

Standard Policy Brief

Under the UNESCO World Higher Education Conference (WHEC2022)

[Section for Higher Education](#) | Division for Education 2030

Type: One organisation | Alliance

HIGHER EDUCATION INSTITUTIONS AS DRIVERS FOR URBAN INNOVATION: THE CASE OF BARCELONA'S SCIENCE DIPLOMACY HUB

SciTech DiploHub

Date [15/03/2022]

Abstract

Internationalization is already an emerging concept in the areas of education, research and talent mobility, nonetheless there has been a growing debate about how Higher Education Institutions (HEI) can participate in a more transversal way in the global efforts and commitments of local and regional knowledge ecosystems. This would include taking advantage of internationalization in a broader range of activities, such as the university's engagement with society, consistent with its Quadruple Helix relationships model. In this new paradigm, HEIs are intrinsically connected to the emerging discipline of Science Diplomacy as leading actors in creating and transferring knowledge; shaping research, policy and training programs and agendas; connecting talent diasporas, and impacting international challenges and debates. In this policy brief, drawing from the case study of Barcelona's science diplomacy strategy, we explore the dynamics of HEI in aligning their internationalization strategies through innovative governance schemes, and, thus, elevating their role as leading drivers in the agenda-setting of global cities.

[SciTech DiploHub, Spain]

Content

Abstract	1
Content	2
Acronyms	3
Introduction	4
Innovation and Cities	5
City Diplomacy and HEIs	5
Barcelona as a case study: SciTech DiploHub	6
HEIs and Barcelona	6
HEIs Coordination and Agenda Setting	7
Recommendations	9
References	10

Acronyms

HEI: Higher education institution

SDG: Sustainable development goal

TNC: Transnational company

STDH: SciTech DiploHub

Introduction

Current global emergencies (e.g., climate change, pandemic outbreaks, food and water security, migration processes, among others) impose an inflexible conjuncture where threats reside at the transnational level and the solutions, consequently, are unreachable through isolated actions. Collaborative, transcalar, multidisciplinary, and multisectoral approaches that bring together actors worldwide are crucial requirements for addressing global challenges. In this policy brief, we explore the dynamics of Higher Education stakeholders in aligning their internationalization strategies through innovative governance schemes, and, thus, elevating their roles as leading drivers in the agenda-setting of global cities (Chakravarty et al., 2021).

Science provides a rationale based on transparency, rationality, traceability, and universality for tackling complex issues. The accelerated emergence of Science Diplomacy in the past decades is indicative of these traits since it provides a framework for international cooperation based on and nurtured by consolidated data and legitimized scientific practices, potentially opening up fruitful dialogues between nation-states. Nonetheless, sub-national actors constitute central pieces for tackling global challenges and must be included in the responsibility-cartography being put forward by Science Diplomacy. Cities must be active players in Science Diplomacy, for they are spatial units disproportionately impacted by globally shared hazards and, at the same time, unparalleled by their potential for action.

Innovation is a hot topic in many research areas and public discourse, especially with the rise of disruptive technologies such as Artificial Intelligence (AI), 5G, supercomputing, 3D printing, among many others, with the potential to drastically change current technological cycles. Innovation is a trigger for economic and social development and an irreplaceable driver for advancing towards globally shared goals. Thus, it is crucial to align innovative dynamics with globally shared challenges, igniting collaborative frameworks rather than purely competitive schemes.

International collaboration and the elevation of science, technology, and innovation as a common language are central guiding principles for re-energizing a shared agenda and facing global challenges. The United Nations Sustainable Development Goals (SDG) comprise an unparalleled effort to elaborate measurable objectives that connect multi-scalar actors and the science and technology community into a joint and globally relevant mission. In this sense, the centrality of Science Diplomacy and the peculiarities of current global affairs indicate the need to empower innovation capabilities emerging from sub-national actors. In this policy brief, we explore the articulation of cities, HEIs, innovation, and science diplomacy. Cities are innovation hubs, and it is urgent to develop a common approach where HEIs are in the driver's seat.

