



Foresight 2030

The role of academic internationalization in the next decade



STINT

Stiftelsen för internationalisering av
högre utbildning och forskning

The Swedish Foundation for International
Cooperation in Research and Higher Education

R 22:03
ISSN 1404-7209

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Preface

The mission of STINT, the Swedish Foundation for International Cooperation in Research and Higher Education, is to internationalize Swedish higher education and research. STINT promotes knowledge and competence development within internationalization and invests in internationalization projects proposed by researchers, educators, and leaderships at Swedish universities. STINT's geographic focus is on countries outside Europe.

The world is currently changing rapidly and becoming increasingly polarized, complex, and uncertain. These changes will affect many aspects of academia, and academic internationalization in particular. In order to understand these trends and related challenges as well as opportunities, STINT in 2020 established an International Advisory Board comprising both Swedish and international experts on higher education and research.

The role of the Advisory Board is to provide expert recommendations on current issues and discuss future developments of relevance to STINT's mission. These recommendations cover academic developments within education and research, but also relevant non-academic aspects that will impact academia at large.

The Advisory Board has been tasked by the STINT Board of Directors to compile this foresight study, *Foresight 2030*, on the role of academic internationalization in the next decade.

Foresight 2030 seeks to provide

- leaders and policy makers in the Swedish academic ecosystem with a broad overview of current and future trends that may affect the international competitiveness of Swedish higher education and research;
- guidance on how the Swedish institutions can better position themselves internationally; and
- recommendations on ways in which STINT can enhance its role in the coming decade.

This report has been written by the Advisory Board, which consists of Prof. Bertil Andersson, former President, Nanyang Technological University, Singapore; Dr Agneta Bladh, former Chair, Swedish Research Council; Prof. William Brustein, former Vice President for Global Strategies and International Affairs, West Virginia University, USA; Prof. Jason E. Lane, Dean of the College of Education, Health, and Society, Miami University in Oxford, Ohio, USA; and Dr Nelson Torto, former Executive Director, the African Academy of Sciences, Kenya, and now Permanent Secretary in the Ministry of Communications, Knowledge and Technology, Botswana. The Advisory Board is chaired by Dr Bladh.

Dr Andreas Göthenberg
Executive Director, STINT

Stockholm, September 2022

Executive Summary

Most higher education institutions (HEIs) in Sweden are regulated by the Higher Education Act and the Higher Education Ordinance, which are enacted by the Swedish Parliament. The Higher Education Act stipulates that the collected international activities of each HEI must enhance the quality of its research and education and make a national and global contribution to sustainable development. This general guidance must be applied by individual HEIs in order to fulfill this ambition. Doing so necessitates an understanding of the world and different situations. International understanding and intercultural competence therefore constitute an integral part of international collaboration in education and research.

The Swedish higher education system has both advantages and challenges. Although Swedish higher education has become increasingly internationalized, there are still some exceptions. The number of foreign students, doctoral students and researchers is high in certain areas, especially engineering and the natural sciences. Many master-level and most doctoral programs are taught in English. Teaching is characterized by a non-hierarchical approach focusing on creativity and cooperation, which has led to several innovations and start-ups involving both students and faculty. There is a comparatively strong interaction with the business sector and other organizations outside higher education.

The challenges related to internationalization include:

- Swedish HEIs operate entirely in Sweden, in contrast to universities in similar countries. Their formal legal status as state agencies (albeit with certain liberties such as academic freedom) clearly limits action abroad as well as proactive and collaborative internationalization.
- Swedish HEIs generally have poor external trend analysis. There is often little awareness of developments, strategies, priorities, structures, and operations at foreign universities.
- Swedish students mostly favor English-speaking countries. Ideally, Swedish students should show greater ambition to learn from a wider world perspective, for example in Asia, Africa, and South America.
- Higher education in Sweden is less aligned to the international education front and from the outside Sweden may be seen as lagging in terms of current best practices. Great investment in pedagogy and educational technology is needed, as well as higher overall funding of higher education.
- Concerns regarding non-democratic countries restrict academic collaborations.

These and other challenges faced by Swedish HEIs need to be addressed seriously in the coming decade, for instance by grasping available opportunities.

Renewed awareness of the importance of internationalization in terms of economic development and public/science diplomacy is also expected. Following the Second World War, the Fulbright program was started to build intercultural awareness. Many similar programs were developed by nations around the world, on both sides of the Iron Curtain. Nations may again seek to *use higher education as a means of building soft power* and strengthening international relations.

HEIs must take a strong position, including dedicated international collaboration and exchange, to address the many challenging issues we face today. This involves for instance taking active measures to combat nationalism, populism, intolerance as well as various forms of propagandistic disinformation. *International collaboration and exchange connect people and are therefore essential peacekeeping activities.*

Many of the greatest threats facing humankind, from political turmoil to climate change, from water scarcity to forced mass migration, are global challenges requiring collaborative engagement by researchers across disciplines and nations if they are to be addressed successfully. International collaboration in research and joint government funding will be critical moving forward. HEIs need to meet these challenges by facilitating meetings between students from different cultural backgrounds and countries to discuss future possibilities. However, foreign students and researchers are in many cases surveyed by their governments, making internationalization, collaboration and mobility more difficult, and definitely providing an argument for the involvement of academic leadership.

We will continue to see the *development of multinational universities*, with campuses and offices located around the world. These locations are likely to be developed in places where there is a growing demand for higher education and sufficient resources to support such activity. Many of these campuses will also continue to grow their own research activities and contribute to the internationalization of research on home campuses. Will Swedish HEIs play a role as part of multinational universities?

There will be a growing need for *internationalization at home* as the world becomes smaller, and students will need to be more culturally aware and engaged. Accordingly, curricula and other activities will need to be internationalized so that all students gain international exposure. *Virtual mobility* will expand as HEIs look to utilize technology to democratize access to international learning opportunities.

Internationalization will increase, but differently than before the pandemic. It will depend more on attitudes than on brands. Hostile attitudes toward foreigners have already changed mobility patterns. Future issues do not only include safety but also a welcoming society and respectful treatment of international students and researchers. Decolonization of higher education will also be important, as will reducing inequality.

Which countries and institutions will be important to collaborate with 10 to 20 years ahead? Will sub-Saharan African countries be more important than Asian or American ones? Are there any differences between short- and long-term perspectives? What issues must be weighed in decision-making?

The European Universities Initiative, as well as a higher Erasmus budget, will contribute to greater intra-European student exchange. The same may happen in other parts of the world, which is why *intraregional exchanges* may become more common, especially as many countries in Asia have expanded their higher education sectors. To promote worldwide collaboration beyond regions, more dedicated structural and intra-institutional educational collaborations are necessary. Researchers have other ways to find collaboration partners worldwide but also need to consider emerging science countries and their institutions to ensure future competitiveness.

