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The European Science Foundation (ESF) was established in 1974 to provide a common platform for its Member Organisations to advance European research collaboration and explore new directions for research. It is an independent organisation, owned by 66 Member Organisations, which are research funding organisations, research performing organisations and academies from 29 countries. ESF promotes collaboration in research itself, in funding of research and in science activities at the European level. Currently ESF is reducing its research programmes while developing new activities to serve the science community, including peer review and evaluation services.

**European Science Foundation**  
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# ESF Evaluation Services

the *Journal of Applied Behavior Analysis* (JABA) and the *Journal of Experimental and Applied Behavior Analysis* (JEA).

The *Journal of Applied Behavior Analysis* (JABA) is a peer-reviewed journal published by the American Psychological Association. It is the primary journal for the publication of empirical research in the field of behavior analysis. The journal covers a wide range of topics, including basic research, clinical applications, and educational interventions. It is known for its rigorous standards and high-quality research.

The *Journal of Experimental and Applied Behavior Analysis* (JEA) is a peer-reviewed journal published by the American Psychological Association. It focuses on the publication of experimental research in behavior analysis. The journal covers a wide range of topics, including basic research, clinical applications, and educational interventions. It is known for its rigorous standards and high-quality research.

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# What If...

- You could provide funders and stakeholders with evidence of policy achievements and science outcomes when you need to?
- You could help shape the future through knowledge innovation and responsive leadership?
- Your organisational culture became a hub of continuous learning, reflection and knowledge sharing?
- Your organisation's reputation was synonymous with excellence and integrity?

ESF Evaluation Services can help you embed a culture of transparency, continuous improvement and evidence-led decision-making into your activities driving innovation, effectiveness and value for money.

You can find inspiration  
in everything.  
And if you can't,  
look again.

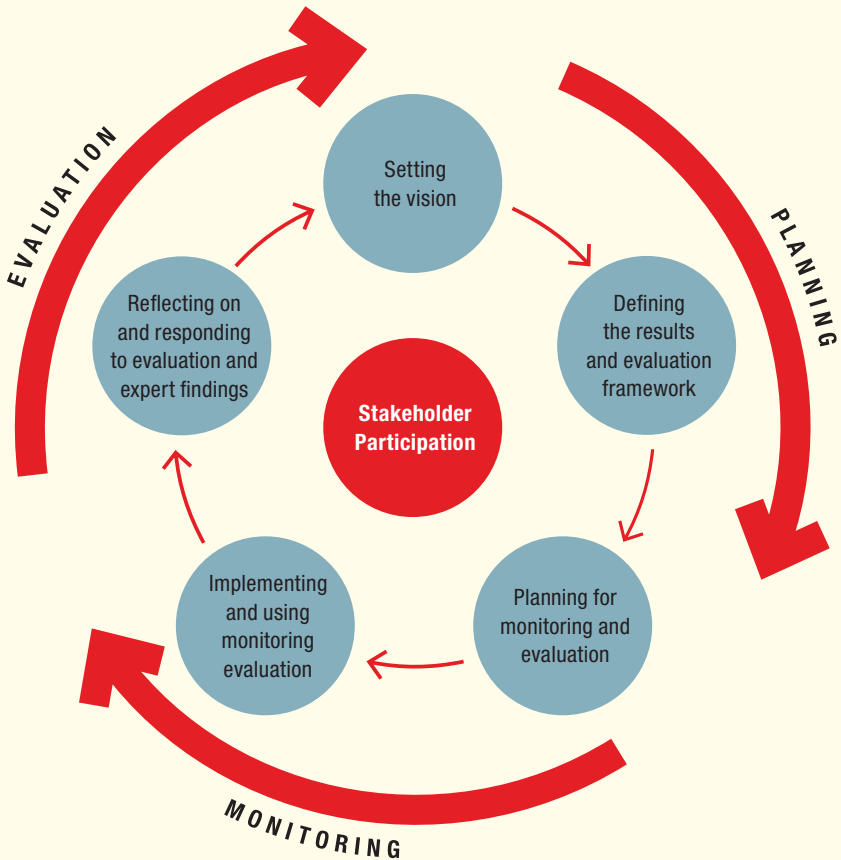
Paul Smith



## How? research, review, reflect, react

ESF has an evaluation resource of over 5,000 international academic experts covering all scientific and humanities domains.

You can call on this knowledge-rich resource to peer review ideas-led policy through proof of concept to accessing ex-post evaluation...