The current discussion around internationalization of higher education covers the more traditional notions of student and staff mobility, internationalization of curricula, new emerging forms in international governance and policy-making such as the Bologna process, but also new dimensions related to their broader role in economic, social, and cultural development (Luijten-Lub, Huisman and Van der Wende 2005). In this policy brief, we explore a case study and recommend actions related to the articulation of HEIs with the Quadruple Helix actors (public and private sectors, academia and civil society) towards a shared internationalization strategy to drive global cities agenda setting.

Innovation and Cities

Cities disproportionately concentrate resources and innovative capabilities, hosting universities, research centers, and knowledge-intensive companies. Cities are not only where innovation happens, but more importantly, a constitutive factor of the innovation dynamics and knowledge generation, activating ecosystems composed of varied stakeholders (e.g., higher education institutions, research centers, public and private actors, and civil society).

Metropolitan areas and big cities play a leading role in articulating cultural trends, fast-paced social dynamics, and competitive impulses, becoming critical nodes for globalized innovation circuits. Urbanization processes ignite a fierce interlocal competition conjuncture, where cities contend over foreign direct investments (FDI), venture capital, and R&D. A crucial dimension of urban competitiveness emanates from cities' capacity to attract and retain talent. Nowadays, scientists are more mobile than ever, and their destination choices are a powerful predictor of local innovation. Additionally, scientists tend to choose global cities as preferred locations. We argue that interlocal competition must be overcome as a central force in city-to-city relations and reformatted in terms of multidimensional cooperation, connecting local governments (and other relevant actors in the local and regional scales) towards shared goals.

Cities are directly engaging with disruptive technologies and their uncertain unfolding (from transportation networks and housing records to security systems and educational facilities) to permeate the organic generation of data with strategic purpose and democratic suitability. In this sense, an approach related to open-data values is imperative for translating raw information into transparent, standardized, and available datasets, which, in turn, are open to technical and political scrutiny and refinement, becoming, ultimately, socially valuable.

Agglomeration economies, spill-over effects, labour pools, and spontaneous social encounters, although indicative elements of innovative capabilities, should not be approached as passive elements in a given urban spatial unit. We argue that it is crucial that local governments identify the involved stakeholders in the innovation ecosystem, assess the dynamic processes related to contextual specificities, and operationalize strategic approaches for steering and potentializing innovation. Moreover, moving beyond the notion that innovation is a self-evident objective for cities worldwide, it is crucial to align innovative processes with local, national, and global values by empowering cities as essential players in international cooperation circuits.

City Diplomacy and HEIs

Cities are widely recognized as important actors in the international relations arena, by the general media, national actors and multilateral organizations, especially concerning their capacity to help progress towards global challenges such as the SDG. Nonetheless, there is still significant improvement to be done in terms of overcoming the current stage of "symbolic acknowledgment" of cities and empowering cities as decision-makers capable of meaningful impacts in foreign affairs. A crucial challenge to be tackled in this sense is the tension between cities and national actors in a conjuncture where local governments gain relevance in the global arena, and, at the same time, the international relations' decision-making stage was constructed by and for nation-states.

Nonetheless, sub-national actors are gaining relevance as important players in the international arena, consecutively, other actors such as HEIs are faced with the challenge to operationalize scientific practices into cross-border cooperation initiatives (King, 2009). HEIs are intrinsically connected to Science Diplomacy as leading actors in knowledge creation, carrying out central activities such as shaping research, policy and training programs, impacting local and international debates.

In the international context, HEIs are responsible for the development of the basic and advanced capacity building, materializing in professionals that will provide their expertise in international organizations, and facilitate the connection between multidisciplinary researchers in their local and international communities. In the local context, HEIs are capable of infusing local programs with a global scope and serving as a seedbed for the development of Science Diplomacy culture (European Union Science Diplomacy Alliance, 2022).