Recommendations for internationalization over the coming years are:

- Presenting better arguments for the value proposition of internationalization within our HEIs, local communities, the business community, and at national level.
- Rethinking international academic partnerships by rewarding mutual benefits and the absence of predatory tendencies with contributions being annually evaluated by all parties, including assessment of returns on investment and effort.
- Establishing more global research partnerships focused on the UN’s Sustainable Development Goals (SDGs). The primary objective of these partnerships should be understanding and providing solutions to critical global challenges such as global health, climate change, socioeconomic inequality, and extremist hate.
- Securing increased funding both nationally and globally for comprehensive internationalization (i.e., a global fund for research and training partnerships addressing critical global challenges).
- Rethinking current student mobility models for both inbound and outbound students in terms of the value proposition of mobility, duration, funding, use of digital platforms, and dual degrees.
- Increasing reliance on thoughtful qualitative and quantitative studies demonstrating the value and status of internationalization as well as ways in which internationalization may be improved.
- Ensuring awareness of responsible internationalization, the consideration of ethical aspects and sustainability. Partners should neither be naïve nor paranoid but make informed decisions when setting up international cooperation. Relevant questions should be asked: Who are the partners and what risks are involved?
- Developing an arena for science diplomacy, so that Swedish actors’ efforts may be better coordinated and more strategic internationally, with relevance for Sweden at large.

1 Rationale

STINT, the Swedish Foundation for International Cooperation in Research and Higher Education, was established in 1994 to promote international cooperation in research and higher education and has evolved to support the international competitiveness of Swedish higher education and, in turn, the country as a whole. Established as an endowed foundation, STINT is guided by its statutes and a dynamic and forward-looking Board of Directors. This structure enables STINT to be an agile actor within the Swedish knowledge system that can quickly respond to changes in the global environment and support leaders and decision makers as they navigate the increasing complexity of internationalization.

During most of its existence, STINT has been a crucial driving force in promoting and funding various programs for international academic collaboration and exchange. The main target during recent years has been Swedish interactions with countries outside Europe. Originally support was given to individual academics and research groups following peer review of submitted applications. Although successful and still important, STINT's role as a funder of international projects has been complemented by its new role as a knowledge resource for internationalization. This new role has a twofold origin. First, other actors in the Swedish funding ecosystem also support international cooperation. Second, the desire to strategically use the STINT endowment, which will eventually come to an end, to further strengthen the international position of Sweden and its HEIs.

Due to actively supporting international research and education activities for more than a decade, STINT has emerged as the national knowledge hub and resource with respect to trends and strategies for engaging the global academic arena. The target audience has been Swedish HEIs and their leaders as well as other actors, such as funders and policy makers. In its recent strategy, STINT states the ambition to develop that role even further and be a key national player in advising actors in the Swedish academic system when it comes to international challenges and opportunities. The core values and objectives of STINT are described below and were formulated by the Board of Directors in June 2021, when the strategy for 2021–2026 was decided.

STINT's core values

STINT wants academic partnerships to contribute to openness, tolerance and understanding between people.

STINT supports education and research collaborations between Swedish higher education institutions and higher education and research institutions abroad, provided that the results and documentation of projects are reported transparently, and activities adhere to good research practice.

The internationalization of higher education and research

- is not an end in itself but a means to an end
- is changeable
- promotes countries' development and transparency and thus contributes to bolstering global cooperation
- must be integrated (comprehensive internationalization)
- must be conducted thoughtfully, responsibly, and sustainably
- requires leadership, commitment, and knowledge
- requires continuous analysis and monitoring.

STINT's objectives

STINT shall

- influence and drive internationalization, particularly comprehensive internationalization, at Swedish higher education institutions, resulting in long-term outcomes
- play a leading role and actively cooperate with the rest of the Swedish system regarding issues of internationalization
- promote the development of knowledge and skills in the area of internationalization
- invest in the international partnerships of young researchers/teachers, and higher education shall be included in STINT's program offering
- be at the frontier regarding the establishment of higher education and research partnerships with strategically significant and dynamic countries
- contribute to enhancing the international competence of researchers, teachers, doctoral students/students and university leaderships as well as their understanding of cultural contexts
- contribute to cultivating an international approach and network at the management levels of higher education institutions
- help higher education institutions to navigate an increasingly complex and rapidly changing world.

In addition, STINT envisions playing a role in promoting competences related to higher education, research, and innovation in an international context among university leaderships as well as funding, research-conducting and governmental organizations. STINT's expertise for example lies in the management of international projects and providing insights into the education and research systems of

various countries, including countries with which prior academic collaboration has been limited.

STINT's Board has therefore decided that a major future role of the Foundation will be to serve as an expert knowledge provider for internationalization within the Swedish academic system. In other words, STINT will further transform from working reactively to taking a leading proactive role with respect to internationalization. Accordingly, STINT needs to update its knowledge base and network in response to the ever-changing global academic landscape. To this end, the STINT Board has decided to establish an International Advisory Board comprising both Swedish and international experts on higher education and research.

The role of the Advisory Board is to provide expert recommendations on current issues, as well as discuss future developments of relevance to STINT's mission. These recommendations should cover academic developments within education and research, but also relevant non-academic aspects that will impact STINT's missions. At the first meeting of the STINT International Advisory Board, on November 24, 2020, the possibility of developing foresight studies was discussed as one conceivable possible way of systematically working with STINT and its stakeholders.

The Advisory Board consists of Prof. Bertil Andersson, former President, Nanyang Technological University, Singapore; Dr Agneta Bladh, former Chair, Swedish Research Council; Prof. William Brustein, former Vice President for Global Strategies and International Affairs, West Virginia University, USA; Prof. Jason E. Lane, Dean of the College of Education, Health, and Society, Miami University in Oxford, Ohio, USA; and Dr Nelson Torto, former Executive Director, the African Academy of Sciences, Kenya, and now Permanent Secretary in the Ministry of Communications, Knowledge and Technology, Botswana. The Advisory Board is chaired by Dr Bladh.

STINT's Board has since tasked the Advisory Board with compiling this document, *Foresight 2030*, which is intended to provide a broad framework that may be followed with focused reports. *Foresight 2030* seeks to provide:

- leaders and policy makers in the Swedish academic ecosystem with a broad review of current and future trends that may affect the international competitiveness of Swedish higher education;
- guidance on how the Swedish institutions can better position the nation's higher education institutions to be competitive; and
- recommendations on ways that STINT can enhance its role in the coming decade.

2 Important trends in the coming decade

International trends in academia in the coming decade will depend on developments related both to research and education. The influence of political, economic, technological, and societal trends outside the actual academic sphere will also be crucial [1]. We note the fragility of any attempt to look into the future. Had this document been written three years ago, there likely would have been little acknowledgement of a pending pandemic and the Russian invasion and war in Ukraine. Thus, we here try to present some educated predictions based on the current situation with the hope of helping readers to understand the possibilities we envision, while also cautioning that any prediction is subject to the sometimes unpredictable winds of change.

2.1 Higher education and the future of democracy

In his recent book, *What Universities Owe Democracy* [2], Johns Hopkins University President Ronald J. Daniels states the obvious: people's faith in formerly trusted institutions—government, the courts, the media—appears increasingly fragile. Legislatures around the world, envisioned as bodies where compromise solutions are forged for the common good, are instead paralyzed by partisan bickering and political gamesmanship. Science and objective truth are under assault, buffeted by disinformation and political interference. If democracies are to continue to flourish, according to Daniels, universities, as core institutions of democracy, have a critical, indispensable role to play. Universities have the potential to function as engines of social mobility, as educators of citizens, as incubators of truth and expertise, and as places where diverse ideas are at once welcomed and challenged, shaping both individual identities and public discourse and policy.

