

IMPACT GUIDE

Moving from evaluation to impact management of start-up support programmes

Impulses, orientations and approaches for start-up supporters, programme managers and accompanying research to assess and manage the impact of start-up support programmes



BORDERSTEP INSTITUTE
for Innovation and Sustainability

Science with Impact

Imprint

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Contents

Imprint	2
Contents	3
1 Introduction	5
2 Moving towards impact orientation	7
2.1 What is “impact”? The results staircase of start-up support	8
2.2 Impact on what? Three examples of target and impact horizons	10
2.3 Why measure and manage the impact of start-up support programmes?	12
2.4 Differences between programme evaluation and impact assessment	12
2.5 The programme impact cycle	15
3 Impact management of start-up support programmes	17
3.1 Impact planning	18
3.1.1 Setting outcome and impact objectives	18
3.1.2 Developing an impact philosophy	20
3.1.3 Developing a logic model	22
3.2 Impact analysis: What, when and how to collect and evaluate data?	25
3.2.1 Causality and contribution: Possibilities and limitations of impact analysis	25
3.2.2 What to measure? Selecting suitable indicators	27
3.2.3 How to collect and evaluate data? Deciding on the basic approach to impact analysis	31
3.2.4 When to collect data?	33
3.2.5 Cohort-internal evaluation: Assessing potential impact	34
3.2.6 Comparative evaluation: Benchmarking and control groups	35
3.3 Improving and communicating your impact	37
3.3.1 Mission-oriented thinking: Programme design	37
3.3.2 Learn & steer: Using results for programme optimisation	37
3.3.3 Legitimate & motivate: Securing the programme	38
4 Outlook: Tasks and next steps	40
Glossary	42
Appendix	43



Preface

Mankind is sawing at the branch on which it is sitting on: every day we receive alarming news about the progress of climate change. Solutions are needed! The challenges are manifold: the need for action and the time pressure, but even more so the consequences of inaction. It is therefore all the more important that sustainable and responsible entrepreneurial action becomes the new principle for our economic activity instead of a maxim of “higher, faster, further”. Green start-ups can make a valuable contribution here.

In the last ten years, more than 200,000 companies have been established in Germany as “green start-ups” in the fields of the circular economy, resource and energy efficiency, and renewable energies. Since 2006, more than 1.2 million new jobs have been created in Germany. However, green start-ups are an important target group not only from an economic perspective, but also from an ecological one: studies show that around two thirds of all “radical” innovations come from new ventures, rather than established companies.

But what sustainability effects do these green start-ups and the corresponding support programmes have? Little is known about this so far. The German Federal Environmental Foundation (Deutsche Bundesstiftung Umwelt DBU) sees itself as a learning organisation in the promotion of green start-ups. The IMPACT guide is the result of

a DBU-funded research project on the development of methods for measuring the impact of sustainability-oriented start-up support. The project investigated innovative approaches for measuring and managing the economic, ecological and social impact of start-up support programmes. Previous studies were primarily limited to economic indicators such as the survival rate, the growth rate and the number of jobs created. Ecological effects, so-called “impacts”, such as the reduction of greenhouse gas emissions, the increase in resource efficiency or the use of renewable raw materials have not yet been systematically measured for start-ups.

But for these innovations to flourish, the framework conditions must be right. This guide addresses the issue of systematic impact measurement and, with a combination of a sustainability-based impact model and controlled impact measurement methodology, provides tools for an evidence-based and multidimensional impact measurement of support programmes. Thus, an analysis is possible not only at the level of individual start-ups (micro-level), but also at the programme level (meso-level) and the market, societal and ecological level (macro-level). This enables a holistic development of start-up support.

Alexander Bonde
Secretary General of the German Federal Environmental Foundation (DBU)

1 Introduction

Are we creating measurable added value for our target groups? Are we having positive impacts on the economy, society and the environment with our programme offerings? And how can we substantially improve these positive effects? Whether in the public, private or non-profit sector - these questions are gaining more importance against the backdrop of the major societal challenges (Grand Challenges), such as climate change, pandemics or natural resource scarcity, and the sustainability goals set by policy makers and supported by many societal actors. We now see a clear shift from placing a mere focus on services provided to making impact the focus of discussion and the benchmark for public, corporate and social action.

The Grand Challenges and the sustainability goals formulated at regional, national and international level require a multidimensional understanding of success of start-up support.

The example of the Federal Government's High-Tech Strategy 2025 shows that there has been a fundamental shift in research and innovation funding over the past decade towards a so-called mission-oriented funding policy. In this context, the focus is on overcoming the Grand Challenges. Concrete "missions", e.g. "developing new technologies", "substantially reducing plastic emissions into the environment" or "safe, connected and clean mobility" are being defined as tasks for research and innovation, to which they should make a clear contribution. In contrast, this kind of mission and impact orientation, which goes beyond market success and economic targets, can hardly be found in start-up support programmes.

The goal orientation of start-up support has so far been almost exclusively on questions of market usability, competitiveness and economic performance indicators. The survival rate of start-ups, their returns and market shares (scaling) or the number of jobs created are undoubtedly important success factors, but are limited to the economic added value for society. The Grand Challenges and the sustainability goals formulated at regional, national and international level require a multidimensional understanding of success of start-up support in the future. What contribution do the funded start-up projects and young companies make to reducing greenhouse gas

(GHG) emissions, to sustainable lifestyles or to establishing environmental and social standards in international supply chains? These are the kinds of questions that policy makers, citizens and entrepreneurs will be addressing to the start-up support system and the funding and investment resources it provides.

This guide aims to support the development of a holistic understanding of impact and success in start-up support. The paper aims to strengthen the multi-dimensional impact measurement and assessment of start-up support programmes as well as a systematic and sustainability-oriented impact management in the start-up support ecosystem. The application of the concept presented is intended to provide start-up support organisations with generalisable findings on both the programme and case-by-case level.

The IMPACT Guide is explicitly aimed at public and private start-up supporters, regardless of whether their focus is more on financial funding or ideational support (e.g. mentoring, coaching, networking), and whether the support activities relate to the pre-seed, seed, start-up or growth phase. It serves to support programme managers, implementation teams and those entrusted with evaluation and accompanying research in systematically measuring and optimising the holistic impact of support programmes on target groups, the market, society and environment.

Impact management

Here, impact management is understood as deliberately designing and managing processes and influencing factors in order to achieve intended impacts of support programmes.



The project IMPACT of sustainability-oriented start-up support

This IMPACT Guide was developed within the project “IMPACT of sustainability-oriented start-up support: Innovative approaches for measuring and managing the economic, ecological and social impact of start-up support programmes” by the Borderstep Institute for Innovation and Sustainability.

Funded by the German Federal Environmental Foundation, the IMPACT project developed a model and methodological framework for a scientifically grounded, evi-

dence-based assessment of the economic, ecological and social impacts of start-up support programmes.

The development of these instruments aimed to provide start-up supporters with innovative funding approaches in control and steering processes for the achievement of their self-imposed impact goals. In this way, the project was to contribute to strengthening the transformation to a sustainable economy and to supporting the sustainability policy objectives in Germany.



The DBU Green Start-up Programme

The DBU’s Green Start-up Programme is the first German funding programme at national level to provide targeted support for start-ups whose innovative solutions contribute to a green economy. The focus is on both financial support and support for developing entrepreneurial competencies and skills.

Green start-ups are particularly attractive high-potentials, both in terms of economic performance as well as social and environmental impact. Their promotion is of great importance in view of the necessary transformation towards a sustainable economy.

More information about the programme:
[› www.dbu.de/startup](https://www.dbu.de/startup)

Before turning to the present approaches to impact measurement and assessment, it may be helpful to consider the following important aspects of impact management:

- **Apply it effectively!** By embedding holistic impact assessment and management approaches into support programmes, the aim is to maximise a programme’s positive effects on the market, the environment and society. Establishing programme legitimacy and motivating programme participants also play an important role here. Reducing impact measurement to a mere reporting instrument should be avoided.
- **Involve stakeholders!** Implementing holistic impact management requires the participation and cooperation of various internal and external stakeholders. In order to avoid misunderstandings, the interests and expectations of all stakeholders should be addressed at the very beginning of impact planning. Important aspects that require joint clarification include the scope of the impact assessment as well as the available resources. Clear and continuous communication as well as transparent working structures are thus crucial for successful impact management.

- **Check the benefit-cost ratio!** The question as to whether the introduction of a holistic impact management is “worthwhile” must always be examined on a case-by-case basis. Criteria to consider include the start-up support programme’s specifications, the specific programme phase and your own priorities and values. You should weigh up the arguments presented in chapter 2.3 (“Why measure and manage the impact of start-up support programmes?”) for yourself. In general, it can be said that the benefit-cost ratio can be positively shaped by following a “lean impact management” approach, focusing on what is essential for you and keeping the effort “lean” in this way. As chapter 3.2 (“Impact analysis: What, when and how to collect and assess data?”) shows, there is a broad “menu” of analysis and assessment approaches that vary in complexity.
- **Link to existing management and reporting systems!** Upon availability, use opportunities to save resources by linking impact management to management and evaluation systems already established in your support programme (keyword: integrated management systems). For example, create synergies and avoid parallel worlds in data collection for impact management and quality management, which includes evaluations focusing on inputs and outputs.
- **Take account of influencing factors!** As part of a holistic impact management, you should consider which factors have a significant influence on the success of start-up and business support programmes. To this end, we have evaluated the current state of research. The table “Factors influencing the success of start-up and business support programmes identified on the basis of empirical studies” in the appendix provides an overview.

2 Moving towards impact orientation



“Taking into consideration impact objectives, especially in sustainable start-up support programmes, is important and becoming increasingly decisive in the development of a forward-looking start-up infrastructure. In order to ensure the competitiveness of the German and European start-up landscape, it is therefore essential to consider direct and indirect impacts at an early stage. Impacts not only pertain to individual founders but also society as a whole. They must be seen in their entirety and ultimately represent the success of start-up support. The IMPACT Guide is therefore an important instrument both for future planning of new programmes and for improving existing start-up support offers.”

Dr Matthias Wittstock
Wittstock Consulting, former Head of Division for Start-ups, Entrepreneurship, Advisory Services on Financing and Funding at the German Federal Ministry for Economic Affairs and Energy

If we look at the many public and private start-up support programmes in Germany, it becomes apparent that only very few programmes are systematically evaluated and many have no or only a fragmented monitoring system in place. On the one hand, this can be explained by the fact that many programmes are still young and a systematic evaluation and monitoring system has not yet been established. On the other hand, this is also due to the fact that in contrast to innovation policy there has so far been little “mission-orientation” in start-up policy. Here, we observe a lack of requirements with regard to the measurement and assessment of the medium- and long-term impacts of start-up support programmes on economic, social and ecological objectives. This also is the

Supplementary material

Supplementary material to the IMPACT Guide that provides examples of data-collecting instruments for the impact evaluation of start-up support programmes (e.g. questionnaires suitable for evaluation in the pre-support phase or early support phase) is available for download on the Borderstep website: www.borderstep.org/projects/impact-of-sustainability-oriented-start-up-support/

conclusion drawn in the final evaluation of the funding programme “EXIST Culture of Entrepreneurship”. It states that there are “no requirements ... to specify quantitative or qualitative target indicators” for the support programme and that there are “no requirements for a uniform system of indicators for project progress and for measuring results set to beneficiaries”¹. The Gründungsradar 2020 (Start-up Radar) also concludes that “independent of start-up support services at universities, integration of monitoring and evaluation into programmes takes place too late and, in the case of complex topics, too short an evaluation period is chosen”² (Stifterverband 2021, p.50).