HEI internationalization is often related to professors' and researchers' individual contacts and networks, detached from a cohesive strategic vision. Nonetheless, planned international cooperation between HEIs has been on the rise, with strategic partnerships related to international structures, team compositions and cooperation (Teichler 2004). The internationalization of HEIs is becoming a deliberate process rather than just a passive experience, becoming a central part of strategic partnerships, initiatives and projects (De Wit et al., 2015).

Apart from research and training, HEIs are also leading actors in fostering relationships with other institutions all around the world and creating partnerships that could be unlikely to exist in other forms of diplomacy. We argue that it is crucial that HEIs identify and engage with the stakeholders in the knowledge ecosystem, and operationalize strategic approaches for steering cooperation. By doing so, HEIs have the potential to align innovative practices towards a cohesive internationalization strategy, empowering the academic sector as an essential player in the international arena.

Crucially, HEIs have the potential to transcend national disputes and develop joint international projects, constructed through scientific practice and operationalized by shared interests and challenges, driving Science Diplomacy (European Union Science Diplomacy Alliance, 2022). In addition, HEIs connect the local and the global, acting as a bridge between international frameworks and local needs and opportunities. Consequently, universities, colleges and research centers can adopt internationalization strategies to seek agreements and partnerships that position them as global institutions (Peterson, 2014) so that they collaborate in the achievement of solutions to shared challenges.

Barcelona as a case study: SciTech DiploHub

HEIs in the context of non-state actors' internationalization

Barcelona hosts a series of HEIs that are globally recognized, including the achievement of being the 5th city in the world with the highest concentration of top 200 universities according to the Times Higher Education (Roig et. al, 2020). One of the city's priorities, as stated in the Strategy for International Relations for the period going from 2020 to 2023, is to position Barcelona as a scientific and innovation hub that promotes a model of technological development that strives to place people at the center of it, whilst having an impact on the European and international innovation agenda. Within this purpose, there's an explicit mention of the higher education ecosystem to show the willingness of supporting

research centers and universities that work on issues of international impact and interest (Ajuntament de Barcelona, 2020). Complementary to said views for the city, it appears implicitly to its internationalization plans that the activity carried out by research centers usually exceeds the area where they are located, thus generating positive spillover effects in their entire area of influence (Diputació de Barcelona, 2017). The concentration of these entities focused on technological knowledge, scientific innovation and sustainability, offers a strong international projection for the region in technological and research terms (Diputació de Barcelona, 2017).

Barcelona is also aware, as a strategic place in the Euro-Mediterranean area, of its role in the tackling of global challenges. Climate change is one of them, as, after the Arctic, it is the region that has felt more of its impact. Another challenge at hand is the division between the Global North and the Global South, as, again, the Euro-Mediterranean constitutes the most unequal border in these terms (Ajuntament de Barcelona, 2020). This global framework can be channelled as a driver for alignment between the higher education ecosystem and the city council itself. Operating within the same framework, as can be the Sustainable Development Goals (SDGs), facilitates the organic alignment between both actors in order to work towards common goals.

Most universities already have the SDGs in their mission statement, Pompeu Fabra University (UPF) works as an example as it strives to educate students with a skill set that allows them to adapt to changes and challenges in society, to become a leader in scientific discovery and innovation for the deciphering of issues in the contemporary world, and transcending the institution's walls in order to contribute to social welfare (Pompeu Fabra University). This resonates with Barcelona's commitment to SDGs: the city council is aware that the implementation of 65% of them depends on local actors (Kanuri et. al, 2016), thus having local governance as a key participant (Ajuntament de Barcelona, 2020). Action towards achieving them has to be bottom-up, the key residing in the ability of local governments to adapt the 2030 Agenda to their respective contexts and to adopt a holistic approach towards them (Bardal et. al, 2021), which can very much be helped by synergies with HEIs.