Even in long-stable democracies, like the United States, academic institutions are attacked in the culture wars. Additionally, access to higher education or the lack thereof may deepen cultural divides around the world. Disrespect of academic freedom and diversity of ideas in different countries and institutions also opens for national legislation of HEIs, which may isolate them from each other.

2.2 Some challenges outside academia

Higher education is sometimes viewed as something separate from the world around it. However, the sector's research and teaching activities are closely interconnected with events beyond the campus. This does not mean that institutions should eagerly and carelessly jump to new opportunities without forethought;

instead, effective leaders need to continually scan the horizon for opportunities and threats that may arise and position their institutions to engage proactively rather than respond reactively. The new version of the Magna Charta Universitatum [3] also states that “Universities acknowledge that they have a responsibility to engage with and respond to the aspirations and challenges of the world and to the communities they serve, to benefit humanity and contribute to sustainability.” Leaders should be aware of the following high-level trends in the broader environment:

- Persisting migrant and refugee crises driven by war and ethnic conflict, the effects of the recent global pandemic, global warming, droughts, crime, famine, and insurgencies.
- Increasing socio-economic inequality both domestically and internationally. Inequality between low- and high-income countries as well as the gaps within countries may lead to political destabilization.
- Increasing scrutiny and lack of trust in traditional expert institutions, such as education and the media. Around the world, including in higher education strongholds such as the United States and the United Kingdom, there is intensifying disbelief in expert opinions and rising narratives posing universities as the sources of problems rather than of solutions.
- Increasing prevalence of information wars, in which both state and non-state actors utilize a wide range of technologies to acquire and weaponize (dis)information resulting in:
 - a. Significant sections of the world’s population embracing conspiracy theories and anti-science, nurtured by the proliferation of new and existing social media platforms.
 - b. A more outspoken distrust of Western democracies from autocratic countries.
 - c. Cyber threats or warfare, affecting the functioning of key information and physical infrastructure.
- Ongoing battles between neo-nationalist and global tendencies with respect to Covid-19 vaccine distribution, free trade vs. protectionism, and support for multinational institutions and policies (e.g., the European Union, G20, climate change).
- Reshaping of geopolitics and international relations around the world, for instance:
 - a. Deterioration in the relations between Europe and Russia, including the war in Ukraine initiated by Russia and Russian threats against other sovereign nations, which reshapes and reinvigorates military and economic relationships, potentially leading to a new Iron Curtain. This will create

- a divided world and restrict international work for many years to come, but also increase the importance of international efforts.
- b. Conflict in US–China relations, particularly regarding disputes over Taiwan, the South China Sea, transparency, intellectual property, access to critical rare earth materials, hearts and minds in less-developed nations, and a new space race.
 - c. Further deterioration of trust between Africa and the rest of the developed world, in particular Europe and the United States. Factors include a lack of vaccine availability and the blame game that fails to appreciate the vigilance Africa had shown with the discovery of the Omicron mutation of Covid-19.
 - d. Uncertainty about future democratic developments in the United States and its international engagement (drifting toward isolationism), although the war in Ukraine appears to be reinforcing global alliances for the time being.

2.3 Changing demography

As birth rates decline many developed countries have aging populations. This was exacerbated in the Great Recession and again during the pandemic, when birthrates in developed countries declined precipitously. At the same time, there is significant population growth in many developing countries. These seemingly contradictory trends will lead to a mismatch in demand and supply. Populations decline in the nations with the most well-developed and expansive higher education systems, while population growth (and a likely increase in demand for higher education) largely occurs in places with the least-developed higher education systems. In addition, global population growth is predicted to shift from Asia to Africa. As seen in the graph below, Asia is predicted to be nearing the peak of its population growth, while Africa's predicted surge in population is only starting. Climate change, global pandemics as well as the effects of digitalization will certainly have an impact on Africa's population growth. Further, some countries in sub-Saharan Africa have the opportunity to increase agricultural production, which should have a positive impact on nutrition and One Health. A One Health approach brings together multiple disciplines working globally (local, national, and international) to address the spread of disease, promote health and emphasize connections between humans, animals and the environment.

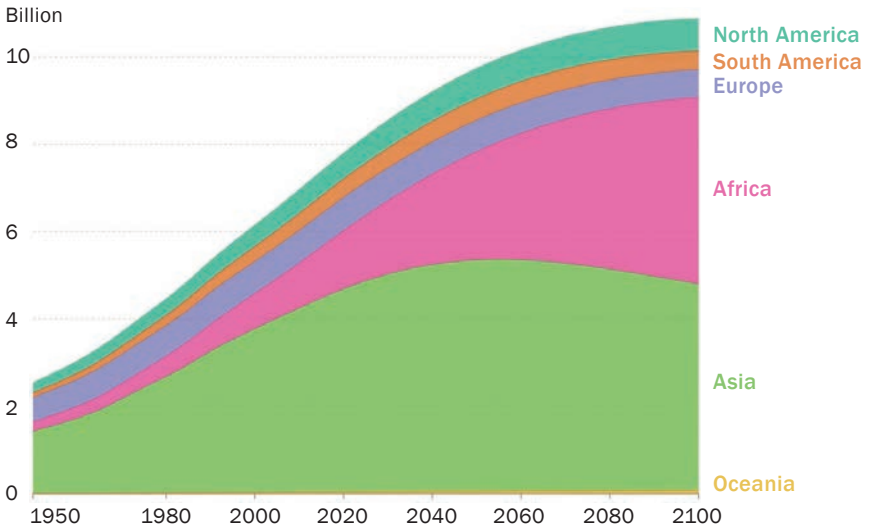
As a result, we are likely to see the continued reshaping of international mobility and collaboration. Institutions in countries with declining populations are likely to seek ways of attracting more international students, which could exacerbate

brain drain as well increase competition for those looking to study abroad. Currently, countries across Asia are significantly expanding their higher education infrastructure as way to meet the growing demand for higher education and retain more of their students in the country and nearby countries. China is the country with the most dramatic decline in population, and it will soon be surpassed by India as the most populated country in the world. China's crucial role in international student mobility and research collaboration is at risk, not only because of political developments, but also because of the dramatically declining number of Chinese students in the years to come as well as what appears to be a declining interest among a certain portion of the Chinese population to study abroad. This will have an enormous impact and lead to considerable changes.

Africa, and its constituent countries, is likely to become a greater focus for international student mobility as well for economic, research, and academic collaboration. However, people in countries on the African continent are poorer than hundreds of millions in China, which is why African students cannot simply replace Chinese ones. As in other regions that have experienced significant population growth, the higher education sectors across the continent are working to meet growing demands for education and research. These developments vary significantly between countries, depending on historical investments, current re-

World population by region

Projected population to 2100 is based on the UN's medium population scenario.



Source: Gapminder (v6), HYDE (v3.2), UN (2019)

OurWorldinData.org/world-population-growth • CC BY

sources, politics, and various conflicts. Swedish universities' ability to collaborate in this space will also depend on the academic and innovation capacities within those countries. Given the varying levels of such capacity across the continent, the types of engagements will likely differ, and institutions are likely to need support in understanding the development levels of different countries and their universities.

