellor Merkel and President Macron on 22 January 2019. The 21st Franco-German Council of Ministers in Toulouse in October 2019 agreed concrete measures for strategic Franco-German cooperation in education, research and innovation. In particular, cooperation is to be intensified in the areas of artificial intelligence, IT security, 5G communication technologies/Open-RAN, climate/energy and green hydrogen – also with a view to cooperation in Africa.
- BMWi has engaged in regular exchange with the Republic of **Austria** since 2017 and has successfully initiated joint technology projects in several technology sectors (notably the data economy, artificial intelligence and GAIA-X).
- As part of the CELTIC programme, BMWi currently funds bilateral 5G communication projects with the **UK**. Following Brexit, initial exploratory talks and political contacts took place in 2020 with a view to possible future cooperation.
- At the centre of the particularly close partnership with **Poland** is a funding initiative intended to contribute to the digitalisation of both countries' economies. The funding programme run by BMBF and its Polish partner ministry targets small and medium-sized enterprises and start-ups. The main focus of the first funding announcement is the digitalisation of medical technology/health research.
- In 2019, particular focus was placed on cooperation with the Western Balkan states. For example, on 4 December 2019, BMBF published its first unilateral funding announcement exclusively aimed at the **Western Balkan states** to support research and development projects between Germany and those states.
- In the research field of IT security, data protection and privacy, one especially successful example of international cooperation involves the CISPA-Stanford Center for Cybersecurity, a collaboration between the CISPA Helmholtz Centre for Information Security and Stanford University in the **USA**. It enables outstanding researchers to work at Stanford University as visiting professors for a period of two years and then continue their research as senior researchers at CISPA.
- With its resources, diverse expertise and international orientation, **Canada** is a valued cooperation partner. The most recent bilateral commission meeting on scientific and technological cooperation took place in September 2019 and focused on the topics of natural resources (energy, environment, including the Arctic and oceans), life sciences/health, artificial intelligence and Industry 4.0. In the field of artificial intelligence, following delegation visits in 2019, BMWi initiated four bilateral cooperation projects in exchange with the Canadian Ministry of Economic Affairs and the provincial governments of Ontario and Quebec.
- **Brazil** offers good conditions for efficient cultivation of biogenic raw materials such as sugar cane. The country is thus one of the preferred partner countries in the "Bioeconomy International" research measure run by BMBF. In the reporting period, BMBF funded 16 research networks in conjunction with Brazilian institutions. With their research on biogenic raw materials and energy sources, they are making an important contribution to the creation of an economy based on renewable raw materials. Since 2017, a steering committee has met regularly to coordinate joint activities on the bioeconomy.

Partners on the Brazilian side are the Ministry of Research (MCTI) and the Ministry of Agriculture (MAPA), and on the German side the Federal Ministry of Food and Agriculture (BMEL) and BMBF. In autumn 2020, a funding announcement was published for joint projects in the thematic fields of “Industrial use of renewable raw materials” and “Medicinal plants”.