It is evident that there is a clear gap in the German start-up support system when it comes to including direct and indirect effects at an early stage. In order to close this gap, we first need to specify what exactly is meant by “impact”. For this purpose, the “results staircase of start-up support” is presented in the following chapter. In addition, we highlight the main reasons that speak for applying impact orientation.

2.1 What is “impact”?

The results staircase of start-up support

In evaluation research and impact management practice, the theory of change is predominantly used (see infobox: Theory of Change), which assumes a linear relationship between the inputs, activities and outputs of a programme or project and the effects caused by them. With regard to the effects, a distinction is made between the outcomes (effects on the target group of the programme or project) on the one hand and the impacts (effects in the wider system) on the other. Depending on the impact philosophy (see Chapter 3.1.2) applied, it is either assumed that effects can be causally attributed to an intervention and therefore, it is possible to quantify the intervention’s specific impact share, or that the generated effects cannot be traced back solely to an intervention and only represent a contribution. Here, a results chain and a fundamental connection between the activities of start-up support and the resulting outcomes and impacts are to be assumed. Further, it is assumed that along the results chain there are various external factors that influence the level and type of generated impact (see Annex, table 3) and that there may also be factors that prevent an impact altogether.

In order to illustrate the assumed logical relationship, we use the idea of the “results staircase”³, which has been adapted to the specific conditions of start-up support. It assumes that the levels of effect shown in Figure 1 can be set in motion by the “intervention” of a programme or a support activity.

The impact logic presented in the results staircase assumes that sufficient resources (money, time, partners, etc.) are invested into a planned support programme (level 1) and that the quality of those involved in the programme (supported start-up teams, programme managers, coaches and mentors, cooperation partners, etc.) is high or at least sufficient (level 2) to achieve defined outputs. The inputs “sufficient resources” and “quality of programme participants” ensure that the support services are provided as planned (level 3), that they are used by the founding teams (level 4), and that the founding teams are satisfied with the services (level 5). The three outputs mentioned above then lead to or contribute to the effects on the “next levels”.

The term impact

Impacts are medium- and long-term effects that occur as a result of an intervention, e.g. a support programme. They can be positive or negative, intended or unintended. Two levels of impact can be distinguished:

- 1. Outcomes:** Short-term and medium-term effects on the target group(s) that are caused by or attributable to an intervention.
- 2. Impacts:** Long-term effects that are caused by or attributable to an intervention and refer to higher level changes in the economy (among customers, suppliers, market structures), society or environment.⁴

Level 6 shows the effects on the target group of the support programme (outcomes). In the case of start-up support programmes, the focus is on clarifying the viability of a business idea (“venture validation”), the development of team quality (suitable composition of the start-up team in terms of professional and human skills, founders’ competences) and the resources of the start-up team (financial resources, specialists, contacts to investors etc.). Clarifying the business viability is of fundamental importance. Here, a support programme can make an important contribution by working out the non-viability of a business idea, adapting and further developing it or, if necessary, abandoning the idea altogether. At this point, the logic of the results staircase assumes that the business idea is positively validated in its original or adapted form.

The effects achieved at level 6 are the basis for ensuring that the start-up’s performance in economic, social and ecological terms (triple bottom line (TBL)) and its resilience are higher than they would have been without the support programme (level 7). On the results staircase, the outcomes contribute to generating change beyond the target group. These impacts refer to changes in the start-up’s customers and other market partners (level 8) as well as to the discernible transformation of the market, such as the generation of new market segments or the increase of market shares for sustainable products and services (level 9). At the end of the results staircase, the intervention of a support programme then generates desired ecological and societal effects (level 10).

Figure 1: The results staircase of start-up support



Source: Own figure based on Kurz & Kubek 2018, p. 5.



Theory of Change

The theory of change (TOC) has been developed to a large extent in the context of social entrepreneurship and corresponding support programmes. TOC explains how change can and should take place. It assumes that despite complex systemic conditions, linear cause-effect chains can be described and designed, and reveals all underlying assumptions. In particular, a TOC assumes linear causality between inputs/incomes, activities, outputs, outcomes and impacts (“IAOOI”). While many TOC applications are limited to the chain up to the outputs or outcomes, other interpretations attach particular importance to the impact aspect. Various approaches exist to differentiate between outcomes and impacts.

Here we follow the approach taken in the “Social Impact Navigator”, which refers to outcomes as the effects on the target groups of an organisation or a programme, while impacts comprise the effects caused by the outcomes at the societal level (market, society, environment). The DeGEval – German Evaluation Society also defines outcome as “effects ... at the level of the target group(s)” (DeGEval 2017, p. 69), but understands “impact” to mean “impacts of an object of evaluation outside its intended scope” (DeGEval 2017, p. 67). From the perspective of mission-oriented start-up and innovation policy, the latter understanding is not expedient and is not followed here.^{5 6}

2.2 Impact on what? Three examples of target and impact horizons

The objectives, guiding concepts and “impact horizons” to which a start-up support programme wishes to refer must be determined on an individual basis and depend on the programme’s specific political and other objectives.

We present three possible impact horizons to which impact management can refer. The examples cover different geographical and political spheres (global, regional, national).

Global: The 17 Sustainable Development Goals

The 17 Sustainable Development Goals (SDGs) with their 169 sub-goals enshrined in the UN Agenda 2030 were adopted in 2015 to steer the world onto an economically, socially and ecologically sustainable development path by 2030. The implementation of the SDGs at national level is based on the sustainability strategies of the member states and thus also influences the economic promotion and investments of the respective countries.



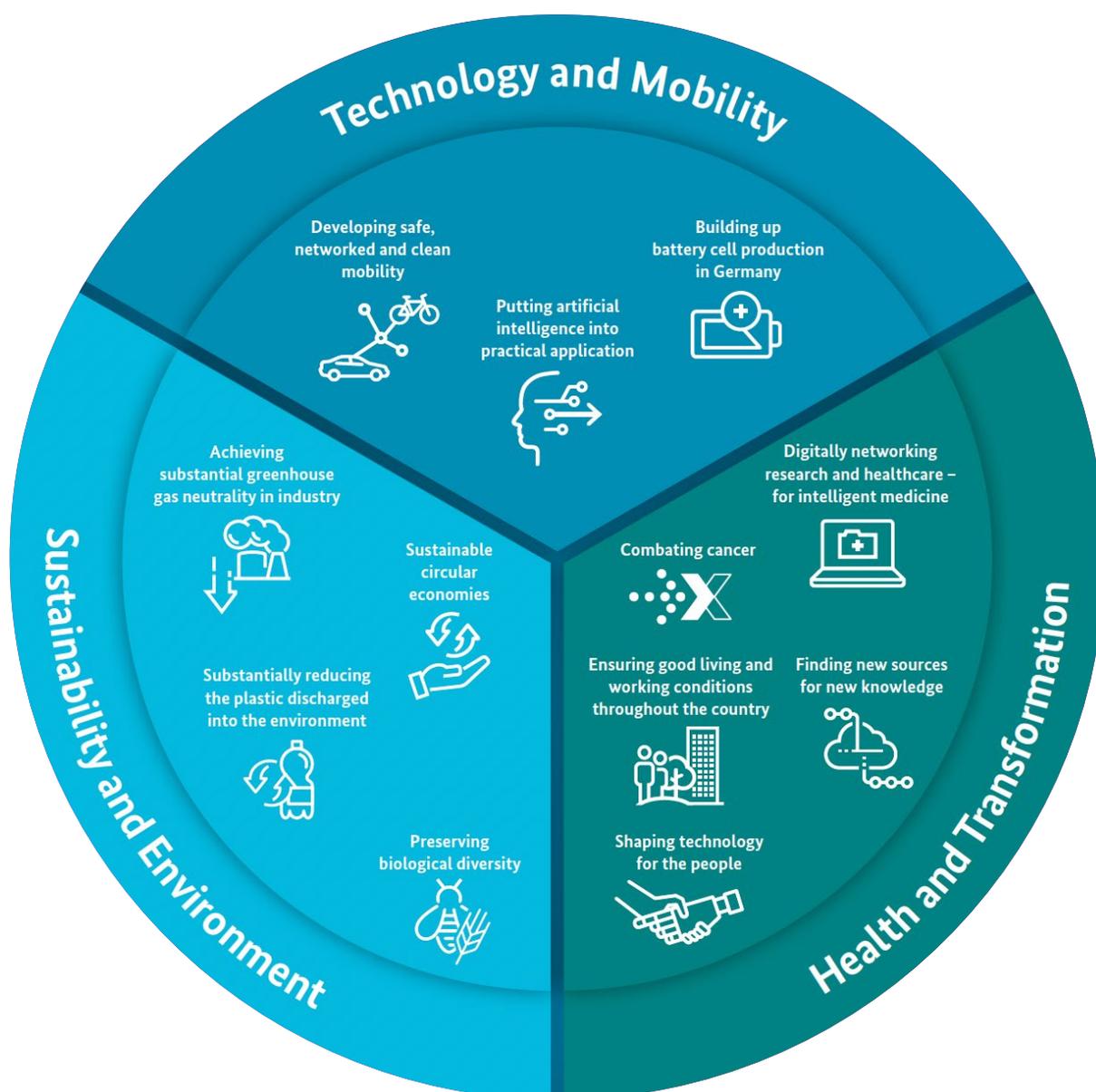
Source: The Global Goals.
Available at <https://www.globalgoals.org/>.

Regional: Horizon Europe

As one of the largest funding programmes for research and innovation worldwide, the European Union's newly launched Horizon Europe programme aims to make a significant contribution to developing an innovation-based society and competitive economy and fostering sustainable development. Aimed at delivering on the EU's strategic priorities of green and digital transitions, the programme focuses on global challenges such as "Climate, Energy and Mobility" and "Food, Bioeconomy, Natural Resources, Agriculture and Environment".

National: The 12 missions of the High-Tech Strategy Germany 2025

With the High-Tech Strategy 2025, Germany is pursuing the goal of strengthening its future competencies and establishing an open culture of innovation. Through strategic funding of research and innovation, the Federal Government is working to develop "knowledge for impact". The funding activities are geared to the major challenges facing society and include a focus on the areas of "Sustainability, Climate Protection and Energy", "Mobility", "Urban and Rural Areas", and "Economy and Work 4.0". A total of 3.5 % of the GDP is to be invested to this end by 2025.



Source:
The German Federal Government (2021).
The High-Tech Strategy 2025 – Progress Report, p. 23.