The Evaluation Cycle



## What evaluation support does ESF provide?

ESF provides a range of evidence-based evaluation services from framework design, through the management, support, and implementation of *ex-ante*, *formative* and *ex-post* evaluation.

We will coordinate and supply the necessary subject matter and evaluation expertise across all science domains and conduct independent evaluations drawing on international expertise at the level of national research and innovation systems, organisations and programmes.

## Examples of ESF evaluation work

Between 2007 and 2012, the ESF coordinated three Member Organisation Fora to exchange information and experiences and develop joint actions in research policy issues, including the development of common approaches to ex-post evaluation of funding schemes and research programmes. The three Fora were:

- Evaluation of Funding Schemes and Research Programmes
- Evaluation: Indicators of Internationalisation
- Evaluation of Publicly Funded Research

The resulting reports communicated suggestions and recommendations for best practices, defined indicators and the 'ex-post' evaluation process. In addition, a number of working group reports were produced, which looked into topics such as the capture and analysis of research outputs and the challenges of impact assessment.

The ESF has also managed a number of internal evaluations of committees and instruments, as well as external organisational evaluations, including:

**2014:**

#### **Hungarian Scientific Research Fund (OTKA)**

ESF is currently evaluating OTKA. The aims of the evaluation are to assess its governance and management structures, the fit between the funding portfolio and OTKA's strategic goals and its effectiveness and efficiency. The evaluation features a mixed-methods approach including an international peer review of the portfolio and scientific strategy together with an analysis of impact. The impact analysis is based on a counterfactual comparison of scientific outcomes for funding applicants and beneficiaries.

**2013:**

#### **Research Council of Lithuania (RCL)**

ESF was requested by the RCL to plan and deliver an independent evaluation of the Council as a national research funding organisation and national policy adviser. An independent Evaluation Committee invited representatives of relevant clients and stakeholders to provide their views and impressions on given aspects of the strategy and operations of RCL.

**2012:**

#### **Independent Evaluation of the European Space Agency (ESA) Programme for Life and Physical Sciences in Space (ELIPS)**

ESF carried out its fourth independent scientific evaluation of ESA's European Programme for Life and Physical Sciences in Space (ELIPS) and its future priorities. ELIPS is ESA's main programme for research on the International Space Station (ISS) and other microgravity platforms in various disciplines. The evaluation aim was to assess the ELIPS programme in terms of its overall structure, programmatic aspects and scientific value, and then provide recommendations for its next phase.

**2010:**

#### **Slovenian Research Agency (SRA)**

The SRA commissioned ESF to conduct an international evaluation of its organisation in 2010. The aims were to identify strengths and improvements related to the mission, structure, portfolio and performance of the SRA. An international panel of academic and leading industry experts was chaired by Martin Hynes (ESF Chief Executive and, at the time, CEO of the Irish Research Council for Science, Engineering and Technology). The panel conducted stakeholder consultations, bibliometric reviews and analysis of an extensive range of policy material and data related to scientific performance and outcomes.

**2009:**

#### **Bulgarian Academy of Sciences (BAS)**

The aim of this evaluation was to conduct an independent scientific review of the achievements of the BAS research units, primarily from the point of view of their international visibility and competitiveness. In collaboration with the *European Federation of National Academies of Sciences and Humanities* (ALLEA: All European Academies) ESF evaluated the 69 institutes, centres, laboratories and other relevant facilities BAS. The review was carried out at the request of BAS and focused on a five-year period from January 2004 to December 2008. The report provided recommendations to facilitate a process for continuously improving and revitalising the scientific performance of the research units of BAS.

► [www.esf.org/evaluation](http://www.esf.org/evaluation)

# What is evaluation?

## The technical side

The two most universally accepted and used definitions of evaluation are:

*“Evaluation is the process of determining the merit, worth, or value of a product or programme”*

Michael Scriven<sup>1</sup>

and

*“Systematic inquiry that describes and explains the policies’ and programs’ operations, effects, justifications, and social implications. The ultimate goal of evaluation is social betterment, to which evaluation can contribute by assisting democratic institutions to better select, oversee, improve, and make sense of social programs and policies.”*

