DAAD

Deutscher Akademischer Austauschdienst
German Academic Exchange Service

DAAD
PERSPECTIVES

Academic cooperation with China: a realistic approach

DAAD recommendations to German higher education institutions

January 2024

Contents

1

Background and aims

The shape and purpose of academic cooperation with China is currently the subject of intense discussions in German higher education and research institutions, and the question is also discussed in politics and the media. China's significance as a centre of higher education and science is growing, and it has also clearly stated that it sees itself as a major player on the global stage. As such, a re-evaluation of academic co-operation with China is urgently needed. In this debate, the German Federal Government's China Strategy, adopted in July 2023, offers a new point of reference. This paper takes the strategy as its starting point for its efforts to consolidate current discussions around academic cooperation with China, and also to share concrete recommendations to German higher education institutions on how to develop their partnerships in future.

Our recommendations have emerged from detailed and lively discussions with an extensive network. As the world's largest organisation funding academic exchange, the DAAD can combine the expertise of large numbers of individuals with high levels of expertise and skills relating to China, such as recipients of DAAD project funding, project participants, alumni and the academics and researchers on whose behalf the DAAD acts as a mediator. The DAAD promotes academic mobility to and from China, not only for undergraduates and postgraduates, but also for PhD students and lecturers. On top of this, the DAAD funds higher education cooperation programmes, such as the Chinese German College for Postgraduate Studies (founded in 1998) and the Chinese German University at Tongji University Shanghai. These programmes include joint study programmes, double degree programmes and research partnerships.

Through our regional office in Beijing and associated offices in Shanghai and Guangzhu, the DAAD can access up-to-the-minute local expertise on the higher education sector and a longstanding network of local stakeholders and partners. The DAAD also works closely with our member institutions, drawing on their experience and expertise in collaborating with China. Since its creation in 2019, KIWi, the DAAD's Competence Centre for International Academic Collaborations in our head office in Bonn, has become a nexus for the DAAD's expertise on China, handling a growing number of inquiries from German higher education institutions, academics and researchers. In addition to this, KIWi organises information and networking

events to help German institutions gain the skills they need to work with China, including raising awareness around chances and risks in such partnerships.

Over the past few years China has been through a period of rapid and wide-ranging change as a centre of higher education and research, and in many areas it is now a key partner for German academia and science. As such, our recommendations in this paper take an active approach, focused on the opportunities from cooperating with Chinese partners and institutions while also identifying and exploiting the potential of such collaborations. However, making the most of these opportunities today also calls for a realistic appraisal of how the wider political, financial, and strategic environment has changed. The Federal Government's China Strategy explicitly acknowledges how these conditions have changed, describing China as a 'partner, competitor and systemic rival'. In this context, relations with China form a space in which cooperative and conflicting constellations overlap. For German academics and researchers, this entails both opportunities and obligations. On the one hand they must be active in exploring and making the most of the opportunities of these partnerships. On the other hand, they must also identify the risks from such collaborations, negotiate the conditions for a partnership and set boundaries for their cooperation. Following earlier considerations of these points by the DAAD (e.g. DAAD 2022a), we would describe this approach as 'pragmatic foreign academic policy'.

As such, German higher education institutions would be advised to follow three guiding principles when designing any partnership with China. Firstly, each higher education institution should consider its own interests and expectations in an academic partnership with China. On this basis, cooperation must be reciprocal (or 'symmetrical' in the words of the Federal Government's China Strategy), asserting as far as possible the German institution's own interests and expectations. Secondly, German higher education institutions need to take a risk-reflexive approach which gives them access to and ensures they can be involved in outstanding research in China, which in some areas is world-leading. At the same time, their approach must also protect German national sovereignty and security. To do this, higher education institutions need to make use of international tools to protect research security. Thirdly, cooperating with China requires mutual understanding and knowledge that is both based on robust foundations and relevant to the activities at hand. For German higher education institutions this entails extending and reinforcing their expertise around science, academia, business, society and politics in China.

In this report, we present an approach which is guided by these institutions' own interests, risk-aware and skills-based. In the next chapter, we consider recent developments in the Chinese higher education system and current academic relations between Germany and China. Chapter 3 presents recommendations based on the three principles outlined above for academic cooperation with China. In Chapter 4 we go on to put these recommendations in a wider context with regard to collaborations between higher education institutions, other stakeholders in science and academia, and education policymakers. The appendix includes a guide to helpful publications on this topic from recent years.

2

The current state of academic relations between Germany and China

An examination of the latest data and trends for the Chinese higher education system and its relation with Germany yields three observations about the current state of academic cooperation with China.

2.1 China's higher education and scientific systems are developing rapidly

China's expansion as a centre of higher education, science and innovation in recent years has made a great impression on the development of the country as a whole. This growth played a part in making social mobility much easier in China than in other western countries over the past 10 years, particularly when compared to the USA (Sandel, 2020: 76). At the same time, massive state investment in academia and research directly follows the Chinese Communist Party's publicly stated desire to give China a global leadership role by 2050.

At the same time, China's higher education has been growing ever since the period of reform and opening-up began in 1978. The country currently has some 3,000 higher education institutions, of which half were set up in the last two decades, and it will not be long before China overtakes the European Union (Abels and Bode 2022: 20). With 47 million students (MoE 2023) and 10 million graduates in 2022 (NBS 2023), China has almost twice the number of students in the EU (Eurostat 2023). Continued growth in STEM graduate numbers over the next few years will only add to China's weight in this area. For example, a study by Georgetown University predicts that almost 80,000 young people will do a PhD in STEM subjects in China in 2025, compared to a predicted figure of 40,000 for the US (cf. CSET 2021: 2).

In addition to this, China's higher education institutions are becoming increasingly attractive, particularly for students from countries in the Global South. The number of students from African countries studying in China has risen sharply, for instance, growing continuously from 2,200 in 2003 to 82,000 in 2018 (Repnikova 2022: 31) and the figure has continued to rise since the end of the pandemic.

The Chinese government's efforts are not solely directed at increasing the quantity of higher education institutions, but also at raising their quality. The Chinese Double Excellence Programme is working towards similar goals as Germany's Excellence Strategy (cf. DAAD

Blickpunkt 2017). Chinese universities are now increasingly to be found in prominent positions in international higher education rankings, and in 2023, 11 Chinese universities held top-100 places in the Shanghai Ranking Academic Ranking of World Universities, and 7 of the top 100 places in the Times Higher Education World University Rankings.

In conjunction with this, China is enjoying increased influence in academia and strength in research. For example, Chinese universities hold 16 of the top 25 places for scientific impact in the CWTS Leiden Ranking 2023, (CWTS 2023) and the Nature Index ranking of leading science cities placed 12 Chinese cities among the top 25. By 2018 China had already become the largest producer of specialist scientific equipment, overtaking the US for the first time (Tollefson 2018). According to the Australian Strategic Policy Institute's Critical Technology Tracker, China now leads in the development of 37 out of 44 critical technologies around the word such as AI, quantum technology, robotics and cybersecurity technologies, once again pushing the US off the top spot (ASPI 2023).

Strength in innovation has also become a key feature of China's higher education system, in contrast to earlier predictions that China's strength lay more in imitating others (DGAP Policy Brief 2023). During the 2023 National People's Congress, the Chinese Government called for a further 2% increase in national spending on research and development in 2023 (Mallapaty 2023: 571), although spending on these areas had already risen by over 10% in 2022, to an equivalent of €424 billion. This now puts China in second place globally, behind only the US at €660 bn, and well ahead of Japan at €194 bn, and Germany at €148 bn (all figures from OECD Main OECD Main Science and Technology Indicators 2022). The Chinese government also plans to focus future investment more on fundamental research, an area where Western countries hold widely varying assessments of Chinese scientific strength.

International academic cooperation is seen as an important tool to develop China's strength as an innovator, and from a Chinese perspective, Germany is a powerful partner, particularly with regard to its potential around innovation. In the WIPO Global Innovation Index 2023, for example, Germany ranked 8th while China held 12th place (WIP 2023: 58).

2.2 Systemic differences cannot be ignored, including those in academia

While China is achieving and in some cases exceeding international standards in higher education and science, significant systemic differences remain evident in many areas of society, and China has long since ceased to attempt to conceal them. For example, in 2023 Germany's Federal Foreign Office noted regressive Chinese domestic policies around civil and political rights, including freedoms of expression and the media, and increasing pressure on the cultural expression and identity of ethnic and religious minorities (Auswärtiges Amt 2023: 8, 20). Furthermore, China's differing positions on Russia's invasion of Ukraine and other geopolitical conflicts are putting pressure on German-Chinese relations. For this reason, the EU and Germany's China Strategy no longer see China only as a productive 'partner' and challenging 'competitor', but also as a 'systemic rival'.