2.3 Why measure and manage the impact of start-up support programmes?

Aligning the management of start-up support programmes with impact dimensions has three main functions: On the one hand, it is a matter of thinking and acting in a mission-oriented way, i.e. designing a support programme in an impact-oriented way from the very beginning and developing a common understanding of the programme with a view to the Grand Challenges. This relates to the programme planning phase. Secondly, it is about learning & steering, i.e. about improving the programme. For this purpose, impact management can support in generating new insights into the efficiency and effectiveness of a programme which in turn can help to avoid deviations from set objectives and to introduce improvements. Thirdly, the collected programme data can be used to legitimise the effectiveness of the support programme, especially to external actors, and to motivate programme participants. This serves to secure the programme. Impact management can thus function as an important innovation driver of start-up support and opens up the possibility for start-up support actors to actively maximise effects: The individual reasons that speak for impact management of start-up support programmes are listed in Figure 2.

“The Impact Guide provides assistance with systematic impact measurement of start-up support programmes. It helps programme managers and programme developers to make transparent their goals and ultimate effects and evaluate them at the output, outcome and impact level. Only this transparent approach enables continuous learning and improvement of the impacts of support programmes. This benefits all actors in the start-up ecosystem, especially start-up founders.”

Julia Gunnoltz,
Startup Affairs at the Berlin Senate Department for
Economics, Energy and Public Enterprises

Figure 2: Reasons for impact management in start-up support

Mission-oriented Thinking & Acting (Planning the programme)	Learn & Steer (Optimising the programme)
<ul style="list-style-type: none"> ▶ Plan the programme in a goal- and mission-oriented way from the outset (Grand Challenges) ▶ Design the programme transparently along the defined impact objectives ▶ Establish a common understanding of the programme ▶ Increase the attractiveness of the programme for potential programme participants ▶ Support the selection of programme participants ▶ Support more effective and targeted use of financial resources ▶ Enable comparability with other programmes in order to exploit synergy potentials 	<ul style="list-style-type: none"> ▶ Monitor the quality of the programme and determine its effects ▶ Support learning culture and learn from lack of achieving objectives ▶ Increase the efficiency and effectiveness of the support programme ▶ Improve demand-driven support by optimising inputs and outputs ▶ Continuously improve and maximise methods and processes of impact analysis ▶ Optimise the contribution to a mission-oriented innovation policy ▶ Maximise positive impacts on the environment and society
Legitimise & Motivate (Securing the programme)	
<ul style="list-style-type: none"> ▶ Demonstrate the added value and meaningfulness of the programme for the target groups and society (contribution to solving the Grand Challenges) ▶ Funding providers can verify the impact of their financial investments ▶ Make visible and better communicate indicator-based results and successes of start-up support ▶ Use impact-oriented sustainability reporting as a long-term tool for policy advice ... ▶ ... and as a PR instrument to create differentiation and strengthen reputation ▶ Justify programme activities to funding providers and policy, also to ensure follow-up funding ▶ Help to make visible how participating start-ups contribute to sustainable development, and facilitate follow-up financing ▶ Motivate programme staff by demonstrating impact and the meaningfulness of their commitment ▶ Increase interest, commitment and participation of external actors (network, contacts) ▶ Trigger ripple effects and reproduce sustainable action: Contribute to the establishment of further impact-oriented support programmes and approaches 	

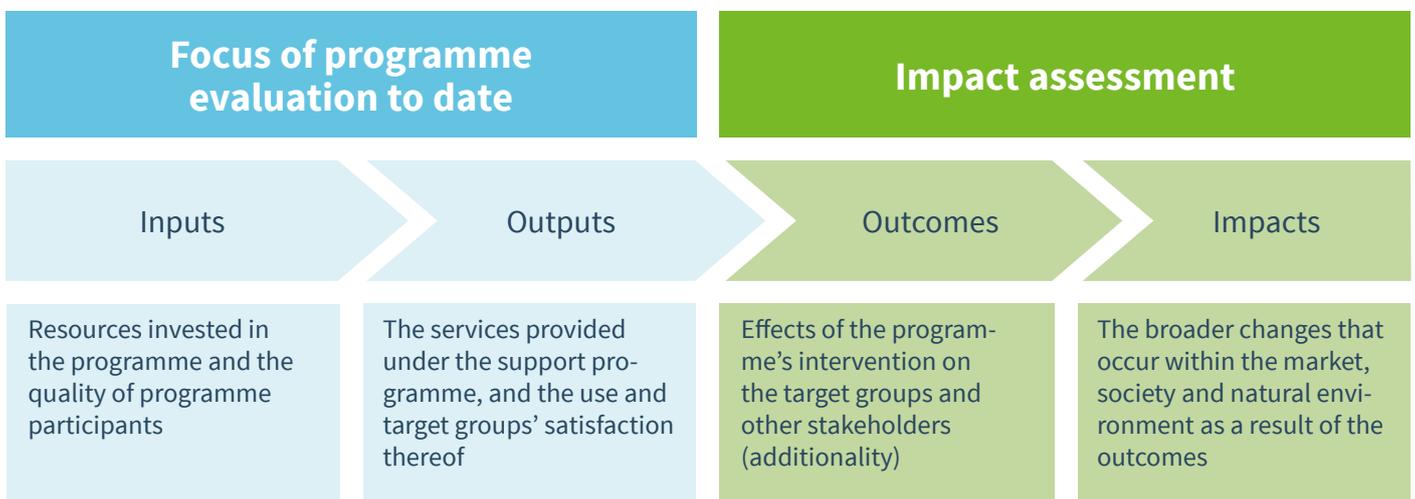
Source: Own figure.

2.4 Differences between programme evaluation and impact assessment

Programme evaluations in the field of start-up support to date have focused on the analysis of programme characteristics and selected performance data on resource inputs, activities and outputs. Outcomes (effects on the beneficiaries) are hardly considered and impacts (higher-level effects beyond the beneficiaries) are usually not considered at all. Against this background, we distinguish between the practice of programme evaluation to date (which focuses on evaluating input, output and short-term outcomes at the end of funding) and medium- and long-term impact assessment (outcomes and impact). These differ significantly in terms of the impact levels and the impact periods they consider.⁷ To determine programme effectiveness in achieving its ultimate impact goals, it is beneficial to go beyond programme evaluation practiced to date and undertake a comprehensive impact evaluation.

In order to be able to determine impact successes, it is necessary to consider the programme inputs and outputs. While impact assessment is linked to programme evaluation, it explicitly focuses on the outcome and impact dimension.⁸ At the level of outcomes, it examines the extent to which positive changes occur in the target group of the support programme as a result of the services and offers provided by a programme. Changes in the target group’s knowledge, attitudes, skills and living condition are made visible. These changes form the basis for sustainable changes beyond the target group in the market, society and environment, which are part of the impact dimension.

Figure 3: Differences between programme evaluation and impact assessment



Source: Own figure.

The distinction between the practice of programme evaluation in start-up support programmes to date and impact assessment makes clear that effects at the level of

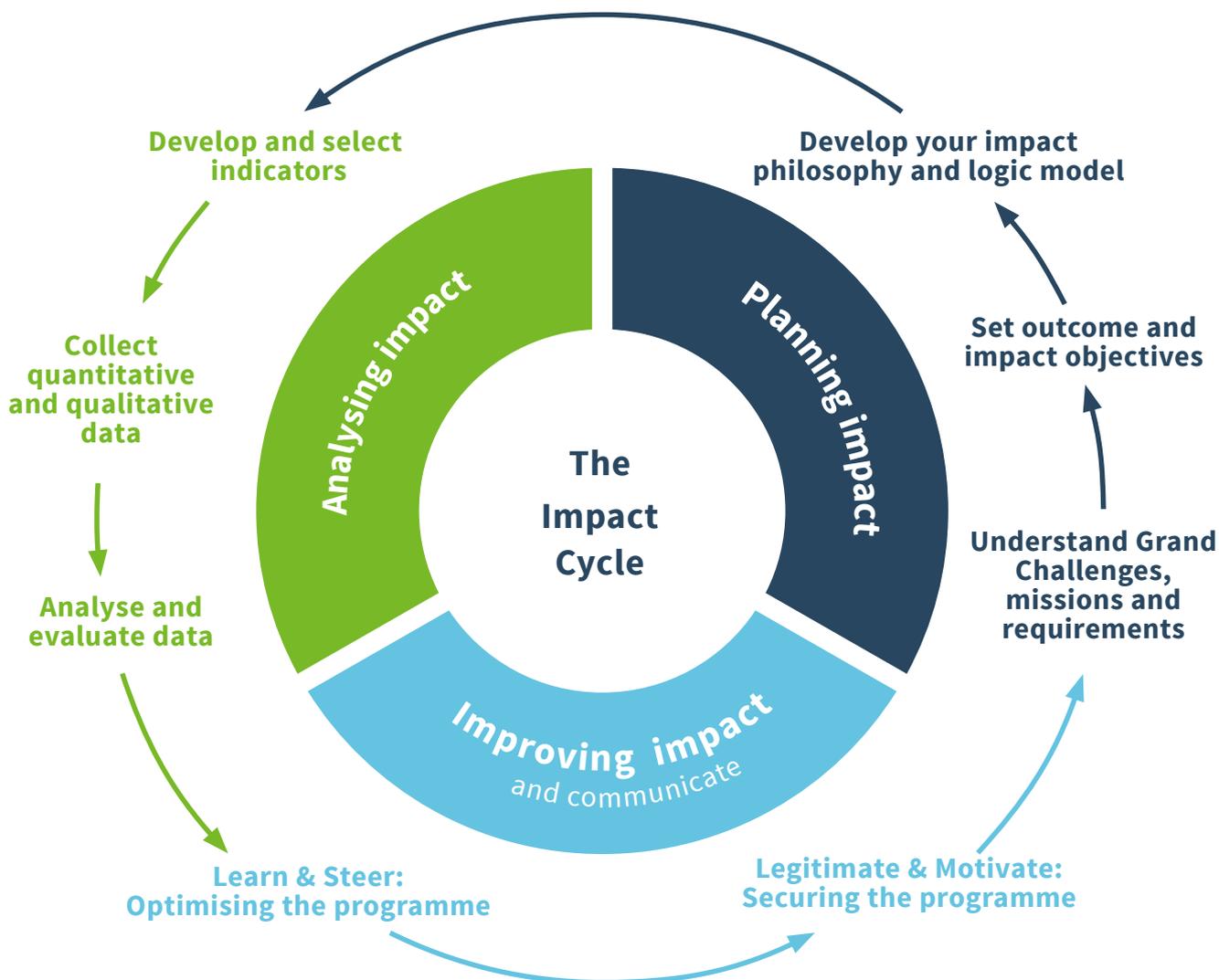
the target group(s) as well as at the societal level can only be achieved and measured on the basis of outputs.

