

Dutch collaboration with PhD students sponsored by the China Scholarship Council

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Clingendael Report
February 2024

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Executive Summary

Background

This report presents the findings of research into the **scope and nature of Dutch collaboration with the China Scholarship Council (CSC)**, a non-profit organisation affiliated with the Ministry of Education of the People's Republic of China. This collaboration has come under scrutiny in the Netherlands and beyond due to various knowledge security concerns: concerns that CSC PhD students may facilitate undesirable knowledge transfer or other forms of foreign interference activities, and concerns about possible dependencies of Dutch knowledge institutes on CSC PhD students, which may make them vulnerable to Chinese political pressure and to geopolitical developments involving China. The issue of low living allowances among CSC PhD students was not a reason to conduct this research, but this did turn out to be a major concern for many of our interlocutors.

Findings

Number of CSC PhD students in the Netherlands

China is an important research and innovation (R&I) partner for Dutch knowledge institutions, and this is reflected in the collaboration with CSC. The Netherlands is the **4th largest host of CSC sponsored students and researchers worldwide**. In 2023 approximately **2,197 CSC PhD students** were working at Dutch research universities and national research institutes. Close to half of this number, approximately **1,145 CSC PhD students, is engaged in research in the fields of engineering, technology, and natural sciences**, including biology, and agricultural technology. The second largest group, **approximately 602 CSC PhD students, studies at medical faculties**. The CSC PhD students are unevenly distributed among Dutch universities and national research institutes.

Benefits

There are **various reasons** why Dutch knowledge institutions work with CSC PhD students. The main drivers are **strategic** in nature: CSC PhD students are seen as valued colleagues that often make important **contributions to the scientific output**, particularly in fields where there is a shortage of talents or in **types of**

research that are not easily financed by other subsidy providers. Furthermore, they sometimes **facilitate broader cooperation** with China by **providing access** to Chinese knowledge, materials, equipment, data or research infrastructure, and to the Chinese academic system as a whole.

Risks and challenges

For the universities and national research institutes, the main potential risks in collaborating with CSC are the **lack of reciprocity** in (a) transparency, (b) access to research sources, and (c) data exchange, and the risks of **infringement of academic freedom** by Chinese authorities and **self-censorship** among CSC PhD students where sensitive research topics or sensitive research results are concerned. Many knowledge institutions illustrated the former by pointing to the challenges in dealing with the **'long arm of Beijing'**, the **'loyalty declaration'** demanded by CSC of its scholarship recipients, and the **monitoring of CSC PhD students** by Chinese authorities.

Undesirable knowledge transfer, dual use and infringement of Intellectual Property Rights were **considered less relevant** in the case of CSC PhD students and the types of research (low Technology Readiness Levels) they are usually engaged in. With regard to the CSC PhD students' personal wellbeing, the **low amount of the CSC scholarship's monthly allowance** and the **risk of stigmatisation and discrimination** of Chinese students and scholars were mentioned as serious areas of concern.

Dependencies

The **dependencies** of Dutch knowledge institutes on CSC PhD students are **limited**. There are no financial or strategic dependencies at university level; at faculty or department level there are eleven cases in which the ratio of CSC PhD students compared to all PhD students is considerable, namely more than 15 percent. There are **a few faculties or departments** with a CSC PhD student ratio of more than 20 percent, indicating a **risk of dependency** on CSC PhD students.

Contracts

All thirteen universities and five national research institutes examined host CSC PhD students. Only six universities have a university level contract with CSC. None of the national research institutes surveyed have a contract with CSC. In case there is no university level or institutional level contract, the CSC students come to the Netherlands on an individual basis through the

General CSC Grant Programme. The researchers found **no political conditions** in the six contracts between the universities and CSC. The **documents that do have political conditions** are contracts between CSC and PhD students, as well as the guidelines published on the CSC website: they include clauses requiring the student to support the leadership of the Communist Party and to regularly report to the Chinese Embassy or Consulate and to obey their leadership.

Mitigation of risks

All universities and the national research institutes with CSC PhD students are developing and implementing **knowledge security policies**, some having progressed further than others. The faculties or departments with a CSC PhD student ratio of more than 15 percent of all PhD students are aware of the risk of dependency and the need to reduce the numbers of CSC students; some of them have started working towards a greater diversity of grant sources.

Recommendations

Based on the research for this report we would like to offer the following recommendations regarding collaboration with CSC to the Dutch government:

Recommendation 1

Provide guidance to Dutch knowledge institutions on collaborating with CSC. The researchers note that many of the interlocutors feel the need for clear guidelines from the Dutch government on collaborating with CSC PhD students. Collaboration with CSC comes with both benefits and challenges. National level guidance on how and in what areas to collaborate or not with CSC PhD students, and how to apply the National Knowledge Security Guidelines to the challenges of collaborating with CSC PhD-students, would be helpful. One specific action worth considering is to organise a discussion among knowledge institutions to exchange views and best practices, and to agree on how to respond to the challenges. UNL, NWO, KNAW, and the Contact Point for Knowledge Security could play leading roles in this process.

Recommendation 2

Coordinate and support national level discussions with CSC. This can be done in two steps. First, UNL could facilitate a discussion between Dutch universities with the aim of jointly formulating an agenda and goals for a meeting with CSC. The agenda could include issues such as the monthly allowance of the CSC

grant amount and the safeguarding of research integrity. Second, the Ministry of Education Culture and Science (OCW) could help set up a meeting between representatives of Dutch universities and CSC. Lifting the discussions with CSC to the national level, rather than having individual meetings with CSC, will also strengthen the position of Dutch universities.

Recommendation 3

Explore the possibilities of European joint efforts to improve the conditions of collaboration with CSC. This can be done at governmental and institutional level. Many Dutch universities and/or faculties are a member of European university or faculty alliances where issues concerning collaboration with CSC PhD students are already discussed. The Dutch government could proactively coordinate a discussion at the level of EU member states.

Recommendation 4

Provide (certified) translations of relevant CSC documents to increase institutions' awareness and knowledge about CSC policies and regulations. The translations could be posted on the website of the Dutch Contact Point for Knowledge Security.

Recommendation 5

Strongly encourage and support Dutch knowledge institutions in their efforts to diversify the sources of PhD scholarship funding and provide support in exploring alternatives where needed.

Recommendation 6

Encourage Dutch knowledge institutions to formulate contingency plans for the scenario of an abrupt discontinuation of research collaboration with China.

Reading Guide

Introduction

The introduction provides the background to this report, explains the methodology used and discusses the limitations of the approach and the report's findings.

Chapter 1 The China Scholarship Council (CSC)

This chapter discusses the China Scholarship Council and its regulations regarding PhD scholarships against the background of China's science, technology and innovation (STI) policies.

Chapter 2 Collaboration between Dutch knowledge institutions and CSC PhD students

This chapter gives an overview of the number of CSC PhD students in the Netherlands, their areas of research, possible dependencies on CSC PhD students and the contracts between Dutch universities and CSC. It also presents the views of representatives of Dutch knowledge institutions on the benefits and risks of working with CSC PhD students, the potential dependency on CSC PhD students, and how Dutch knowledge institutes attempt to mitigate the risks of collaboration.

Chapter 3 Dutch-Chinese Research Cooperation in the Geopolitical Context

This chapter discusses the geopolitical context of research cooperation with China, Dutch knowledge security policies and Dutch measures to encourage collaboration with China. In addition, it presents various scenarios for future developments with regard to cooperation with CSC PhD students.

Chapter 4 Collaboration with CSC in other European countries

This chapter discusses how research institutes and governments in Sweden, Denmark and the United Kingdom deal with the challenges of collaborating with CSC PhD students. It ends with some lessons that the Netherlands can learn from these cases.

Chapter 5

This last chapter contains conclusions and policy recommendations for the Dutch government.