2.4 Meeting a changing knowledge society

In recent years, an increasing number of countries have emerged as science nations. Many *scientifically emerging countries*, such as China, South Korea, Singapore and Qatar, have made large investments in research and higher education during the last decades to enhance and diversify their economies. For instance, China today matches the United States in terms of some measures of knowledge production (i.e., scientific publications). Along with a larger playing field with more actors, there will be increasing competition for students, knowledge workers, and innovators. The fight over data, particularly personal data, will continue to be a major issue with countries enacting new laws to protect the data of their citizenry. Some research areas, for example space research, have been extremely costly but are now open to a broader set of actors, whereas historic areas of research collaboration, such as Arctic studies, are under significant constraint due to sanctions against Russia, a key partner with significant interests at stake. While brain drain has long been a concern as more developed nations attract students and scientists from developing countries, we are beginning to see that developing countries act with more intent in retaining their citizens and recruiting members of their national diaspora, as China is doing with its Thousand Talents Plan. Moreover, innovation and leap-frog technologies in for instance Africa will have an impact in other parts of the world. Mobile banking was for instance adopted in Africa several years before Sweden and further leapfrogging innovations are expected to lead to upgrades in innovation systems in Europe and America, in areas such as cloud computing and microfinance.

Virtual connectivity will continue to be an important component of how we work, live, and study. There will still be a need for travel and in-person gatherings. However, a component will now move online via virtual platforms, which could have the effect of accelerating international collaborations. Although digitalization often contributes to inclusiveness, it can also contribute to dividing people. The development of hybrid solutions is therefore important. Both virtual and physical lifelong learning will become more prevalent among learners and uni-

versities, including opportunities for international students as well as upskilling or reskilling existing workers for new jobs in the new economy. Universities must train students both for the labor market of tomorrow – an obvious challenge – and for today. The knowledge society will expand in all parts of the world.

Authoritarianism and nationalism will continue to pose a threat to the world order, with the potential onset of a new type of cold war as nations take sides on these important issues. Of course, these struggles continue to threaten the stability of governments and higher education within some countries too. HEIs tend to be favored targets of those seeking to limit freedoms. In addition, we see examples of what a new cold war may entail. China's international influence is expanding, and Sino–American relations are at an all-time low. Russia's invasion of and now ongoing war within Ukraine has reset geopolitical and academic relationships. Once neutral in such relations, Sweden and its Nordic neighbor Finland have signaled closer alignment with the West, including pursuing membership in NATO. Sweden, along with most of the countries already in NATO, has curtailed academic and research relations between Swedish HEIs and those in Russia. Possible NATO membership may thus give new dimensions to research collaboration: restrictions, but also opportunities, as NATO has a broad funding scheme that includes basic science.

The *realignment of international relationships* and the question of international organizations may also portend impact on academic relationships. The United Kingdom left the European Union and although the NATO alliance, which has undergone significant scrutiny, seems fairly united against Russian aggression, China and Russia seem to be entering closer cooperation. At the same time, the United Kingdom and the United States created a new alliance with Australia as part of their pivot toward Asia. Hungary forced the relocation of the US-based Central European University, while welcoming a new branch campus of China's Fudan University. The Russian invasion of Ukraine is also an attack on the democratic societies, which may create greater unity among democracies against autocratic regimes, including the expansion of NATO, as well as strengthen ties between more autocratic regimes.

In fact, Russia's invasion of Ukraine has highlighted the increasing intersection of geopolitics and higher education. In the past, higher education has often been left unaffected by international conflict management. When Russia invaded Crimea, for example, much higher education collaboration with Russia continued largely unabated, while governments and businesses took more hardline approaches. However, in the current situation, the presidents of Russ-

ian universities have publicly supported Russia's actions in Ukraine, while many of their researchers have been leaving the country in fear of the impact of the crackdown on freedom on their work. At the same time, international research and educational collaborations have ended or at least been paused.

However, science diplomacy between faculty in all nations, particularly between faculty in democratic countries and autocratic countries, may be an important means to build relationships and prepare the ground for diplomatic contacts. National security issues and agendas will however always be of primary concern, which is why academic leadership also must be involved in science diplomacy.

Contemporary polarization does not only involve political differences on a left–right scale. Other divisions have increasingly been incorporated, including nationalist vs. globalist, religious vs. secular, traditional vs. modern, and rural vs. urban. At the extreme, each camp questions the moral legitimacy of the other, viewing the opposing camp and its policies as an existential threat to their way of life or the nation as a whole. Recent academic work shows how intolerance affects polarization [4].

2.5 Learning from the pandemic and preparing for future uncertainties

The world has been combating the worst pandemic crisis in a century as Covid-19 led to unforeseen challenges and disruptions. In addition to causing enormous individual suffering and mortality, it has wrecked social structures and societies, economies are badly hit and there may be long-lasting financial and human consequences. Healthcare systems have been brought to their limits and even beyond. The limitations of national governments and international organizations have been revealed, and certain politicians have been in populist denial with tragic consequences for their countries. The weaknesses of the global supply chain have become readily apparent and international solidarity has shown clear limitations which may portend future tensions over scarce resources.

The pandemic has been game changing. Evidence of a bimodal impact can be seen both within and between nations, with the economic conditions of some groups improving while others have declined. Early in the pandemic, there was a near-universal concern about the net-negative impact on government spending as economies stalled and tax income declined, but effects on higher education have varied significantly. Some countries, like Sweden, have seen a rise in gov-

ernmental spending on HEIs and research councils to address the consequences of the pandemic, such as unemployment and possible new research outcomes. In other nations, governments reduced their support of higher education as part of overall budget cuts. In yet others, the impact of the pandemic is still uncertain. This is for example the case in the United States: some federal relief had eased the financial fallout on higher education, yet there are now a million fewer students in higher education than before the pandemic.

In addition, international student mobility came to a near standstill as travel bans were implemented and embassies shuttered. International travel has begun to make a return and so has student mobility. However, the long-term impact on student mobility is as yet unclear, as is whether long-term trends will be disrupted. The number of international students in the United States has increased but is still far from pre-pandemic numbers. At the time of writing, China is still largely closed to international students. We also saw new international collaborations emerge as institutions in one country partnered with those in another to “host” their international students unable to travel to conduct their studies.

It remains to be seen how much society will change. However, there are indications that new national and international institutions will be formed to handle future threats. Novel detection and analytic methods combined with smart infrastructures will be used to monitor various public places such as bigger events, travel, shops as well as university campuses. This will possibly threaten citizens’ rights and freedom to movement. This major concern is currently being addressed in many countries across the world, although some authoritarian states take advantage of curbed freedom.

Effects of the pandemic will be seen in our societies, and in the business and other sectors. Some sectors have expanded, while others have shrunk, albeit perhaps only temporarily; new business ideas have been born as new habits arose among the population and new technology is used more frequently and in new areas. This necessitates an adaptation of educational opportunities and education reorientation. Artificial intelligence is on the rise and will also require new educational opportunities. Research contributions, including peer reviews and meetings, have been facilitated during the pandemic in ways that may continue in the future. Although travel may be reduced in future, it should not disappear completely. Physical in-person meetings will still be necessary for building trust and understanding cultural situations and contexts, especially in early or critical phases of collaboration.

