

Portfolio Evaluation of the International Programmes: Statement by the FWF

Context of the evaluation

International cooperation is a *sine qua non* of the scientific/scholarly system. Extensive evidence supports this finding, whether it is the ever-increasing internationality of cooperation and thus of scientific/scholarly publication behaviour, the increasing global mobility of researchers or the growing bundling and coordination of scientific activities at European or global level.¹

Funding organisations such as the Austrian Science Fund FWF take this development into account and align their funding portfolios to provide the necessary general conditions for the national scientific/scholarly community. The FWF facilitates and promotes international cooperation in all programmes. For example, just over two thirds of all the FWF's stand-alone projects² are carried out in international cooperation and the FWF's mobility programmes (Erwin Schrödinger International Fellowships, Lise Meitner Programme for Scientists from Abroad) are essential components to support *brain circulation*.³

Above all, however, the FWF's international programmes⁴ enable Austrian research institutions to carry out international cooperation projects in basic research on a secure financial basis. As far as the financial and substantive conditions are concerned – apart from occasional thematic restrictions – the project formats of the international programmes are largely identical to those of the stand-alone projects. The FWF sees this form of funding as a logical extension of the possibilities of stand-alone project funding for the sustainable intensification of cooperation opportunities with foreign researchers. For this reason, the same high scientific/scholarly quality standards as in the stand-alone projects are applied in the funding decisions.

International cooperation programmes involve a higher administrative burden due to the necessary coordination, both at the level of the funding organisations and that of the researchers. The general conditions of these funding programmes can also lead to new approaches on the part of the project applicants. On the one hand, this may be desirable in terms of research policy, e.g. as an incentive for cooperation with particular geographical areas. On the other hand, this can also be associated with strategic behaviour if the proposal

¹ It was not the task of the evaluation to make a new stock-taking or justify internationality in the scientific/scholarly system.

² Approximately half of the FWF's annual new grant approvals (2016: €92.1m) are spent on stand-alone projects. 70% of the stand-alone projects are carried out in cooperation with foreign partners (2012–2016)

³ For *incoming* (Meitner Programme) and *outgoing* (Schrödinger Programme) PostDocs in 2016: €16.2m (8.8% of the approval budget).

⁴ In 2016, *joint projects* with European and non-European partner organisations and the funding of participation in the ERA-NET amounted to €22.1m (12% of the approval budget).

is not focused on the content of the research, but rather on the external general funding conditions.

Key data of the international programmes

- Between 2005 and 2016 the FWF invested around €134 million (12% of the total budget in 2016) in its international programme portfolio.
- 600 projects with 496 different principal investigators (18% of them women) were funded during this period.
- The overwhelming majority of the budget went to cooperation programmes inside Europe (bilateral programmes with European partner organisations: 51%; ERA-NET participation: 25%), 12% of the budget was spent on bilateral cooperation programmes outside Europe.⁵
- With a success rate of 22%, the competition for international projects is higher than for stand-alone projects (2016: 25%).
- At €224,000 the average funding amount for international projects is 10% less than the average funding amount for individual projects (€246,000).
- More than 50% of the projects are multilateral in terms of publication output and involve researchers from at least three countries.
- Thematically, the highest proportion of international projects is in biology (22%), followed by physics (14%) and computer science (8%), with most projects being carried out at the University of Vienna, the TU Wien (Vienna University of Technology) and the University of Innsbruck.
- Each international project produces an average of 5.4 publications, which is comparable to FWF stand-alone projects (5.8).

Evaluation – Goals and Commissioning

In 2016, following an international call, the FWF commissioned a team, led by Alexander Degelsegger (ZSI) and John Rigby (Manchester), from the University of Manchester and the Centre for Social Innovation (ZSI) to evaluate its international programme portfolio. The German Centre for Higher Education Research and Science Studies (DZHW) and Digital Science (London) carried out the bibliometric investigations.

The main focus of the evaluation of the FWF's international programmes was the added value of this form of funding in comparison to the stand-alone projects, i.e. the question "*Does it pay off?*" both for researchers and for the FWF as a funder: with regard to the attractiveness of the funding format for scientists/scholars, the quality of the research output, the development of the national research system, the complementarity with other (national and international) initiatives, and the administrative effort.

⁵ The remainder of the budget (12%) was spent on the EUROCORES programme, which was discontinued in 2011.

The following questions arise from this:

- *Is the international funding portfolio of the FWF appropriate?*
- *Are the design and the management of the programmes appropriate?*
- *What are the impacts of the international programmes of the FWF?*
- *Should the programmes under discussion be continued, improved or restructured?*

The evaluation was based on a mix of methods consisting of the evaluation of programme and monitoring data, a bibliometric analysis including a comparison group approach⁶ and *altmetrics*, online surveys of the principal investigators, expert interviews and a workshop with representatives of the FWF.