The challenges facing the higher education sector include the tangled links between civilian and military life in the sector and the fact that the system is rooted in Chinese power politics. Moreover, the Chinese higher education system is centrally managed and monitored, and there are restrictions on freedoms to teach and research in the country. The Academic Freedom Index places China in the bottom 10% of countries worldwide for academic freedom, alongside Iran and Saudi Arabia (Kinzelbach et al. 2023: 3). The Chinese government keeps a very close eye on the country's higher education institutions as potential starting-points for democratic protests and disturbances. By training staff, conducting reviews, requesting reports and installing video cameras in lecture theatres, the government keeps higher education institutions and campus life under constant

surveillance. Digitalisation in teaching and administrative processes also allows political monitoring to become even more wide-ranging. For example, universities are required not only to train students with academic talent, but also to ensure that future elites are set on their path through life with the right mindset. Academic organisations such as the Chinese Academy of Sciences demand their members be faithful to the party and ideologically loyal.

These restrictions on academic freedom are felt most strongly in the humanities and social sciences, but China is also seeking to impose these restrictions beyond its own borders. In Germany, for example, this resulted in sanctions on the Mercator Institute for China Studies in 2021. Conditions for cooperation are also becoming more difficult in the sciences, medicine and engineering. Chinese laws such as the new data protection law from 2021 and the anti-espionage law which came into force in July 2023 cause conflicts with German and European laws, and create uncertainty around the rights of foreign academics and researchers collaborating with Chinese partners.

2.3 The pace of German-Chinese higher education cooperation has slowed since the pandemic

In conjunction with the systemic differences described above, China's more than three years' isolation during the pandemic have created a challenging environment for academic cooperation. Digital surveillance and the zero-Covid policy have meant that Chinese universities were cut off from the outside world for several years. Only university employees and students could enter campuses, and visits by foreign partners were effectively impossible until the beginning of 2023. This had serious side effects on academic mobility and impacted the number of German-Chinese higher education partnerships. According to data from the German Rectors Conference (HRK), collaborations peaked at 1,408 in 2020, but by 2022 had fallen over 2% to 1,376 (HSI-Monitor 2023).

That said, since the end of strict Covid policies, academic cooperation has gradually been picking up once more. For example, the DAAD's Beijing regional office reports growing interest in international cooperation from Chinese institutions, which is leading to increased requests for contact and cooperation from German higher education institutions. The pandemic severely impacted the continuation of longstanding DAAD-funded collaborations with German higher education institutions, but these are currently beginning to revive and take up new topics. These include the Sino-German University (CDH) at Tongji University Shanghai, the Centre for German Studies of Peking University, the Sino-German Institute for Law Studies, and the German Language, Literature and Culture: Institutional Partnerships Worldwide (GIP) programme.

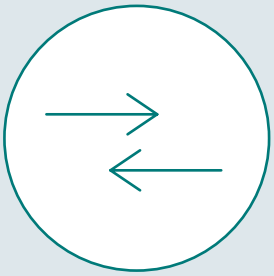
The impact of restrictions due to the pandemic is also evident in data on academic mobility. This not only concerns mobility to China (which has been slowed significantly since 2019/2020 due to China's zero-Covid policy) but also mobility to Germany in some areas. On this point, however, it is worth analyzing the various forms of mobility and groups involved on a case-by-case basis.

Chinese early career and more established academics and researchers working in Germany remain a major pillar of Germany's higher education system. For example, the 7,208 PhD students from China (including Hong Kong and Macau) accounted for 15% of all international PhD students in Germany in 2022. This puts China at the head of the list of key countries of origin, ahead of India and Iran, with 3,769 and 2,553 PhD students respectively (Federal Statistical Office 2023a). Even during the pandemic the number of Chinese PhD students continued to rise, up from 5,986 in 2019.

Similar trends can be seen in Chinese academic staff at German higher education institutions (although this overlaps somewhat with the group of PhD students). The number of academic staff from China has risen year on year from 2,400 in 2012 to 4,000 in 2022. That said, Chinese academics and researchers rank only third in this group,

KEY FINDINGS ON THE STATE OF ACADEMIC RELATIONS BETWEEN GERMANY AND CHINA

China's higher education and scientific systems are developing rapidly



Systemic differences cannot be ignored, nor those in academia

The pace of German-Chinese higher education cooperation has slowed since the pandemic

behind India and Italy, making up just less than 7% of international academic staff at German higher education institutions (DAAD and DZHW 2023: 88).

In terms of short visits by visiting lecturers and academics, China has remained in first or second place in recent years for countries of origin, just ahead of or just behind India (DAAD and DZHW 2023: 101). There is no national data for Germany on the number of PhD students, postdocs and visiting lecturers and researchers from China who receive funding from state scholarship programmes.

While the percentage of Chinese academics and researchers at German higher education institutions has continued to rise in recent years, the number of Chinese students has declined since the 2019/2020 winter semester following a long period of growth. Chinese students now make up the second-largest group of international students at German universities, with 39,000 individuals. India has led the rankings since the 2022/2023 winter semester, with 42,500 students. Up until the Covid pandemic, the number of Chinese students at German higher education institutions had grown steadily, peaking in the 2019/2020 winter semester. Since then, the number of Chinese first-year students has fallen along with the total number of Chinese students in Germany.

Internationally UNESCO data from 2021 shows that Germany ranks sixth as a destination for students from China, well behind the US and the United Kingdom, with over 295,000 and 145,000 respectively (UNESCO Institute for Statistics 2023). That said, the population of international students in Germany is more diverse overall than in English-speaking countries. While Chinese students make up 11% of all international students in Germany (Federal Statistical Office 2023b), they made up 35% of international students in the US in 2021, and 24% each in Australia and the UK (calculations based on UNESCO Institute for Statistics 2023).

However, the number of German students and early career academics who go to China for research or study visits has dropped sharply in recent years due to China's strict Covid policies. In the 2021/2022 winter semester 1,787 students from Germany were enrolled at higher education institutions in China; during the 2010s, over 8,000 students were in the country (Federal Statistical Office 2021: 11; DAAD and DZHW 2023: 75). All current extrapolations and predictions suggest that numbers will only recover slowly over the next few years, despite the ending of Covid restrictions.

The number of German visiting lecturers and researchers in China has also fallen. In 2015, over 700 visiting lecturers and researchers from Germany visited China, but by 2021 that number had fallen to 120, a decline of 83% (DAAD

and DZHW 2023: 117). The number of DAAD funding recipients from German higher education institutions who are going to China is also declining. In 2015 the DAAD reported providing funding in 1,679 cases, but that fell to only 296 during the pandemic in 2022. In addition to this, most funding recipients completed their stay digitally. In contrast to this, trends in funding recipient numbers for other countries were much more positive during the pandemic. Funding recipients from Korea, for example, rose by 202%, from 373 in 2015 to 754 in 2022. Others, such as Japanese recipients, showed only slight decreases, falling by 12% from 823 in 2015 to 727 in 2022 (cf. DAAD 2015: 98-99; DAAD 2022b: 126).

2.4 Interim conclusions

The data and trends in this report show that China's national importance as a centre for academia and science has grown substantially in recent years. The quantity and quality of Chinese higher education and research have risen, and the country has become more attractive to international students from the region and the Global South. In light of these trends, China offers a wider range of potential collaboration partners from which German academia can benefit. As such, academic 'decoupling' can be of no benefit to Germany as a centre of science and scholarship. Indeed, the declines in the number of collaborations and student mobility as shown above are grounds for concern, not only with regard to the medium and long-term development of expertise on China.

At the same time, the systemic differences we have outlined indicate that academia, which now operates on a global scale, does not always or automatically create cohesion and mutually beneficial situations. Indeed, it can create differences and associated risks. Making international academic cooperation more responsible in foreign academic policy terms will require action which is commensurate with the situation at hand. This action must seek out and negotiate collaboration while also identifying and monitoring risks, and setting and maintaining boundaries. Essentially this involves 'de-risking', as the Federal Government's China Strategy puts it. In the next chapter we unpack this idea in a series of recommendations to German higher education institutions.

Cooperation in the Indo-Pacific region

The Indo-Pacific region holds great potential for academic collaboration and exchange. It is home to 60% of the world's population and 50% of the world's students. Along with Japan, Korea, Singapore and Australia, Taiwan and Hong Kong are in demand as research and innovation partners both in Germany and around the world. India already provides the largest group of international students at German universities. Many South Asian countries, particularly members of the Association of South-East Asian Nations (ASEAN) are targeting investment in expanding and internationalising their higher education systems.

At the same time, the Indo-Pacific has become the focus of geopolitical interests. For instance, Germany's Federal Government published a set of guidelines on the region in September 2020 (Federal Foreign Office 2020), followed less than a year later by the EU's strategy on cooperation in the Indo-Pacific region (European Commission 2021). One factor behind growing interest in the region is the increasing extent of Chinese influence. In addition to complex political relations with other countries in its area, and close economic links from increasing Chinese investment in infrastructure, Chinese influence is also growing in the Indo-Pacific region's higher education and science systems. This takes the form of opportunities to learn Chinese, for example, scholarships to study in China, and closer academic collaboration, even with former wartime enemies such as Japan.