HEIs Coordination and Agenda Setting: Barcelona's Science Diplomacy Strategy

SciTech DiploHub, the Barcelona Science and Technology Diplomacy Hub, was launched in 2018. This non-profit public-private partnership emerges with the objective of driving alignment among the city's Quadruplex Helix actors for a cohesive internationalization strategy. This process is supported by the Barcelona Manifesto¹, a document signed by over 200 world-class scientists, technology experts, foreign affairs and public policy professionals, both in the city and abroad, as well as university deans, research institutions, business leaders and all former city mayors. This was the first time the assembly of stakeholders in the science, technology and higher education ecosystem, along with public institutions' representatives, came together to advance towards a common internationalization strategy.

From this case study, we feature a specific project emerging from Barcelona's Science Diplomacy Strategy, the Barcelona Alumni Network². Traditionally, it was argued that the loss of talented professionals, through brain drain, represented a major and permanent loss to the country of origin. However, more recently there has been a move towards greater recognition of the role of brain circulation and a renewed focus on how overseas skilled diaspora may be used in the service of both the

¹ <https://www.scitechdiplohub.org/manifesto/>

² <https://barcelonaalumni.org>

country of origin and common global goals (Tung, 2008). Human talent flows can thus be understood as a brain gain for everyone: talented human capital that benefits host and home countries alike through collaboration on global issues.

This network of internationally mobile students, and the scientists that they become, is arguably a public good. It is not just students and scholars who are moving across borders, but also scientific programs, research projects and education policies emerging worldwide. The landscape of higher education diplomacy is being reshaped by international collaborative projects and expert networks, global mobility programs and the worldwide circulation of higher education reform policies (Frédéric & Rapoport, 2012).

In the case of Barcelona, HEIs came together under a coordinated internationalization strategy to launch the Barcelona Alumni Network, bringing together all professionals, from any nationality, that studied in any of Barcelona's universities and now reside abroad. At this moment, this network brings together around one and a half thousand professionals from different sectors in over thirty countries. This global network is an innovation in empowering the city's talent diaspora, by engaging them into local initiatives through a joint internationalization strategy put forward by Barcelona's HEIs.

The network's members are a crucial part of Barcelona's science diplomacy strategy as intercultural communicators, advocates of its knowledge ecosystem and education, and business and trade promoters. By encouraging this interaction opportunities for partnerships are being created for Barcelona, in addition to sharing ideas and insights that add value to research and higher education actors while enhancing its global competitiveness. This initiative also reflects and is nurtured by the quality of the HEIs, which are a necessary enabler for it, along with the cooperation between alumni and the city in different ways. Hence, the network works as a new modality of talent retention linked with Barcelona without having the requirement of it being residing locally, allowing the creation of new flows of information-sharing and collaboration of professionals with a special connection to the city.

Stemming from the Barcelona Alumni initiative, the need to periodically gather this talent gives place to the creation of the Barcelona Alumni Global Summit, which is an annual event hosted by leading members of Barcelona's science and technology ecosystem, as well as the meeting point of the Alumni network. The Summit aims at serving as an interdisciplinary platform mainly concentrating in the fields of science, technology and innovation, but not exclusively, whilst also acting as a bridge between Barcelona and its talent abroad. The goal is to support the global community of high-level scientists and technology professionals educated in Barcelona's HEIs in an effort to maintain engagement in the group of experts who have a common past in the city, therefore being knowledgeable of its scientific and technology ecosystem's state of affairs.

This project exemplifies the potential of multistakeholder coordination for international initiatives. In this case, public and private sectors, as well as academia and civil society, gather to empower an innovative initiative for talent retention. Finally, it is crucial that HEIs collaboratively develop internationalization strategies capable of gathering talent and scientific resources to tackle global challenges and produce a cohesive international outreach for their knowledge ecosystem.

Recommendations

In this policy brief, we argued for the need for HEIs to develop cohesive internationalization strategies, connecting different stakeholders' agendas towards globally shared goals. We also indicated improvement opportunities in the relations between HEIs in diverse stakeholders in the Quadruple Helix.