Introduction and Research Methodology

The report

In recent years, the collaboration between Dutch universities and national research institutes with the China Scholarship Council (CSC) and CSC PhD students has come under scrutiny. The CSC is a non-profit scholarship-providing organisation, affiliated with the Ministry of Education of the People's Republic of China. Researchers, university staff members, politicians and intelligence services in the Netherlands are concerned that CSC PhD students could facilitate undesirable knowledge transfer and/or could be involved in foreign interference activities. They are also worried about possible dependencies of Dutch knowledge institutions on Chinese funding through CSC, which may make them vulnerable to Chinese political pressure and to geopolitical developments involving China (AIVD, 2023; MIVD, 2023; De Bruin, 2022). In addition, media reports about CSC students having to sign 'loyalty pledges' to the Chinese Communist Party and its policies have caused concern about Chinese infringements on academic freedom (Hogan, 2023). These concerns about CSC have led to several parliamentary questions requesting the Dutch government to provide information about the number of PhD students holding CSC scholarships and their areas of research, and to inform the Parliament of its findings (Van der Woude, 2023). The Dutch Ministry of Education, Culture and Science (hereafter OCW) has committed to investigating these questions (OCW, 2023b).

This report presents the findings of the investigation into the scope and nature of Dutch collaboration with CSC and CSC PhD students. The research was commissioned by the Dutch Ministry of Education, Culture and Science (OCW) with the support of the Ministry of Foreign Affairs (MFA) and was carried out within the framework agreement of the Dutch China Knowledge Network.

It answers the following questions:

- How many CSC PhD students conduct research at Dutch knowledge institutions and what are their areas of research?¹ (See the Appendix for the list of universities and research institutes examined.)
- What are potential challenges and risks in collaborating with CSC and what are the benefits? How do they balance out?
- What kind of contracts are used by CSC and what do they entail?
- To what extent are (departments of) Dutch knowledge institutions dependent on PhD-research financed by CSC?

In addition, the report:

- Describes CSC in the context of China's international research collaboration
- Discusses Dutch research cooperation with China and the geopolitical environment in which it takes place
- Presents scenarios for future developments regarding collaboration with CSC
- Offers a brief overview of three other European countries' policies regarding collaboration with CSC, and
- Offers policy recommendations.

Methodology

The researchers combined various research methods. We started by sending out questionnaires to the thirteen universities to gather factual data. The Dutch universities, plus the national research institutions of the Dutch Research Council (NWO) and the Royal Netherlands Academy of Arts and Sciences (KNAW) were asked to fill out a questionnaire inquiring into the number of CSC PhD students per faculty and department, agreements with CSC, the financial and strategic relevance of collaborating with the CSC PhD students for the institution, and the risks and benefits of collaboration with CSC. All universities that were contacted and all national research institutes, except one, shared information on their collaboration with CSC PhD students. The number of details provided varied per institute.

1 This report looks at thirteen of the fourteen Dutch research universities that are part of Universities of The Netherlands. The fourteenth, the Open University, which is designed to provide distance education for part-time study, is not covered. Nor are the universities of applied sciences.

Subsequently we held semi-structured interviews with representatives of the thirteen universities and followed these up through email correspondence or telephone conversations. In most cases the universities selected the relevant representatives, varying from 3 to 10 interlocutors per interview. At some universities two rounds of interviews were held. Interlocutors included the Rector Magnificus and/or President of the university, Faculty Heads, Researchers and policy makers in the areas of international collaboration or security. As the number of CSC PhD students at the national research institutes is limited, we followed up with them through emails and telephone calls.

We conducted desk research of publicly available primary and secondary sources in Dutch, Chinese and English, and drew on the lectures, seminars and workshops on the topic that we attended. We furthermore interviewed three foreign experts/policy makers working in the area of knowledge security, who prefer to remain anonymous.

Limitations

Due to the sensitive and confidential nature of the collected data, this report discusses the total number of students and the requirements to which they are subjected in their contracts with CSC, but not the data per knowledge institution. The report, therefore, presents an overall picture. Furthermore, given the confidentiality of data under GDPR rules and/or because detailed data were not always available or provided, there are a few cases in which the researchers did not obtain full insight into the exact number of CSC PhD students at the faculty or institutional level. In this small number of cases, the accuracy of the findings is affected.

In accordance with the research assignment, this report focuses on collaboration of Dutch universities and national research institutes with CSC PhD students. However, CSC PhD students represent only a part of the Chinese PhD students working at Dutch knowledge institutions. Many interlocutors indicated that their institution also hosts Chinese PhD students – and in some cases even a larger group – with other funding sources or with employee status. The latter are in a different position and will most likely not have direct connections with a Chinese government organisation, but some of the knowledge security concerns indicated above may also apply to this group.

Review

The report was **peer reviewed** by the Clingendael peer review group, by Dr Chris Eveleens, Dutch Advisory Council for Science, Technology and Innovation (AWTI), and by and Miriam Tardell, Swedish National China Centre. We are grateful for their valuable comments.

The universities and research institutes were given the opportunity to correct factual errors concerning their collaboration with CSC.

1 The China Scholarship Council (CSC)

The China Scholarship Council is the largest Chinese provider of scholarships for Chinese PhD-students abroad. In 2022, CSC provided 19,000 scholarships to outgoing students at various levels, though mostly to PhD students ('Notes', 2023). **The Netherlands receives the fourth largest number** of CSC scholarships worldwide, ranking after the UK, Russia and Germany, but before the US ('Notes', 2023). Before delving deeper into the CSC and its programmes, the following paragraph outlines the environment of China's S&T and knowledge security policies.

1.1 Background: China's S&T and knowledge security policies

For China, strengthening its self-reliance in Science and Technology (S&T) and becoming a world-ranking innovative country are key long-term development goals and viewed as essential to the country's economic growth (Xi, 2022; d'Hooghe, 2021). To achieve these goals, China invests strongly in its domestic higher education and research system: government-related entities in China fund approximately 60 percent of the country's S&T activities (Bouillenois et al., 2023). As a result, big strides have been made in the quantity and quality of China's S&T output, surpassing the US in contributions to publications in the natural sciences and becoming a leader in a growing number of research areas (Woolston, 2023; Gaida et al., 2023). In recent years China has also reformed its S&T system: it reorganised the Ministry of Science and Technology (MOST), created a Central Science and Technology Commission under the CCP's Central Committee, and strengthened the role of the CCP and of CCP ideology in higher education and S&T policies (Bian Xue, 2023; GT Staff reporters, 2023). However, how these reforms will play out is still unclear. The Chinese government also aims to accelerate the internationalisation of high-level research in the country, and has vowed to support universities and research institutes in their efforts to actively engage in collaboration and exchanges with other countries (Guo et al., 2022; Xinhua, 2023). China wants to keep sending scientists abroad, but also aims to have more international scientists involved in high-level research taking place in China. Furthermore, by increasingly exporting Chinese knowledge abroad it is expanding its international influence and position.

Concerning knowledge security, China has always carefully shielded and protected scientific information and knowledge that it considers to be of strategic importance to the country. It has never had an open academic and research climate: there is a lack of access to research resources, and the government censors research proposals, publications and debates. In recent years, government control has tightened further, for example through the introduction of new laws and measures that have an impact on S&T collaboration (Sharma, 2023a; Upton 2023) and by cutting foreign access to four China National Knowledge Infrastructure databases (Sharma, 2023c). In recent years China also detained a number of foreign researchers on suspicion of espionage (AFP, 2023; Doherty & Kuo, 2020). In response to Western knowledge security measures targeting China, the Chinese government has called on foreign governments and politicians to stop stigmatising China and Chinese programmes (Chen & Zhao, 2021). The Chinese newspaper *Global Times* warned the Netherlands and other countries presently considering screening foreign students that such measures would negatively affect their own competitiveness (Hu, 2023).

1.2 The China Scholarship Council

CSC is one of many scholarship-providers in China. Universities, companies and foundations also provide funding for Chinese students to study overseas. Although they usually offer scholarship programmes of limited size and scope, the overall result is a large group of overseas Chinese PhD-students (Shenzhen University, 2022; Xidian University, 2023; CCICF, n.d.). Other government and government-related organisations offer a variety of scholarship programmes as well, including the People's Liberation Army which has sponsored at least 2,500 military scientists and engineers to study advanced scientific fields abroad over the past decade (Joske 2018).

However, in terms of size and scope, CSC is the biggest Chinese provider of scholarships for Chinese PhD-students abroad. CSC was founded in 1996 by the Chinese Ministry of Education as a non-profit organisation. Its aim is to create a highly skilled workforce to boost the country's economic, technological and military modernisation. It offers various scholarship programmes for incoming and outgoing students. In 2023 CSC planned to send 25,000 students to study abroad under its various programmes (CSC, 2023a; CSC, 2023b). In addition to providing four-year PhD scholarships, CSC also offers a Government Award

for Outstanding Self-Financed Students Abroad, which provides financial support to individual Chinese PhD students and postdocs who are already studying at foreign universities and have successfully completed a first year of PhD/Postdoc studies abroad. In 2023 this programme aimed to award 200 students in 47 countries, including the Netherlands (CSC, 2023b; 'Notice', 2021). Based on this research and previous reports (Fang et al., 2022) a majority of CSC-sponsored PhD students perform research in areas that serve China's national strategies, including in engineering and natural sciences.