The primary focus of German and European positioning is on security (and maritime security in particular), trade and climate. That said, German Federal Government guidelines also identify 'bringing people together through culture, education and science' as an area for action. According to the guidelines, cooperating in academia and research creates 'trust, facilitates dialogue and strengthens our relationships, particularly in the geopolitical sphere' (Federal Foreign Office 2020: 59). The EU strategy also commits to boosting cooperation around research and innovation through the Horizon Europe programme (European Commission 2021: 17). The DAAD's global network is keeping pace with the growing importance of the Indo-Pacific for academic cooperation and science diplomacy, with 17 regional offices and information centres in the region, along with 68 lectureships and German Centres for Research and Innovation in Tokyo and New Delhi.

Bolstering cooperation with partners in the Indo-Pacific is a core strategic interest for German higher education institutions. We urge institutions to leverage the potential of cooperating with India, Japan and South Korea, and to develop relations with partners in Taiwan and Hong Kong. Furthermore, German institutions should tap into positive trends in higher education in ASEAN countries. This will help them forge more diverse regional relationships and avoid one-sided dependencies.

3

Core principles and recommendations for academic cooperation with China

The growing strength of the Chinese higher education and science systems is a powerful reason to define the interests underlying German cooperation and to support the development of symmetrical relations. At the same time, the systemic differences between politics and academia in Germany and China demand that risk-awareness and transparency be designed into academic cooperation. The decline in academic mobility in particular makes it all the more important for institutions to conserve and extend their expertise and experience in dealing with China.

The following recommendations are intended to help German higher education institutions when designing collaborations with China, to be conscious of their own interests, alert to risks and founded on competence. The recommendations are grouped under the three guiding principles. It is up to each institution to implement these in line with their own specific circumstances, taking into account their current position as regards cooperating with China and other local factors.

3.1 Institutions should define their own interests and develop symmetrical relationships

The data from the previous chapter shows that China is on its way to becoming a world leader in academia and science. Chinese students, lecturers and researchers play a key role in higher education institutions and research abroad (although their role is less pronounced in Germany than in other countries).

As such, China is a hugely significant partner for German academia and science. In some areas, cooperating with China can give German institutions access to world-leading research, particularly where Germany plays a part in developing new knowledge and benefiting from that.

At the same time, academic exchange with China safeguards dialogue in civil society as well as opening new and maintaining existing channels of communication. Academic exchange can give German students and researchers a more nuanced understanding of people and society in modern China, and help them understand the wider social, political and economic framework within which they live

their lives. Academic exchange facilitates and cements personal relationships and friendships which can become the foundation for long-term development.

At the same time, prevailing systemic differences remain a major challenge for German partners, particularly in terms of the openness of education and research systems, and the role expected of higher education institutions by the Chinese Communist Party and society at large. These constraints can often impact on whether both sides enjoy equal benefit from academic cooperation, for example. Where German partners have defined conditions for success, and these conditions no longer exist, they need to make realistic plans for an exit strategy and, where necessary, put those plans into action. Basically, institutions must be more selective in their collaborations, reviewing projects prior to and during their implementation, and, where appropriate, reprioritising or shelving them.

Adopting this philosophy demands that institutions reflect on and readjust how they cooperate. German higher education institutions and scientific organisations also need to act strategically with regard to their strengths in academia. Firstly, this requires that institutions define their own interests in a cooperation with China. They should also prioritise projects which include 'fundamental research policy priorities' (Federal Foreign Office 2023: 30).

On this basis, institutions should design their collaborations in a way that does justice to German interests, guided by the principle of building reciprocal cooperation relationships. This means that there must be an appropriate balance in terms of the academic, human, financial and academic resources which each partner contributes (including access to research facilities), reflecting each partner's defined interests.

Define institutional goals for cooperation

For an institution to uphold its own goals and objectives in a cooperation with China, it is vital that the institution first defines and then internally agrees an appropriate set of parameters for that cooperation. As such, the DAAD recommends that institutions set out binding strategic objectives at an institutional level on how to cooperate with Chinese partners. These objectives should take the wider political environment and factors into account. We also advise large institutions to develop their own China strategies. These should include the core conditions and boundaries for cooperation. When developing strategic objectives, higher education institutions should involve all relevant stakeholders, from academics and researchers and faculties, significant administrative units such as international offices, legal departments and export law offices, and the institution's leadership team. An institution's objectives and defined interests then provide a framework for making decisions on individual collaborative projects.

Promote better integration for Chinese students

The DAAD believes it is in the interest of German higher education institutions to welcome Chinese students as part of their international student community on their campuses. Chinese students enrich an institution's diversity, often achieve excellent grades and achieve above-average outcomes (DAAD and DZHW 2020: 55). Furthermore, the DAAD welcomes the way in which institutions value their Chinese students and respond decisively where Chinese students suffer discrimination or disadvantage, both individually and as a group. In this, it is particularly important to integrate Chinese students into the higher education institution and campus life, and to help them learn German. Institutions should bolster activities for these purposes, and the DAAD offers programmes such as STIBET for higher education institutions. By contrast, we do not consider it prudent for German higher education institutions to set up or continue study programmes which are exclusively or primarily aimed at Chinese students.

Attract Chinese early career academics and researchers

Many Chinese early career academics and researchers make an important contribution to research in Germany, even if they are only in the country for a short time on Chinese-funded

scholarships. Some even contribute to teaching at German higher education institutions. Furthermore, they often become important partners for German researchers and higher education institutions after they return to China. As such, the DAAD advises institutions to continue accepting Chinese scholarship holders where doing so serves the academic interests of the institution. At the same time, it is vital that higher education institutions provide transparency around these students' funding and where they are employed. This can be achieved by drawing up contracts for visiting researchers and instituting review processes to guarantee the integrity of a research stay (cf. 3.2).

Involve German students, academics and researchers in exchange programmes

Joint higher education programmes focused on study and PhDs (and double degree programmes in particular) should be designed with mutuality in mind. Doing so allows them to mitigate inequalities in academic exchange. Structured stays in China as part of organised programmes give German students and PhD students an insight into Chinese higher education institutions and allow them to participate in Chinese academia. These stays help students and researchers gain skills specifically related to China (cf. 3.3). In addition, such stays provide opportunities to experience other cultures, and are a way for participants to gain additional skills for employment within and without academia, such as through access to international networks and local infrastructure. Setting up new joint study programmes at Chinese universities should create significant value for the German higher education institution involved, such as by allowing German students to benefit from the programmes. Given the success of the Chinese higher education system outlined above, cooperation focused on building capacity or 'development aid' for Chinese higher education institutions is no longer appropriate.

Prioritise interests and reciprocity in research cooperation design

German institutions involved in research cooperation should reflect on and set out the specific ways in which cooperating with Chinese partners gives them access to resources or helps them gain skills. We further recommend that they define what they are gaining from the research, including how it can help contribute to solving global challenges. Setting clear boundaries when designing research collaborations ensures that projects deliver benefits to the Germany party, such as by securing usage rights to research data and infrastructure, or by creating mechanisms for knowledge and technology transfer which are transparent and designed on a mutual basis.

3.2 Minimise risks and create transparency

In light of current geopolitical uncertainties and conflicts around the world, the safety and security of international academic cooperation is a key element of any comprehensive view of the issue. In terms of German-Chinese academic cooperation, there is great concern in Germany around the deployment of Chinese academia and science to achieve global policy hegemony objectives and the Chinese government's 'military-civil fusion' strategy. In addition to this, Germany takes a sceptical view of curbs on academic freedom and open transfers of data in China.

If German academia hopes to boost its resilience in collaborations with China, it needs measures which weigh up the genuine interests of academic cooperation and the opportunities to promote German competitiveness in science and technology against Germany's needs to protect its own security and safety. Here, higher education institutions should make use of the tools which many institutions are already developing to improve the research security of their international academic cooperations. That said, when considering the practicability of a certain cooperation, they should always also consider the risk of not participating.

The only way to strike the right balance in a cooperation is when a higher education institution works together as a community

Core principles and recommendations for academic cooperation with China

1. INSTITUTIONS SHOULD DEFINE THEIR OWN INTERESTS AND DEVELOP SYMMETRICAL RELATIONSHIPS

- Define institutional goals for cooperation
- Promote better integration for Chinese students
- Attract Chinese early career academics and researchers
- Involve German students, academics and researchers in exchange programmes
- Prioritise interests and reciprocity in research cooperation design

2. MINIMISE RISKS AND CREATE TRANSPARENCY

- Maintain an overview of partnerships and participants
- Raise awareness and establish decision-making processes
- Publish full details of review procedures related to foreign trade law
- Facilitate additional processes for due diligence reviews
- Identify common ground and take a rules-based approach to cooperation design

3. DEVELOP EXPERTISE ON CHINA

- Consolidate expertise on China at higher education institutions
- Help individual researchers and students gain stronger expertise on China
- Encourage active engagement with China
- Involve Chinese partners while protecting your own independence
- Expect and encourage critical dialogue

sharing common responsibilities. This task falls to academics and researchers interested in collaborations as well as to institutional leaders and administrators. Across all these levels, institutions guard against risk by raising awareness among those involved and implementing formal institutional processes. In addition to this, organisations such as KIWi at the DAAD, HRK, DLR-PT and other academic organisations can provide advice and information. Institutions can also access support from higher-level supervisory bodies such as the Federal Office for Economic Affairs and Export Control (BAFA) (cf. Appendix: Wider Reading).