Mark, Henry, & Julnes<sup>2</sup>

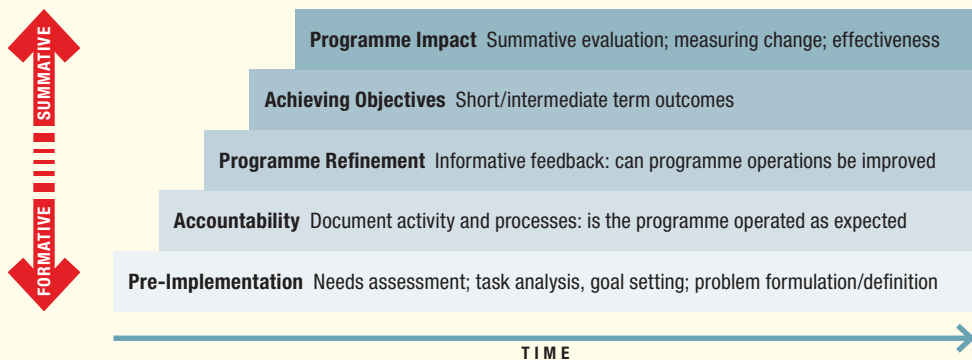
Scriven distinguished between what he termed **formative** and **summative** evaluation.

**Formative** (usually internal) evaluation refers to the methods for judging the worth of a programme prior to (*ex-ante*) and during implementation (*in itinere*). Formative evaluations focus on *process or how a programme is being implemented* and permit policy makers, managers, and staff to monitor and improve the project design as it is being implemented (continuous improvement).

**Summative** (*ex-post* and often external) evaluation is concerned with judging the worth of a programme on completion (summation). The focus is on *outcomes or impact* (effects that can be directly attributed to the intervention).

1. Scriven, M. (1991) *Evaluation Thesaurus*. Sage Publications.

2. Mark, M. Henry, G. and Julnes G. (2000) *Evaluation: An Integrated Framework for Understanding, Guiding, and Improving Policies and Programs*. Jossey-Bass



### Programme evaluation – ages and stages

Adapted from <http://omerad.msu.edu/meded/progeval/step4.html>



## Evaluation structure and processes

Good quality evaluation requires a framework incorporating practical systems and communication processes including the development and agreement of:

- Clearly defined objectives, outputs and performance measures or indicators
- Appropriate methods for stakeholder input and information gathering on programme performance
- Resources, timeline and responsibilities for information gathering and analysis
- Reporting or feedback mechanisms for sharing information and incorporating results into prevention and response planning

ESF provides a needs-based, customised evaluation service supporting or directly providing some of these activities at the level of advice, coaching or systems design through to full wrap-around evaluation service provision.

Evaluation activity and the service provided will differ depending on internal evaluation capacity and values, the complexity of the system or programme to be reviewed, the balance to be achieved between internal and external and the scientific quality or rigor required.

Examples of the kinds of evaluation stages, activity and corresponding services provided by ESF are outlined in the following sections.

## Planning and design of evaluation systems and/or framework

ESF can provide a valuable pre-evaluation service focused on supporting organisations to develop a high-quality evaluation and monitoring framework or system that is aligned with their strategy, internal capabilities, resources and values. We will work with you to design a usable, customised and coherent or value-based approach to evaluation for your particular programme or activity.

An important review by Stufflebeam, Madaus, & Kellaghan (2000<sup>3</sup>) categorised the different approaches to evaluation in terms of their values orientation and conformity with the Scriven definition of evaluation (merit, worth or value).

Four categories of evaluation were identified. The first included those that promote invalid or incomplete findings (e.g. those that are politically or PR motivated), while the other three categories included approaches that correspond to varying degrees with the Scriven definition (e.g. Questions and/or Methods-Oriented, Improvement/Accountability, and Social Agenda/Advocacy).

In choosing an appropriate evaluation framework or design, organisations might find it useful to reflect on their values/positioning in terms of the importance of the following dimensions:



3. Stufflebeam, D. Madaus, G. and Kellaghan, T. (2000) *Evaluation Models*. Kluwer Academic Publishers, New York.

For example, an evaluation design for a programme supporting exploratory or speculative research would be informed by different considerations to one that is expected to produce highly specified results. Decisions about the relative balance between internal (usually formative) and external (usually summative/ex-post) evaluation activities will also need consideration.

ESF will support you to make an informed choice about the most fitting approach for your institution or activity and the qualitative and quantitative measurement and assessment processes that follow.



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## Ex-ante evaluation

Ex-ante evaluation is concerned with assessing the rationale for interventions or programmes prior to implementation. It can be applied to research programmes, research organisations and research projects on a stand-alone basis or, preferably, as part of an evaluation system or framework incorporating ex-post evaluation.