2.5 The programme impact cycle

Processes of impact assessment and management of start-up support programmes can be understood as a cycle.⁹ In order to manage support programmes in an impact-oriented manner, impact must be considered from the onset. This means that desired effects, which are formulated as concrete goals, are ideally already taken into account when planning or revising a support programme. Planning impact also includes the development of an impact philosophy (see Chapter 3.1.2) and a logic model (see figure 8) - an important step in making clear the intended cause-effect relationships of a programme and a prerequisite for subsequent impact evaluation and management.

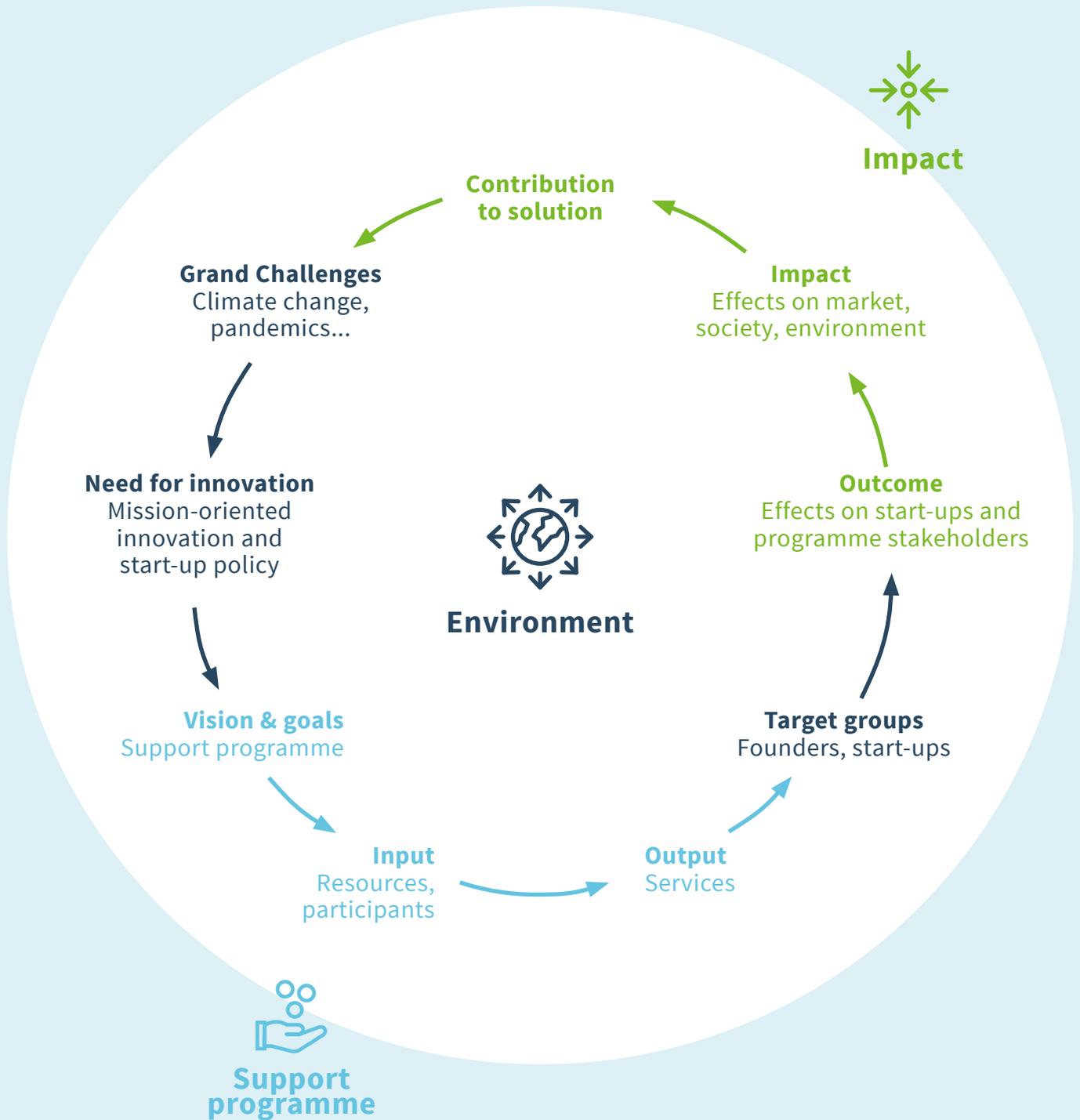
Based on a set of indicators tailored to the support programme (see Chapter 3.2.2), both quantitative and qualitative information is measured and evaluated during the impact analysis. The final step in the impact cycle involves the improvement of the programme based on the evaluation results. This also includes the external and internal communication of the results. Based on the improvements and renewed impact planning, the impact cycle begins anew. The programme impact cycle is part of a medium and long-term societal impact cycle, as shown in Figure 5.

Figure 4: The programme impact cycle



Source: Own figure based on Kurz & Kubek 2018, p. 7.

Figure 5: The big picture: Impact management as part of the societal impact cycle



Source: Own figure based on Kurz & Kubek 2018, p. 45.

Are you still providing services or already having an impact? Assessing your status quo

1 Impact-oriented newcomer

You are developing a new, innovative start-up support programme. In view of ecological, social and economic challenges, you understand the importance of holistic impact orientation and want to incorporate this into your new programme from the outset. The planning phase of your support programme offers you the ideal scope to design and manage your programme in an impact-oriented way. This means that the specific impact management strategies and plans you develop are already part of the design process of the programme.

2 Impact-oriented change maker

You plan on relaunching your existing support programme or rather, revising and expanding current programme offers and services. Taking up impact management practices can support your relaunch and provide you with important insights into where you can start to make changes to the programme.

3 The next step for those experienced in evaluation

You have been supporting start-ups with the services offered in your programme for some time now. You monitor relevant parameters continuously and conduct evaluations or commission them at regular intervals to gain insights into the results of your programme. In the context of the upcoming programme revision, you would now like to go a step further. By carrying out a first impact analysis you are moving towards impact orientation, initially focusing on a before-and-after comparison of the supported start-ups (cohort). This allows you to measure the short-term effects on the beneficiaries (outcomes) and to undertake an initial assessment of the medium- and long-term impact potential. On this basis, you then address the medium- and long-term effects of your existing support programme, for example by using a benchmarking approach (see Chapter 3.2.3) to compare your beneficiaries with a control group.

4 Continuous optimiser with impact objectives

You make ongoing adjustments to your well-established support programme, but not on the basis of comprehensive evaluations and reviews, but rather continuously and in small steps. This is for example due to the fact that the funding of the programme takes a rather short-term focus and is provided by your funding provider as tranche funding. While this may limit your scope for action in setting up an impact management system, you can nevertheless

take the necessary first steps towards impact orientation. You should strive for securing an independent budget for evaluation or impact analysis, as even a “lean” impact management is hardly manageable without sufficient financial resources. Before-and-after surveys of beneficiaries can then be carried out with reasonable effort to assess short-term effects on the beneficiaries and make rough impact potential assessments. Moreover, you can systematically analyse selected “representative” start-ups after two or more years and create individual impact profiles (see chapter 3.2.3), which can then be used as a basis for impact-oriented improvements to your programme.

3 Impact management of start-up support programmes



“In recent years, universities in Germany have established a strong, dynamic culture of start-up support with the help of many committed actors from research, business and policy. In order to feed into and channel this innovative vigour for designing a liveable future, we see impact management as the next major task for start-up support at universities. The IMPACT Guide provides initial orientation on how impacts of start-ups and university support programmes at different levels can be systematically measured and analysed in an evidence-based way.”

Dr Klaus Sailer

Professor for Entrepreneurship at the Munich University of Applied Sciences and Spokesperson for the think tank “Denkfabrik Hochschulen und Entrepreneurship”

3.1 Impact planning

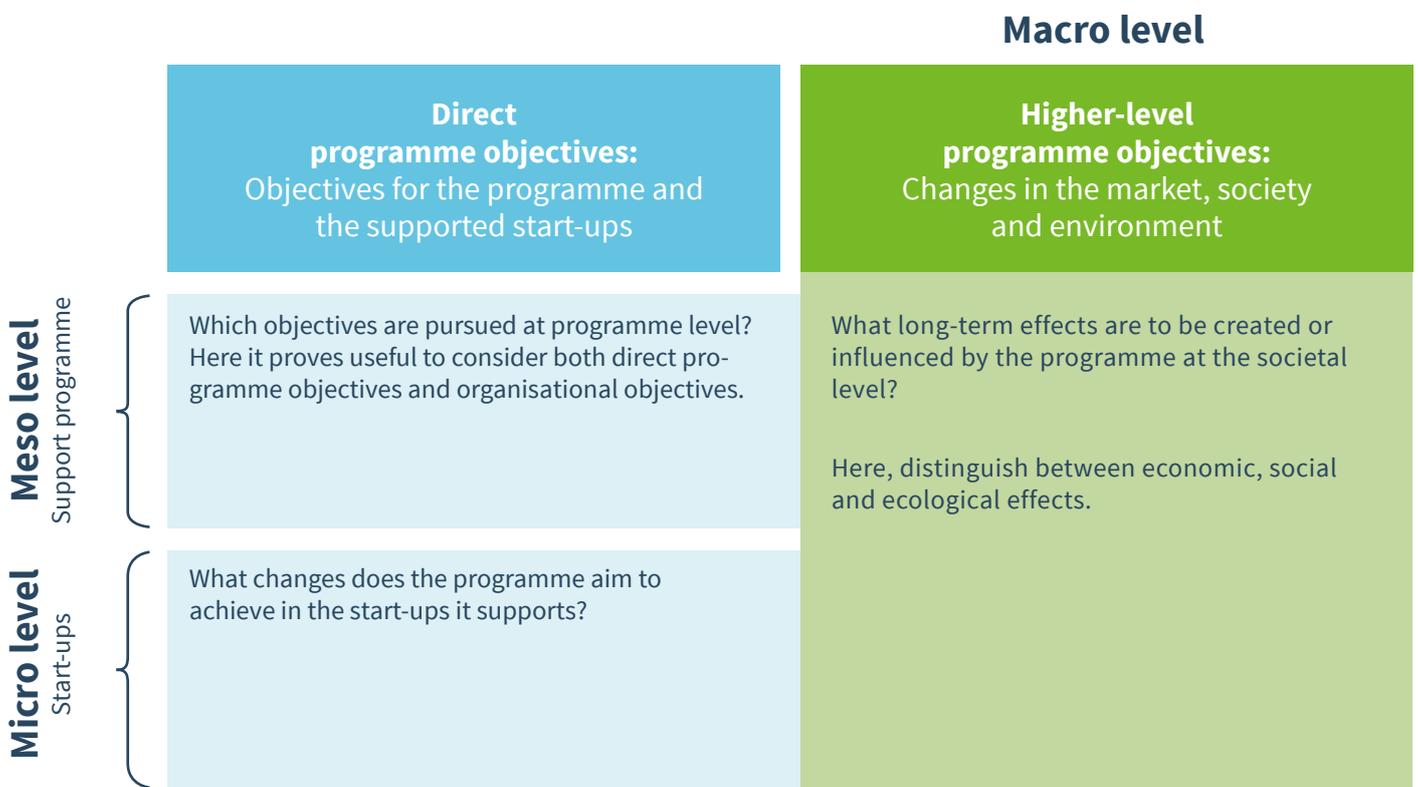
3.1.1 Setting outcome and impact objectives

Central to impact planning is the formulation of objectives and the regular reflection of already set objectives, as this is the prerequisite for evidence-based impact assessment and management of start-up support programmes. Accordingly, sufficient time and energy should be devoted to both setting and adapting objectives. Hereby, the focus should be on establishing the programme objectives in a participatory process in order to establish a common understanding of the intended programme effects.