The principle of minimising risk also includes improving transparency around and within collaborations. The Federal Government's China Strategy calls for 'maximum transparency and openness' (44). For German higher education institutions, this entails defining their own interests and expectations of a cooperation, but they must also clearly set out to their partners what they expect in terms of transparency, while also making themselves accountable to the German public for their cooperation. Cooperation with Chinese partners should take a rules-based approach, i.e. on the basis of clearly worded contracts and agreements that allow parties to review compliance and which include consequences for non-compliance.

Maintain an overview of partnerships and participants

When weighing up the chances and risks of cooperating with China, it is vital that institutional leaders (or the body acting on their behalf) are aware of existing and planned collaborations. Maintaining a central register of visiting lecturers and researchers (and their contractual conditions) is essential not only to managing access, but also to processes for reviewing export licences for specific individuals (cf. 3.1 above and recommendation 4 below). Furthermore, institutions should also decide levels of physical and digital access for foreign students and researchers, and actively manage these. Levels of physical and digital access and permissions should be appropriate to the subject of research or data concerned, and they should cover all countries involved in a partnership.

Raise awareness and establish decision-making processes

Institutions should take steps to make their members more alert to security issues by providing information, regular training and inter-institutional advice and support. The DAAD's KIWi competence centre offers services to this end and plans to develop more in the future. All higher education institutions should have their own criteria-based decision-making processes (determined in line with their own institutional profile) to evaluate institutional and individual collaborations with Chinese and other international partners.

Publish full details of review procedures related to foreign trade law

Another key element of any decision-making process is preventing the export of dual-use goods and expertise, as defined under the rules of the Federal Office for Economic Affairs and Export Control (BAFA, cf. 'Handbuch Exportkontrolle und Academia'). Higher education institutions must also act in accordance with EU dual-use regulations (including the 2021 update) covering foreign trade law assessment procedures. The catch-all regulations in the latest update represent a new addition by expanding the scope of export controls. German higher education institutions have set up their own processes (or are in the processes of doing so) to meet these requirements, in line with German and European laws. In this context it is absolutely vital that academics and researchers involved in research where dual-use could be an issue should cooperate with export control bodies, be they within their faculties or for the institution as a whole, so that these bodies can assess whether a cooperation requires approval and, if needs be, obtain approval from BAFA. In this, higher education institutions must ensure that all researchers, academics and relevant staff members are aware of the review procedures required and understand which bodies are responsible.

Facilitate additional processes for due diligence reviews

The DAAD recommends that institutions bolster their due diligence procedures as a means of reinforcing foreign trade law reviews and reducing wider academic ethical and business policy risks. These procedures investigate the extent to which partners (such as those in China) have points of contact with security-relevant research or institutions that conduct research of concern (cf. Gemeinsamer Ausschuss 2022). We recommend that higher education institutions work with one another when setting up such processes, such as by forming clusters to share expertise and resources. Ethics commissions and similar academic self-regulation bodies at higher education institutions have a significant role to play in this. Involving such commissions and committees is particularly advisable where joint research may raise ethical questions related to human rights.

Identify common ground and take a rules-based approach to cooperation design

When initiating and carrying out collaborative projects, institutions should actively identify their own principles and preconditions for the cooperation, taking these as a basis to find common ground with their Chinese partners. In research cooperation, this might mean higher education institutions working with their partners to set boundaries to draw lines between knowledge transfer which is desirable and

necessary to the success of the cooperation on the one hand, and on the other hand the undesirable exploitation of outcomes from the cooperation and knowledge drain. Cooperation contracts should include explicit agreements around usage rights and the publication of research data, along with non-compliance provisions such as exit clauses. These agreements should also clearly state German institutions' expectations regarding the freedom of scientific and academic activity.

3.3 Develop expertise on China

Taking a reflective approach to designing cooperation with China requires a comprehensive understanding of the political, social and economic factors which shape the Chinese academic and scientific systems. Institutions must also understand how decisions are made within the system, the restrictions it faces and the grey areas within it. It is for good reason that the West perceives see China as a country of contradictions, where gaining an understanding of how China functions requires 'decoding' rather than mere 'translation' (cf. e.g. the Decoding China Project). Its rigid political system stands in contrast with the rapid pace of social and technological development which does not fit Western models. For the majority of Western academics and researchers, students and higher education staff, it is almost impossible to properly follow and understand developments in the Chinese system. In part this is due to an increasingly complex political environment, barriers to integration for foreigners, and linguistic and cultural differences. Another factor is the ever-greater penetration of digitalisation into everyday life. Outsiders find this development very difficult to comprehend and from a Western perspective, it involves troubling restrictions on personal rights. China's restrictive Covid policies in recent years have also played a part in making it almost impossible to access the local reports and experiences which are essential to understanding the country.

As such, developing a robust body of expertise and knowledge about China is an essential precondition for developing interest-oriented and risk-aware cooperation in academia, business, society and politics. In addition, institutions face a growing need for intercultural skills when working with Chinese partners. This includes skills in making Chinese partners aware of our interests in cooperation and the system of values which underpins our actions, as well as being able to negotiate differences and not concede key positions.

In this sense, institutions cannot merely engage with China from afar. They need real-life, up-to-date and ongoing experience with China, including an understanding of the Chinese language. The pandemic has increased reluctance among students and early career academics and researchers to take the leap into China and engage with China on an academic level. This represents a challenge, not only to German higher education institutions' expertise in dealing with China, but also to German businesses, policymakers and society in the medium term. Another contributory factor to this uncertainty and hesitance are the vigorous debates currently underway in the press, politics, society and higher education institutions about the influence of Chinese power, the potential risks from the Chinese leadership, and the right way to deal with China. 'Expertise on China' (in the sense of specialist expertise, language skills, intercultural skills and experience relevant to cooperation) as called for by the Federal Government's China Strategy, amongst others, are therefore very important to all areas of academic and scientific cooperation.

↗ Consolidate expertise on China and expertise at higher education institutions

Higher education institutions should consolidate, expand and exploit their existing expertise in disciplines with a regional focus such as China studies, political science, the social sciences, law and economics and business administration. Institutions would also be advised to maintain channels of communication about China with experienced academics

and researchers from all disciplines. They should also stay in communication with relevant administrative bodies such as their international offices, legal departments and export control offices. One way for higher education institutions to bolster engagement with China is by creating opportunities for students with an interest in China to talk to students who already have experience of studying or living there. Setting up interdisciplinary teams focused on China can be a way for institutions to develop new competencies. Such teams provide a forum to consolidate, maintain and update specialist expertise and practical experience from academia and administration. They can also help higher institutions improve their strategic positioning and profile in terms of cooperation with China. When setting up new collaborative projects it is particularly important that higher education institutions draw on their existing expertise and experience and seek out opportunities to discuss their plans with colleagues with experience in working with or in China. Smaller institutions with relatively low levels of experience of working in and with China should find opportunities to discuss their plans with academics elsewhere in Germany. To this end the DAAD provides all its member institutions and other higher education institutions with a point of contact for information and advice.

Help individual researchers and students gain stronger expertise on China

In addition to building stronger skills at an institutional level, higher education institutions should also encourage their students and employees to learn more about and reflect on China. This particularly applies to institutions with extensive cooperation and exchange links. Achieving this requires support on an interdepartmental level such as providing opportunities to learn languages and gain intercultural skills. In addition to this, institutions should also raise awareness around social and political challenges and differences with China, and in particular with regard to academic cooperation. Information and training programmes are particularly relevant to researchers, who, as the initiators and designers of individual collaborative projects, bear special responsibility. In addition to this, institutions should provide and expand opportunities for students to develop their individual expertise on China (as appropriate to an institution's scale and priorities).

Encourage active engagement with China

Taking a cautious and defensive posture towards China in academic cooperation is not productive, as it limits the development of the necessary expertise and skills at higher education institutions. Rather, institutions need to take an active approach to dealing with China as a complex and challenging partner. Institutions can promote this active approach at an institutional level by taking measures to promote internationalisation at home, in programmes and activities to raise awareness and share information about China as a country with the potential for academic cooperation. One particularly effective way to promote practical expertise on China (particularly among students) is to provide opportunities for initial contacts with low barriers to entry, such as study trips, summer schools and preliminary trips linked to research cooperation. All such activities should promote reflection and nuance in dealing with China and avoid black-and-white thinking.

Involve Chinese partners while protecting your own independence

When developing expertise on China, institutions should take care to avoid asymmetries and dependencies. In this, they should develop their own independent expertise on China by involving Chinese partners, but without creating one-sided dependencies. Taking a decision on institutional cooperation with China to develop expertise on China (and particularly with Chinese state-funded Confucius Institute) therefore requires that the German institution should be absolutely transparent around its boundaries and the environment in which it is operating. This transparency applies as much towards the Chinese partner as towards the public in Germany.