- Create strategic synergies between HEIs and governmental actors that set a clear view of which are the priorities for the city and the knowledge ecosystem.
- Elaborating strategic documents and assessment tools connecting innovation and international cooperation.
- The city's international strategy must relocate HEIs as central actors and the articulation between international strategy and HEIs must emerge from contextual specificities.
- Assessment tools are essential for monitoring and evaluating progress towards consolidated goals, providing accountability and transparency.
- A proactive approach to internationalization is central for HEIs, bringing together essential stakeholders for planning exercises and not only reactively to crisis management.
- Have an aligned strategy between HE actors and the science, technology and innovation ecosystem when operating under the same framework as is the case for sustainable action.
- Foster relationships between HE actors and the private sector to have established clear paths that ensure knowledge transfer with the ultimate goal of collaborating to benefit the local community.
- Promote the integration of higher education actors in international networks in order to have greater outreach, exchange best practices with other institutions and, while doing so, allowing for bigger impact to happen both in the local communities - when implementing the practices in their own institutions - and in the global level, through the contribution towards global common knowledge.
- Leverage and nurture global diasporas of professionals trained in HEIs, thereby enabling knowledge sharing and access to international networks as well as enhancing the competitiveness, visibility and influence of the local ecosystem.
- Finally, the coordination between HE actors at a local, regional and national level to also have a certain degree of alignment within their community.

References

Ajuntament de Barcelona. (2020). Barcelona, Ciutat Global | Pla Director de Relacions Internacionals 2020–2023. Retrieved from <https://ajuntament.barcelona.cat/premsa/wp-content/uploads/2020/07/Pla-Director-de-Relacions-Internacionals.pdf>

Bardal, K. G., Reinar, M. B., Lundberg, A. K., & Bjørkan, M. (2021). Factors Facilitating the Implementation of the Sustainable Development Goals in Regional and Local Planning—Experiences from Norway. *Sustainability*, *13*(8), 4282. MDPI AG. Retrieved from <http://dx.doi.org/10.3390/su13084282>

Coordinating the national agenda of SDGs with universities: policies and actions launched in Argentina | Education 4 SDG. (2021). Accelerating Education for the SDGs in Universities. Retrieved from <https://blogs.upm.es/education4sdg/2021/08/02/coordinating-the-national-agenda-of-sdgs-with-universities-policies-and-actions-launched-in-argentina/>

Diputació Barcelona. (2017). *L'estratègia d'internacionalització del món local de la demarcació de Barcelona*. Retrieved from <https://www.diba.cat/documents/228621/20643032/Estrat%C3%A8gia+d%27internacionalitzaci%C3%B3+3+dmc+Bcn.pdf/f7aa99be-d942-455e-a7a3-5b654af63719>

Directorate-General for Internal Policies - European Parliament. (2015). *Internationalisation of Higher Education*. Retrieved from https://www.europarl.europa.eu/RegData/etudes/STUD/2015/540370/IPOL_STU%282015%29540370_EN.pdf

de Wit, H., & Hunter, F. (2015). The Future of Internationalization of Higher Education in Europe. *International Higher Education*, *83*, 2–3. Retrieved from <https://doi.org/10.6017/ihe.2015.83.9073>

Dlouhá, J., Henderson, L., Kapitulčinová, D., & Mader, C. (2018). Sustainability-oriented higher education networks: Characteristics and achievements in the context of the UN DESD. *ScienceDirect*. Retrieved from <https://doi.org/10.1016/j.jclepro.2017.07.239>

Docquier, F., & Rapoport, H. (2012). Globalization, Brain Drain, and Development. *Journal of Economic Literature*, *50*(3), 681–730. Retrieved from <http://www.jstor.org/stable/23270475>

Dwarka Chakravarty, Anthony Goerzen, Martina Musteen, Mujtaba Ahsan. (2021). Global cities: A multi-disciplinary review and research agenda, *Journal of World Business*, Volume 56, Issue 3, 101182, ISSN 1090-9516, <https://doi.org/10.1016/j.jwb.2020.101182>. (<https://www.sciencedirect.com/science/article/pii/S1090951620301103>)