1.3 CSC PhD scholarship stipulations and regulations

The CSC PhD-scholarship is available for outstanding students seeking to do a PhD abroad. It covers a return flight ticket from China to the destination country, basic health insurance, and living expenses for a maximum of four years. At the time of writing CSC students received living expenses of € 1350 per month. This allowance lies below the sustainable and sufficient income requirement of the Dutch Immigration and Naturalisation Service of € 1508.22 per month. This is an issue that causes much concern in the Netherlands and other European countries, as will be discussed in later chapters.

CSC has set several requirements for scholarship applicants that are considered problematic internationally, including in the Netherlands. They include pledges of loyalty to the Chinese Communist Party, return and guarantor clauses, and clauses about guidance by and/or obedience to the Chinese Embassy or Consulate in the country of destination. The latter **enables and facilitates monitoring** of the student by the Chinese embassy in the Netherlands, and previous research (d'Hooghe and Dekker, 2020) as well as the interviews conducted for this report show that such monitoring does indeed take place.

The *Selection Guide 2023 for Recipients of the China Scholarship Council Funding for Studying Abroad* (CSC, 2023a), Chapter IV, Article 7 states:

'Basic requirements for applicants:

1. Support the leadership of the Communist Party of China and the socialist system with Chinese characteristics, love the motherland, have good moral character, abide by discipline and law, have a sense of responsibility to serve the country, society, and the people, and have a correct world outlook, outlook on life and values.

2. Have a good professional foundation and development potential, abide by academic ethics and academic norms, perform well in work and study, and have a sense of professionalism and mission to return to China to serve the country's construction.'

A contract between CSC and CSC PhD students of May 2019 (CSC Contract, 2019) states:²

'While studying abroad, CSC-sponsored citizens should develop a sense of responsibility and mission to serve the country after returning to China and should not engage in activities detrimental to the interests of the motherland. They consciously protect the honour of the motherland, obey the leadership and administration of the embassy (consulate), adhere to the laws of China and the country where they study, adhere to the regulations of the foreign educational institution, respect the customs and customs of the local population, and maintain friendly contacts with the local population.'

Both the contracts between CSC and Dutch universities and the 'Guidelines for selection' on the CSC-website stipulate that upon completing their PhD, CSC-students are obligated to return to China for at least two years. In some contracts an exception is made for cases in which the PhD-student is invited to work as a postdoc at the department at which they received their PhD; they are then allowed to extend the stay with a maximum of 24 months. The requirement to return to the home country after finalising the PhD is not exclusive to CSC, as other scholarship providers have similar requirements. Nevertheless, the clause is an issue of concern for some interlocutors, either because they want to employ the students in their research team and/or they are concerned about the political environment the student has to return to.

Another issue that raises concern is the CSC regulation requiring candidates to supply personal information about their guarantor. The guarantor, often a close relative, is financially responsible for repaying the total sum of the scholarship award in case the student does not fulfil the contract ('CSC Contract', 2019). The media have reported on a CSC regulation that forbids the guarantor to

2 These contracts are signed directly between the students and CSC without any involvement of the foreign universities receiving the CSC PhD students.

leave China for a period of more than three months during the CSC student's stay abroad (Felden, 2023).

Some CSC documents stipulate that the CSC PhD student should register at the Chinese Embassy in the country of destination within ten days after arrival and must abide by the regulations set by the Chinese Embassy or Consulate (CSC 2023a; CSC Contract, 2019). In addition, some documents stipulate that the student should regularly report to the Chinese Embassy or Consulate and should obey the leadership of the Chinese Embassy or Consulate (CSC Contract, 2019).

There is also a lack of clarity about the consequences for CSC PhD students who do not complete their PhD-trajectory within four years. Several interlocutors mentioned this as a concern. When a Dutch university enquired about the consequences in such a case, the Chinese Embassy responded that there would be no consequences in case of force majeure and/or if the PhD-student had done his/her best to finish the PhD.

In response to the increasing concerns abroad about CSC scholarship conditions, CSC seems to have increased its outreach through dialogues and discussions with foreign stakeholders. In one of these meetings, a representative of CSC said it faces three challenges (Notes, 2023):

1. The influence of geopolitics on the mobility of students and researchers.
2. The Covid-pandemic, which has impacted Chinese students' willingness to study abroad.
3. Inflation, as a result of which the CSC scholarship has fallen below the income requirements of several countries. An updated indexation of the scholarship grant is scheduled for 2024.

This illustrates that CSC is aware of foreign concerns. Furthermore, the fact that a CSC-representative brings up the latter challenge regarding income requirements in various countries that receive CSC PhD students indicates that this issue has the attention of the CSC leadership.

2 Collaboration between CSC and Dutch knowledge institutes

2.1 Background

The Netherlands belongs to the most scientifically advanced and innovative countries in the world, ranking 7th on the Global Innovation Index (WIPO, 2023). International collaboration plays a key role for Dutch Research and Innovation (R&I), including collaboration with China. From the late 1970s onwards, Dutch research institutions started engaging with China and until approximately 2018 the Dutch government actively encouraged this collaboration, for instance through various exchange scholarship programmes (Hong et al., 2017). China's growing importance over the past two decades as a research partner of Dutch knowledge institutes is reflected in the numbers as well. Thus, in the period 2010-2020 the number of Dutch-Chinese co-publications increased by 400 percent (from 894 in 2010 to 4,459 in 2020), and in the period 2007-2019 the number of Chinese scientists working at Dutch universities increased by 70 percent, from 398 to 679 (Rathenau Institute, 2023).

However, over the past five years a growing number of media reports, (Koop, 2018; De Bruin et al., 2022) academic studies (Joske, 2018; d'Hooghe et al. 2018), and reports by the intelligence services have drawn attention to the risks involved in academic collaboration with China. For example, the 2022 Annual Report of the Dutch General Intelligence and Security Service stated that China 'represents the largest threat to Dutch knowledge security', while the Military Intelligence and Security Service (2023) wrote that the country is 'interested in acquiring Dutch high-end knowledge', either through (cyber)espionage or (academic) cooperation. Other reports point to undesirable applications of research results (Funnekotter 2019; Eikelenboom et al., 2021); attempts by the Chinese government to undermine academic freedom by pressurising Chinese nationals and international China scholars to refrain from taking a critical stance on China and Chinese policies (Sys, 2021; d'Hooghe and Dekker, 2020); and efforts to influence Dutch perspectives on China through educational and research collaboration.

As discussed in the Introduction, these reports have led to a closer scrutiny of Dutch collaboration with CSC and CSC PhD students and to parliamentary questions to the Dutch government, requesting information about the number of

PhD students with CSC scholarships at Dutch universities and national research institutes and their areas of research (Van der Woude 2023). The Ministry of OCW committed to investigating these questions in 2023 (OCW, 2023b), and this chapter presents the findings of that investigation.

2.2 CSC PhD students at Dutch universities and national research institutes

In the summer of 2023, approximately **2,197 Chinese PhD students with a grant from the China Scholarship Council (CSC)** were engaged in a full PhD research trajectory at universities and national research institutes in the Netherlands.³ This figure does not include PhD students that will obtain their PhDs at a Chinese university and do part of their research with a CSC stipend at a Dutch knowledge institute. Approximately **35** of the 2,197 CSC PhD students in the Netherlands **conduct their research at a national research institute** of the Royal Netherlands Academy of Arts and Sciences (hereafter KNAW) or the Dutch Research Council (hereafter NWO). Most of this group have their primary affiliation with one of the Dutch universities, and fourteen have their primary affiliation with the national research institute itself.

All thirteen Dutch universities and five Dutch national research institutes⁴ host CSC PhD students. The students have come to the Netherlands through one of the following three channels:

1. under China's general CSC grant programme, which allows many individual CSC PhD students to find their way to the Netherlands;
2. under a contract between the Dutch university and CSC;
3. through a framework agreement between a Chinese and a Dutch university, in which the Chinese university applies for CSC-funding for Chinese students to do their PhD in the Netherlands.