Expect and encourage critical dialogue

Productive cooperation with China not only demands that German students and researchers develop expertise on China. It is also essential that German institutions and individuals communicate German view points and expectations to Chinese students, academics and researchers. A particularly fruitful way of generating constructive discussions is by consciously offering an alternative interpretation which counters Chinese narratives. Critical dialogue which seeks ways of sharing ideas and experience while at the same time clearly acknowledging differences should be just as strong a feature of relationships with cooperation and research partners as support and advice is for Chinese students during their studies in Germany.

4

Outlook

The same fundamental principles apply to academic cooperation with China as to academic exchange with the rest of the world. Germany's Basic Law enshrines the principle of academic freedom, and as such, individual decisions on specific aspects of how to design and implement academic cooperation must be left up to academics and scientists. Following this principle, we intend our recommendations to German higher education institutions to serve both as a starting-point and as guidelines for each institution to plan their cooperate with China. Our recommendations acknowledge the complex interconnections of such collaborations, which aim at cooperation while at the same time imposing demands in terms of reflection, negotiation and risk management.

Furthermore, complex cooperation with China demands that institutions not only remain in ongoing discussions with all stakeholders in academia, politics, business and society, but also to draw on these resources. The Federal Government's China Strategy has underlined the fact that cooperation with China is a task shared by all government ministries. Helping higher education institutions to cooperate with China in ways that align with their own interests, acknowledge and respond to risks, and build on their skillsets requires systemic and policy responses. Such measures include:

1. Regular sharing of academic and political perspectives

For institutions to act in their own interests requires that researchers, scientific institutions and policymakers in Germany coordinate and balance interests of varying weights. The Federal Government's China Strategy pledges to support higher education institutions 'in their efforts to deal with Chinese institutions in a coordinated way' (Federal Foreign Office 2023: 60). This entails a need to further develop information services and discussion forums between academics, higher education institutions and politicians.

One example of the support called for in the Federal Government's China Strategy 'with regard to taking precautions for risks in dealing with China and preventing the emergence of unilateral dependencies in this cooperation' (Federal Foreign Office 2023: 60) is the DAAD's Centre for International Academic Collaborations (KIWi). KIWi's existing information, advice and discussion services are in high demand and

ACTIVITIES AT THE LEVEL OF SYSTEMS AND POLICIES

Regular sharing of academic and political perspectives

Coordination with European and other partners

Provide necessary resources

the Centre is constantly expanding its offering. Alongside central sources of advice such as this, consolidating expertise on China across the higher education and scientific systems is both necessary and worthwhile.

The latest academic analysis China should be made available so that the whole higher education system in Germany and policymakers can make use of it. One example of this is the BMBF's RegioChina funding programme, which recently started work.

2. Coordinate with European and other partners

Discussions on China must also include European partners. There is an urgent need to share experience at a pan-European level and coordinate more closely around cooperation with China. In terms of export controls, higher education institutions need to share best practice, and at an EU level there is a need for ongoing adjustments to rules and procedures. It would also be prudent to extend conversations and discussions with other partners outside Europe, particularly those in the transatlantic area.

3. Provide necessary resources

An interest-oriented, risk-aware and competence-based approach to cooperation with China not only requires the active cultivation and expansion of scope for coordination between all levels of academia and politics which are involved. It also requires the provision of adequate resources for German higher education institutions. Reciprocity can only be achieved if an institution can contribute its own resources, which requires funding programmes specifically aimed at cooperation with China across all areas of collaboration, along with programmes to promote the mobility of German students, academics and researchers to China. Co-funding collaborations can avoid one-sided dependencies and asymmetries. Creating secure research collaborations and developing the necessary structures, processes, training programmes and expertise on China is vital, but also expensive. As such, higher education institutions require reliable financial facilities.

The activities we outline are necessary to support higher education institutions as they design and develop their academic cooperation with China. Only a jointly coordinated approach by academics and policymakers will make it possible for institutions to achieve their own interests from collaborations with China while at the same time reflecting on and minimising potential risks.

Sources quoted

Abels, Sigrun und Christian Bode (2022): 'China - der unbekannte Partner,' *DUZ Wissenschaft & Management*, Ausgabe 2, p. 16-32.

Australian Strategic Policy Institute (ASPI) (2023): USA vs. China: Technologievorsprung in Forschung und Wissenschaft in kritischen Technologien im Vergleich im Jahr 2023. Statista. Statista GmbH. URL: *https://de.statista.com/statistik/daten/studie/1370851/umfrage/vergleich-des-vorsprungs-in-kritischen-technologien-zwischen-china-und-den-usa/* (Accessed on: 3 January 2023).

Auswärtiges Amt (2020): Leitlinien zum Indo-Pazifik. Berlin: Federal Foreign Office (Auswärtiges Amt). URL: *https://www.auswaertiges-amt.de/blob/2380500/33f978a9d4f511942c241eb4602086c1/200901-indo-pazifik-leitlinien--1--data.pdf* (Accessed on: 22 December 2023).

Auswärtiges Amt (2023): China-Strategie der Bundesregierung. Berlin: Federal Foreign Office (Auswärtiges Amt). URL: *https://www.auswaertiges-amt.de/blob/2608578/810fdade376b1467f20bdb697b2acd58/china-strategie-data.pdf* (Accessed on: 18 December 2023).

Centre for Science and Technology Studies (CWTS) Leiden University (2023): CWTS Leiden Ranking 2023. URL: *https://www.leidenranking.com/* (Accessed on: 18 December 2023).

Center for Security and Emerging Technology (CSET) (2021): China is Fast Outpacing U.S. STEM PhD Growth. CSET Data Brief, August 2021. Georgetown: CSET. URL: *https://cset.georgetown.edu/publication/china-is-fast-outpacing-u-s-stem-phd-growth/* (Accessed on: 18 December 2023).

Decoding China Dictionary Team und Alexander Davesy (Eds.) (2023): Decoding China Dictionary. Second Edition. URL: *https://decodingchina.eu/download/decoding-china/#* (Accessed on: 4 January 2023).

Deutscher Akademischer Austauschdienst (DAAD) (2015): Jahresbericht 2015. Bonn: DAAD. URL: *https://static.daad.de/media/daad_de/pdfs_nicht_barrierefrei/der-daad/analysen-studien/daad_jahresbericht-2015.pdf* (Accessed on: 18 December 2023).

Deutscher Akademischer Austauschdienst (DAAD) (2022a): Außenwissenschaftspolitik für eine multipolare Welt. Systemrivalität, Konfrontation und globale Krisen. Bonn: DAAD. *https://static.daad.de/media/daad_de/pdfs_nicht_barrierefrei/der-daad/220705_daad_awp-papier_perspektiven.pdf* (Accessed on: 4 January 2024).

Deutscher Akademischer Austauschdienst (DAAD) (2022b): Jahresbericht 2022. Bonn: DAAD. URL: *https://static.daad.de/media/daad_de/pdfs_nicht_barrierefrei/der-daad/web_jb_2022.pdf* (Accessed on: 18 December 2023)

Deutscher Akademischer Austauschdienst (DAAD) and Deutsches Zentrum für Hochschul- und Wissenschaftsforschung (DZHW) (2020): Wissenschaft weltoffen: Daten und Fakten zur Internationalität von Studium und Forschung in Deutschland und weltweit. Bielefeld: wbv Media. URL: *https://www.wissenschaft-weltoffen.de/content/uploads/2021/09/wiwe_2020_verlinkt.pdf* (Accessed on: 4 January 2024)

Deutscher Akademischer Austauschdienst (DAAD) and Deutsches Zentrum für Hochschul- und Wissenschaftsforschung (DZHW)(2023): Wissenschaft weltoffen: Daten und Fakten zur Internationalität von Studium und Forschung in Deutschland und weltweit. Bielefeld: wbv Media. URL: *https://www.wissenschaft-weltoffen.de/content/uploads/2023/09/WWO_2023_web_bf_de.pdf* (Accessed on: 4 January 2024).

European Commission and High Representative of the Union for Foreign Affairs and Security Policy (2021): Joint Communication to the European Parliament and the Council. The EU Strategy for Cooperation

in the Indo-Pacific. URL: *https://www.eeas.europa.eu/sites/default/files/jointcommunication_2021_24_1_en.pdf* (Accessed on: 22 December 2023).

Eurostat (2023). Tertiary Education Statistics. *Statistics Explained*, 3 January 2024. URL: *https://ec.europa.eu/eurostat/statistics-explained/SEPDF/cache/1152.pdf* (Accessed on: 3 January 2024).

Friedrich-Alexander-Universität, Institute of Political Science und V-Dem Institute (Ed.) (2023): Academic Freedom Index. URL: *https://academic-freedom-index.net/* (Accessed on: 18 December 2023).

Gemeinsamer Ausschuss zum Umgang mit sicherheitsrelevanter Forschung (2022): Umgang mit sicherheitsrelevanter Forschung in Deutschland — Auf einen Blick. URL: *https://www.leopoldina.org/fileadmin/redaktion/Ueber_uns/Kooperationen/Informationsbroschüre_Sicherheitsrelevante_Forschung_auf_einen_Blick_Webversion.pdf* (Accessed on: 8 January 2024).