While most states closed their physical borders for a significant portion of the pandemic, the opposite has been the case for the sharing of research, especially medical research. Global research capacity has been demonstrated to be enormously versatile and the re-

sponse to the pandemic was impressive. The molecular information on and diagnoses of the new virus were quickly in place, and efficient vaccines were produced in record time. The clinical practices that faced crowds of patients had learned by doing and after two years of the pandemic the survival rate for Covid has risen dramatically. As new variants arose, such as Omicron variants, data continued to be shared quickly around the world in order to minimize the impact of the virus. The world is not yet out of the pandemic, but there is reason to see light in the tunnel, not the least due to improving vaccination rates. However, improving global health in general will remain a crucial issue for research also after the end of the current pandemic.

It is quite clear that HEIs will take on many of the research and development (R&D) challenges faced by our societies (and even may be forced to do so). Research will be both highly international and interdisciplinary and will require multinational collaborative efforts as well as national ones, due to national security considerations. Yet, many institutions do not have infrastructures in place to decide where to invest limited resources, strategically advance such collaborations or effectively navigate the various regulatory, cultural, and financial aspects involved. Accordingly, more global intelligence, analyses and advice will become critical for university leaders, research funders, and governments when making strategic decisions.

3 Three major international research areas

In the coming decade, three major research areas will likely dominate the international scene: global health; global sustainability and climate change; and global geopolitical polarization and conflict. The first will be driven by the realization that future pandemics are likely and societies must be much better prepared to mitigate their negative societal and economic impact. Climate change and sustainability possibly present the most crucial challenges ever faced by modern society. There is an obvious urgency, as the survival of life on our planet as we know it is at stake, and the coming decades will be crucial. Russia's recent invasion of Ukraine ushered in heightened tensions between Russia and the West and is a notable example of the fragility of the global world order in place since the end of the Cold War. Research networks have already been affected, both negatively and positively.

Even though research is always developing, and new areas emerge in a bottom-up manner, the coming decades will largely be dominated by the three mega areas mentioned above. There will be the need for truly multidisciplinary and interdisciplinary projects, and for international critical mass projects. Climate change and viruses are not subject to national borders and therefore knowledge cannot be restricted to national frames. Furthermore, there is reason to believe that investments in R&D, particularly in these three areas, will be enormously high both nationally and internationally. These trends are already becoming evident in several countries.

These research developments provide significant opportunities while also posing challenges to HEIs, and not least to their management and leadership. Besides ordinary – and important – blue-sky, bottom-up projects, greater coordination, stimulation, and funding of critical interdisciplinary bottom-up projects involving researchers from different subject areas and disciplines are necessary.

National research funding systems are anticipated to give significant priority to projects within the areas of sustainability and global health, as well as to research in all kinds of geopolitical dimensions. In the long run, it would be fruitful if more funding is extended to bottom-up interdisciplinary research. This may give Swedish research an advantage in the future. However, to truly position Sweden as a leader in the mentioned and new research areas, we believe that we need to shift away from historic notions of HEIs operating independently and, instead, begin to view the collective capacity of Swedish higher education as a national asset and learn to leverage that collective asset to build greater international networks and address the complex issues now facing humankind. In addition, sig-

nificant international private and public funding will become available and international research networks and centers, including those at HEIs, will be established. This development will provide leadership with another opportunity, but also challenge them when it comes to positioning their institutions and contributing to the crucial global tasks while at the same time benefitting from competitive resources available.

Emerging science areas resulting from bottom-up interdisciplinary collaboration will be important for STINT to follow, in collaboration with research funding organizations. With its broad knowledge and long experience of international academia STINT will be a crucial resource in this future scenario. Beyond treating these three major research areas individually, researchers are currently focusing on the intersection of global health and climate change, as well as the intersection of climate change and geopolitical challenges. One of the most promising fields where we see this intersection is in the arena of global One Health, briefly described above.

4 University education – from Gutenberg to Gates

4.1 Pedagogical development

In 2012, ‘the year of the MOOC’ (Massive Open Online Courses), traditional higher education was seen as obsolete and MOOCs were regarded as the recipe for all higher education. This prediction proved false: most students continued to study at HEIs and traveled to HEIs to obtain their desired education. During the pandemic, online learning was broadly implemented when about 200 million students had to study online. This large-scale experiment did not just involve students choosing online options as in the MOOC year, and has shown many advantages of virtual education, which has developed both technically and pedagogically. Educational technology has been used frequently, and many teachers have become more skilled in delivering online learning.

However, the deficiencies of online learning or the advantages of face-to-face learning have also been evident. The disadvantages especially affect traditionally underserved groups, who tend to be disfavored by online learning, with a lack of technological and moral support at home and a lack of space for studying. Students in regions and countries with inadequate internet connections have lost out, as have students without adequate computer facilities. The appreciation of campus learning has grown. The social benefits of campus life and of interpersonal connections have been obvious.

The next decade is expected to be a ‘big bang’ for educational technology as students enter classroom 3.0. Before the pandemic, the introduction of educational technology was rather slow. Parts of Asia, such as Singapore, developed faster than Europe and the United States. However, the pandemic crisis forced all HEIs to engage in online and remote learning. Teachers had to adopt their material to fit into a remote virtual learning frame. Possible hybrid solutions may also reduce costs for international students.

Educational technology is not only limited to remote learning but gives new dimensions to on-campus learning. Many advanced university campuses have developed so-called blended learning, a combination of online and face-to-face interactions. A class may for example meet in person a few times per semester while other components are conducted online. Both online and campus learning is increasingly being designed so that students are not passive consumers of lectures, but instead active participants in group-based learning processes. One example is the so-called ‘flipped classroom’ that uses online learning to provide students with readings and assignments in advance, with the expectation that

classroom time is spent on discussions, dialogue, and other learning exercises. HEIs will move from lecture mode to the more classical tutorial mode, and it is essential to realize that educational technology leads to new pedagogical research and practices. Further ongoing developments will embrace digital learning experiences such as simulation, games, virtual and augmented reality and three-dimensional (3D) visualization. Our eyes and our brains function three-dimensionally, so 3D-based learning can be seen as a natural way of learning.

Technology is also accelerating broad international engagement through so-called virtual mobility. As a complement to physical mobility, virtual mobility allows students to engage in an international context using technology. Two classes at different HEIs in different countries may for example be co-taught, as students use technology to listen to lectures, engage in group work, and conduct collaborative projects. Essentially, students are exposed to working with students from another culture via technology, without ever leaving their home institutions. This transformation will require strong international collaboration and exchange between HEIs and their staff and students. International teacher exchanges will for example be crucial in this dynamic scenario.

All these developments will necessitate HEIs to invest in educational infrastructure in the next few years, and not just in research infrastructure. Best international educational practices are expected to emerge dynamically.

Will Swedish HEIs

- establish branches in other countries to meet educational demand?
- shape new forms of educational supply for international students, making it possible for them to perform part of their studies in their home countries?
- offer more courses in English?

4.2 International student mobility

Student mobility can take different forms. It may involve short-term international exchanges, including spending a semester abroad, or students may decide to complete entire degrees at a reputable foreign university. How will such international mobility be affected in a polarized world with more political tensions? The business models of many HEIs outside Sweden depend on access to paying international students.