Both the management team of the support programme and relevant stakeholders, such as higher-level funding providers and supported start-ups, should be involved in the process. The implementation of different workshop formats is suitable here. Ultimately, clearly defined impact objectives also offer advantages for the programme’s public relations activities and the acquisition of new programme funds.

When specifying the impact objectives, it can be helpful to formulate the set objectives at three levels: the target group level of the supported start-ups (micro level), the programme level (meso level) and the societal level (macro level):

Figure 6: Setting objectives for a start-up support programme at micro, meso and macro level



Source: Own figure.

The multi-level perspective

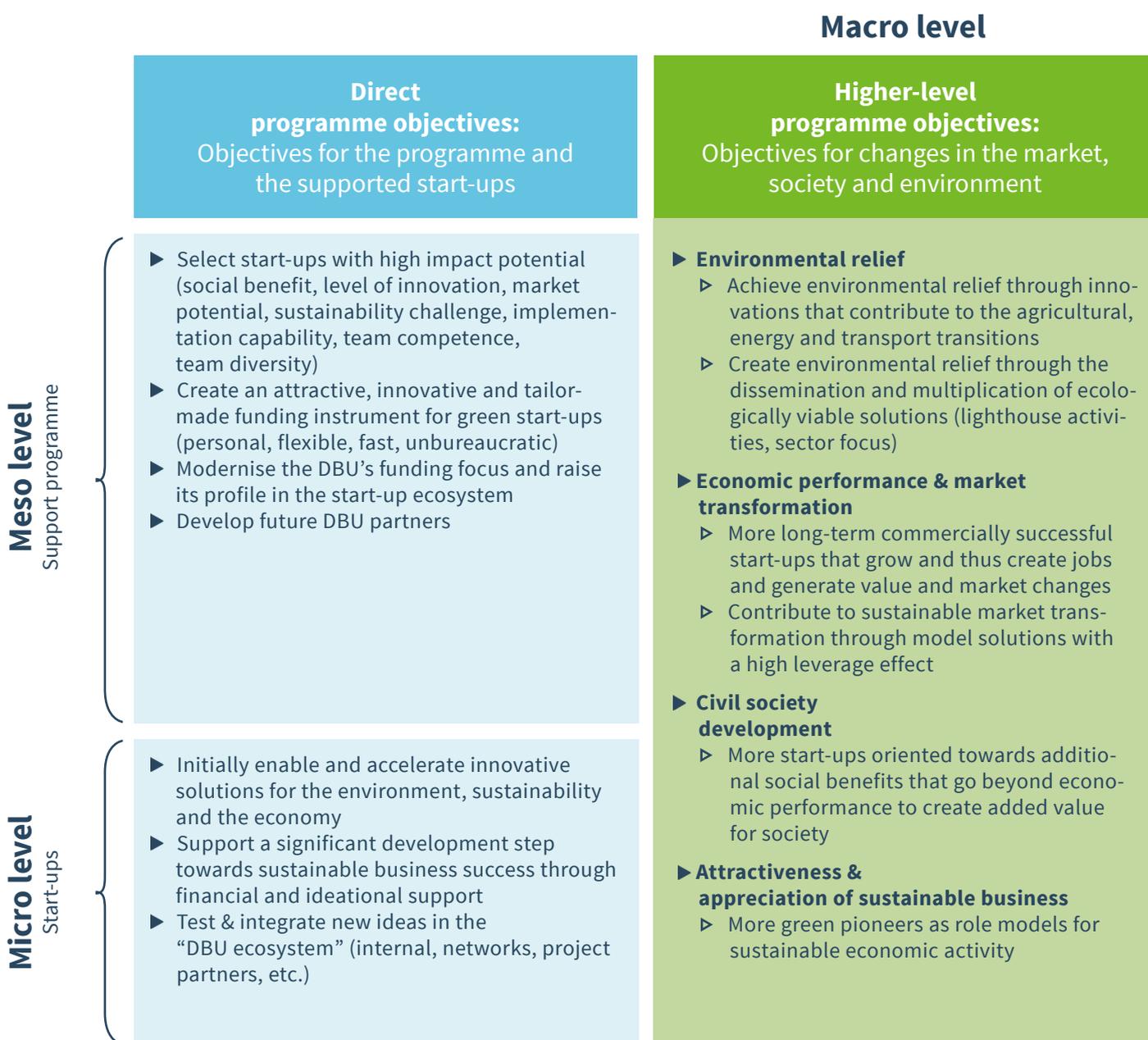
The now widely used heuristic of the multi-level perspective (MLP) is regularly applied in innovation systems and transformation research. It represents a systemic way of thinking and an approach to illustrate complex relationships and processes that take place on and between

different levels of observation. Its advantage is that the system representation can be individually defined and constructed depending on the context of application and knowledge interest.¹⁰

When formulating objectives the SMART criteria (specific, measurable, achievable, reasonable, time-bound) can be used for orientation and to avoid mere activity descriptions.

On this basis, the objectives concept for the Green Start-up Programme of the German Federal Environmental Foundation was developed, which is shown in Figure 7.

Figure 7: The objectives of the Green Start-up Programme of the German Federal Environmental Foundation (DBU)



Source: German Federal Environmental Foundation.

3.1.2 Developing an impact philosophy

In addition to defining impact objectives, it is important for transparent impact planning that the programme and evaluation team in charge clarifies the fundamental understanding with which the impacts of a support programme are to be viewed and analysed. We refer to the clarification of basic assumptions and understanding as “impact philosophy”. With regard to the impact philosophy, two decisions must be made:

1. In impact planning and impact analysis, does one rather follow the “causality school” or the “contribution school”? The two schools of thought are presented in chapter 3.2.1.
2. What basic understanding of the impact of a programme should be built upon? Three basic conceptualisations are presented below.

When planning the impact evaluation, it makes sense to clarify the basic understanding of the cause-effect relationships of a support programme. Which of the following three conceptualisations is most appropriate depends on the prerequisites and framework conditions of the programme¹¹:

Programme-focused causal attribution

This conceptualisation is suitable if the support programme is fundamentally capable of achieving the intended impact objectives on its own, separately of contextual factors or other support programmes. However, this is often not the case with individual programmes or support measures, as there are often alternative ways to achieve the planned impacts. Hence, this conceptualisation is seldom a favourable cause-effect model used for impact evaluation.

Figure 8: Conceptualisation of programme-focused causal attribution



Source: Own figure based on Rogers (2016, p. 1).

Joint causal attribution

This conceptualisation proves useful if the support programme generates the effects together with other programmes, support measures or influencing factors. For instance, this may be another programme that complements the support programme being evaluated. This also includes influencing factors such as the experiences and competencies that the supported start-up teams bring to the support programme as “inbounds” (see Chapter

2.1) or also the quality of other programme participants, e.g. the cooperation partners. Further, this also includes factors pertaining to the environment, such as legal regulations or market dynamics, which can have a significant influence on the market success or ecological impact of a supported start-up. For most support programmes, the basic understanding of joint causal attribution is likely to apply.

Figure 9: Conceptualisation of joint causal attribution



Source: Own figure based on Rogers (2016, p. 2).

Alternative and multiple causal paths

This conceptualisation posits the support programme to be one of several possible ways to achieve the impacts. While one programme may produce the intended impacts, they may also be generated by other programmes, interventions or contextual factors. This may be the case if start-ups have the option of accessing support services through another programme or measure, or if different programmes from different organisations aim to generate the same impact. For example, there may be a number of programmes which share the same guiding objective to improve start-up support. Some of these programmes may aim to achieve this by improving government start-up funding programmes, while others launch targeted private sector initiatives.

This conceptualisation has important implications for the impact evaluation. In the case of a counterfactual design being applied that compares supported start-ups with non-supported start-ups, the services used by the non-supported start-ups must be taken into consideration. If a programme aims to generate changes that form the same objectives as other programmes, it is especially important to consider this in the programme-specific theory of change and logic model (see Chapter 3.1.3) and to collect appropriate data. This will help to determine the extent to which the effects are attributable to the evaluated programme in question.

Figure 10: Conceptualisation of alternative and multiple causal paths



Source: Own figure based on Rogers (2016, p. 2).

3.1.3 Developing a logic model

Based on the developed impact philosophy, the impact logic systematically links the defined impact objectives to the programme resources and services used to achieve these objectives. An impact logic helps to present cause-effect relationships of a programme in a simplified way and to distinguish between programme outputs and intended outcomes and impacts.

Logic models are commonly used to illustrate a programme's impact logic. They promote impact-oriented thinking and form the basis for successfully implementing all impact management processes:

- In impact planning, logic models are a transparent way of illustrating a support programme's impact logic and can thus contribute to creating an internal understanding of the intended effects of the support activities. They can also be used as a communication tool to reflect on planned impact mechanisms with other actors involved in the programme, such as network partners.
- In impact analysis, logic models are useful for developing and selecting relevant indicators for impact measurement.
- In terms of impact management and optimising impact, logic models can support programme adjustments and can also be integrated into external and internal communication and reporting processes.

Logic model for start-up related support activities

For start-up support programmes, the following logic model can be used as an instrument for multi-dimensional impact assessment and evaluation. It builds on the multi-level model of objectives setting of a start-up support programme presented above (see Figure 6). In combination with the concept of impact analysis presented in chapter 3.2 ("Impact analysis"), it is the first standardised analytical framework for start-up support that includes economic as well as ecological and societal target variables, and thus specifically enables the holistic evaluation of the success of start-up-related support activities.

Causal chains

The logic model represents the inherent impact logic of start-up support programmes by applying the theory of change. The general logic model of a start-up support programme shown in Figure 11 draws on the idea of the causal chain and structures this chain according to the levels of the results staircase (see figure 1). Unlike in the results staircase, the individual levels or elements are presented according to the input-output-outcome-impact logic of the theory of change.

The model can be read as both a linear and a multiple chain of effects with feedback loops. It also allows to apply the three impact philosophies described in chapter 3.1.2. In addition, it considers alternative and multiple causal paths (see Chapter 3.1.2). When developing the logic model, it is important to clarify which cause-and-effect relationships have already been "proven" and where one has to work with hypotheses that then have to be tested in the impact analysis. In this way, the model can be continuously improved and it becomes more realistic.