HSI-Monitor (2023): Internationale Kooperationen insgesamt (ohne Erasmus). URL: *https://www.hsi-monitor.de/themen/internationale-hochschulkooperationen/internationale-hochschulkooperationen/internationale-hochschulkooperationen-insgesamt/* (Accessed on: 4 January 2024).

Mallapaty, Smriti (2023): 'China is Mobilizing Science to Spur Self-Reliance,' *Nature*, vol. 615, pp. 570-571.

Ministry of Education, China (2023): Number of Students Enrolled in Degree Programs in Tertiary Education in China from 1990 to 2022 (in Millions). *Statista*. Statista Inc. URL: *https://www.statista.com/statistics/1114979/china-enrolled-student-number-in-tertiary-education/* (Accessed on: 3 January 2024).

National Bureau of Statistics of China (2023): Number of Graduates from Public Colleges and Universities in China between 2012 and 2022 (in 1,000s). *Statista*. Statista Inc. URL: *https://www.statista.com/statistics/227272/number-of-university-graduates-in-china/* (Accessed on: 3 January 2024).

Nature Index (2023): Leading 200 Science Cities. URL: *https://www.nature.com/nature-index/supplements/nature-index-2023-science-cities/tables/overall* (Accessed on: 4 January 2024).

Organisation for Economic Co-operation and Development (2022): Main Science and Technology Indicators, Volume 2022 Issue 1, Paris: OECD Publishing. URL: *https://doi.org/10.1787/4db08ff0-en* (Accessed on: 18 December 2023).

Repnikova, Maria (2022): *Chinese Soft Power*, Chin Kwan Lee (Eds.): Elements in Global China. Cambridge: Cambridge University Press.

Sandel, Michael J. (2020): *The Tyranny of Merit. What's Become of the Common Good?* New York: Farrar, Straus and Giroux.

ShanghaiRanking Consultancy (2023): 2023 Academic Ranking of World Universities. URL: *https://www.shanghairanking.com/rankings/arwu/2023* (Accessed on: 18 December 2023).

Statistisches Bundesamt (2021): Deutsche Studierende im Ausland – Ergebnisse des Berichtsjahres 2019, Wiesbaden: Statistisches Bundesamt. URL: *https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bildung-Forschung-Kultur/Hochschulen/Publikationen/Downloads-Hochschulen/studierende-ausland-5217101217004.pdf?__blob=publicationFile* (Accessed on: 3 January 2024).

Statistisches Bundesamt (2023a): Statistischer Bericht, Statistik der Promovierenden, Wiesbaden: Statistisches Bundesamt. URL: *https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bildung-Forschung-Kultur/Hochschulen/Publikationen/Downloads-Hochschulen/statistischer-bericht-promovierende-5213501227005.xlsx?__blob=publicationFile* (Accessed on: 4 January 2024).

Statistisches Bundesamt (2023b): Statistischer Bericht - Statistik der Studierenden - Wintersemester 2022/2023. Wiesbaden: Statistisches Bundesamt. URL: *https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bildung-Forschung-Kultur/Hochschulen/Publikationen/Downloads-Hochschulen/statistischer-bericht-studierende-hochschulen-endg-2110410237005.html* (Accessed on: 18 December 2023)

Times Higher Education World University Rankings (2023): World University Rankings 2024. URL: *https://www.timeshighereducation.com/world-university-rankings/2024/world-ranking* (Accessed on: 18 December 2023).

Tollefson, Jeff (2018): 'China Declared Largest Source of Research Articles', *Nature*, vol. 553, p. 390.

UNESCO Institute for Statistics (2023): Inbound internationally mobile students by country of origin. URL: *http://data.uis.unesco.org/index.aspx?queryid=3804* (Accessed on: 18 December 2023).

World Intellectual Property Organization (2023): Global Innovation Index 2023: Innovation in the face of uncertainty. Geneva: WIPO. URL: *https://www.wipo.int/global_innovation_index/en/2023/* (Accessed on: 18 December 2023).

Wider reading

Here we present a selection of reference resources which include further information with criteria and guidelines.

German Federal Government and Federal Administration reference resources

Federal Government China Strategy, July 2023

Published under the auspices of the Federal Foreign Office, the Federal Government's China Strategy presents a framework for cooperation with China. The strategy aims to strengthen the positions of Germany and the EU within collaborations with China, which it describes as a 'partner, competitor and systemic rival'. The strategy calls for the development of expertise on China, which is to be promoted through exchanges between German and Chinese students, academics and researchers. In addition to this, the strategy pledges Federal Government support for German higher education institutions, non-university research institutions, the German Rectors Conference, and German scientific organisations to help coordinate their dealings with Chinese institutions. The Federal Government's Strategy on China, along with its analysis of the fundamentals and parameters of German-Chinese cooperation, has been a key point of reference for this paper.

Auswärtiges Amt (2023): Federal Government Strategy on China. Berlin: Auswärtiges Amt. URL: *https://www.auswaertiges-amt.de/blob/2608580/49d50fecc479304c3da2e2079c55e106/china-strategie-en-data.pdf* (Accessed on: 18 December 2023).

National Security Strategy, June 2023

In its National Security Strategy, the Federal Government aims to uphold the safety of the public and contribute to the security of Europe and the world. The government plans to bring this about through an integrated security policy which sees all relevant stakeholders, tools and means working together. This interlinked process is to maintain all aspects of Germany's security and peaceful democratic order, and protect these against external threats. The National Security Strategy explicitly refers to China, which it describes as a partner, competitor and systemic rival.

Auswärtiges Amt (2023): National Security Strategy: Robust. Resilient. Sustainable. Integrated Security for Germany. Berlin: Federal Foreign Office (Auswärtiges Amt). URL: *https://www.nationalesicherheitsstrategie.de/National-Security-Strategy-EN.pdf* (Accessed on: 18 December 2023).

Asia-Pacific Research Area Monitoring (APRA), December 2022

Commissioned by the Federal Ministry of Education and Research (BMBF) and compiled with the involvement of the DAAD, the Performance Monitor China analyses key issues in political backing for high

technology under the current 14th 5-year plan. It also investigates China's current actual positioning across a range of key technology areas. The first part of the report comprises an empirical classification of real strengths, weaknesses and potentials. This is followed by a wide-ranging overview of the principles which underpin Chinese science and technology policy. The second part of the report focuses on Chinese cooperation with other countries and mutual dependencies in the area of academia. It aims to give potential stakeholders the evidence they need for the strategic development of academic partnerships in the Asia-Pacific region.

Asia-Pacific Research Area Monitoring (APRA) (2022): Chinese science and technology policy: promoting high technology and technological independence. Bonn: Deutsches Zentrum für Luft- und Raumfahrt e.V. URL: *https://www.kooperation-international.de/fileadmin/user_upload/01_APRA_2022_China_5.pdf* (Accessed on: 18 December 2023).

BAFA Handbook for Export Control and Academia, November 2022

In this handbook the Federal Office for Economic Affairs and Export Control (BAFA) provides information on export controls and non-proliferation, sanctions and embargoes. The updated second edition is primarily aimed at the science and research sector, and those who represent and work in it. It aims to raise awareness among universities and research institutions around the purposes of export controls and provide instructions on how to apply foreign trade law.

Bundesamt für Wirtschaft und Ausfuhrkontrolle (2022): Handbuch Exportkontrolle und Academia. 2nd edition, November 2022. Eschborn: Bundesamt für Wirtschaft und Ausfuhrkontrolle. URL: *https://www.bafa.de/SharedDocs/Downloads/DE/Aussenwirtschaft/afk_aca_broschuere_handbuch.html* (Accessed on: 4 January 2024).

Federal Foreign Office Science Diplomacy Strategy Paper, December 2020

The Federal Foreign Office's Science Diplomacy Strategy combines normative aspects of science diplomacy with priorities around content and geography. This includes the values-based dialogue with China on topics such as academic freedom, cooperation with China to address global challenges such as climate change, and strengthening expertise on China in Germany. It also aims to promote Germany as a location to study and research, embedded within a European frame of reference.

Auswärtiges Amt (2020): Science Diplomacy Strategy Paper. URL: *https://www.auswaertiges-amt.de/blob/2436494/2b868e9f63a4f5ffe703faba680a61c0/201203-science-diplomacy-strategiepapier-data.pdf* (Accessed on: 18 December 2023).

Federal Government Policy guidelines for the Indo-Pacific, September 2020

The Federal Government policy guidelines for the Indo-Pacific set the direction of travel for German foreign policy on the region. At the same time, the guidelines aim to stimulate discussions among policymakers, academics, scientists and the public and encourage serious engagement with partners in the region. German engagement with the region is to be increased. The guidelines identify interests, principles, initiatives and policy areas.

Auswärtiges Amt (2020): Policy guidelines for the Indo-Pacific. Berlin: Federal Foreign Office (Auswärtiges Amt). URL: *https://www.auswaertiges-amt.de/blob/2380514/f9784f7e3b3fa1bd7c5446d274a4169e/200901-indo-pazifik-leitlinien--1--data.pdf*(Accessed on: 18 December 2023).