- BMBF has supported the government of **Colombia** in setting up innovation clusters with the aim of sharing German experience in the field of knowledge-based value creation in structurally weak regions. With the FIDUCOLDEX funding bank, BMBF has supported nine bilateral cluster networks in the fields of health, water technology and bioeconomy since 2016. The Federal Foreign Office (AA) funds the German-Colombian Peace Institute (Capaz) in Bogotá via the German Academic Exchange Service (DAAD). Capaz is designed to contribute to the consolidation of peace in Colombia by providing scientific support and political advice. DAAD also supports the Centre of Excellence for Marine Sciences (CEMarin), which for years has been operated as a successful research network with high application potential.
- Focal points of the long-standing cooperation between Germany and **Japan** include marine research and technology, automated and connected driving, optics and photonics, and environmental and battery research. The 23rd meeting of the Japan-Germany Joint Committee on Cooperation in Science and Technology was held in Tokyo on 6 February 2019, immediately following Chancellor Merkel’s trip to Japan. Cooperations on topics such as cluster networking, automated and connected driving, battery research, hydrogen research, climate research and artificial intelligence are to be further intensified. Federal Minister Karliczek’s trip to Tokyo in April 2019 focused on artificial intelligence (AI) and digitalisation. In the annual German-Japanese Digital Dialogue, the last of which took place in February 2020, the Federal Ministry for Economic Affairs and Energy (BMWi) and the Japanese Ministry of Internal Affairs and Communications (MIC) engage in ongoing exchange on relevant digital economy topics (e.g. GAIA-X, Industry 4.0, robotics) and also initiate bilateral R&D projects.
- The thematic areas of bilateral cooperation with **South Korea** are diverse and include, for example, health research, environmental technology and robotics. Since 2017, cooperation between companies and research institutions from Germany and South Korea has been increasingly promoted in the form of what are known as “2+2” projects. The sixth meeting of the Korean-German Cooperation Committee on Science & Industrial Technology (KGCCSIT) took place in June 2020 – it was held as an online conference for the first time due to the travel restrictions imposed in response to the coronavirus pandemic.
- BMBF’s bilateral cooperation with **Singapore** currently focuses on advanced production technologies and blockchain technologies. These topics have been funded in cooperation between companies and research institutions/universities from both countries in the form of “2+2” projects since 2018 and 2020 respectively.
- The German-Chinese joint project “Industry 4.0 Platform for Turnkey Production Systems” (I4TP) contributes to German-Chinese cooperation in the field of intelligent manufacturing (Industry 4.0) and smart services. In the future, the research work will focus on transformable products, production equipment and services for cross-border cooperation. The establishment of a factory automation platform will provide the basis for sustainable economic cooperation between Germany and the People’s Republic of **China**.
- In summer 2020, BMBF signed a Joint Declaration of Intent with the Australian Department of Industry, Science, Energy and Resources and the Department of Foreign Affairs and Trade to promote a joint feasibility study for a green hydrogen supply chain from **Australia** to Germany. Preparation for the study began in November 2020.



- Cooperation in science and research with **South Africa** has existed since 1996. The agreement between BMBF and the South African Department of Science and Innovation (DSI) governs the establishment of a Joint Science and Technology Cooperation Committee. The last meeting held in South Africa in 2019 was integrated into the two-year meeting cycle of the Binational Commission (BNK) and was held virtually in March 2020 due to the COVID-19 pandemic. As an outcome of the BNK meeting, BMBF and DSI published a joint funding guideline for research on post COVID-19 sustainable societal change and transformation in September 2020.
- The establishment of German-Ukrainian cores of excellence is intended to strengthen **Ukraine's** attractiveness as a research location. Excellent Ukrainian researchers currently working outside their country will be given the opportunity to establish a core of excellence in Ukraine in conjunction with a German research institution. BMBF published an associated call for proposals at the start of 2020. The high quality of the proposals submitted led to BMBF selecting 13 projects for funding in a 12-month conception phase. Up to four projects will subsequently be selected to receive four-year funding.
- In December 2018, the “German-Russian Roadmap for Cooperation in Education, Science, Research and Innovation” was signed by the Federal Minister of Education and Research and her then Russian counterpart in Moscow. The roadmap set out a ten-year strategy on cooperation with **Russia** in four priority areas: (I) major research infrastructures, (II) joint research projects in the areas of scientific and technological cooperation prioritised by both countries, (III) promotion of early-career scientists in higher education and vocational training, and (IV) science and research to build bridges between science, society and business. An important milestone on the roadmap saw the signing of an agreement between the GSI Helmholtz Centre for Heavy Ion Research and the Joint Institute for Nuclear Research (JINR) on the instrumentation and scientific use of the future accelerator facility – the Nuclotron-based Ion Collider fAcility (NICA) – being built at the JINR in Dubna. The joint concluding event of the final thematic year of the “German-Russian Year of Cooperation in Higher Education and Research 2018–2020” took place on 15 September 2020 using a bilateral format under the patronage of both foreign ministers.

