



# Evaluation of the Humboldt Research Fellowship (HRF) programme of the Alexander von Humboldt Foundation

## Executive Summary

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7 September 2021

## Executive Summary

Since 1954, financed by the Federal Foreign Office (AA) and the Federal Ministry of Education and Research (BMBF), the Alexander von Humboldt Foundation has been sponsoring study and research stays of highly qualified academic researchers and scholars from abroad at German universities and research institutions through the Humboldt Research Fellowship Programme (HRF programme). Depending on their career stage, academic researchers and scholars with above-average qualifications either apply in the funding line for post-doctoral researchers (for applicants who completed their doctorate no more than four years prior to the application) or in the funding line for experienced researchers (for applicants who completed their doctorate no more than twelve years prior to the application). HRF fellows get the opportunity to carry out a long-term research project of their own choice in collaboration with a host at a German research institution.

Since 2012 researchers from Brazil have been applying for a CAPES-Humboldt Research Fellowship. In Brazil, the programme is carried out and financed in cooperation with the Brazilian science funding organisation CAPES. The selection criteria for the CAPES-Humboldt Research Fellowship correspond to those of the HRF programme. The fellows are selected by a selection committee jointly appointed by CAPES and the Humboldt Foundation.

With the fellowship, the researchers become members of the Humboldt Network. The Humboldt Foundation supports the networking of its fellows during and after their sponsorship stay in Germany. The Humboldt Foundation's alumni programmes aim to continuously maintain and strengthen the Humboldt Network. Today, more than 30,000 researchers from all academic disciplines worldwide belong to the Humboldt Network.

### Purpose of the evaluation

The purpose of the evaluation was to examine to which extent the Humboldt Foundation succeeds in achieving its objectives in implementing the HRF programme. These objectives are:

1. to attract academically highly qualified applicants;
2. initiating long-term research collaborations;
3. permanent use of the cooperation network for international research collaborations;
4. access to international experts and decision-makers in science, politics, culture and the business sector for partners in Germany;
5. allowing personal and nuanced insights into German science and research, German society and culture.

The HRF programme was already evaluated for the first time between 2009 and 2011. In the first evaluation, the evaluators concluded that the HRF programme overall achieves its goals. The new evaluation was therefore meant to set specific priorities. The evaluation focused on issues regarding the academic excellence of the applicants, the (country-specific) push and pull factors that, from the perspective of researchers abroad, speak for or against applying to the HRF programme, as well as issues regarding the safeguarding the excellence of applicants in the selection process.

The evaluation analysed the implementation of the HRF programme in the period 2010 to 2019. Subject of the analyses were the applications which the Selection Committee for Humboldt Research fellowships and the Selection Committee for CAPES-Humboldt Research Fellowships decided in the years 2010 to 2019, the HRF research fellows who completed their stay in Germany between 2010 and 2019 (end of initial sponsorship) and the alumni sponsorship measures for which this group of HRF fellows had applied and were approved by the Humboldt Foundation between 2010 and 2019.

### Methodological concept and implementation of the evaluation

In order to achieve results that were as empirically robust as possible, a mix of qualitative and quantitative means for data collection and analysis was used for the evaluation of the HRF programme. The evaluation included an analysis of the Humboldt Foundation's application and sponsorship databases, an analysis of the final reports of the fellows and their hosts, which the Humboldt Foundation collects electronically since 2015, an online survey of fellows who completed their initial sponsorship between 2010 and 2019 and their hosts, qualitative interviews with (former) members of the Humboldt Foundation's competent committees and with competent staff at the Humboldt Foundation's Head Office, as well as qualitative interviews with fellows and hosts. Further qualitative interviews were conducted with experts and network partners in four selected countries (Brazil, Canada, Spain, South Korea) in order to identify and analyse country-specific issues related to the HRF programme in case studies. Finally, the evaluation comprised bibliometric analyses of a sample of Humboldt research fellows from the natural sciences and life sciences as well as of (CAPES-)Humboldt research fellows from Brazil and a comparison group of Humboldt research fellows from other countries. The bibliometric analyses provide information on the development of the successful applicants' scientific outputs as well as on the effects and effectiveness of the selection procedure. The evaluation of the HRF programme was carried out between March 2020 and August 2021.

### Conclusion of the evaluation

The results of the evaluation show that the HRF programme is very successful in achieving the goals of the programme: The programme appeals to academic researchers and scholars with above-average qualifications. To a high degree the programme succeeds in facilitating sustainable scientific and research collaborations between the fellows and researchers in Germany. The research stays provide the fellows with deep personal experiences and insights into German science, research, society and culture, which show themselves in improved German language skills and a continuing interest in Germany. Alumni make use of the Humboldt Collaboration Network, although postdoctoral researchers in particular would like to see more opportunities for research networking and academic collaboration.

