ESF Member Forum
Evaluation of Funding Schemes and Research Programmes
Expectations, Practices and Experiences
Berlin, October 22nd to 23rd, 2007

Collecting and using project output data in the Austrian Science Fund (FWF)

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The FWF is Austria’s central body for the promotion of basic research.

We invest in new ideas that contribute to an advance in knowledge and thereby to further developments. We are equally committed to all branches of science and the humanities and are guided in our operations solely by the standards of the international scientific community.
The FWF

- covers all fields of science and the humanities (unlike e.g. the British Research Councils)
- is focussed on basic science (unlike e.g. RCN)
- does not run research institutes (unlike e.g. NWO)
- does not act as a strategic advisory council for the government (unlike e.g. RCN)
- uses *exclusively* reviewers from abroad (virtually unique in international funding scene)
- has a single budget for all disciplines (virtually unique in international funding scene)
3 instruments:

- funding of research projects, up to 3 years, one PI, volume 230k€/project
- funding of research networks
- provision of fellowships for excellent investigators
Projects: quality assessment

Cooperations

International scientific community

FWF

Referees (peers)


FWF Secretariat: Scientific & Non-Scientific Administrators

National scientific community

Applicants

Cooperations

Conflict of interest
<table>
<thead>
<tr>
<th>Principle</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality standard</td>
<td>international scientific community</td>
</tr>
<tr>
<td>Peer review</td>
<td>exclusively outside Austria</td>
</tr>
<tr>
<td>FWF Reporters</td>
<td>nomination of referees</td>
</tr>
<tr>
<td>FWF Executive Board</td>
<td>request for reviews</td>
</tr>
<tr>
<td>Number of reviews</td>
<td>at least 2 (according to requested funding)</td>
</tr>
<tr>
<td>Funding Decisions</td>
<td>ca. every 2 months</td>
</tr>
<tr>
<td>Decisions</td>
<td>entire FWF Board based on the reviews</td>
</tr>
<tr>
<td>Justification</td>
<td>reviews made available to applicants</td>
</tr>
<tr>
<td>ex post evaluation</td>
<td>peer review of the final reports</td>
</tr>
</tbody>
</table>
The FWF funding machine

Applicant ➔ sci. / non-scientific administrator

sci. / non-scientific administrator ➔ checks – formal and of contents

checks – formal and of contents ➔ Vice-President

Vice-President ➔ assignment

assignment ➔ Reporter + Alternate

Reporter + Alternate ➔ check of contents ⇒ suggestion: review / rejection

check of contents ⇒ suggestion: review / rejection ➔ Executive Board

Executive Board ➔ request for reviews

request for reviews ➔ international referees (at least 2)

international referees (at least 2) ➔ Reporter + Alternate + Scientific Administrator

Reporter + Alternate + Scientific Administrator ➔ Preparation of funding decision

Preparation of funding decision ➔ Board

Board ➔ Approval

Rejection ➔ Rejection ➔ Rejection
FWF "philosophy" for quality assurance

international peer review

ex ante evaluation

maximal flexibility

project period

ex post evaluation

international peer review
Aspects of “flexibility”

- One Overall budget + 5% “general project costs”
- no requirement for annual reports (only accounting)
- One comprehensive final report at the end of the project
annual accounts and brief (one page) progress report
comprehensive report at the conclusion of the project, consisting of 5 parts (a total of ca. 2,400 words or 4 pages):
→ subjected to peer review (1 ex-ante reviewer)

1. summary for PR work (German and English)
2. brief project report
   2.1. report on the scientific work
   2.2. personnel development – importance of the project for the scientific careers of those involved (including the project leader)
   2.3. effects of the project outside the scientific field
3. Information on project participants

### 3. Information on project participants

<table>
<thead>
<tr>
<th>not funded by the FWF</th>
<th>funded by the FWF (project)</th>
</tr>
</thead>
<tbody>
<tr>
<td>co-workers</td>
<td>co-workers</td>
</tr>
<tr>
<td>number</td>
<td>number</td>
</tr>
<tr>
<td>man months</td>
<td>man months</td>
</tr>
<tr>
<td>non-scientific co-workers</td>
<td>non-scientific co-workers</td>
</tr>
<tr>
<td>diploma students</td>
<td>diploma students</td>
</tr>
<tr>
<td>PhD students</td>
<td>PhD students</td>
</tr>
<tr>
<td>post-doctoral co-workers</td>
<td>post-doctoral co-workers</td>
</tr>
<tr>
<td>co-workers with</td>
<td>co-workers with</td>
</tr>
<tr>
<td>“Habilitation”</td>
<td>“Habilitation”</td>
</tr>
<tr>
<td>(professorial qualifications)</td>
<td>(professorial qualifications)</td>
</tr>
<tr>
<td>professors</td>
<td>professors</td>
</tr>
</tbody>
</table>
4. Attachments  → for peer review and data collection

List 1.a. scientific publications
List 1.b. publications for the general public and other publications
List 2 project-related participation in international scientific conferences
List 3 Development of collaborations (national, European, international)
List 4 “Habilitations” (professorial qualifications) / PhD theses / diploma theses
List 5 Effects of the project outside the scientific field (where appropriate)
List 6 Applications for follow-up projects

5. Feedback about Work with the FWF
1.a scientific publications
with an indication of the status (published, in press, submitted, in preparation)

- Publications may only be listed if they relate directly to the project. Up to three of the most important publications should be indicated (e.g., printed in bold letters; for books, two originals should be supplied if the book has already been published, otherwise a brief description should be given together with the name of the publishing house).
- Please note that publication costs may be requested (under the original project number) for up to three years following completion of a project.
- A common format for citations should be followed.