Basic dimensions of programme evaluation

In evaluation research and practice, four basic dimensions are distinguished for the study and assessment of programmes:¹²

Conditions: These include the institutional, geographic and cultural context in which a programme is embedded, as well as the structural and procedural organisation of the organisation, association or network that carries out the programme. However, the conditions of a programme are also shaped by the financial, human or other resources that are brought into the programme as resource inputs. The same applies to the qualifications with which members of the target groups enter the programme. For example, these include the participants' knowledge, attitudes, values and competencies. The participants' qualifications (incomes) and the resources invested into the programme can be considered as programme inputs.

Plan: Concept specifying which objectives and results are to be achieved with the programme by when/where/with whom and which activities are to be used to achieve these objectives. The programme concept can be understood as an "intervention plan". This is based on implicit or explicit impact assumptions.

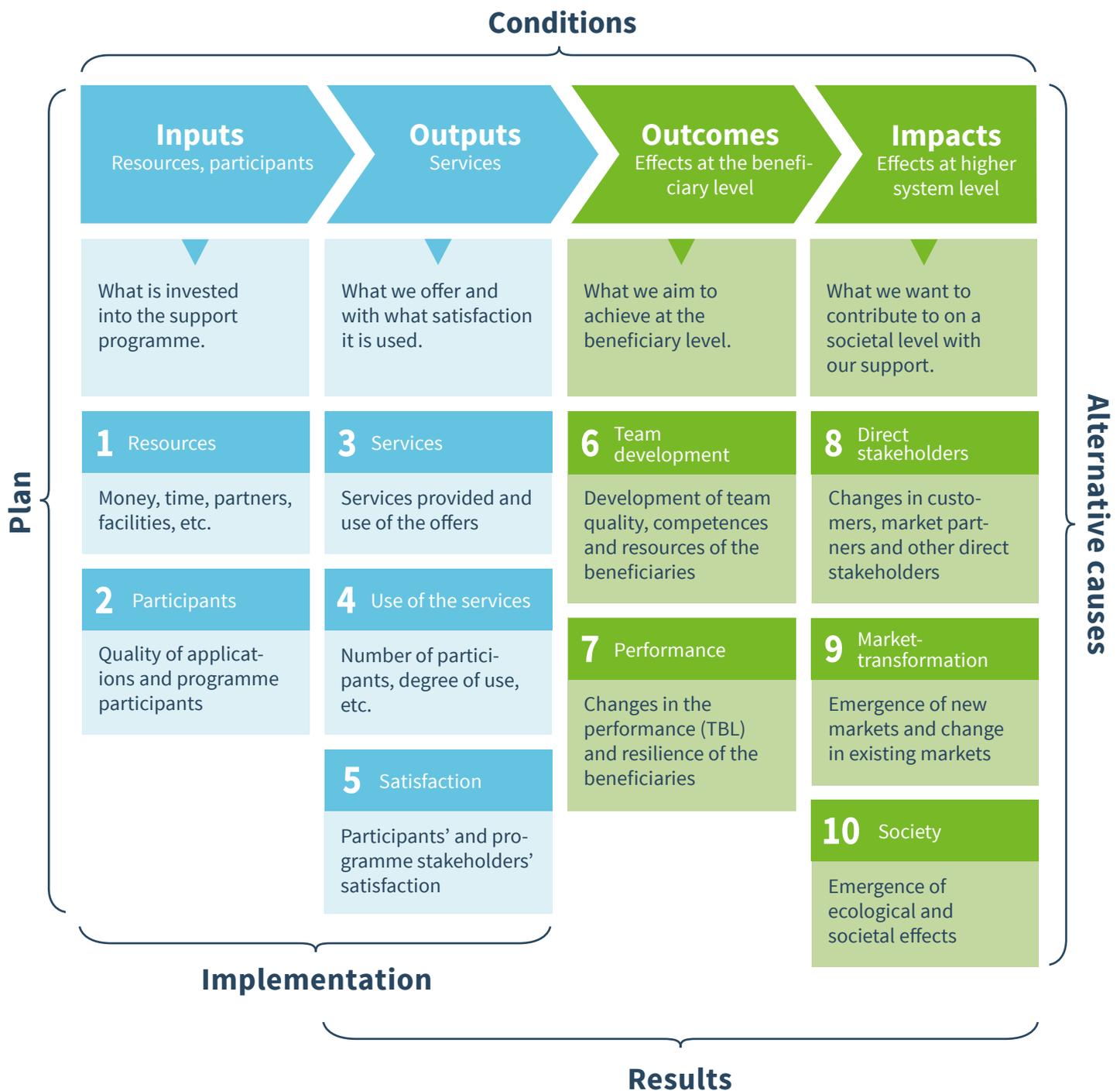
Implementation: This includes the activities and actions carried out during programme implementation. In the case of support programmes, this refers to the specific support activities.

Results: On the one hand, these include direct pro-

programme outputs. These are the (countable) services and products of a programme generated by the interventions, the participation and utilisation quantities as well as the target group members satisfaction with the interventions. On the other hand, results also refer to outcomes, i.e. the

short-term or medium-term changes achieved by the intervention in the target group, as well as the impacts caused by the outcomes in the economy, environment and society.

Figure 11: General logic model of a start-up support programme



Source: Own figure based on Kurz & Kubek 2018, p. 35.

Alternative causes

Depending on which impact philosophy you follow (see chapter 3.1.2), causes beyond the support programmes under consideration must also be considered in a logic model. These possible alternative causes for outcomes and impacts should then be explicitly included in the logic model.

Factors influencing the success of start-up support programmes and start-ups

The success of a start-up support programme is influenced by participant-, programme- and context-specific factors. An overview of factors influencing the success of start-up and business support programmes, which have been identified on the basis of empirical studies, can be found in the appendix.

In order to understand and take into account the participant-specific factors, a resource-based view of start-up projects and start-ups is helpful (see infobox “Resource-based View”). Furthermore, the impact of a support programme is also significantly influenced by programme-specific factors (programme characteristics). Finally, the effect of a start-up support programme also depends on contextual factors (environment and network factors), which are also presented in the appendix.¹³

Resource-based View

The Resource-based View is a theory from strategic management that primarily considers the resources and competencies of a company that are relevant to competition. In the context of start-up support, the focus is therefore on the desired strengthening of those resources and competencies that can provide a supported start-up with competitive advantages. For this purpose, the present logic model refers to the **DIN SPEC 90051-1: Sustainability assessment of start-ups: Part 1 - Concept and criteria for the assessment of potential and actual impact of venture projects and young enterprises on the environment, society and economy**. In the category “enablers”, it lists the following five drivers: Vision & Strategy, Team, Processes, Partnerships & Resources and Product/Service & Market Position.

A logic model should therefore also include important programme- and context-related factors of impact. In the case of the environment and network factors, external conducive environmental influences and conditions play an essential role, which can influence the start-up ecosystem and thus also the development paths of start-ups. The impact of start-up support programmes should never be considered independently of the economic, political and social contextual factors, as this can lead to considerable misjudgements of the programme’s effects.

Adaptating the logic model to your use case

Before you turn to the next step of impact analysis, i.e. data collection and evaluation, you should reflect on the following points in order to adapt the presented logic model for start-up-related activities and the data collection approach to your specific use case:

1. What is the function of the application in your case? For orientation, you can draw on the reasons for impact management mentioned in chapter 2.3. Possible reasons include:
 - Continuous improvement of an existing programme
 - Evaluation of the impact of a new or young programme and need for change
 - Impact monitoring and management aligned with the objectives of a support programme or its funders
 - Reporting of impacts to decision-making bodies, funding bodies (co-financing) and other stakeholders
 - Legitimation of the efficient and effective use of funds
 - Comparison of the effects and the use of funds with other support programmes
2. In what institutional and programme context does the application take place?

Which environmental conditions and context factors (environment and network factors) are relevant for the use case?

 - National or regional start-up culture
 - Policy-induced or policy-supported target markets, regulatory frameworks
 - Financing conditions: access to venture capital etc.
 - Access to attractive markets
 - Effective cooperation structures, access to suitable expert networks

Which programme-specific factors (programme characteristics) are relevant for the use case?

- Political and institutional objectives and stipulations (e.g. through EU co-financing)
- Breadth and profile (e.g. generic or technology/sector/sustainability-focused)
- Age/development phase of the support programme
- Reputation of the support programme
- Age/development phase of the supported target groups

3.2 Impact analysis: What, when and how to collect and evaluate data?

In addition to an objectives concept and a logic model, holistic impact measurement and evaluation of a support programme requires both a data collection and measurement concept and an impact evaluation methodology. Indicators contained in the data collection concept can be used to check whether the defined impact objectives are achieved along the logic model levels. They support in assessing the programme's progress and impact and thus serve as an important instrument for a learning start-up support programme.

In accordance with the impact logic levels underlying the impact model, not only impact indicators are identified to measure long-term effects, but also outcome indicators that provide information on the progress of the start-ups participating in the support programme. In addition, output indicators are formed, since outputs form the basis and condition for the emergence of outcomes and impacts. Furthermore, defining input indicators provides insights into the resources invested in the programme. These can provide information on programme efficiency and effectiveness when considering the input-output nexus and the input-impact nexus.

Before we address the questions "What to collect?", "How to collect?" and "When to collect?", we will first reflect on the opportunities of impact analysis and its limitations.

3.2.1 Causality and contribution: Possibilities and limitations of impact analysis

The practice of impact management usually builds on the theory of change (see infobox on p. 10) and assumes linear impact chains. In most cases, it is explicitly or implicitly assumed that an effect can be assigned to a cause and that the extent to which impacts have been due to an intervention (e.g. a support programme) can be established. The development of an individual theory of change for a single support programme is considered necessary in evaluation research, although there are warnings against overly simplistic assumptions and an excessively limited choice of methods.¹⁴ With regard to the question of the extent to which assessed effects or changes can be causally attributed to a particular intervention or a particular support programme, a basic distinction can be made between two schools of thought. The first will be referred to as the "causality school" and the second as the "contribution school".

The causality school: grasping causal chains and proportion of impact

The causality school assumes that there is a linear causal chain and that an effect can be assigned to a cause and that the share of an intervention or a support programme can be delimited. It assumes a clear cause-effect relationship. A key question in this context is the attribution of a certain cause (e.g. a support programme) to an effect that is likely to occur in the future (ex ante) or has already occurred (ex post). In evaluation and impact management, various methods and strategies for causal attribution are proposed and applied, including¹⁵:

- Estimation of the counterfactual situation (i.e., what would have happened without the intervention or the support programme)?
- Checking the consistency of the impact data obtained (evidence) with regard to the theory of change developed for the programme and the causal relationships assumed therein
- Exclusion of alternative explanations through a logical, data-supported (evidence-based) process.

In the causality school, to which the Impact Management Project (IMP) also belongs (see chapter 3.2.5), the change that would have occurred anyway even without the intervention (the support programme) is termed "deadweight". According to the causality school, the gross effect minus the deadweight effect is the net effect that can be attributed to the intervention.