German-Chinese Cultural Agreement, November 2005, and Agreement on scientific and technological cooperation (WTZ), November 1978

Exchanges focusing on culture, education, sport, young people and science and technology have been a major element of bilateral relations between Germany and China for several decades. The most recent version of the Cultural Agreement (2005) and the 1978 WTZ agreement form a foundation for the work of academic organisations and project partners.

Auswärtiges Amt (2006): Notice of the interim application of the German-Chinese Agreement on Cultural Cooperation. 28 November 2005. In: Bundesgesetzblatt Jahrgang 2006, Teil II, Nr. 2. URL: *https://china.diplo.de/blob/1218278/eee9152dcfee073cb45264e00dbaef6a/kulturabkommen-de-chn-data.pdf* (Accessed on: 18 December 2023).

Federal Ministry of Research and Technology (1978): Notice of the agreement between the Government of the Federal Republic of Germany and the Government of the People's Republic of China on scientific and technological cooperation. 13 December 1978. In: Bundesgesetzblatt, Jahrgang 1978, Teil II, Nr. 58. URL: *https://www.bgbl.de/xaver/bgbl/start.xav?startbk=Bundesanzeiger_BGBl&jumpTo=bgbl278s1526.pdf#__bgbl__%2F%2F*%5B%40attr_id%3D%27bgbl278s1526.pdf%27%5D__1704373566141* (Accessed on: 4 January 2024).

DAAD reference resources

HSI-Monitor and Wissenschaft weltoffen

The DAAD and its partners prepare statistics on international academic cooperation and mobility flows on an ongoing basis and publish these digitally for the public. Users can access this data through the HSI-Monitor and Wissenschaft weltoffen and filter by various criteria.

Deutscher Akademischer Austauschdienst (DAAD), Alexander von Humboldt-Stiftung (AvH), Hochschulrektorenkonferenz (HRK) und Deutsche Forschungsgemeinschaft (DFG): HSI-Monitor. Profildaten zur Hochschulinternationalität. Bonn: Gemeinsame Geschäftsstelle des HSI-Monitors. URL: *www.hsi-monitor.de* (Accessed on: 18 December 2023).

Deutscher Akademischer Austauschdienst (DAAD) and Deutsches Zentrum für Hochschul- und Wissenschaftsforschung (DZHW): Wissenschaft weltoffen: Daten und Fakten zur Internationalität von Studium und Forschung in Deutschland und weltweit. URL: *https://www.wissenschaft-weltoffen.de/en/* (Accessed on: 18 December 2023).

DAAD perspectives: Science diplomacy for a multipolar world, July 2022

In the aftermath of the 'turning point' of 24 February 2022, the DAAD paper picks out five principles for developing German science diplomacy. It proposes putting values, responsibility, interests, regionality and risk awareness at the heart of foreign academic policy.

Deutscher Akademischer Austauschdienst (DAAD) (2022): Science Diplomacy for a Multipolar World. System rivalry, confrontation, and global crises Bonn: DAAD. URL: *https://imp.daad.com/media/daad_de/pdfs_nicht_barrierefrei/der-daad/daad_perspectives_science_diplomacy_for_a_multipolar_world.pdf* (Accessed on: 18 December 2023).

KIWi Kompass: No red lines: Academic cooperation within complex legal and regulatory environments, December 2020

The DAAD set up the Centre for International Academic Collaborations (KIWi) in 2019 to support higher education institutions as they initiate and implement international partnerships. In addition it seeks to help them position themselves confidently and successfully in increasingly volatile environments. The KIWi Kompass series includes reference grids to provide orientation and help with decision-making.

Deutscher Akademischer Austauschdienst (DAAD) (2020): KIWi Kompass. No red lines. Academic cooperation within complex legal and regulatory environments. Bonn: DAAD. URL: *https://blog.daad.de/kiwi-kompass/files/2023/10/daad_kiwi_kompass_keinerotenlinien_2020.pdf* (Accessed on: 18 December 2023).

DAAD-Blickpunkt: Chinese Double First Class Programme, 2017

This DAAD Blickpunkt presents the Double First Class programme which was introduced by the Chinese government in 2017, along with its predecessor programmes. The document includes a table listing the universities and faculties funded through the programme.

Birk, Klaus (2017): Ergebnisse des neuen chinesischen Doppel-Exzellenz-Programms, Geförderte Hochschulen und Fachbereiche. DAAD-Blickpunkt, October 2017. URL: *https://www2.daad.de/medien/der-daad/analysen-studien/blickpunkt_ergebnisse_des_neuen_chinesischen_doppel-exzellenz-programms.pdf* (Accessed on: 4 January 2024)

Reference resources from other German academic and scientific organisations and institutions

Allgemeiner Fakultätentag: Recommendations on academic cooperation with China, September 2023

The recommendations from the Allgemeiner Fakultätentag (AFT) aim to create visibility around the chances and challenges associated with academic cooperation with China and thereby contribute towards productive and sustainable collaborations. The AFT argues that cooperation makes it possible to address global problems such as climate change, new energy concepts and peace research. Mutual understanding and clear agreements are essential to ensuring the quality and security of research. The paper stresses that careful choice of partners, forging long-term relationships and maintaining good academic and scientific practice can lead to successful and trusting collaboration with China.

Allgemeiner Fakultätentag (AFT) (2023): Empfehlungen für wissenschaftliche Kooperationen mit China. Karlsruhe: AFT. URL: *https://allgemeiner-fakultaetentag.de/2023/07/25/empfehlungen-fuer-wissenschaftliche-kooperationen-mit-china/* (Accessed on: 18 December 2023).

DFG Recommendations: Dealing with Risks in International Research Cooperation, September 2023

With the goal of creating a research culture which can respond to geopolitical shifts, the German Research Foundation (DFG) presents recommendations on how to deal with risks in research activity.
It particularly focuses on recruiting staff from abroad and choosing partners which are not based within the German higher education and science systems. While they are primarily designed to support individuals and research institutions involved in submitting funding applications, the recommendations can also support decision-making and assessment processes.

Deutsche Forschungsgesellschaft (DFG) (2023): Dealing with Risks in International Research Cooperation. Recommendations from the Deutsche Forschungsgemeinschaft. Bonn: DFG URL: *https://www.dfg.de/resource/blob/289704/585cb3b48bb8e9f5b6e57e0e0a0d700e/risiken-int-kooperationen-en-data.pdf* (Accessed on: 18 December 2023).

TU9 Alliance: The Future of Internationalization. Overcoming Geopolitical Challenges: Resilience, European Anchoring and Knowledge Equity, September 2023

This paper summarises the Future of Internationalization – Strengthening Excellence, Shaping Strategy conference held in Berlin on 22 and 23 June 2023 which brought together senior figures from the TU9 universities along with experts from the DAAD and DFG and representatives of science bodies and politics. At the conference, attendees agreed on suitable international and external frameworks for international cooperation in challenging geopolitical contexts. The paper also aims to prompt the further development of the Strategy of the Federal and State Ministers of Science for the Internationalization of Higher Education in Germany.

German Universities of Technology – TU9 (2023): The Future of Internationalization Overcoming Geopolitical Challenges: Resilience, European Anchoring and Knowledge Equity. A Commentary on the Further Development of the 'Strategy of the Federal and State Ministers of Science for the Internationalization of Higher Education in Germany', September 2023. Berlin: TU9. URL: *https://www.tu9.de/media/download/tu9_future_of_internationalization_overcoming_geopolitical_challenges_023-09-19.pdf* (Accessed on: 18 December 2023).

WIKOOP-INFRA, Policy Briefs, 2022 and 2023

WIKOOP-INFRA is a joint project which aims to develop empirically grounded guidelines that will assist scientific actors from Germany and the EU in recognizing and pursuing opportunities for mutually beneficial, peaceful science collaboration with China. Research using large facilities is a particular focus of the project. The project's four policy briefs discuss risk management in cooperation with China (1), the experiences of scientists conducting research in Germany from cooperation with China (2), challenges in fundamental research (3), and de-risking in cooperation with China (4).

WIKOOP-INFRA (2022): Risikosteuerung bei wissenschaftlichen Kooperationen mit China, WIKOOP-INFRA Policy Brief No. 1, 15 July 2022. URL: *https://www.wikoop-infra.de/sites/sites_custom/site_wikoop-infra/content/e215410/e215421/e230382/WIKOOP-INFRAPolicyBriefNr01-2022_ger.pdf* (Accessed on: 5 January 2024)

WIKOOP-INFRA (2023a): Erfahrungen und Einstellungen in Deutschland forschender Wissenschaftler:innen zur Kooperation mit China, WIKOOP-INFRA Policy Brief No. 2, 1 June 2023. URL: *https://www.wikoop-infra.de/sites/sites_custom/site_wikoop-infra/content/e215410/e215421/e230383/WIKOOP-INFRAPolicyBrief-Nr02-2023_ger.pdf* (Accessed on: 5 January 2024).