3 This figure is based on the information that was provided by the thirteen Dutch (research) universities and eighteen of the nineteen national research institutes. Because the reference dates of the figures provided vary from January 1 to July 2023, and some universities did not report exact numbers below 5 for reasons of compliance with GDPR regulations, this total figure must be considered a realistic approximation.

4 Based on information of eighteen of the nineteen national research institutes.

Universities do not need to have a contract (channel 2) to receive CSC PhD students through channels 1 or 3. Many universities receive CSC PhD students through more than one channel. The fourteen CSC PhD students that have their primary affiliation with a Dutch national research institute have come to the Netherlands under the general CSC grant programme (channel 1).

Fields of research

The **largest group** of CSC PhD students conducts research at **Faculties of Mathematics and Natural Sciences, Faculties of Science and Engineering, and Faculties of Medicine**. For the complete overview, see Table 1.

Table 1 Indication of the numbers of CSC PhD students per field of study⁵

Field of Study	Number of CSC PhD students
Technology, engineering, mathematics, and natural sciences, including biology, agricultural technology etc.	1145
Medical Sciences	602
Social Sciences	244
Humanities and Arts	Approx. 89
Business Administration and Economics	76
Law	Approx. 33
Unaccounted for because of proximations	8
Total	Approx. 2,197

In addition to Chinese PhD students with a CSC grant, there are also considerable numbers of Chinese students obtaining their PhD at Dutch knowledge institutes with other grants or as employees. These groups lie outside the scope of this assignment and their exact number is unknown.⁶

5 Some numbers in this table are realistic approximations rather than precise figures, for reasons of compliance with GDPR regulations. If the number of CSC PhD students per field of study was below 5, several universities did not report the exact number. As a result, some of the numbers are realistic approximations.

6 The questionnaire used for this research did not include a question about the number of Chinese PhD students other than those with a CSC grant, because the researchers did not have a mandate to do so. The estimate that the total number is 'considerable' is based on written and oral information that knowledge institutions volunteered to provide.

2.3 Interests and benefits of collaboration with CSC

There are a variety of reasons why Dutch knowledge institutions work with CSC PhD students. The representatives of universities and research institutes first and foremost mentioned **strategic interests** as a driver. Many said that CSC PhD students are valued colleagues that often make important **contributions to the scientific output** of a department, particularly in fields where there is a shortage of talent. Furthermore, some CSC PhD students **facilitate broader cooperation** with China: they **provide access** to Chinese knowledge, materials, equipment, data, or research infrastructure and to the Chinese academic system at large. They also contribute to the **development of future networks** in China, as CSC PhD-students regularly end up in important positions at top Chinese universities. This access to and the connections with research institutions in China can be important with a view to maintaining a strong knowledge position on the Dutch side, especially in scientific areas in which China leads or in fields in which China provides an ‘experimental garden’ for research projects.

In addition, it was often mentioned that Chinese PhD students contribute to the **diversity in perspectives** within research groups. All interlocutors emphasised the **importance of international collaboration**, noting that open scientific exchange is central to **solving global challenges**, which is often embedded in the mission of their institutions. Furthermore, the collaborative relationship with China has helped Dutch knowledge institutions achieve the **strong international position** many hold today. Various interlocutors also indicated that the collaboration with CSC PhD students allows them to conduct **types of research that are not easily financed by other subsidy providers**, for instance research that is ‘less mainstream’ or ‘research that does not directly lead to major breakthroughs’. Although the majority of interlocutors mentioned the good quality of CSC PhD students, both in terms of level of knowledge and commitment, a few of them said the quality varies considerably and/or that cultural and language barriers regularly hamper a smooth collaboration.

There are also **financial interests and benefits**. For many knowledge institutions, appointing CSC PhD students is financially more attractive than employing PhD students without a grant, since a considerable part of the living costs is paid through the CSC stipend. The institutions can thus expand their research capacities with subsidised researchers. However, most universities see the **financial significance** of CSC as **limited**, arguing that (in most cases) CSC PhD

students do not pay a bench/tuition fee while the costs of a PhD trajectory, especially in faculties and departments of science, are high. Some universities or departments also invest financially in the collaboration by offering a top-up to PhD scholarships, including to those of CSC.⁷

2.4 Risks of collaborating with CSC

The universities and national research institutes also see risks in collaborating with CSC. The risks most often mentioned are **a lack of reciprocity in transparency, access to sources, and data exchange**. Though views varied on the lack of openness on the Chinese side, many mentioned that it can be difficult to obtain data in/from China. One interlocutor called for more reciprocity in the exchange of PhD students, as the number of Dutch PhD students who obtain their PhD at Chinese universities is considerably lower than the other way around. The issue of possible unethical research was mainly mentioned in the context of medical research. In such cases the knowledge institutions consult the ethical committees that exist at faculty or central level.

Many interlocutors, particularly those representing the Faculties of Humanities or Faculties of Social Sciences, were aware of and concerned about the risks of **infringement of academic freedom** by Chinese authorities and **self-censorship** among CSC PhD students where sensitive research topics or sensitive research results are concerned. Many knowledge institutions illustrated the former by pointing to the challenges in dealing with the **'long arm of Beijing'**, the **'loyalty declaration'** demanded by CSC of its scholarship recipients, and the **monitoring of CSC PhD students** by Chinese authorities. PhD supervisors said that they try to avoid sensitive topics that could bring CSC PhD students into a vulnerable position in the research project and that they discuss possible risks in one-on-one conversations with their students. Some mentioned that this has led to self-censorship in the choice of research topics. Two universities are considering appointing a **confidential advisor** where students and staff members can report and discuss cases of foreign interference or pressure. Many also

7 University of Groningen, University of Amsterdam, Leiden University, and the Tilburg School of Economics and Management currently provide financial top-ups; Maastricht University offers a contribution to housing costs in the first year.

pointed out that during the onboarding processes for all PhD students, attention is paid to academic freedom on campus.

Undesirable knowledge transfer, dual use, and infringement of Intellectual Property Rights, which are often mentioned as the biggest risks in research collaboration with China, were considered less relevant in the case of CSC PhD students. Interlocutors argued that there is little confidential knowledge to be transferred as researchers work on the basis of Open Science and publish all research results. They also point to low Technology Readiness Levels of PhD research and to the fact that in a growing number of research areas, China no longer lags behind and that there is, therefore, not much knowledge to be transferred. In many areas, they say, the Netherlands can **learn as much from China** as the other way around.

In terms of risks, **the language barrier** was mentioned a number of times. The fact that most people involved in the collaboration with Chinese PhD students, including those sponsored by CSC, do not speak and read Chinese, and that some CSC-students have limited English language competence, can cause difficulties regarding the evaluation and validation of feedback from and to a Chinese co-researcher and/or the evaluation of Chinese research materials used by a CSC PhD student. When, in case of a dual doctorate, the PhD also needs to be presented in China in the Chinese language, the supervisor on the Dutch side is not able to evaluate that version.

In all interviews, the interlocutors expressed concerns about the risk of **discrimination and stigmatisation** of Chinese students and staff, including CSC PhD students. Some said that Chinese students had told them they felt unwelcome. In connection with this they also mentioned the risks of mental health problems and loneliness due to cultural differences, and performance pressure from family. In one interview, the interlocutor brought up the vulnerability to extortion by Chinese-speaking criminals.⁸

Finally, the risk posed to international collaboration in general and collaboration with China in particular as a result of **geopolitical developments**, including decoupling or de-risking from China, was often mentioned as a serious challenge.

8 In one case, Chinese students had been forced to hand over their savings to a criminal organisation involving Chinese-speaking people.

Low living standards

Most knowledge institutions explicitly stated that the benefits of collaboration are outweighed by **concerns about the living standards** of CSC PhD students, since the amount of the CSC scholarships – at the time of writing €1,350 – has fallen below the required minimum income set by the Dutch Immigration and Naturalisation Service (IND), which was €1,508.22 at the time of writing. As a result, various universities that do not and/or cannot provide top-ups have become **more reluctant to appoint CSC PhD students**. Some universities currently advise employees against recruiting CSC candidates, another has recently introduced the requirement that all new scholarship holders receive a living allowance of at least €1,700 per month. For some universities or departments, this was either an important or the main reason for the decision to (temporarily) stop working with CSC PhD students (see 2.6 below).