Travel restrictions have made student exchange and studying abroad much more difficult, and the pandemic has caused some students and families to reassess

how far they are willing to travel from home to study. Further restrictions due to the war in Ukraine and developments in China are worrying for future international mobility. Shifts may occur in the global mobility marketplace, with students perhaps studying in their home country or in neighboring countries rather than traveling halfway around the world. Increased connectivity associated with learning adopted during Covid restrictions suggest that studying through other institutions without any travel is possible.

In some countries, HEIs have also looked to expand their transnational education activities by taking their courses to students via international branch campuses and other models rather than having the students travel to them. In addition, some countries like China have invested in more national HEIs, combined with a higher number of international students at their universities. Some national governments have even become more actively involved in creating promotional campaigns to attract international students as borders reopen.

What kind of student mobility patterns will develop? Will they be the same in all parts of the world? Which role will English-speaking countries play when many other countries also offer degree programs and courses in English? And what role will Mandarin play in the future, when it is taught at many HEIs, especially in Africa? Digital translation functions will likely have solved many language issues by 2030, for example through simultaneous translation systems. This will have an immense impact, spanning from lectures to administration.

5 The world in ten years

Will young people

- still be interested in international travel and experiences?
- be satisfied to stay behind their computers in their national bubbles, and have global experiences via Zoom screens?
- forego or sacrifice traveling due to sustainability concerns?
- be allowed to travel due to political restrictions?

5.1 Looking back – looking ahead

If STINT had commissioned a foresight for 2022 in 2010, how would it have looked? Would that hypothetical foresight have predicted the rather strong populist and nationalist developments of the past decade? Could one have foreseen the animosity between the superpowers China and the United States and the reemergence of Russia? Did anyone predict Brexit in 2010?

The past decade has shown strong tendencies toward increased polarization of societies; compromises seem to be few and fake news is a new addition to the media world. The refugee crises in Europe and other places in the world were not quite foreseen, and nor was the Arab Spring which has left the Middle East in an even more problematic situation. Moreover, one could not have predicted a severe global pandemic caused by Covid-19; the 2003 SARS epidemic was handled and contained, after all.

One may have predicted the strong economic progress of Asia, in particular of China. In 2010, one probably also would have predicted the continued economic and social challenges faced by Africa and South America.

When presenting a foresight, it is easy to extrapolate from earlier and current developments, but this approach has often proved to be inaccurate. Current trends may end, and there will be sudden unforeseen issues and black swans.

5.2 Who owns the truth in 2030? A high-risk scenario for HEIs

Academic knowledge and research have long influenced societal development, for instance in medicine and health, by creating opportunities via new technologies, agriculture, and food, and by promoting the inclusion of a larger number of citizens in developments. Education has been based on scientific and scholarly knowledge and normally, politicians would embrace academia and be proud of their universities. Generally, the press and media would adhere to the knowl-

edge-based society and were bound by ethical and societal norms. One may argue that societies and the public trusted the academic world, which to a large extent owned the truth. Although this situation still prevails in many countries, including Sweden, it is evidently no longer the case in many others, including the United States. In some political circles, universities are seen as part of the problem rather than providing solutions.

The following developments during the last decade may be seen to exemplify the discussion above:

- Populistic politicians ignore established scientific knowledge if it does not serve their purpose. The management of the Covid pandemic provides clear examples, where several high-powered politicians thought they knew more about virology than the specialists.
- During the Brexit debate several conservative politicians claimed that the United Kingdom's problems were caused by too great an influence from academic experts in the past.
- The concept of fake news disrupts trust in society. Established facts are classified as fake news, while fake news is fed into the media as facts.
- Various social media platforms have become beacons of racism, hate, slander as well as misinformation about medical and scientific knowledge. The anti-vaccine lobby is only one example.
- Misinformation around climate change has significantly delayed response to this threat to the planet.
- Weather will be increasingly extreme, not least through changes in water supply, and will begin to affect a range of factors from agriculture to migration.
- Rising geopolitical tensions and war affect mobility and information sharing, and the alignment of democracies and autocracies dictate where students are able to study and what information can be shared with whom.

Current public debates are thus often dominated by various non-transparent information sources. A crucial question is what HEIs, and their leaderships, are doing to counteract this development, challenge what needs to be challenged, and enhance so-called meta-literacy among the public. Is there a risk that most academics are hiding in their ivory towers? Academic publications are aimed at other academics, but science to society will become more important for penetrating the public domain that otherwise is dominated by fake news and other obscurities.

A major issue in this foresight toward 2030, is therefore the risk that HEIs will slowly become marginalized during the coming decade. HEIs will need to act, as Johns

Hopkins University President Daniels so cogently stated in his book *What Universities Owe Democracy* [2], by not only describing problems, but guiding the development of our societies. This will require strong, daring academic leadership as well as new ways of evaluating academic missions, including research communication and stronger promotion of academic values, not least through international collaboration.

From research to education to outreach, HEIs will need to be more engaged in translational research and preparing students with meta-literacy skills. For many in the academic sphere, this will entail a shift from traditional types of work. However, if experts do not relate better to the public, they may begin to be discounted in the ways seen in other countries.

HEIs also will face greater demands to engage in innovation and contribute to economic development. Swedish companies are very international and if Swedish HEIs do not engage successfully, our companies will invest their projects in foreign HEIs. At the same time, Swedish HEIs should work more with foreign companies.

A more general question is to what extent the leadership and operations of HEIs need to develop in the coming decade to meet many of the new and complex challenges ahead. Issues include governance, management, strategies, budgeting, and practices that not only aim at academic excellence but also at fostering social engagement. In addition, there is a need for analyses of how internationalization processes are managed in different universities. More international benchmarks may be needed to identify best practices from various university systems.

5.3 Will the academic world be less internationalized in 2030?

A decade ago, Ben Wildavsky wrote about the great brain race as countries competed for students and innovators [5]. Such competition will only become fiercer, particularly as the population of developed countries ages and population growth occurs in the developing world. In addition, competition between innovators to drive the economy will be fierce and enrollments in higher education will be increasingly diverse.

Although the internationalization of HEIs has developed quite steadily in previous decades, it cannot be taken for granted that this trend will continue in the coming decade. The following obstacles cannot be ignored:

- Many countries are moving into more nationalistic and populist directions.
- Political tensions between superpowers may lead to a return to cold war re-

strictions on international interactions.

- Brexit will change the international position of UK universities.
- Young people will be more resistant to travel due to concerns about the climate.
- The pandemic has created new virtual ways of interaction, and mobility has become less important. Remote learning has become established.

Even if nations and public HEIs will move in a more nationalist direction, private companies are unlikely to do the same. The private industrial sector will push universities to keep high international profiles. Big multinational companies are truly international, not only with respect to their commercial activities but also in their R&D. However, this is not the only possible outcome. What lies ahead? Currently big tech is regulated in China and expected to be more national. The European Union and the United States are also trying to act on companies. The transportation of goods has been severely affected during the pandemic, and this has become the ‘new normal’. A way to avoid large logistic chains is to build different production units closer to the home market, particularly when it comes to food and specific products such as semiconductors. Such a trend reduces international trade.