This type of evaluation is currently unique internationally. Although many national and supranational funders have been financing international cooperation projects for quite some time, there is a lack of reliable evidence of the added value of these funding activities. Quantifying the added value of international projects in comparison to national projects is an essential aspect of the evaluation. In this respect, this evaluation is also exemplary for similar programmes in Austria and abroad.

Findings

Of particular interest for a funding organisation such as the FWF is the quality of project output, especially in comparison with the stand-alone projects, which already have a considerably high international co-publication rate of 57% (international projects: 67%).⁷ The findings are unambiguous and astonishingly clear from the point of view of the FWF: both the normalised mean and median of the citation impact as well as the share of the most cited publications (top 10% highly cited) in the international programmes are 20% higher than that of the stand-alone projects, and even more clearly above the Austrian average.⁸ The figures, both regarding the discipline and the geographic distribution, are stable.

An important conclusion of the evaluation is therefore that the cooperation supported by the FWF's international programmes results in a relevant added value compared to "individual cooperation" within the framework of FWF stand-alone projects. This added value applies both to cooperation with partners from countries with a generally low level of cooperation intensity (e.g. BRICS countries) and to countries with existing intensive cooperation activities (e.g. Germany). This suggests that cooperative relationships are established with the best scientists/scholars in the respective country.

⁶ As part of this evaluation, a comparison group of stand-alone projects that were as similar as possible to the projects of the international programmes in terms of certain structural characteristics (discipline, age, gender, cooperation) was selected from the FWF monitoring data.

⁷ It depends on the publication cultures of the scientific/scholarly disciplines whether intensive cooperation leads to joint publications or whether it takes other forms. These can be varied (e.g. workshops, conferences, personnel and data exchange) and are difficult to quantify using common methods.

⁸ *Field normalized citation rates*: international projects *mean* 1.8 (1.6–2.1) or *median* 1.2 (1.0–1.3), comparison group *mean* 1.5 (1.4–1.7) or *median* 1.0 (0.8–1.0)
Share of top 10% highly cited papers: international projects 23.2%, comparison group 15.7%, Switzerland 15.2%, Austria as a whole 11.7%, EU as a whole 10.6%

Which group of people is responsible for this outstanding impact? The international programmes mobilise an extended, internationally well-networked segment of the Austrian scientific/scholarly community – i.e. a segment that goes beyond the recipients of stand-alone project funding. In general, it is mainly established researchers⁹ who make use of this funding opportunity. These people obviously already have intensive international contacts and thus use the international programmes to generate high-quality output and impact in even closer cooperation.

This is also clear from the fact that the stated intensity of cooperation within the international projects is demonstrably higher than within the stand-alone projects.¹⁰ From the scientists'/scholars' point of view, funding from FWF stand-alone projects that offer a higher approval rate or are administratively simpler does not permit the same intensity of international cooperation.¹¹

The FWF's international programmes thus above all support the intensification and deepening of international scientific/scholarly cooperation, but are only of limited suitability for helping people who have not yet been active in international research contexts to become involved.

It is also revealing that within the framework of international programmes researchers do not replicate the patterns of cooperation on the basis of their biographies (nationality, mobility programmes), but instead engage in cooperation in other geographical areas. The evaluation therefore concludes that the international programmes are an appropriate instrument to support researchers in opening up new geographical areas.

These findings also make it clear that the internationalisation of research personnel is ultimately a task that goes far beyond the scope of the FWF as a funding organisation that finances research according to the highest international standards in all its programmes. Rather, internationalisation requires appropriate measures from all players in the scientific/scholarly system in their respective fields of activity.

What is striking is the low ratio of women as leaders of international projects (18%) compared to the stand-alone projects (approx. 26% in the last five years). The reasons for this are not gender-specific differences in funding rates, but presumably the fact that the majority of international programmes are taken up by established researchers and that women are still comparatively under-represented in this group. Owing to the FWF's massive efforts to increase the proportion of women – especially for young researchers – it is expected that their participation in international programmes will increase over the next few years. Otherwise, the FWF will have to undertake even more far-reaching supporting measures.

⁹ 80% of the principle investigators of the international programmes have a fixed position, in contrast to 64% of the comparison group.

¹⁰ International projects: very intensive/intensive cooperation: 88% (very intensive 45%)
comparison group: very intensive/intensive cooperation: 71% (very intensive 35%)

¹¹ *Added value* of the international programmes
Programme participants: *joint projects* Europe 77%, *joint projects* outside Europe 69%, ERA-NETs 70%
All those surveyed: *joint projects* Europe 71%, *joint projects* outside Europe 47%, ERA-NETs 25%

Another remarkable and gratifying result is the high level of satisfaction of the researchers with the programme management by the FWF.¹² It is remarkable in that the general conditions of international programmes are more complex, time-consuming and competitive than those of the stand-alone projects. Nevertheless, the potential benefits for the beneficiaries clearly exceed the necessary effort.

The evaluation study also underlines the unique selling point of the FWF's international programmes in the national research system and the marked complementarity with existing national and European forms of funding.