2.5 Dependencies on CSC PhD students

An important issue investigated by this study concerns **possible dependencies** of Dutch knowledge institutes on CSC PhD students. These dependencies can be financial and/or substantive-strategic in nature. The first refers to a situation in which a university (department) or a research institute has come to depend on CSC-financing of PhD research to ensure its research output. Substantive-strategic dependency refers to being reliant on the research work performed by the CSC PhD students and/or the access to Chinese research data and research facilities provided by CSC PhD students.

We took a ratio of CSC PhD students (compared to all PhD students) of 15 percent or higher as a threshold for indicating possible dependencies on CSC PhD students and to discuss them in the interviews. This percentage was chosen as it amounts to a substantial part of the total number of PhD students at a university or department.

This approach yields the following picture:

- **University level**

The 13 Dutch universities examined have a CSC PhD student ratio well below 15 percent; the average ratio is 5.7 percent. Central level interlocutors of all universities stated they saw no dependencies for the university as a whole.

- **Faculty or department level**

Based on the information available to the researchers⁹, there are eleven university faculties or departments where the CSC PhD student ratio is above 15 percent. They account for less than eight percent of the total faculties and departments studied. Within this group, a few faculties or departments have a CSC PhD student ratio of more than 20 percent, indicating a risk of dependency. Not all faculties/departments of the latter group concern research areas of strategic concern to Dutch knowledge security.

- **National research institutes**

Based on the available information, two national research institutes and one department within a national research institute have a CSC PhD student ratio of more than 15 percent; one of these institutes has a ratio of more than 20 percent. In absolute terms these cases concern small numbers of CSC PhD students.

Most of the cases with a CSC PhD student ratio above 15 percent were discussed with representatives of the relevant universities or faculties. In cases with a ratio between 15 and 20 percent, CSC PhD students are seen as a relevant and welcome addition to the research capacity, but not as a group the faculty or department cannot do without. In cases where the researchers were able to discuss CSC PhD ratios that are (suspected to be) higher than 20 percent, including in research areas of strategic concern, interlocutors said that they recognise that the numbers are significant and pose a certain risk, but that they do not consider their departments to be dependent on collaboration with CSC. One interlocutor summed it up as follows: “We would have to accept a reduction in scientific output if collaboration were to be halted tomorrow, but we would not collapse.” Representatives of three departments said they are developing a diversification strategy, including proactively searching for alternative funding. The national research institutes indicated that the CSC PhD students make a significant contribution to research output, but that they do not regard them as a strategic dependency.

⁹ In a few cases the researchers did not obtain information about CSC PhD student ratios at faculties or departments.

2.6 Contracts with CSC

All universities work with CSC PhD students but only six universities have a contract with CSC: University of Groningen (RUG), Leiden University (UL), Maastricht University (UM), Erasmus University Rotterdam (EUR), Vrije Universiteit Amsterdam (VU), and University of Amsterdam (UVA). The other seven universities never had or no longer have a contract with CSC and none of the national research institutes surveyed have a contract with CSC. They receive CSC PhD students through the individual channel or framework agreement with a Chinese university (see 2.2).

The texts of the contracts between CSC and the six Dutch universities are largely similar. Aside from one exception, they contain the maximum number of PhD students – ranging from 25 to 75 – that can be appointed at the university under the contract. All include the requirement to obtain the PhD at the Dutch university, a list of preferred research themes, and information about the process of appointing CSC PhD students. Where applicable, they contain provisions regarding scholarship top-ups or other support from the Dutch university. The researchers found **no political conditions** in the contracts between Dutch universities and CSC, but all contain the condition that CSC students acknowledge that they must return to China after completing the PhD programme. However, not all interlocutors consider this to be a problem as this requirement is not unique to CSC. Some contracts include the addition that upon completion of their PhD studies and upon mutual agreement by the Dutch university and CSC, candidates may stay to pursue postdoctoral research for up to 24 months.

However, the **contracts that are signed between CSC and CSC PhD students** and documents published at the CSC website **do contain political conditions**, including the so-called ‘Declaration of Loyalty’ to the Chinese state or the Chinese Communist Party (see 1.3). All interlocutors indicated that until the issue was brought up in the media, they were not aware of these contracts because foreign universities are not involved in this agreement between the Chinese parties. These contracts also contain a clause about the need to appoint a Chinese guarantor who is registered as living in China and who will be held financially liable in case the CSC PhD student cannot fulfil his/her responsibilities. Interlocutors mentioned a few instances where CSC PhD students had told supervisors they had run into problems because a family member who was serving as guarantor was not permitted to travel

abroad, or that they felt weighed down by the pressure of having to be successful and to not bring financial problems upon their relatives. Many representatives of universities and national research institutes are **calling for talks with CSC** at a national or European level about the conditions of cooperation with CSC. They regard this as the only way to achieve results in talks with CSC and to create a level playing field for collaboration with CSC among knowledge institutions at a national or European level.

In the individual CSC-certificates that one university received from CSC, it is stated that: 'CSC entrusts the Education Section of the **Chinese Embassy** or the Chinese Consulate General to look after other welfare of the awardee'. **This enables and facilitates monitoring** by the Chinese government. The interviews conducted for this report confirm that such monitoring takes place, and that university staff are aware of that. In a university framework agreement between a Dutch and a Chinese university that provides CSC-funded PhD students, it is stated that project activities in China '**should not jeopardise China's sovereignty, national security and public interests.**' In view of the broad interpretation of what constitutes 'jeopardising national security' in China, which includes criticising policies of the Chinese Communist Party (CCP), this clause stimulates self-censorship.

Many Dutch universities and national research institutes sign a **Hospitality Agreement** or a similar agreement with PhD students with a scholarship, including those with CSC. The content and wording of these agreements, which are often accessible on the university website, vary per university. A growing number of these agreements refer explicitly to codes of conduct with regard to scientific integrity; in some other cases, universities indicated that they are planning to include such a reference in their Hospitality Agreement.

Suspending or stopping collaboration with CSC

Several knowledge institutions have recently suspended or stopped their collaboration with CSC because of the risks involved and/or concerns about the low scholarship amount discussed above. They include the Faculty of Science, Faculty of Dentistry and the Faculty of Medicine of the Vrije Universiteit Amsterdam (VU); the Faculty of Dentistry and the Faculty of Medicine of the University of Amsterdam; the Erasmus School of Social and Behavioural Sciences (ESSB) and the Erasmus School of Economics (ESE); various faculties of the Technical University Delft and Utrecht University; and several national research institutes (information provided by the universities; VU, n.d.; NOS, 2023).

2.7 Approaches to Knowledge Security

All universities are developing and implementing knowledge security policies, though their level of advancement and the amount of time and effort they invest varies. Important drivers for these efforts are media reports on knowledge security breaches and the actions that the Dutch Ministry of OCW is taking to promote knowledge security. In developing knowledge security measures, the knowledge institutions are supported and encouraged by Universities of the Netherlands (UNL), representing the interests of the universities, the Royal Netherlands Academy of Arts and Sciences (KNAW), and the Dutch Research Council (NWO) (KNAW, 2023). Some universities have been working on knowledge security for several years already, and are now leading the way for others. Two of these, the Technical University of Delft (TU Delft, 2021) and the University of Twente, proactively encourage and support other universities in the Netherlands and abroad with respect to developing knowledge security policies by sharing their models and experience with university and government policy makers in the Netherlands and Europe.

Many universities base their approach on the Dutch National Knowledge Security Guidelines (UNL, 2022). Almost all universities have appointed a **knowledge security officer** or are in the process of doing so. Most universities have developed or are developing **frameworks and procedures for assessing foreign PhD candidates**, including those of CSC, in terms of knowledge security risks. Some are waiting for further guidelines by the government. When making such assessments, many seek the advice of the Dutch National Contact Point for Knowledge Security. Most interlocutors said they believe **raising awareness of the risks is the crux** of strengthening knowledge security, and they invest in meetings and workshops to familiarise staff with the topic.