The Contribution School: Understanding

combined effects

In contrast to the causality school, the evaluation community of the contribution school is much more cautious with regard to the assessability of causes and causal chains as well as the quantitative delimitability of impact shares.¹⁶ As the contribution school suggests, the focus should not be primarily on linear causal chains and causalities, but rather on understanding effect mechanisms, i.e. the question of how something takes effect and what role an intervention (in this case a support programme) plays in interaction with other areas of influence and influencing factors.¹⁷ For instance, we can distinguish between the roles of a trigger, a supporter, a facilitator and an accelerator.¹⁸ The effects of a support programme are understood as a “network of simultaneously occurring causes”, in which there can be linear and non-linear relationships and different feedbacks¹⁹. Thus, it is not only a question of what has been achieved, but also why and how.²⁰ In view of the generally longer periods of time until a support programme produces effects on the beneficiaries, the contribution school suggests that the focus and scope of the evaluation be precisely defined and that the following steps of the contribution analysis be taken:²¹

1. Thoughtfully lay out the practical cause and contribution issues to be addressed,
2. Develop the long-term timeline of events related to the intervention,
3. Identify key causal paths and their timelines,
4. Develop related theories of change,
5. Evaluate the intended changes that have occurred,
6. Identify critical cause questions,
7. Develop impact narratives for the pathways and
8. Conclusions on the likely contributions made by the intervention and how they occurred.

analyses of new ventures and start-ups

Impact research shows that the faster the effect becomes apparent, the easier it is to attribute it to a specific cause, e.g. a support programme. Furthermore, the more time that passes, the greater the significance of other influences²², such as other support programmes that are subsequently participated in, or market dynamics and political framework conditions. The simplicity of attributing a cause thus decreases on the time axis, while the influence of other factors and activities increases. Here, some evaluation researchers also speak of the “evaporation of the effect”.

In the case of start-up support programmes, there is also the special feature that they take effect in a phase of start-up or company development in which typically no or hardly any effects can emanate from the supported start-ups, as they are not yet on the market or are only at the beginning of their market participation. Thus, in an early phase, e.g. at the end of funding, only the future impact potential can be assessed (ex ante) and only at a later point in time, e.g. 2 or 5 years after the funding, actual effects can be determined retrospectively (ex post). Although only the impact potential can be estimated in early phases, it is plausible to assume that there is a connection between the intentions of founders and start-ups to achieve certain performance and impact goals and their actual subsequent behaviour. Entrepreneurship research has provided empirical evidence for this connection on the basis of the theory of planned action^{23, 24}.

The time dimension: special features of impact

3.2.2 What to measure? Selecting suitable indicators

An indicator is understood as an “empirically measurable variable that gives an indication of a construct that is important for evaluation but not directly observable or measurable, and thus makes it accessible for qualitative or quantitative data collection”²⁵. The selection of indicators for impact evaluation depends on the defined impact objectives for the respective support programme and the impact philosophy applied (see Chapter 3.1.2). The development and selection of qualitative and quantitative indicators for inputs, outputs, outcomes and impacts must also be based on the basic approach of the impact analysis (see Chapter 3.2.3) and the desired timing of the assessment (see Chapter 3.2.4).

There is no need to reinvent the wheel when developing and selecting indicators. Both general and start-up-related evaluation research offer important foundations here, but rather for the input and output categories and to a limited extent for short-term outcomes. For the medium- and long-term outcomes and especially the impacts, internationally established metrics and indicator concepts should be used. These include:

- **Global Reporting Initiative (GRI):** The GRI standards and guidelines for sustainability reporting formulate important principles for determining content and indicators (stakeholder involvement, materiality, etc.) and relevant principles for ensuring reporting quality (balance, comparability, etc.), but also propose comprehensive cross-sectoral and sector-specific indicators.
- **Impact Reporting and Investment Standards (IRIS):** The IRIS network has developed a globally recognised system for measuring, managing and optimising impact. The current IRIS taxonomy comprises more than 600 impact indicators, from which the most relevant and target-oriented ones for the respective user can be selected.



- **Impact Management Project (IMP):** The IMP provides a forum to build global consensus on the measurement, management and reporting of sustainability impacts. It brings together a community of over 2,000 practitioners to share best practices, explore technical issues in greater depth, and identify areas where further consensus is needed in measuring and managing impacts. The five impact dimensions identified by the IMP (see Chapter 3.2.6) as well as the indicators that are useful for this purpose also provide important orientation for the impact evaluation of start-up support programmes.

From the large number of possible indicators, selected examples of indicators are given in Figure 12.

Figure 12: Example indicators for inputs and outputs in the context of the evaluation of start-up support programmes



Source: Own figure based on Kurz & Kubek 2018, p. 62.

Figure 13: Example indicators for outcomes and impacts in the context of impact analysis



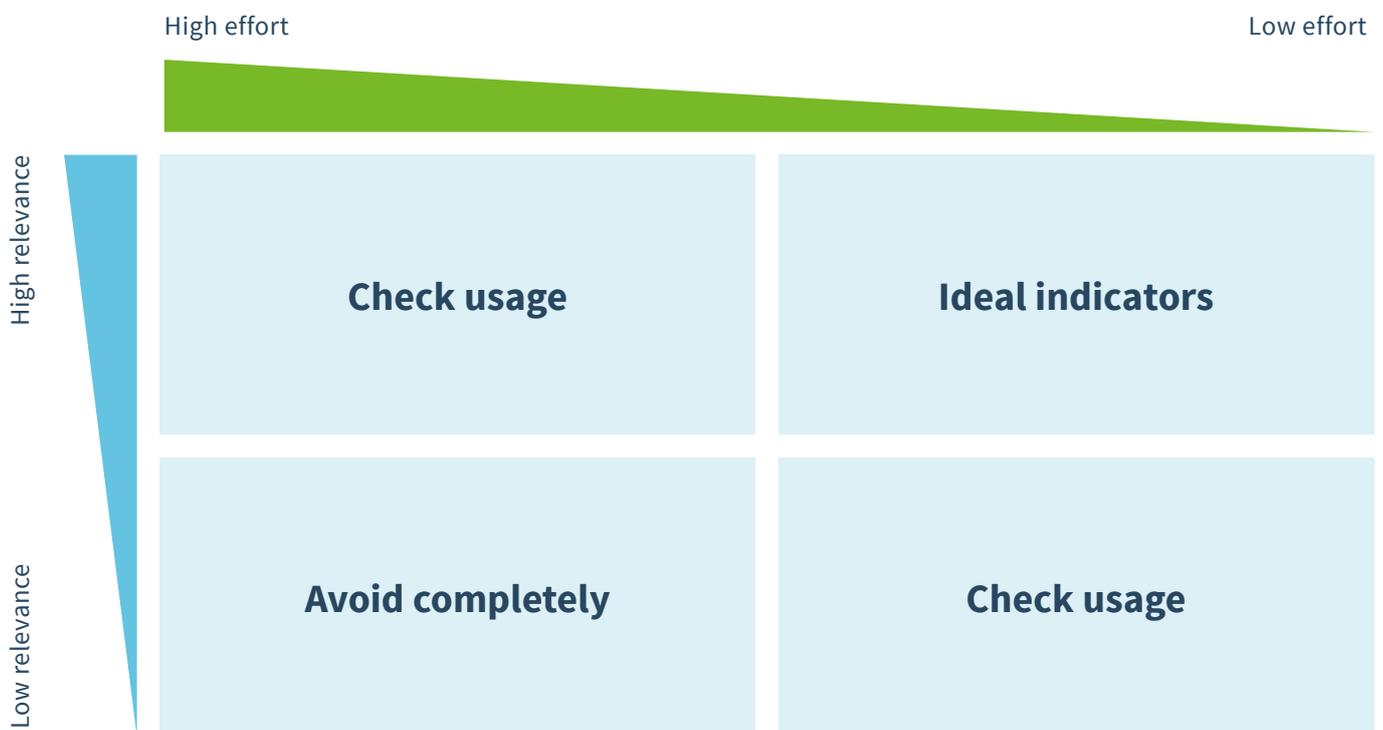
Source: Own figure based on Kurz & Kubek 2018, p. 62.

BORDERSTEP IMPACT GUIDE

A detailed list of possible indicators can be found in the appendix. When selecting suitable indicators, it is important to ensure they fit the developed logic model. It is advisable to consider the following questions when selecting indicators for the impact analysis of your start-up support programme:

- **Collectability and measurability:** Can the indicator be collected and measured at all? Clarify whether the data sources required for data collection are available and accessible.
 - **Data collection intervals:** How often and at what intervals must data be collected for the indicator?
 - **Timing of data collection:** When is the right point in time to collect data? Clarify whether an indicator should be collected before or at the beginning, during or at the end or after the end of the funding. Outcome and impact indicators can also be collected in the short term, medium term or long term after the end of funding.
- When developing and choosing indicators, the cost-benefit ratio of an indicator should be taken into account. Ideally, the effort of collecting a relevant indicator is low. In the case of relevant indicators that require a great effort to collect and evaluate, it must be weighed up on a case-by-case basis whether the cost-benefit ratio is reasonable. The same applies to less important indicators which require little effort for collection. Irrelevant indicators which demand a lot of effort to collect data should of course be avoided. It should also be pointed out that in general, it is more difficult to measure the benefits than the costs - especially when developing indicators for future impacts.

Figure 14: Considering the cost-benefit ratio of indicators



Source: Own figure.

3.2.3 How to collect and evaluate data?

Deciding on the basic approach to impact analysis

Evaluation research and practice provide a wide range of proven methods and approaches to data collection and evaluation. In addition, many years of experience in the field of evaluation allow for the formulation of important principles which should be considered when collecting and evaluating data for the impact analysis. For instance, the DeGEval – German Evaluation Society formulates the following four principles in its “Standards for Evaluation”: 1. usefulness, 2. feasibility, 3. fairness, and 4. accuracy. Two aspects that are of great importance with regard to data collection are highlighted as follows:

- “Data collection methods and data sources should be selected in such a way that the reliability of the collected data and their validity in relation to answering the evaluation questions are ensured in accordance with professional standards.”²⁶
- “In general, an evaluation means additional work for the people and/or organisations involved in the object of evaluation, for example if they support data collection or provide data themselves. In order to secure the cooperation of those involved and affected, not to jeopardise the acceptance of the evaluation and to conserve the resources available for the evaluation, the burden for those involved should be minimised as far as possible.”²⁷

In the context of impact analysis of start-up support programmes, a number of additional aspects should be taken into account when choosing data collection methods:

- The founders or start-ups funded supported through the programmes are target groups that undergo highly dynamic changes during and after the funding period (team composition, business model pivots, market development, growth, mortality, etc.).
- In addition, as already presented in Chapter 3.1.2, as so-called “impact carriers”, founding teams and start-ups find themselves in the start-up or growth phase which typically show no or hardly any impacts yet. Thus, in an early phase, e.g. at the end of funding, often only the future impact potential can be estimated (ex ante) and only later actual impacts can be determined retrospectively (ex post).