WIKOOP-INFRA (2023b): Kooperationspotentiale und Herausforderungen in der Grundlagenforschung mit China: Erkenntnisse der Expertenreise des WIKOOP-INFRA-Teams im Juni 2023, WIKOOP-INFRA Policy Brief No. 3, 29 July 2023. URL: *https://www.wikoop-infra.de/sites/sites_custom/site_wikoop-infra/content/e215410/e215421/e230384/WIKOOP-INFRAPolicyBriefNr03-2023_ger.pdf* (Accessed on: 5 January 2024).

WIKOOP-INFRA (2023c): De-Risking in der Wissenschaftskooperation mit China: Aus der Defensive kommen, WIKOOP-INFRA Policy Brief No. 4, 1 December 2023. URL: *https://www.wikoop-infra.de/sites/sites_custom/site_wikoop-infra/content/e215410/e215421/e232131/WIKOOP-INFRAPolicyBriefNr04-2023_ger.pdf* (Accessed on: 5 January 2024).

German Rectors Conference: Resolution on guidelines of higher education cooperation with People's Republic of China, September 2020

By way of background, the paper describes the growing challenges faced by German higher education institutions working in cooperation with Chinese partners. The key issues it identifies are legal constraints and organisational hurdles, state influence on curricula and processes at Chinese higher education institutions, restrictions on academic freedom and increased efforts by Chinese stakeholders to make an impact on international academic discourse and higher education activity abroad, including in Germany. The paper sets out a spectrum of guidelines across a series of overarching dimensions: 'strategy and governance', 'teaching, learning and researching together', and 'higher education institutions as transnational spaces'. Each of these dimensions is accompanied by awareness-raising questions for a higher education institution to answer from its own perspective.

Hochschulrektorenkonferenz (HRK) (2020): Leitfragen zur Hochschulkooperation mit der Volksrepublik China. Beschluss des 690. Präsidiums der HRK am 9 September 2020. Berlin/Bonn: HRK. URL: *https://www.hrk.de/fileadmin/redaktion/hrk/02-Dokumente/02-01-Beschluesse/HRK_Beschluss_Leitfragen_zur_Hochschulkooperation_mit_der_VR_China_9.9.2020.pdf* (Accessed on: 18 December 2023).

DLR-PT: Comparison of the innovation systems in China and Germany, February 2020

This study was commissioned by the Expert Commission for Research and Innovation (EFI) at the German Aerospace Center (DLR). It focuses on comparing the research and innovation systems in Germany and China. By examining the development of China, the study aims to identify relevant points for Germany's innovation system and use those as a basis for recommendations. The study argues that the following points should be prioritised: steering the R&I systems of Germany and China, access to the Chinese market, Chinese investment abroad, digitalisation and AI, Chinese business and innovation policy, and changes in the Chinese education sector.

Deutsches Zentrum für Luft- und Rahmfahrt – Projektträger (DLR-PT) (2020): Comparison of innovation systems China and Germany. In: Studies on the German innovation system, No. 9-2020. Bonn: DLR-PT. URL: *https://www.e-fi.de/fileadmin/Assets/Studien/2020/StuDIS_09_2020.pdf* (Accessed on: 18 December 2023).

European Union reference resources

European Parliament: Resolution to adopt a new European China Strategy, September 2021

In 2021 the European Parliament passed a resolution to initiate a new strategy on China. The resolution explicitly supports student exchanges and the need to expand expertise on China in the EU. The new China strategy has not yet been published.

European Parliament (2021): European Parliament resolution of 16 September 2021 on a new EU-China strategy (2021/2037(INI)). URL: *https://www.europarl.europa.eu/doceo/document/TA-9-2021-0382_EN.html* (Accessed on: 18 December 2023).

European Commission: Global Approach to Research and Innovation, May 2021

The communication reaffirms the EU's commitment to openness in international research and innovation cooperation, to strengthening the EU's leading role, and supporting multilateral research and innovation partnerships, with the aim of finding new solutions to environmental, digital, social and health challenges.

European Commission (2021): Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the Global Approach to Research and Innovation. Europe's strategy for international cooperation in a changing world. Brussels: EU COM (2023) 252 final. URL: *Https://research-and-innovation.ec.europa.eu/system/files/2021-05/ec_rtd_com2021-252.pdf* (Accessed on: 18 December 2023).

EU-China Strategic Outlook, March 2019

The report focuses on relations between the European Union and China, two of the world's three largest economies and trading blocs. Under the EU-China 2020 Strategic Agenda for Cooperation, both sides have committed themselves to a comprehensive strategic partnership. The report concentrates on the challenges and opportunities from the multi-dimensional structure of relations between the two partners. It also lists ten concrete actions for discussion and agreement by the European Council.

European Commission (2019): European Commission and HR/VP contribution to the European Council. EU-China – A Strategic outlook. Brussels: EU COM (March 2019). URL: *https://commission.europa.eu/system/files/2019-03/communication-eu-china-a-strategic-outlook.pdf* (Accessed on: 18 December 2023).

Other reference resources

Decoding China Dictionary, 2023

The Decoding China Dictionary explains how the Chinese government and other state actors in China interpret and apply terminology from the field of international relations. The editors are a group of academics, researchers, think tank members and publishers who all have experience of working with and on China. They present a range of frequently used terms from society, business and politics in China and emphasise the differences between how these standard terms are understood in China and how they are defined by institutions of the EU and UN. The dictionary aims to help those involved in cooperation with China. Its analysis is also of interest to the higher education sector.

Decoding China Dictionary Team and Alexander Davesy (Eds.) (2023): Decoding China Dictionary. Second Edition. URL: *https://decodingchina.eu/download/decoding-china/#* (Accessed on: 04 January 2024)

Jeffrey Stoff: Should Democracies Draw Redlines around Research Collaboration with China? A Case Study of Germany, January 2023

The case study's author, Jeffrey Stoff, is the founder of the Center for Research Security & Integrity, an NGO. In it he analyses collaborations involving German higher education institutions, research institutions and businesses in the STEM field. He criticises very close collaborations with Chinese institutions with links to the military. He calls for new redlines around academic research collaborations with certain institutions in China which are based on a risk assessment.

Stoff, Jeffrey (2023): Should Democracies Draw Redlines around Research Collaboration with China? A Case Study of Germany. Virginia: Center for Research Security & Integrity. URL: *https://researchsecurity.org/wp-content/uploads/2023/01/Click-here-to-download-the-full-publication.-Stoff-DrawingRedlinesFINAL.pdf* (Accessed on: 18 December 2023).

MIT: University Engagement with China: An MIT Approach, November 2022

This report focuses on MIT's future relations with China, which are now uncertain due to heightened geopolitical and strategic rivalries between the US and China. There are concerns that China hopes to gain an advantage over the USA by taking advantage of US university research. The report presents a path towards future relations between the MIT and China. It recommends an approach that combines selective engagement with targeted risk assessment and management. This approach is designed to help the MIT advance knowledge and the needs of the nation and the world — without damaging U.S. interests in national security or the economy, without endangering human rights, and in ways that are consistent with the MIT's core values.

The MIT China Strategy Group (2022): University Engagement with China: An MIT Approach. Final Report: November 2022. Cambridge: Massachusetts Institute of Technology. URL: *https://global.mit.edu/wp-content/uploads/2022/11/FINALUniversity-Engagement-with-China_An-MIT-Approach-Nov2022.pdf* (Accessed on: 18 December 2023).

The Hague Centre for Strategic Studies: Checklist for Collaboration with Chinese Universities and Other Research Institutions, January 2019

The Hague Centre for Strategic Studies (HCSS) has worked closely with the Leiden Asia Center (LAC) to prepare a comprehensive study of the risks and challenges of academic and research cooperation with Chinese partners. The findings of the HCSS/LAC study include the checklist referred to in the report title to support higher education institutions in assessing risks and potential limitations associated with partnerships with Chinese universities and other research institutions.

Bekkers, Frank, Oosterveld, Willem and Verhagen, Paul (2019): Checklist for Collaboration with Chinese Universities and Other Research Institutions. In: HCSS Global Trends. The Hague: The Hague Centre for Strategic Studies. URL: *https://hcss.nl/wp-content/uploads/2021/01/BZ127566-HCSS-Checklist-for-collaboration-with-Chinese-Universities.pdf* (Accessed on: 18 December 2023).

Imprint

Publisher
Deutscher Akademischer Austauschdienst e.V. (DAAD)
Kennedyallee 50
53175 Bonn
Phone: +49 228 882-0
Fax: +49 228 882-444
Email: webmaster@daad.de
Internet: https://www.daad.de

Authorised Representative of the Executive Committee: Prof. Dr. Joybrato Mukherjee
District Court of Bonn
Register of associations, number VR 2107
Sales tax number: DE122276332

Person responsible according to § 18 Abs. 2 MStV:
Dr. Kai Sicks, Kennedyallee 50, 53175 Bonn

The DAAD is an association of German universities and their student bodies.
It is institutionally funded by the German Federal Foreign Office.

Contact person
Michael Flacke
Press Spokesperson
flacke@daad.de

Published in digital form online 1st edition, January 2024