Challenges

Interlocutors often mentioned the multiple **challenges** of implementing knowledge security measures. The main challenges are **lack of manpower** with sufficient knowledge and experience, and the **lack of knowledge and awareness of risks** among employees. Knowledge security officers struggle to reach the thousands of staff members within the faculties and institutes. This challenge is intensified by resistance to knowledge security measures among some groups of staff members. Many researchers that have built up long-term collaborations and personal relationships with Chinese partners and CSC PhD students are reluctant to look at the collaboration through a security lens. **Doubts about the severity and scale** of the problem and the **proportionality of knowledge security measures**, as well as the risk of **stigmatisation** add to the reluctance.

3 Dutch-Chinese Research & Innovation Cooperation in the Geopolitical Context

3.1 Geopolitical context

Research and Innovation (R&I) cooperation is affected by the geopolitical context in which it takes place. Knowledge and technology have become a strategic means of power, and the Dutch government finds itself increasingly confronted by state actors that use knowledge and technology to strengthen their own military, technological, political, and economic power. These actions affect Dutch interests, including national security and European fundamental rights and values (OCW, 2022). Two geopolitical developments in particular are impacting Dutch-Chinese R&I cooperation: the **intensifying US-China technological rivalry** and **EU de-risking policies towards China**.

The US and China both see technological supremacy as key to economic development and to global political power and influence. As a result, the **US-China competition** is increasingly focused on the area of science and technology (S&T). While the US has long been the number one technological power, China is now challenging that position as it has become leading in a growing number of S&T areas, including in certain areas of defence and space technologies, biotechnology, advanced materials and key quantum technology (Gaida et al. / ASPI, 2023; Garver 2022). In seeking to gain the competitive edge, both China and the US are mutually limiting access to S&T resources. Europe is drawn into this rivalry, not only because of the increasing awareness of the challenges that China poses, but also through US pressure to follow suit and take measures to limit China's access to resources.

Competition between the EU and China has increased as well. The relationship has become more tense in recent years due to frictions over an unlevel playing field in trade, economic coercion, export controls of critical raw materials, the war between Russia and Ukraine, and human rights conditions in China (EEAS, 2023). In March 2023, President of the European Commission Von der Leyen announced the Commission's intention to **'de-risk' in critical sectors** from

China. In line with these efforts, the Commission recently unveiled a European Economic Security Strategy, listing ten critical technology areas that are key to economic security in the EU (European Commission, 2023a and 2023d). In a 'Recommendation' stemming from that Strategy, the European Commission advises carrying out risk assessments on four critical technology areas, including in research in the areas of advanced semiconductors, artificial intelligence, quantum technology, and biotechnologies (European Commission, 2023d). Further illustrating the EU's growing attention for risks in research collaboration is, for example, the publication of the 'Factsheet on EU funding for research actions to combat disinformation, foreign manipulation, and interference' (European Commission, 2023b) and the 'Staff Working Document on tackling R&I foreign interference' (European Commission, 2022b). Though country-neutral in character, both documents were developed with risks posed by countries such as China in mind.

While the EU continues to see China as a cooperation partner in R&I, it also aims to strengthen its competitiveness in relation to China's rise and is increasingly nuanced and transactional in its engagement with China. Despite many rounds of talks, the two sides have not yet been able to agree on a new EU-China Joint Roadmap for the Future of Science, Technology, and Innovation Cooperation. Encouragement of R&I cooperation between Europe and China within the EU's Horizon Europe programme is currently limited to the areas of Food, Agriculture, and Biotechnology, Climate Change and Biodiversity (European Commission, 2022a).

3.2 Dutch knowledge security policies

The geopolitical developments described above and the ensuing challenges in STI collaboration have led various European countries, including the Netherlands, to develop policies to address these challenges. In the Netherlands, parliamentary questions in late 2018 and 2019 about reports on espionage and Chinese researchers with military ties at Dutch universities led the Dutch government to examine whether measures to avoid undesirable knowledge transfer to China were necessary (OCW 2019a; OCW 2019b; d'Hooghe & Lammertink, 2018). The Dutch government also commissioned a 'Checklist for cooperation with Chinese universities and other research institutes' (HCSS, 2019). In November 2020, the first contours of a policy on knowledge security were introduced (OCW, 2020), which have since been developed further (OCW, 2022,

2023a and 2023b; AWTI, 2022). Knowledge security¹⁰ is treated as a component of national security and the Dutch effort to strengthen knowledge security is, therefore, part of the Dutch government-wide Security Strategy for the Kingdom of the Netherlands (Government, 2023a). The Dutch Ministry of Education, Culture and Science (OCW) has the lead in knowledge security, but is supported by various other ministries including the Ministry of Economic Affairs and Climate, the Ministry of Justice and Security, the Ministry of Foreign Affairs, and the Intelligence Services.

The Dutch policy on knowledge security is country-neutral and has adopted the motto: 'open where possible, protected where necessary'. The approach consists of:

- Measures that **promote awareness of risks** and **self-regulation of knowledge institutions** supported by a national infrastructure which includes:
 - a **knowledge security dialogue** with universities and research institutes.
 - the development of a '**learning**' **knowledge security network** with stakeholders from knowledge institutions and the government.
 - **National Knowledge Security Guidelines (UNL 2022)**.
 - **National Contact Point for Knowledge Security (Government 2023b)** where universities can turn to for advice on the risks that an international collaboration project may pose.
 - Furthermore, universities have been requested to carry out a **risk analysis of international partnerships** and to report on this to their supervisory board; and to participate in an external knowledge safety audit. The results of the audit were published in September 2023 (Bokdan et al., 2023).
- **The development of screening mechanisms** for undesirable knowledge and tech transfer. The development of a 'legislative proposal for screening knowledge security' has still to be finalised (OCW, 2023a).
- Investment in international collaboration on knowledge security. In the EU, the Dutch government actively supports the exchange of knowledge security approaches and the organisation of Mutual Learning Exercises (MLEs) on tackling R&I foreign interference.

10 Knowledge security is defined as being 'first and foremost about the undesirable transfer of sensitive knowledge and technology', but also entailing 'the covert influencing of education and research by state actors', which may place academic freedom and social safety in jeopardy, and 'ethical issues that can be at play in collaboration with countries that do not respect fundamental rights' (UNL 2022).

3.3 Measures to encourage collaboration

While the development of measures to strengthen knowledge security takes up much attention and resources, the Dutch government has recently also invested in finding a better balance between developing measures that address the risks, and measures that encourage collaboration with China in areas and ways that are secure and mutually beneficial. A major step in that direction was the formalisation in September 2023 of a Memorandum of Understanding (MoU) between the Dutch Ministries of Education Culture and Science (OCW) and of Economic Affairs and Climate Policy (EZK), and the Chinese Ministry of Science and Technology (MOST). The MoU outlines a renewed framework for collaboration in Science, Technology and Innovation and includes new paragraphs that emphasise the autonomy of research institutions and ethical research principles. It also establishes a consultation structure between the Dutch Ministries of OCW and EZK and Chinese counterparts. This strategic platform aims to facilitate an ongoing dialogue, addressing both opportunities and potential concerns and risks. The Dutch side emphasises opportunities for collaboration on circular economy, climate, health and health services, agriculture, and water management (OCW, 2023c; Dijkgraaf, 2023; Klein Tunte, 2023).

3.4 Scenarios that may affect collaboration with CSC

As Chapter 2 showed, Dutch knowledge institutions regard the collaboration with CSC PhD students as valuable and therefore hope to continue with it. However, in view of the risks and challenges of collaboration with CSC PhD students discussed in Chapter 2 and the geopolitical developments discussed above, new situations may arise that could affect collaboration with CSC PhD students. This section explores some of these potential future developments. A full scenario-analysis lies outside the scope of this paper but based on literature and expert judgement, two brief scenarios that could lead to strong pressures or even a halt to collaboration with CSC are presented. These scenarios aim to raise awareness of potential future changes in collaboration with CSC PhD students. As discussed further below, there are also more positive scenarios.

In the first scenario, there is a sharp deterioration of EU-China ties, including ties between the Netherlands and China, due to increasing political and trade frictions. In this environment, the EU steps up its scrutiny of STI collaboration with China. The results of the assessment of European vulnerabilities in advanced

technologies (see section 3.1) points to serious exposures to China and new reports on Chinese interference in R&I collaboration with Europe are published. The developments in this scenario could prompt European governments to stop collaborating with Chinese scholarship programmes, including CSC, and/or could prompt China – out of discontent with the negative reporting – to discontinue CSC scholarship collaboration with selected European countries. Indicators of these potential developments include the growing scrutiny of CSC in several European countries, including Germany and Sweden (Felden, 2023); EU-level documents such as the 2022 ‘Staff Working Document on Tackling R&I Foreign Interference’ (European Commission, 2022b; Matthews & Guerini, 2023) and the 2024 ‘Proposal for a Council Recommendation on Enhancing Research Security’ (2024), which demonstrate a growing attention for the strengthening of research security. On the Chinese side, new laws impacting research collaboration (Sharma, 2023a; Upton 2023), and China’s discontent about the stigmatisation of Chinese researchers (Chen 2021) are indicators.