With regard to the portfolio of international programmes, almost half of those surveyed see a need to expand the cooperation opportunities offered. The focus of the desired new country cooperation will be on the countries with a strong international scientific/scholarly base (North America, Asia; 77% of researchers) as well as the countries of Europe (55%), but also the BRICS countries (38%).

As far as the structure of cooperation is concerned, in addition to a geographical expansion of bilateral programmes, the possibility of *thematically open multilateral* cooperation is the main desideratum. There is also a high demand for a network programme as an option for geographically broad, subject-specific networking.

Main findings of the evaluation

- The (bibliometric) impact of publications from international projects is above average – compared to the comparison group as well as by international comparison.⁸
- The quality of the project output is independent of the discipline.
- The quality of the project output is independent of the partner country.¹³
- Those funded assess the intensity of cooperation in international projects as being higher than in comparison group projects.¹⁰
- With its international programme portfolio, the FWF is able to attract researchers who are not active in other FWF funding programmes.¹⁴
- A high degree of satisfaction with the implementation of the international programmes by the FWF can be observed among those receiving funding.¹²
- Women and scientists/scholars with little cooperation experience are underrepresented among the funding recipients of international programmes.
- In Austria's *scientific community* there is a clear need for an extension of international cooperation opportunities.¹⁵

¹² *Highly satisfactory/satisfactory/appropriate*: application documents 99%, application advice: 100%, process time: 83%, transparency: 93%

¹³ Co-publications with authors from different regions – with the exception of co-publications with emerging countries – are qualitatively stable. The average impact values in these co-publications are again above the comparative values (global as well as in Austrian publications in general).

¹⁴ 48% of the principle investigators of international projects have lead an international FWF project as their first FWF project, three quarters of these principal investigators exclusively an international project.

Recommendations

On the basis of these evaluation findings, the programme portfolio of the FWF's international programmes can be assumed to provide a high added value. The added value of international projects compared to national projects has been clearly demonstrated.

The evaluation comes to the clear recommendation that the existing portfolio of international programmes should be continued.

However, three elements should be considered:

1. An even more sustainable **calls policy** should be pursued, which is more easily calculable for researchers in terms of geographical and/or thematic orientation, timelines and success rates. A sustainable increase in the FWF's budget, as envisaged by the Federal Government, is a necessary precondition for this.
2. Support mechanisms should be established to facilitate **thematically open multilateral cooperation**. With the D-A-CH agreement, the DFG, the SNSF¹⁶ and the FWF have established first priorities in this respect. These cooperation models need to be extended step-by-step via networks, for example within the framework of Science Europe.¹⁷
3. A **network programme** should be added to the programme portfolio. The FWF has made initial proposals for this in the "Synthesis Networks" programme in its 2017-2020 strategy. Under Austrian leadership, it would be possible to set up international and interdisciplinary working groups in order to establish or expand Austria's thematic leadership in some areas.

¹⁵ Geographically:

1. European countries with strong research traditions, 2. Non-European countries with strong research traditions, 3. BRICS countries.

Funding instruments:

1. Thematically open multilateral cooperation opportunities, 2. Funding of networking activities.

¹⁶ German Research Foundation (www.dfg.de), Swiss National Science Foundation (www.snf.ch)

¹⁷ Science Europe (www.scienceeurope.org):

Association of European research funding and research performing organisations.

Conclusions

For the FWF, the evaluation of the international programmes is the starting point for the further development of its internationalisation strategy on the basis of existing evidence. The biggest challenges for the FWF can be described as follows:

- How can the FWF align its **whole funding portfolio** with a view to an increased international opening of the Austrian research system?
- How can Austria become a hub of international cooperation through **new forms of funding**?
- How can the **range of funding be expanded** without a disproportionately high increase in efforts for researchers and for the FWF?
- How can cooperation with foreign partner organisations be coordinated in such a way that **multilateral funding formats can be intensified**?
- What **geographical and programmatic priorities** must be set in view of limited budgetary resources?

In closing – a word on cooperation with evaluators

The FWF is committed to the standards of evaluation developed by the Austrian Platform for Research and Technology Policy Evaluation.¹⁸ In addition, the FWF has adopted its own quality and transparency rules that formed the basis of this evaluation project.¹⁹ These sets of rules provide a clear line with regard to the relationship between the “evaluator” and the “client”. The cooperation with the team around John Rigby and Alexander Degelsegger was on the one hand characterised by professional distance – one was well aware of the different roles; on the other hand, in the context of linking different data sources, one could, for example, cooperate closely and appreciatively as part of developing a common understanding of the nuances of the FWF’s programme portfolio. Not only an exact methodological knowledge, but also this understanding of the roles makes for a good evaluation.

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¹⁸ www.fteval.at

¹⁹ <http://www.fwf.ac.at/de/forschungsfoerderung/entscheidung-evaluation/evaluationsstandards/qualitaets-und-transparenzregeln-von-evaluierungen/>