Nevertheless, there are also *arguments for increased internationalization* within academia:

- Many areas of research and the availability of research infrastructure will require collaboration across borders.
- The major research challenges in the coming decade, climate and sustainability as well as challenges related to global health and geopolitics, will require strong international efforts and collaboration.

Further possibilities include:

- Improved virtual connectivity will expand international collaboration in a more structural way, both in education and research.
- Agreements between one or more institutions from one country with one or more institutions in another country or other countries may present better opportunities for internationalization of higher education on more equal grounds. This is also the case when countries with an emerging higher education sector are concerned.
- Research collaboration will be easier – from a platform where researchers know each other’s strengths – when researchers can stay at their home institutions. This is especially important when only one person in a family can spend a longer period abroad.

6 The Swedish academic system – a 2030 perspective

6.1 Identified challenges in the Swedish knowledge system

The Swedish knowledge system comprises many funders, both private and public, and a large number of HEIs, mostly state financed and operated. There is a low proportion of research institutes and most research is produced at the HEIs. Private companies also carry out research. In comparison to other countries, there is considerable cooperation between HEIs and the corporate sector.

Most HEIs in Sweden are regulated by the Higher Education Act and the Higher Education Ordinance, which are enacted by the Swedish Parliament. The Higher Education Act stipulates that the collected international activities of each higher education institution must enhance the quality of its research and education and make a national and global contribution to sustainable development. This general guidance must be applied by individual HEIs in order to fulfill this ambition. Doing so necessitates an understanding of the world and different situations. International understanding and intercultural competence therefore constitute an integrated part of international collaboration in education and research.

The Swedish higher education system has both advantages and challenges. The advantages include Sweden's good international reputation and profile in many research areas. The number of international co-publications is high. Swedish HEIs have good science infrastructure and in addition some prime investments such as the European Spallation Source, the Max IV synchrotron radiation facility and the Science for Life Laboratory, SciLifeLab.

Although Swedish higher education is increasingly internationalized, there are still some exceptions. The number of foreign students, doctoral students and researchers is high in certain areas, especially engineering and the natural sciences. Many master-level and most doctoral programs are taught in English. Teaching is characterized by a non-hierarchical approach with a focus on creativity and cooperation, which has led to several innovations and start-ups involving both students and faculty. There is a comparatively strong interaction with the business sector and other organizations outside the higher education sector.

However, Swedish HEIs also face *challenges*, compared with the situation in many other countries:

- Swedish HEIs operate entirely in Sweden, in contrast to universities in similar countries. Their formal legal status as state agencies (albeit with certain liberties such as academic freedom) clearly limits action abroad. The state is one legal

- entity and HEIs cannot act independently without the consent of the Swedish Government or Parliament. This limits proactive and collaborative internationalization. One of the exceptions are research and research programs supported by the Swedish International Development Cooperation Agency. Therefore, legislation has to be modified to enable Swedish institutions to award all their degrees to students studying their curriculum abroad.
- The *Higher Education Ordinance* aligns HEIs and does not support differences. Even when allowed to implement reforms, HEIs are often reluctant to distance themselves from established norms and practices, which does not encourage diversity in approaches and strategy. The resource allocation system has to be adapted to facilitate profiling and diversification.
 - Sweden is a relatively small country and Swedish higher education is less known than that of larger countries. An uncommon language poses a challenge to international recruitment and undergraduate education. The extent to which programs and courses are offered in English is not always well known. Swedish research is better known in certain fields, partly because of the Nobel Prize.
 - Swedish HEIs have started to collaborate in the European Universities Initiative but are not engaging in significant international projects with universities outside the European Union.
 - Many Swedish HEIs produce excellent research, but during the last decade research impact has slowly declined due to the huge growth in the number of HEIs in the world.
 - Swedish HEIs are less international than Swedish industry. Collaboration with foreign industrial partners is more limited than with domestic partners.
 - Sweden has renowned scientists and researchers with an extremely high international profile. This is not the case when it comes to leadership in international institutions and organizations. Few Swedes are interested in international positions in academia and research.
 - Recruitment of top leadership is hampered by the rule that office holders must hold Swedish citizenship (applicable to all institutions that are state agencies) and command the language.
 - Swedish HEIs generally have poor external trend analysis. Here is often little awareness of developments, strategies, priorities, structures and operations at foreign universities.
 - There are more inbound international students to Sweden than Swedish students going abroad. Virtual mobility and long-lasting agreements with specific foreign institutions are recommended to increase outbound mobility.
 - Swedish students mostly favor English-speaking countries. The European Universities Initiative may contribute to fostering broader language skills. Ideally,

Swedish students should show greater ambition to learn from a wider world perspective, for example in Asia, Africa, and South America.

- Foreign students and doctoral students experience difficulties in remaining in Sweden after graduation, though the labor market requires more highly skilled employees.
- Higher education in Sweden is less aligned to the international education front and from the outside Sweden may be seen as lagging in terms of current best practices and developments. Great investment in pedagogy and educational technology is needed, as well as higher overall funding of higher education.
- Concerns regarding non-democratic countries restrict academic collaborations.
- Science diplomacy does not play an important role in and for Sweden. An arena is needed where actors can coordinate efforts and initiatives related to science diplomacy.
- The leaderships of Swedish HEIs must prioritize real internationalization in ways beyond running an international office that handles the administration of student exchanges and foreign research contracts.
- Although university rankings are fraught with issues, only a few Swedish HEIs are highly ranked. International governments, institutions, and prospective students pay attention to rankings.

Swedish HEIs need to make serious efforts to address these challenges in the coming decade.

6.2 Opportunities

Renewed awareness of the importance of internationalization in terms of economic development and public/science diplomacy is expected. Following the Second World War, the Fulbright program was started to build intercultural awareness. Many similar programs were developed by nations around the world, on both sides of the Iron Curtain. Nations may again seek to *use higher education* as a means of building soft power and strengthening international relations. This is certainly a component of China's Belt and Road strategy, a new phase of which is probably being played out in Hungary with the newly established international branch campus of Fudan University.

HEIs must take a strong position, including dedicated international collaboration and exchange, to address the many challenging issues we face today. This involves for instance taking active measures to combat nationalism, populism, intolerance as well as various forms of propagandistic disinformation. *International collaboration and exchange connect people and are therefore essential peacekeeping activities.*

Many of the greatest threats facing humankind, from political turmoil to climate change, from water scarcity to forced mass migration, are global challenges requiring collaborative engagement by researchers across disciplines and nations if they are to be addressed successfully. International collaboration in research and joint government funding will be critical moving forward. HEIs need to meet these by facilitating meetings between students from different cultural backgrounds and countries to discuss future possibilities. However, foreign students and researchers are in many cases surveyed by their governments, making internationalization, collaboration and mobility more difficult and definitely providing an argument for the involvement of academic leadership.

We will continue to see the *development of multinational universities*, with campuses and offices located around the world. These locations are likely to be developed in places where there is a growing demand for higher education and sufficient resources to support such activity. Many of these campuses will also continue to grow their own research activities and contribute to the internationalization of research on home campuses. Will Swedish HEIs play a role as part of multinational universities?