- 1.a.1. Peer-reviewed publications (journals, contribution to anthologies, working papers, proceedings etc.).
- 1.a.2. Non peer-reviewed publications (journals, contribution to anthologies research reports, working papers, proceedings, etc.).
- 1.a.3. Stand-alone publications (monographies, anthologies).

The publication list must mention for each work: all authors; full title; series/journal title; year; volume; and page numbers.
attachment, example: development of collaborations

**Development of collaborations**
Indication of the most important collaborations (maximum 5),
that took place (initiated or continued) in collaboration please give
the name of the collaboration partner (name, title, institution) and a
few words about the scientific content.
Please also assign one of the following **categories** to each collaboration:

<table>
<thead>
<tr>
<th>Nature</th>
<th>N (national); E (European); I (other international cooperation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extent</td>
<td>E1 <strong>low</strong> (e.g. no joint publications but mention in acknowledgements or similar); E2 <strong>medium</strong> (collaboration e.g. with occasional joint publications, exchange of materials or similar but no longer-term exchange of personnel); E3 <strong>high</strong> (extensive collaboration with mutual hosting of group members for research stays, regular joint publications etc.)</td>
</tr>
<tr>
<td>Discipline</td>
<td>D within the discipline T transdisciplinary</td>
</tr>
</tbody>
</table>
Closing of the project

accounts
final report
Scientific Administrator

auditing

checks – formal and of content
selection of one referee from initial review

international referee (min.1)

project leader

review

comments

Scientific Administrator

computer entry
of project output

science communication,
reports, evaluations

Board

taken into account in future funding decisions

Reporter + Alternate
Reviewers are asked to comment on:

1. the scientific success of the project;
2. the development of human resources in the course of the project;
3. effects beyond the scientific field (in the sense of applications in or impacts on social, cultural, ecological, medical, economic and/or technological areas);
4. the running of the project with regard to use of available resources; and
5. the future perspectives of the research work.
Rating scale for ex-post evaluation

- 100 – 80: excellent, in the sense of exceptional results, excellent work, optimal development, exceptional use of available resources etc.;
- 80 – 60: very good, in the sense of very good results, very good work, very good development, very good use of available resources etc.;
- 60 – 40: good, in the sense of acceptable, good results, good work, good development, appropriate use of available resources etc.;
- 40 and below: problematic, in the sense of unclear scientific results or results of marginal importance, work difficult to understand; no discernible development, problematic use of available resources etc.

Important: The complete review will be made available to the PI
## Track record available for board members

<table>
<thead>
<tr>
<th>P xx xxA</th>
<th>Granted</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Application:</strong> Rev.1: 80, Rev.2: 90, Rev.3: 90</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ex-post Eval:</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P xx xxB</th>
<th>Granted</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Application:</strong> Rev.1: 90, Rev.2: 90, Rev.3: 90, Rev.4: 90</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ex-post Eval:</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Collection of project output data
Publications

ca. 10,000 Scientific Journals
Evaluation of FWF-Priority Research Projects (Research Networks)

Publications Austria and FWF-Priority Research Projects

- Medicine
- Biological Science
- Environmental Science
- Mathematics
- Physical Sciences
- Engineering
- Business and Management Studies

Graph showing the rebased impact 2001 for various fields with comparison to the overall average Austria.
Bibliometrics of Stand Alone Projects
THE AUSTRIAN SCIENCE FUND: EX POST EVALUATION AND PERFORMANCE OF FWF FUNDED RESEARCH PROJECTS
FINAL VERSION 15-07-2005
STUDY COMMISSIONED BY THE AUSTRIAN SCIENCE FUND
RTW.2004.AF-020-01
by
M.Dinges (Joanneum Research)
http://www.fwf.ac.at/de/downloads/pdf/InTeReg%20RR%20Nr%2042.pdf
### Average Ratings of ex-ante evaluations