European Union Science Diplomacy Alliance (2022). Stressing the Importance of Science Diplomacy within EU Higher Education. Retrieved from https://www.science-diplomacy.eu/wp-content/uploads/2022/01/Stressing-the-Importance-of-Science-Diplomacy-within-EU-Higher-Education_final.pdf

Labrianidis, L., Sykas, T., Sachini, E., & Karampekios, N. (2021). Highly educated skilled migrants are attracted to global cities: The case of Greek PhD holders. *Population, Space and Place*, e2517. Retrieved from <https://doi.org/10.1002/psp.2517>

Luijten-Lub, A., van der Wende, M., & Huisman, J. (2005). On Cooperation and Competition: A Comparative Analysis of National Policies for Internationalisation of Higher Education in Seven Western European Countries. *Journal of Studies in International Education*, 9(2), 147–163. Retrieved from <https://doi.org/10.1177/1028315305276092>

Kanuri, C., Revi, A., Espey, J., & Kuhle, H. (2016). *Getting started with the SDGs in Cities: A guide for stakeholders*. Sustainable Development Solutions Network. Retrieved from <https://irp-cdn.multiscreensite.com/be6d1d56/files/uploaded/9.1.8.-Cities-SDG-Guide.pdf>

King, Kenneth. (2009). Higher education and international cooperation: The role of academic collaboration in the developing world." *Higher education and international capacity building: Twenty-five years of higher education links*: 33-49

Mauduit, J., & Gual, M. (2020). Building a Science Diplomacy Curriculum. *Frontiers*. Retrieved from <https://doi.org/10.3389/feduc.2020.00138>

McGill Peterson, P. (2014). Diplomacy and Education: A Changing Global Landscape. *International Higher Education*, (75), 2-3. Retrieved from <https://doi.org/10.6017/ihe.2014.75.5410>

Missió, visió i valors - Pla Estratègic Universitat Pompeu Fabra 2016–2025 (UPF). (2016). Universitat Pompeu Fabra. Retrieved from <https://www.upf.edu/web/plaestrategic/missio-visio-valors>

Ramaswamy, M., Marciniuk, D. D., Csonka, V., Colò, L., & Saso, L. (2021). Reimagining Internationalization in Higher Education Through the United Nations Sustainable Development Goals for the Betterment of Society. *Journal of Studies in International Education*, 25(4), 388–406. Retrieved from <https://doi.org/10.1177/10283153211031046>

Roig, A., Sun-Wang, J.L. & Manfredi-Sánchez, J.L. Barcelona's science diplomacy: towards an ecosystem-driven internationalization strategy. *Humanit Soc Sci Commun* 7, 114 (2020). Retrieved from <https://doi.org/10.1057/s41599-020-00602-y>

Teichler, U. (2004). The Changing Debate on Internationalisation of Higher Education. *Higher Education*, 48(1), 5–26. Retrieved from <https://doi.org/10.1023/b:high.0000033771.69078.41>

Tong, L. (2021). Higher education internationalization and diplomacy: Successes mixed with challenges. A case study of Hungary's Stipendium Hungaricum scholarship program, *Hungarian Educational Research Journal*, 10(4), 382-400. Retrieved from <https://doi.org/10.1556/063.2020.00036>

Tung, R. L. (2008). Brain circulation, diaspora, and international competitiveness. *European Management Journal*, 26(5), 298–304. Retrieved from <https://doi.org/10.1016/j.emj.2008.03.005>

UNESCO. (1995). *Policy paper for change and development in higher education*. Retrieved from <https://unesdoc.unesco.org/ark:/48223/pf0000098992>

University of Nairobi & University of Helsinki partnership | University of Nairobi. (2021). University of Nairobi. Retrieved from <https://www.uonbi.ac.ke/news/university-nairobi-university-helsinki-partnership>

Whitsed, C., Burgess, M., & Ledger, S. (2021). Editorial Advisory Board Members on Reimagining Higher Education Internationalization and Internationalization of the Curriculum. *Journal of Studies in International Education*, 25(4), 348–368. Retrieved from <https://doi.org/10.1177/1028315320984840>