At the level of national funding programmes, ex-ante evaluations examine whether science or research programmes are the most appropriate means of addressing identified needs and, if so, whether they have well defined and achievable strategies, priorities and objectives to underpin both monitoring and future (ex-post) evaluation work.

At organisational level it is concerned with the strategic fit between policies and programmes and involves analysis of internal and external consistency of plans and activities before their implementation.

At individual research project level, ex-ante evaluation is continuous with peer review as it is concerned with selecting the best applications for funding through assessing both the quality of the project and the suitability of the individual or team who will carry it out. Decisions are usually made through a combination of common criteria, peer review (assessment by researchers with expertise in the same research area) and bibliometric analysis (statistical analysis of publication and citation patterns).

ESF has deep experience of ex-ante evaluation processes particularly at organisational and competitive call levels and can provide comprehensive, high quality services (see [www.esf.org/peer-review](http://www.esf.org/peer-review)) matched to your requirements.

## Formative or in itinere evaluation

Formative Evaluation (FE) aims to strengthen or improve a programme or intervention by examining its delivery, implementation quality and its organisational context including resources, structures and procedures. As a change oriented evaluation process it focuses on the analysis of discrepancies between programme plans and implementation and identifies influences that may not have been anticipated. It also focuses on the dynamic context within which change is taking place. The benefits of FE include:

- The opportunity to analyse programme strengths and weaknesses
- The opportunity to assess any discrepancies between the expected direction and outputs of a programme and what is happening in reality
- The opportunity to strengthen or improve a programme early in its development and continuously
- The development of a culture of reflectiveness, responsiveness and continuous improvement

ESF can assist you in designing and/ or implementing a rigorous and iterative formative evaluation process and feedback system that improves programme quality. The evaluation system can also help you produce cost savings because of the early identification and remediation of implementation issues.

Another benefit is that the development of a formative evaluation system usually means that any data requirements for ongoing monitoring or reporting purposes can be easily met, helping organisations improve external accountability and administrative efficiencies. It also facilitates and greatly simplifies any ex-post evaluation requirements.

## Ex-post evaluation

Ex-post evaluation is concerned with evaluation of an intervention after it has been implemented.

The aim is to identify success and constraint factors, to assess the sustainability of results and impacts and to draw conclusions that may inform other interventions (see <http://www.oecd.org/development/peer-reviews/2754804.pdf>).

While there is no 'one size fits all' methodology, ex-post evaluations usually employ a combination of methodologies including literature reviews, stakeholder workshops and interviews, beneficiary surveys and analysis of programme documentation and data – including bibliometrics – to address the following themes:

**Relevance:** *To what extent does the programme/policy address the problem it was designed to solve?*

**Effectiveness:** *To what extent has the programme met its stated objectives?*

**Efficiency:** *What is the relationship between inputs (financial and human resources) and outputs achieved?*

**Impact:** *To what extent can the outcomes achieved be attributed to the intervention?*

Of the above themes, impact is the most difficult to assess and is of increasing interest to funders including the European Commission. Impact evaluations attempt to measure benefits that are attributable to the intervention alone. Attribution is the greatest evaluation challenge in that the question of what would have happened to the beneficiaries in the absence of the programme has to be determined (the counterfactual). This is easier to do if an ex-ante evaluation has been performed in the sense that the methods for addressing the counterfactual would have been built into evaluation plans. Moreover, at a minimum, the outcomes achieved can be compared to what was anticipated or planned at the outset.

Impact analysis requires the collection of outcome data on participant and nonparticipant groups, as well as accompanying social and economic data that may have had an effect on the intervention.

There are different ways of isolating the impact of programmes depending on the nature and importance of the intervention being evaluated and the resources available. Empirical methods are favoured when there is a strong need to demonstrate causality. These include 'before and after' designs where baseline measures are taken at 'pre' and 'post' intervention states and 'comparison' or 'control group designs' where a 'treated' group is compared to an 'untreated' group which is very similar in all other respects.

The similarity of the control or comparison group is a central requirement and can be enhanced through statistical or other means. For research funding programmes, for example, it may be possible to compare the outputs and achievements of awardees to non-awardee applicants (close to funding thresholds to enhance comparability).

Impact analysis is challenging and is not always financially or operationally achievable. ESF is well placed to advise you on the different methodological options available and to ensure that choices made are underpinned by an understanding of the strengths and weaknesses of different methodological approaches.