In a second scenario, the conflict between China and Taiwan escalates into a major global crisis. Increased military activity in the Strait of Taiwan by China and the US leads to a collision between Chinese or US ships or planes, which spirals out of control leading to a military crisis. In this situation the EU may decide to halt R&I collaboration with China, including with CSC, just like it suspended cooperation with Russian entities on R&I after the Russian invasion in Ukraine (European Commission, 2022a). Indicators of the possibility of a major conflict include the growing tensions between China and Taiwan, China’s refusal to exclude military action against Taiwan, and various near-collisions and other incidents between Chinese and US ships and planes in recent years (Reuters, 2023; Lo, 2022).

There are also **scenarios that could lead to a strengthening of collaboration**, for example if CSC were to raise the monthly living allowance for PhD-students abroad to a level that is well above the required minimum income set by the Dutch Immigration and Naturalisation Service (IND). This development would positively affect the collaboration between Dutch universities and CSC PhD students, and universities and faculties that that have suspended collaboration with CSC because of the low living allowance may reverse their decision.

While the consequences of these scenarios for collaboration with CSC PhD vary, Dutch knowledge institutions would do well to be prepared for the possibility that CSC-cooperation could be abruptly halted, and therefore to diversify their R&I cooperation.

4 Collaboration with CSC in other European countries

Collaboration with CSC has come under scrutiny not only in the Netherlands but also in other countries. This chapter examines collaboration with CSC in three European countries: Sweden, Denmark, and the UK, and discusses how stakeholders respond to the challenges involved. The chapter ends with lessons that can be drawn from these cases.

4.1 Sweden

China is an important academic and educational partner for Sweden. It is the top third country of origin of foreign students in Sweden (Universitetskanslersämbetet, 2023), and in the autumn of 2022, China was the number one country of origin of foreign doctoral students in Sweden. The 850 Chinese doctoral students account for 5% of the total number of doctoral students enrolled in Swedish higher education institutions (Universitetskanslersämbetet, 2023). They come with diverse types of financing; the total number of CSC PhD students in Sweden is unknown.

Knowledge institutions' approach

Various Swedish universities have contracts with CSC (KHT, 2023). Swedish researchers mention similar reasons to cooperate with China and CSC as Dutch researchers, namely access to Chinese datasets, studying problems on a larger scale, and financial and personnel resources. They also see similar challenges and risks, such as the lack of transparency, ethical issues, dual use, and lack of reciprocity (Tardell 2021; Shih & Forsberg, 2022). In January 2023, Swedish media reported on the problematic clauses in contracts between CSC and the PhD students it sponsors (Hogan). This news, in combination with concerns about the low living allowances of CSC PhD students and overall knowledge security concerns, led several knowledge institutions to suspend or terminate their collaboration with CSC, including the Karolinska Institute (KI, 2023) and Uppsala University (Sharma, 2023b). Others, like the KTH Royal Institute of Technology, are attempting to negotiate with CSC rather than suspending collaboration.

Government approach

The Swedish government generally takes a 'hands-off' approach towards its knowledge institutions (Government of Sweden, 2019; Interview, 2023c). However, in July 2023, the government tasked the Swedish Council for Higher Education with coordinating the development of national guidelines on responsible internationalisation, including a tool for assessing international collaboration. A final report is expected by December 2024 (Government of Sweden, 2023). More general guidelines for internationalisation, developed by the Swedish Foundation for International Cooperation in Research and Higher Education (STINT), were published in 2020 (Shih et al.).

4.2 Denmark

In Denmark there are at least 239 CSC PhD scholars doing research at Danish universities (Kjedltoft, 2023). They account for one third of all Chinese PhD students in Denmark; most of them work in S&T areas relevant to China's development strategy. There are no contracts between Danish universities and CSC, and CSC PhD students are unevenly distributed across the universities. CSC came under public scrutiny in Denmark early 2023, after the Swedish media reports about the problematic clauses in CSC-contracts.

Knowledge institutions' approach

Before the news about the 'loyalty pledges to the CCP' broke, Danish universities had already raised several issues with CSC (Interview, 2023a). They had collectively expressed concerns to CSC about the low living stipend, the requirement that CSC-students must return to China after completing their PhD, and the fact that Danish universities had to cover tuition for CSC students. When the universities learned about the loyalty pledges to the CCP they all halted the recruitment of CSC PhD students (Petersen, 2023; Interview 2023a).

Government approach

The Danish government has put knowledge security high on the agenda. In 2021, the Danish Security and Intelligence Service (PET) and the Ministry of Higher Education and Science published 'Is your research at risk? – Tips on foreign interference and espionage for researchers and other staff', with the aim of increasing awareness of the risks (PET, 2021). In 2022, the same Ministry published the 'Guidelines for international research and innovation cooperation' (Danish Ministry of HES, 2022). While China is not mentioned in

the English version, a Danish document summarising the Committee's main conclusions mentions China and CSC explicitly. It calls for a stricter approach to research collaboration with countries, including China. After media reports on the loyalty pledges to the CCP in CSC contracts in early 2023, the head of Danish counterintelligence stated that 'CSC scholars in Denmark are especially vulnerable to being pressured to conduct activities on behalf of the Chinese state' (Petersen, 2023).

4.3 United Kingdom

Academic engagement between the UK and China is extensive and has, according to a recent report to which the former Minister of State for Universities, Science, Research and Innovation, Jo Johnson, contributed, led to financial dependence of many UK universities on China (Adams et al., 2023). In the academic year 2021-2022, 28 percent of the non-UK PhD students studying in the UK were from China (Adams et al., 2023). This share was an increase compared to previous years, partly because Brexit led to significant reductions in EU doctoral researchers. Overall, most research collaboration between the UK and China is tilted towards technology (Adams et al., 2023). Many UK universities have a formal contract with CSC (Clarke, 2023). The exact number of CSC students currently doing research in the UK is not known, but since the UK is the largest recipient country of CSC PhD students worldwide ('Notes', 2023), the number must be considerable. Clarke reports that at least 646 CSC scholarship students are welcomed to UK universities every year (Clarke, 2023).

Knowledge institutions' approach

There is little public information on the risk management policies of universities towards CSC ('Interview', 2023b). In 2022, universities and government collaborated in putting forward the (country-neutral) guidelines 'Managing risks in international research and innovation' (UKRI). However, the report by Adams et al. warned that in general, universities are slow in diversifying international student flows and research. It also states that the sector 'continues to follow a "cross your fingers" strategy that de-coupling is in the future never necessary for China'. It concludes that 'The China question therefore to a great degree remains unanswered.' (Adams et al., 2023). In reaction to this report, the Russell Group, which represents 24 leading UK universities, noted that they are 'ready to work with Government' towards diversification (2023). Charity UK-China Transparency

has translated CSC contracts and regulations (2023), and a report by the educational charity Civitas has called for an end to collaboration with CSC (Clarke, 2023). However, so far universities have not taken (public) action to halt the collaboration.

Government approach

The UK government approach to knowledge security is comprehensive (D'Hooghe & Lammertink, 2022). Like elsewhere in Europe, Intelligence Services in the UK warn against the risks of research collaboration with China. In October 2023, a report by MI5 warned that universities 'are magnetic targets for espionage and manipulation' (MI5, 2023). There is also widespread concern about the higher education's financial dependence on China (Cabinet Office, 2023; IRC, 2023). Issues regarding CSC seem to have received less attention in the UK than in Denmark and Sweden, and as such have not been specifically targeted in government policy. However, the government has taken many steps to address potential risks regarding knowledge security. In 2022, the National Protective Security Authority published the updated 'Trusted Research Guidance for Academia' that was first put forward in 2019 and that focuses on preventing undesirable knowledge transfers (NPSA, 2022). International researchers need to apply for an Academic Technology Approval Scheme (ATAS) certificate if they are researching 'sensitive subjects' (FCO). The government has also established a Research Collaboration Advice Team (RCAT), which provides research institutions with a first point of contact for official advice about national security risks linked to international research (RCAT, n.d.). In May 2023, the UK's higher education regulator Office for Students (OfS) asked 23 universities with high numbers of Chinese students about their contingency planning in case of a sudden interruption to overseas recruitment, for instance resulting from a changing geopolitical environment (Weal & Quinn, 2023). The Sunak government has also committed to building China competencies throughout government to better understand China, and to increase protections for academic freedom (Office for Students, 2023).