<table>
<thead>
<tr>
<th>Field</th>
<th>N</th>
<th>Assessments (Mean)</th>
<th>Mean</th>
<th>Median</th>
<th>Var.</th>
<th>Std. De.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Sciences</td>
<td>252</td>
<td>2.92</td>
<td>88.06</td>
<td>88.33</td>
<td>19.08</td>
<td>4.37</td>
</tr>
<tr>
<td>Engineering Sciences</td>
<td>23</td>
<td>2.82</td>
<td>87.10</td>
<td>86.67</td>
<td>13.01</td>
<td>3.61</td>
</tr>
<tr>
<td>Human Medicine</td>
<td>95</td>
<td>2.89</td>
<td>86.48</td>
<td>86.67</td>
<td>26.43</td>
<td>5.14</td>
</tr>
<tr>
<td>Agric. Sc. &amp; Vet. Med</td>
<td>7</td>
<td>3.14</td>
<td>89.10</td>
<td>89.33</td>
<td>14.29</td>
<td>3.78</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>19</td>
<td>2.58</td>
<td>90.61</td>
<td>90.00</td>
<td>15.71</td>
<td>3.96</td>
</tr>
<tr>
<td>Humanities</td>
<td>78</td>
<td>2.59</td>
<td>91.69</td>
<td>92.50</td>
<td>31.07</td>
<td>5.57</td>
</tr>
</tbody>
</table>
Scientific Success of the projects

- Natural Sciences
- Human Medicine
- Social Sciences
- Engineering Sciences
- Humanities

The chart illustrates the distribution and variability of scientific success across different fields.
## Table 6: Average rating of the ex post evaluation criteria

<table>
<thead>
<tr>
<th>Category</th>
<th>N</th>
<th>Mean</th>
<th>Media N</th>
<th>Variance</th>
<th>Std. De.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific Success</td>
<td>190</td>
<td>79.48</td>
<td>80.00</td>
<td>250.93</td>
<td>15.84</td>
</tr>
<tr>
<td>Effects on Human Resources</td>
<td>187</td>
<td>80.62</td>
<td>80.00</td>
<td>196.26</td>
<td>14.01</td>
</tr>
<tr>
<td>Effects that Reach Beyond the Scientific Field</td>
<td>165</td>
<td>73.20</td>
<td>77.50</td>
<td>422.22</td>
<td>20.55</td>
</tr>
<tr>
<td>Project Performance (Financial Aspects)</td>
<td>164</td>
<td>79.22</td>
<td>80.00</td>
<td>280.86</td>
<td>16.76</td>
</tr>
<tr>
<td>Future Perspectives of Research Work</td>
<td>158</td>
<td>80.40</td>
<td>85.00</td>
<td>296.90</td>
<td>17.23</td>
</tr>
</tbody>
</table>
Scientific Output of FWF-funded project, mean values (ca. 500 projects)

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>JOURNAL ARTICLES (PEER REVIEWED)</td>
<td>6.80</td>
<td>1.81</td>
<td>6.36</td>
<td>4.25</td>
<td>1.77</td>
<td>1.17</td>
<td>5.25</td>
</tr>
<tr>
<td>JOURNAL ARTICLES (NON REVIEWED)</td>
<td>0.21</td>
<td>0.19</td>
<td>0.15</td>
<td>0.00</td>
<td>0.36</td>
<td>0.08</td>
<td>0.18</td>
</tr>
<tr>
<td>COMMUNICATIONS</td>
<td>0.21</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.09</td>
<td>0.01</td>
<td>0.11</td>
</tr>
<tr>
<td>MONOGRAPHS</td>
<td>0.18</td>
<td>0.15</td>
<td>0.04</td>
<td>0.00</td>
<td>0.41</td>
<td>0.37</td>
<td>0.19</td>
</tr>
<tr>
<td>PUBL. IN ANTHOLOGIES</td>
<td>0.55</td>
<td>0.35</td>
<td>0.29</td>
<td>0.50</td>
<td>1.45</td>
<td>2.75</td>
<td>0.89</td>
</tr>
<tr>
<td>PUB. IN MASS MEDIA</td>
<td>0.33</td>
<td>0.04</td>
<td>0.19</td>
<td>0.63</td>
<td>0.36</td>
<td>0.13</td>
<td>0.26</td>
</tr>
<tr>
<td>PhD-THeses</td>
<td>0.85</td>
<td>0.54</td>
<td>0.77</td>
<td>0.25</td>
<td>0.64</td>
<td>0.18</td>
<td>0.69</td>
</tr>
<tr>
<td>MA-THESSES</td>
<td>1.03</td>
<td>0.38</td>
<td>0.37</td>
<td>0.38</td>
<td>0.73</td>
<td>0.05</td>
<td>0.68</td>
</tr>
<tr>
<td>TENURE (HABILITATION)</td>
<td>0.27</td>
<td>0.08</td>
<td>0.27</td>
<td>0.25</td>
<td>0.09</td>
<td>0.06</td>
<td>0.22</td>
</tr>
</tbody>
</table>
Feedback on the work of FWF

Application Guidelines:
- Volume
- Transparency
- Clarity

Review and Decision Procedure:
- Advice
- Duration
- Transparency

Guidance by FWF:
- Availability
- Transparency
- Clarity
- Financial Affairs

About 1,400 reports evaluated