### The findings in detail

#### Excellence of the applicants

The bibliometric indicators for HRF fellows from the natural sciences and the life sciences show that both the research visibility and the resonance of the publications in the years before and after the research stay in Germany are very clearly above the expected values. A bibliometric comparison between HRF fellows and Marie Skłodowska-Curie Actions-Individual Fellows (MSCA-IF) based on funding information in the Web of Science (WoS) database shows that key indicators for research visibility and resonance of MSCA-IF publications are

higher than those of HRF publications. At the same time, hosts who have already supervised both HRF fellows and MSCA-IF in the past often rate their HRF fellows as academically better qualified than MSCA-IF. This result is likely related to the HRF programme's emphasis on the development of academic independence. When assessing scholarship holders, hosts give greater weight to the research fellow's academic potential and to the professional and social qualifications which are associated with academic independence than to their publication record only.

#### Transparency of the selection process

Since 2012, if an application is rejected, information on the reasons for the decision can be requested from the Humboldt Foundation. This offer has been well received by applicants and hosts. This information is requested in approximately one third of the rejected cases. The majority of hosts finds that the information provided by the Humboldt Foundation is useful. However, some of the hosts see still room for further improvement: The information on the rejection of applications was regarded not being specific enough and not conducive to contribute sufficiently to being able to submit better applications in the future.

#### Adequacy of the selection procedure to identify and select highly qualified researchers

The Humboldt Foundation categorises the submitted applications on the basis of the available documents and expert reviews into different groups. Applications of very high quality and applications that do not meet the formal requirements and academic standards of the programme are decided by means of a circular procedure without further discussion in the Selection Committee. All other applications are decided by the Selection Committee after discussion. The analysis shows that the bibliometric indicators for publications of scholarship holders whose applications were decided positively in the circulation procedure are overall slightly better than those of scholarship holders who only received a positive decision after discussion in the committee. For both groups, the bibliometric indicators for research visibility and resonance in the years prior to the decision on the application are significantly above the expected values.

Since 2016, the Selection Committee ranks the application which are to be discussed using a points system. The fellowships are awarded according to this ranking, provided that the Selection Committee reviews the application favourably and funding for fellowships is available. The analysis shows that the bibliometric indicators for the best-ranked applicants are, on average, higher than the corresponding values for applicants whose applications were only just positively decided on the basis of the ranking. In the latter group, too, the bibliometric indicators are above the expected values.

#### Differences between CAPES-Humboldt and Humboldt research fellows against the background of the separate selection procedure

The bibliometric analysis shows that before the introduction of the CAPES-Humboldt programme, the bibliometric indicators for research fellows from Brazil were somewhat lower than for research fellows coming from other countries chosen for the comparison. These differences carried on or even became more pronounced since the introduction of the separate CAPES-Humboldt selection procedure. However, also the bibliometric indicators for the publications by research fellows from Brazil who were selected in the CAPES-Humboldt programme are above expected values.

### Push and pull factors for applying to the HRF programme

As destination for highly qualified researchers, Germany competes with other leading nations in science and research, especially with the United States and the United Kingdom. For many qualified researchers, Anglo-Saxon countries are still the preferred destination for research stays abroad. Contacts with researchers in Anglo-Saxon countries are often perceived as being more intensive than those with researchers in Germany. Many postdoctoral researchers use research stays abroad to improve their English skills.

The most important decision criterion for postdoctoral researchers when choosing a destination country for a research stay abroad is the academic reputation of the host and the host institution (and the academic development opportunities this choice offers). The main objective for the research stay abroad is to further one's academic career in the best possible way. Due to strategic career considerations (i. e. seeking a permanent academic position) postdoctoral researchers from North America, in particular, usually do not regard Germany as an attractive destination for a research stay abroad.

The HRF programme competes with other funding opportunities, especially for postdoctoral researchers, for research stays abroad. For research fellows from Europe, in addition to various national programmes, it is the European Commission's MSCA programme in particular the competes with the HRF programme. For experienced researchers, the high flexibility of the HRF scholarship, the emphasis on academic independence and the high reputation of the Humboldt Foundation add to the attractiveness of the HRF programme.

Changes in the economic situation and the academic development opportunities in the countries of the applicants have a significant influence on the attractiveness of research fellowship schemes - and thus on the demand for the HRF programme. The extent and the strength of the networks and contacts on an institutional and personal level that exist between Germany and the countries the applicants are also an important factor for attracting highly qualified researchers to the HRF programme.