4.4 Lessons

The cases discussed in this chapter offer various lessons for the Dutch government:

- The Danish universities have jointly raised their concerns with CSC. While the government did not take the lead in formulating policy towards CSC, the Ministry of Higher Education and Science facilitated the contact between Danish universities and CSC. The Dutch Ministry of OCW could play a similar coordinating and facilitating role.
- UK Transparency published translations of relevant Chinese CSC documents, which contributes to increasing awareness and knowledge about CSC regulations. The Dutch government could facilitate (certified) translations and publish them at the website of the Dutch Contact Point for Knowledge Security.
- The UK's higher education regulator wrote to universities with high numbers of Chinese students, asking to see their contingency planning in case of a sudden interruption to overseas recruitment. The Dutch government could encourage its knowledge institutions to develop contingency plans for the scenario of an abrupt cessation of research collaboration with China.

5 Conclusions and recommendations

5.1 Conclusions

This report describes the collaboration of Dutch knowledge institutions with China Scholarship Council (CSC) sponsored PhD students in the context of geopolitical developments that are putting pressure on international research collaboration in general, and on collaboration with China in particular.

Collaboration with CSC PhD students is only one element of Dutch research collaboration with China, but in view of the numbers involved – approximately 2,197 CSC PhD students in the Netherlands in 2023 – it is a relevant element. Close to half of this number performs research in fields that are of strategic importance to both China (Chapter 1) and the Netherlands: engineering, technology, and natural sciences. The second largest group studies at medical faculties.

Despite these numbers, dependencies of Dutch knowledge institutions on CSC PhD students in strategic areas of research are limited. Firstly, there are no financial or strategic dependencies for universities as a whole. Secondly, at the level of faculties, departments, and institutes there are only a few cases with a CSC PhD student ratio of more than 20 percent, indicating a level of dependency or the risk thereof. Not all of these cases concern strategic areas of research. University and/or faculty representatives say they are aware of (the risk of) a level of dependency in these cases. Some indicate their commitment to diversifying sources of PhD-funding. As it will be challenging to achieve this goal, it would be helpful if the government were to support and encourage efforts to diversify the sources of PhD funding.

Diversification is also wise because, as discussed in Chapter 3, it is not inconceivable that future geopolitical developments may lead to a discontinuation of collaboration with CSC. Universities with large numbers of CSC PhD students would therefore do well to develop contingency plans for that situation.

Although the contracts between Dutch universities and CSC do not contain political conditions, other CSC documents do, and Dutch knowledge institutions are concerned about this. The controversial 'loyalty pledges', guarantor clauses, and requirements to report to or accept guidance from the Chinese Embassy or Consulate in the host country are found in the contracts signed between CSC and PhD students and in regulations published by the China Scholarship Council.

Most staff members at Dutch knowledge institutions are aware of the various risks involved in collaborating with China, but all of them also emphasise the importance of China as a research partner. This illustrates the dilemma they face and underlines the need for a balanced approach in the development and implementation of knowledge security measures. All institutions have developed research security policies or are in the process of doing so. However, some institutions devote more time and effort to the task than others, and not all of them are convinced of the severity and scale of the problem. Some also question the proportionality of knowledge security measures.

Many Dutch knowledge institutions currently regard the CSC stipend's low amount of living expenses, which is below the minimum income requirement set by the Dutch Immigration and Naturalisation Service, as one of the biggest problems. For universities or departments that provide a top-up to the CSC scholarship, this issue is of less concern. A number of Dutch knowledge institutes or specific faculties and departments within them have suspended or halted collaboration with CSC: some mainly because of the low amount of living expense, others because of a combination of the low monthly allowance and knowledge security concerns.

As Chapter 4 shows, questions and concerns regarding collaboration with CSC and CSC PhD students are prevalent in other countries as well. Their experiences and approaches to this issue offer lessons for the Netherlands. It furthermore allows for European collaboration on this matter.

5.2 Recommendations

Based on the questionnaires and interviews, as well as on the approaches taken by Sweden, Denmark and the UK, the project team would like to offer the following recommendations for the Dutch government regarding collaboration with CSC.

Recommendation 1

Provide guidance to Dutch knowledge institutions on collaborating with CSC. The researchers note that many of the interlocutors feel the need for clear guidelines from the Dutch government on collaborating with CSC PhD students. Collaboration with CSC comes with both benefits and challenges. National level guidance on how and in what areas to collaborate or not with CSC PhD students, and how to apply the National Knowledge Security Guidelines to the challenges of collaborating with CSC PhD-students, would be helpful. One specific action worth considering is to organise a discussion among knowledge institutions to exchange views and best practices, and to agree on how to respond to the challenges. UNL, NWO, KNAW, and the Contact Point for Knowledge Security could play leading roles in this process.

Recommendation 2

Coordinate and support national level discussions with CSC. This can be done in two steps. First, UNL could facilitate a discussion between Dutch universities with the aim of jointly formulating an agenda and goals for a meeting with CSC. The agenda could include issues such as the monthly allowance of the CSC grant amount and the safeguarding of research integrity. Second, the Ministry of Education Culture and Science (OCW) could help set up a meeting between representatives of Dutch universities and CSC. Lifting the discussions with CSC to the national level rather than individual meetings with CSC will also strengthen the position of Dutch universities.

Recommendation 3

Explore the possibilities of European joint efforts to improve the conditions of collaboration with CSC. This can be done at governmental and institutional level. Many Dutch universities and/or faculties are a member of European university or faculty alliances where issues concerning collaboration with CSC PhD students are already discussed. The Dutch government could proactively coordinate a discussion at the level of EU member states.

Recommendation 4

Provide (certified) translations of relevant CSC documents to increase institutions' awareness and knowledge about CSC policies and regulations. The translations could be posted on the website of the Dutch Contact Point for Knowledge Security.

Recommendation 5

Strongly encourage and support Dutch knowledge institutions in their efforts to diversify the sources of PhD scholarship funding and provide support in exploring alternatives where needed.

Recommendation 6

Encourage Dutch knowledge institutions to formulate contingency plans for the scenario of an abrupt discontinuation of research collaboration with China.

Appendix

List of knowledge institutions examined

The following universities were researched:

- Delft University of Technology
- Eindhoven University of Technology
- Erasmus University Rotterdam
- Leiden University
- Maastricht University
- Radboud University Nijmegen
- Tilburg University
- University of Amsterdam
- University of Groningen
- University of Twente
- Utrecht University
- VU Amsterdam
- Wageningen University and Research Centre

The following NWO institutes were contacted, eight of them were researched:

- AMOLF – Physics of functional complex matter
- Advanced Research Center for Nanolithography (ARCNL)
- Netherlands Institute for Radio Astronomy (ASTRON)
- Centrum Wiskunde & Informatica (CWI)
- Dutch Institute for Fundamental Energy Research (DIFFER)
- National Institute for Subatomic Physics (Nikhef)
- Royal Netherlands Institute for Sea Research (NIOZ)
- Netherlands Institute for the Study of Crime and Law Enforcement (NSCR)
- Netherlands Institute for Space Research (SRON)

The following KNAW institutes were researched:

- Data Archiving and Networked Services (DANS)
- Hubrecht Institute for Developmental Biology and Stem Cell Research
- Huygens Institute
- Institute for War, Holocaust and Genocide studies (NIOD)
- International Institute of Social History (IISG)
- Meertens Institute

- Netherlands Institute for Advanced Study in the Humanities and Social Sciences (NIAS)
- Netherlands Institute for Neuroscience
- Netherlands Institute of Ecology (NIOO)
- Netherlands Interdisciplinary Demographic Institute (NIDI)
- Royal Netherlands Institute of Southeast Asian and Caribbean Studies (KITLV)
- Westerdijk Fungal Biodiversity Institute

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