6. Activities of the research and intermediary organisations

The research and intermediary organisations are engaged in a wide variety of international activities. The German Research Foundation (DFG), the Max Planck Society for the Advancement of Science e. V. (MPG), the Helmholtz Association of German Research Centers e. V. (HGF), the Fraunhofer Society for the Promotion of Applied Research (FhG), the Leibniz Association (LG), the German Academic Exchange Service (DAAD), the Alexander von Humboldt Foundation (AvH) and the German Rectors' Conference (HRK) are all involved in activities ranging from the establishment of research centres abroad for select priority topics (such as the Fraunhofer Austria Center for Digitization and Artificial Intelligence (KI4LIFE) established in 2019), to support for the internationalisation of German universities by both the DAAD and the HRK, to interdisciplinary research to address global challenges such as climate protection (for example, 2019 saw the launch of MOSAiC, the largest Arctic expedition ever, led by the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, with over 70 participating partner institutions from 20 countries). Other key activities include cooperation with excellent partners worldwide and the targeted promotion of scientific excellence (such as via AvH's Henriette Herz Scouting Programme – newly launched in the reporting period – which enables researchers serving as “scouts” at German research institutions to actively recruit research fellows from abroad).

List of abbreviations

AA	Federal Foreign Office
AI	Artificial Intelligence
ARGO	Array for Real-time Geostrophic Oceanography
AvH	Alexander von Humboldt-Stiftung
BWD	Education and Science Diplomacy
BMBF	Federal Ministry of Education and Research
BMEL	Federal Ministry of Food and Agriculture
BMVI	Federal Ministry of Transport and Digital Infrastructure
BMWi	Federal Ministry for Economic Affairs and Energy
BMZ	Federal Ministry for Economic Cooperation and Development
CEPI	Coalition for Epidemic Preparedness Innovations
CLIENT II	BMBF funding programme on “International Partnerships for Sustainable Innovations”
COVID-19	Coronavirus disease 2019 – an infection caused by SARS-CoV-2 (SARS: severe acute respiratory syndrome)
DAAD	German Academic Exchange Service
DFG	German Research Foundation
DIE	German Development Institute
DLR	German Aerospace Center
DWIH	German Centres for Research and Innovation
EADI	European Association of Development Research and Training Institutes
EaP	Eastern Partnership
ECTS	European Credit Transfer System
ERA	European Research Area
ERA-NET	European Research Area Networks
ESFRI	European Strategy Forum on Research Infrastructures
ET 2020	Strategic framework for European cooperation in education and training
EU	European Union
EURAXESS	Researchers in Motion – Support for mobile researchers
EUREKA	European initiative for market-oriented research and development
FhG	Fraunhofer Society for the Advancement of Applied Research

GPAI	Global Partnership on Artificial Intelligence
GOVET	German Office for International Cooperation in Vocational Education and Training
G7	Group of Seven: Germany, France, United Kingdom, Italy, Japan, Canada, US
G20	Group of Twenty
HGF	Helmholtz Association
HRK	German Rectors' Conference
iMOVE	International Marketing of Vocational Education and Training
IPCEI	Important Project of Common European Interest
JPI	Joint Programming Initiative
JTI	Joint Technology Initiatives
KIC	Knowledge and Innovation Communities
MENA	Middle East and North Africa
MPG	Max Planck Society
OECD	Organisation for Economic Co-operation and Development
R&D	Research and Development
R&I	Research and Innovation
RFCF	Research Fund for Coal and Steel
SASSCAL	Southern African Science Service Centre for Climate Change and Adaptive Land Management
SFIC	Strategic Forum for International STI Cooperation
SMEs	Small and medium-sized enterprises
STC	Science & Technology Cooperation
TNB	Programm für Transnationale Bildung im Bereich der internationalen Berufsbildungszusammenarbeit (Programme for Transnational Education in International VET Cooperation)
UNESCO	United Nations Educational, Scientific and Cultural Organization
WASCAL	West African Science Service Centre on Climate Change and Adapted Land Use
WHO	World Health Organization

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