There will be a growing need for *internationalization at home* as the world becomes smaller and students will need to be more culturally aware and engaged. Accordingly, curricula and other activities will need to be internationalized so that all students gain international exposure. Virtual mobility will expand as HEIs look to utilize technology to democratize access to international learning opportunities.

Internationalization will increase, but differently than before the pandemic. It will depend more on attitudes than on brands. Hostile attitudes toward foreigners have already changed mobility patterns. Future issues not only include a safe society but also a welcoming society and respectful treatment of international students and researchers. Decolonization of higher education will also be important, as will reducing inequality.

At the start of a collaboration with another HEI abroad, this collaboration is expected to be a win-win situation that thereby contributes to both higher quality and better international understanding. International collaboration may also be seen as an assessment of the state of higher education and research in the world over a longer time span. *Which countries and institutions will be important to collaborate with 10 to 20 years ahead?* Will sub-Saharan African countries be more important than Asian or American ones? Are there any differences between short- and long-term perspectives? What issues must be weighed in decision-making?

The European Universities Initiative, as well as a higher Erasmus budget, will

contribute to greater intra-European student exchange. The same may happen other parts of the world, which is why *intraregional exchange* can become more common, especially as many countries in Asia have expanded their higher education sectors. To promote worldwide collaboration beyond regions, more dedicated structural and intra-institutional educational collaborations are necessary. Researchers have other ways to find collaboration partners worldwide but also need to consider emerging science countries and their institutions to ensure future competitiveness. Higher education institutions and health authorities have demonstrated the positive effects of research collaboration during the pandemic—let this be a good example for the future. However, when setting up international research cooperation it is important to consider aspects such as responsible internationalization, including ethics and sustainability [6] [7].

6.3 Recommendations for internationalization

Recommendations for internationalization over the coming years are:

- Presenting better arguments for the value proposition of internationalization within our HEIs, local communities, the business community, and at national level.
- Rethinking international academic partnerships emphasizing mutual benefits and the absence of predatory tendencies, with contributions being annually evaluated by all parties, including assessment of returns on investment and effort.
- Establishing more global research partnerships focused on the UN’s SDGs. The primary objective of these partnerships should be understanding and providing solutions to critical global challenges such as global health, climate change, socioeconomic inequality, and extremist hate.
- Securing increased funding both nationally and globally for comprehensive internationalization (i.e., a global fund for research and training partnerships addressing critical global challenges).
- Rethinking current student mobility models for both inbound and outbound students in terms of the value proposition of mobility, duration, funding, use of digital platforms, and dual/double degrees.
- Increasing reliance on thoughtful qualitative and quantitative studies demonstrating the value and status of internationalization as well as ways in which internationalization may be improved.
- Ensuring awareness of responsible internationalization, the consideration of ethical aspects and sustainability. Partners should neither be naïve nor paranoid but make informed decisions when setting up international cooperation. Relevant questions should be asked: Who are the partners and what risks are involved?

- Developing an arena for science diplomacy, so that Swedish actors' efforts may be better coordinated and more strategic internationally, with relevance for Sweden at large.

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8 Appendix

8.1 Recommendations for STINT

It is obvious from the sections above that STINT has the potential to play a central role in the internationalization of the Swedish academic system, its institutions, and actors. Importantly, STINT intends to further develop its new role as a knowledge provider rather than its previous function as funder of international projects. The funding role should be a tool used to implement STINT's visions and goals.

Some recommendations include that STINT should:

- Broaden its in-house expertise without building a heavy organization. One possibility is to continue development into a knowledge hub for internationalization while relying more on external researchers in the field. STINT may commission studies from relevant experts and serve as a central hub for convening discussions and disseminating information.
- Provide services through its network such as studies and analyses to HEIs and other actors, such as funders and the government.
- Continue its work on responsible internationalization, which was recently mentioned in the European Union report on tackling foreign interference in research [7].
- Position itself as an actor for science diplomacy in Sweden, as mentioned in a report by Kuhlmann and Aukes [8]. STINT could for example initiate an arena for science diplomacy.
- Further establish close, trusting interaction with Swedish HEIs. Events such as STINT Forums will be crucial and need to cover current important issues, occur frequently and adhere to the highest quality to attract top-level national and international speakers.
- Actively construct collaborative approaches to international activities, by continuing to build trust and networks with the Swedish government and its various organizations (including various research funders) as well as develop knowledge to support HEIs to operate collaboratively, including with the private sector and industry.
- Engage in crucial analyses of changing trends and behaviors in serving Swedish HEIs. STINT will play a major role in providing Swedish HEIs with information on various global university systems and their dynamic development. This in turn suggests that STINT should strengthen its interaction also with Swedish multinational companies in coming years.
- Have a high-level International Advisory Board, as well as a network for establishing competent working groups related to specific projects and missions.
- Further increase its visibility and wider network abroad. Current representations in China and the United States are important, but more countries could

be considered. Postdoctoral fellows could serve as ambassadors and academic scouts alongside their research activities abroad.

- Continue to play a role in benchmarking the Swedish system regarding internationalization, e.g. through the STINT Internationalization Index.
- Preserve its independent status while strengthening its role as an intermediary in the Swedish academic ecosystem.

Serious efforts must be made to address the challenges faced by Swedish HEIs, mentioned in 6.1, in the coming decade. No doubt STINT can take a leading coordinating and facilitating role.

8.2 Topics for future foresight studies

Ad hoc examples of potential topics that could be covered by future STINT foresight studies:

- Academic developments in various geographical areas (e.g., China, Africa, South America, the United States).
- How will increasing tensions between the superpowers influence academic exchange and collaboration between countries?
- How will neo-nationalism, populism, racism, and protectionism as well as anti-intellectualism influence political support for international academic collaborations?
- How will the post-pandemic world embrace international exchange and collaboration?
- New international alliances, for example with more independent small smart countries (i.e., Switzerland, Sweden, Denmark, Finland, Israel, Singapore, New Zealand).
- How will global challenges such as climate change, pandemics, space, and poverty, drive international collaboration?
- Analyses of rapidly emerging disciplines and new interdisciplinary contexts.
- Advanced Infrastructure as a driver for internationalization of research.
- Will technological advances in remote education lead to more or less international collaboration in the areas of education and student exchange?
- New developments in leadership, management, and the operation of foreign universities (good and bad examples).
- In what way will big multinational companies (traditional and new) promote international research collaboration in the interface to universities?
- Will English in the long run remain the international academic language?
- Educational technology, including remote education, and its role in/impact on internationalization, particularly from a Swedish perspective.
- What factors limit the enhancement of Swedish HEIs' international profiles and operations?

STINT, The Swedish Foundation for International Cooperation in Research and Higher Education, was set up by the Swedish Government in 1994 with the mission to internationalise Swedish higher education and research.

STINT promotes knowledge and competence development within internationalisation and invests in internationalisation projects proposed by researchers, educators and leaderships at Swedish universities.



STINT

Stiftelsen för internationalisering av
högre utbildning och forskning

The Swedish Foundation for International
Cooperation in Research and Higher Education

Wallingatan 2, SE-111 60 Stockholm, Sweden
Telephone +46 8 671 19 90. Fax +46 8 671 19 99
info@stint.se www.stint.se