Regarding the CAPES-Humboldt Programme, the obligation for research fellows to return to Brazil has proven to be an inhibiting factor for participation in the programme. Due to the currently very difficult academic labour market conditions in Brazil this obligation poses a substantial financial risk for applicants without a permanent academic position in Brazil.

### Strategies for approaching qualified applicants

The Humboldt Foundation pursues a variety of measures to promote its programmes worldwide: Cooperation with Humboldt associations, appointing Humboldt Ambassador Scientists, cooperation with research und research funding institutions abroad, country-specific public relations initiatives. Still, the most important tool remains the network of Humboldtiens. The country case studies show that there is no overall single best instrument for successfully positioning the HRF programme abroad. The greater the density of contacts and access points for qualified researchers in the various countries, the more likely they will learn about the opportunities the Humboldt Foundation offers. Former Humboldt research fellow play a key role as multipliers for the HRF programme.

### Participation of women in the HRF programme

The Humboldt Foundation has not succeeded in noticeably increasing the proportion of women among applicants in the period 2010 to 2019. The proportion of women among hosts in Germany also remains low.

### Development of career paths and publication behaviour of research fellows after their stay

Almost all experienced researchers and more than 90% of the postdoctoral researchers who completed their research fellowship between 2010 and 2019 were still working in academia by the end of 2020. More than half of the experienced researchers and every sixth postdoctoral researchers at the time of their fellowship now hold full professorship positions. Women among postdoctoral researchers are less likely than men to reach full professorship positions in the years following the research stay in Germany. The publication patterns of the Humboldt alumni show a visible increase in publication activity after the fellowship, combined with a noticeable increase in the number of excellence publications. The research fellowship is thus followed by a clear increase in the scholars' research visibility.

### Sustainability of the research collaborations

The academic contacts established during the research stays of the Humboldt fellows are being continued after the end of the fellowship to a high degree. A high proportion of the research fellows keep up their interest in German politics and culture after the end of their research stay. They also continue to maintain their personal contacts in Germany. Experienced researchers keep up their contacts with academic colleagues in Germany to a slightly greater extent than postdoctoral researchers.

During the fellowship and in the years after their research stay in Germany, the research fellows very significantly increase the number of publications they publish jointly with researchers in Germany. The research visibility of these joint publications is significantly higher than that of other publications published by the research fellows in the same period. The number of German affiliations with which the research fellows publish jointly also increases significantly in the years during the fellowship and in the years after the fellowship.

### Attractiveness of the alumni programmes

The research fellows rate the Humboldt Foundation's alumni programmes that promote academic contacts and professional networking as being particularly useful: Among the programmes available the research fellows rate support for establishing long-term research collaborations with partners in Germany and further research stays in Germany highest. Programmes that mainly focus on the Humboldt Network as such are of less interest to postdoctoral researchers in particular. Postdoctoral researchers would welcome more opportunities in support of academic collaboration and professional networking.

### **Recommendations for the further development of the programme**

The evaluation identifies the following key issues for the further development of the HRF programme:

1. In communicating the programme and its two funding lines, the Humboldt Foundations shall more strongly emphasise the unique selling points and strengths of the programme (i. e. emphasis on the development of academic independence; high degree of flexibility of the fellowship; lifelong membership in the Humboldt Network; broad range of alumni

programmes). In line with the overall concept of the HRF programme, the terms and conditions for the fellowship could allow for more flexibility in the programme line for post-doctoral researchers.

2. The Humboldt Foundation shall take measures to promote and present the HRF programme to the target groups (i. e. researchers and academics with above-average qualifications from abroad, potential hosts in Germany) via online channels.
3. In order to support the long-term involvement of postdoctoral researchers in the Humboldt Network, the Humboldt Foundation shall continue to further develop its (existing) alumni programmes with the aim to provide more support for academic networking and the promotion of research collaborations.
4. The feedback on the reasons for rejections which the Humboldt Foundation communicates to unsuccessful applicants and their hosts shall help improve the quality of application (and thus the success of the applications) in the event of a renewed application (or in support for an application by another applicant).
5. The Humboldt Foundation shall involve alumni as role models, contact persons and multipliers when designing and implementing country-specific initiatives to communicate and promote the HRF programme.
6. In order to increase the visibility of the HRF programme in research publications, Humboldt research fellows and their hosts shall be made more aware of their responsibilities to name the Humboldt Foundation as funding institution in publications related to the Humboldt research fellowship.
7. The Humboldt Foundation shall take additional actions to encourage more women to participate in the HRF programme. In particular, the Humboldt Foundation shall actively approach outstanding female professors at German universities and research institutions as potential hosts who are not yet part of the Humboldt Network.