Two basic options can be distinguished for the impact assessment and evaluation of start-up support programmes: On the one hand, the analysis and evaluation of the funded cohort and, secondly, the comparison of the funded cohort with a comparison group. So far, the evaluation of start-up support programmes has focused almost exclusively on analysing and assessing the funded cohorts. This is due to the fact that the effort for cohort-internal evaluation is lower and the validity is considered sufficient. Since the effort required for evaluation is an important aspect, cohort-internal evaluations are a legitimate and pragmatic approach, but with regard to their validity (see Chapter 3.2.1) they are associated with clear limitations. As a result, the choice of data collection methods and the approach to impact evaluation is guided by the dimensions of effort and relevance shown in Figure 15.

Against this background, the following five approaches to impact analysis can be taken into consideration. The first three are based on cohort-internal analysis and evaluation and only allow for assessing short-term outcomes and the medium- and long-term impact potential. Only the two evaluation approaches that focus on comparative evaluation allow for assessing actual medium- and long-term outcomes and impacts:

(1) Qualitative initial assessment on the basis of surveys and interviews with beneficiaries: This is an “entry-level” evaluation approach that requires comparatively little effort, but is also very limited in terms of the validity it provides. For example, interviews can be conducted with individual beneficiaries in the middle or at the end of the funding period, allowing for initial estimates of outputs and outcomes. However, the analysis is limited to qualitative aspects and is carried out without quantitative indicators. Cautious initial estimates of potential funding effects are possible, but cannot be “extrapolated” or generalised.

(2) Quantitative before-and-after comparison: The second approach goes further as it is more quantified and systematically uses key indicators. Here, a before-and-after comparison of the beneficiaries also proves useful. For this purpose, self-assessments of the applicants as well as surveys at the beginning and at the end of the funding period can be used. The variety of methods is greater here than in approach 1. For example, online workshops or focus groups can also be conducted with the beneficiaries during the funding period in order to discuss important aspects of the support provided and its impact.

(3) Ecosystem approach: The third approach builds on approach 2, extending data collection and evaluation beyond the beneficiaries to also cover other programme participants and stakeholders as well as the ecosystem of the support programme and its environment. This entails a greater effort, but also increases validity, since the information provided by the beneficiaries can be cross-checked against the assessments of other participants and, if necessary, be validated and expanded. In addition, this allows for analysis of possible impact contributions made by the entrepreneurial ecosystem and the support ecosystem.

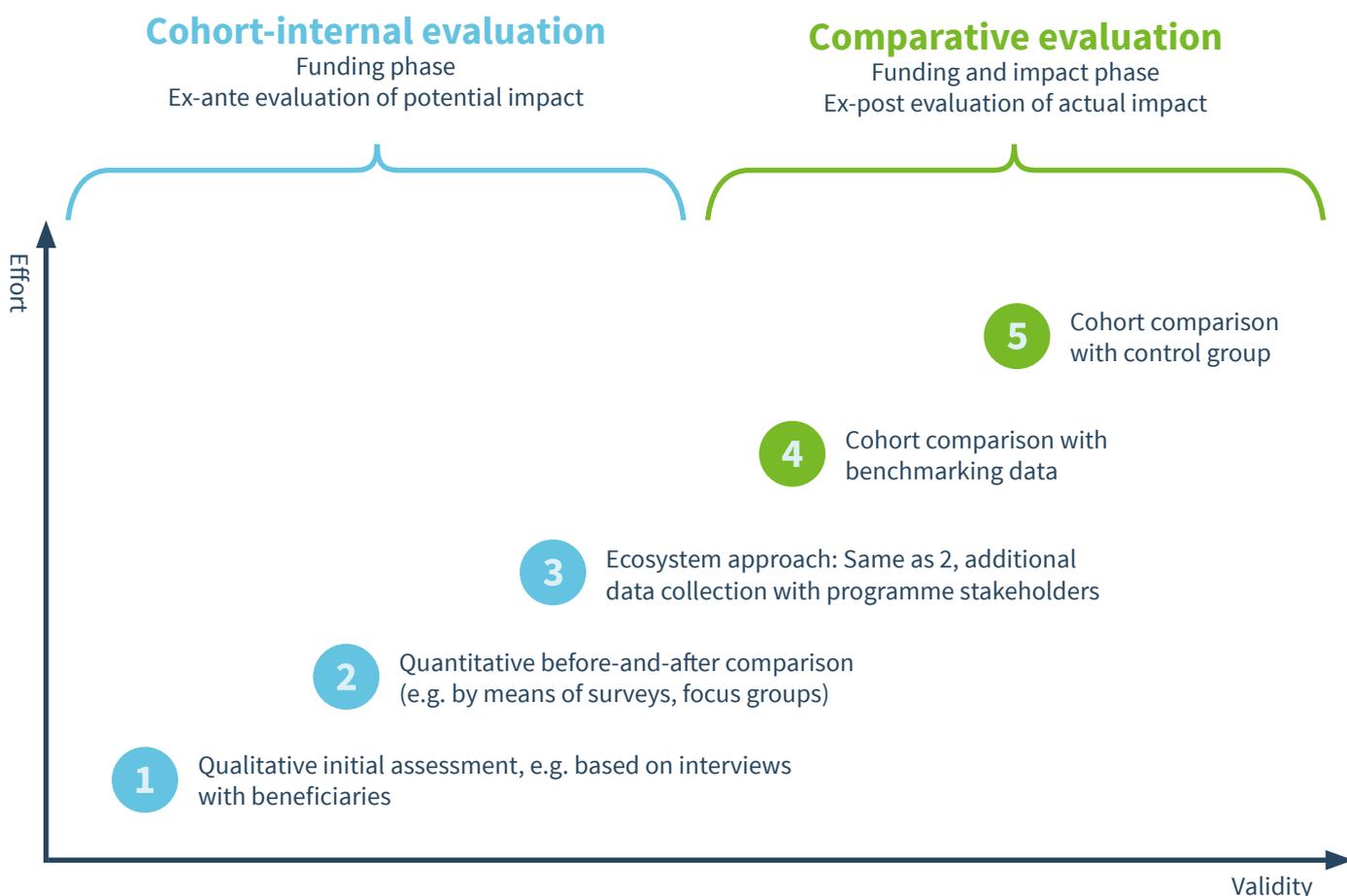
(4) Cohort comparison with benchmarking data: This approach differs fundamentally from the previous ones, as not only the supported cohort but also comparison groups are considered here. Moreover, the greater effort required for this approach pays off only if the assess-

ments are also conducted some time after the end of the funding phase, e.g. two or five years later. This makes it possible in the first place to analyse and evaluate medium- and long-term effects.

(5) Cohort comparison with control group: The “royal league” of impact analysis is the comparison with a systematically selected control group. The comparability of the control group is higher than in the benchmarking approach in option 4. The latter usually only allows comparison with a largely anonymous group of other start-ups or companies. The reliability and validity of the control group approach is therefore higher.

The cohort-internal evaluation and the comparative evaluation are discussed in more detail in Chapters 3.2.5 and 3.2.6.

Figure 15: What to collect and how to evaluate: Approaches to impact analysis



Source: Own figure.

3.2.4 When to collect data?

With regard to the question of when to collect data, a basic distinction can be made between programme phase-dependent data collection and that independent of programme phases. For instance, relevant data can be collected before the actual start of the support programme, e.g. during the application process. Data collection during programme implementation, i.e. at the beginning, during and/or towards the end of the support programme, is mainly carried out to check whether it is on track to deliver on its intended outcomes and impacts and to

forecast potential impacts. It should be timed in a way that fits the programme schedule as well as the formulated objectives along the programme's impact logic.

On the other hand, providing evidence about the long-term effects produced requires data collection in the impact phase, i.e. several years after the end of the funding phase. Data can also be collected independently of the support programme phases from sources such as general start-up surveys and benchmarking and economic databases, and then be used for comparative evaluations.

Figure 16: Data collection in different phases of a support programme



Source: Own figure.

Challenge: Reaching out to beneficiaries after the support phase

The more time passes until data is collected after the end of the respective support phase, the more difficult it becomes to reach former start-up beneficiaries. This is what many start-up support programmes experience when they try to contact their “alumni” after a few years in order to carry out questionnaires or conduct interviews. A possible solution to this issue of long-term availability may be to make participation in surveys both during and after the support phase a requirement as part of the funding conditions.

If necessary, this can also be made a prerequisite for the disbursement of final funding, or additional financial or other incentives can be provided for those beneficiaries willing to participate in surveys after the funding phase. It may also be helpful to maintain and update contact management databases regularly.

3.2.5 Cohort-internal evaluation: Assessing potential impact

Relevant approaches to cohort-internal evaluation have already been presented in Chapter 3.2.3. In addition, cohort-related data collection instruments and concepts that can support the assessment of impact potential will be discussed here.

From the multitude of possible data collection methods that can be used in the context of a cohort-based impact evaluation, the following can effectively support the impact analysis:

Data-collection instruments for cohort-internal evaluation

- Data from application documents and the selection process
- Data from the organisation running the support programme: compilation and/or survey of programme managers
- Self assessment of applicants or beneficiaries, e.g. by means of online tools and standards,
- Specific tasks for start-ups: e.g. using standardised tools to calculate the CO₂ footprint or GHG emissions
- Surveys with beneficiaries, programme managers, evaluators, programme partners, experts, e.g. assessment of the resilience of the beneficiaries.
- Interviews with grantees, programme managers, evaluators, programme partners, experts
- Feedback forums or focus groups with multiple beneficiaries, entire cohort, etc.

The Impact Management Project's assessment approach

The evaluation approach employed by the Impact Management Project (IMP) provides another way to understand and evaluate impacts. This approach can support both cohort-internal and comparative evaluation. While it was developed to measure and evaluate the outcomes and impacts of businesses or organisations, its basic principles can also be applied to support programmes. The IMP evaluation approach has been developed on the basis of many years of experience of numerous evaluation institutes and impact investment organisations.

Since 2016, the IMP has brought together a practitioner community of over 2,000 companies and investors brought to build a global consensus on how to assess potential environmental, social or governance risks and how to measure and evaluate positive impacts.²⁸

The evaluation of available results can be guided by the following five impact dimensions developed by the IMP. To this end, we have adapted the questions on outcomes and impacts to support programmes and have also drawn on questions from the DIN SPEC 90051-1 Specification on the sustainability assessment of start-ups:

Recommended reading: Sustainability assessment of start-ups – The application tool of the DIN SPEC 90051-1 Specification

The [DIN SPEC 90051-1](#) provides start-ups, start-up supporters, investors and assessment institutions with a concept for assessing the potential and actual sustainability impacts of start-ups. [The corresponding application tool](#) summarises the most important aspects for practical

use. It can serve as a useful tool in start-up support, for instance when selecting sustainable start-ups for start-up support programmes, for incubator and accelerator programmes, or for developing subsequent training and mentoring concepts.

Impact dimension	Impact questions to be answered per dimension
What	<ul style="list-style-type: none"> • What positive, actual effects has the funding programme achieved in relation to its target groups (outcome) and on environment, society and market (impact)? • What unintended, positive or negative effects has the funding programme had on the target groups (outcome) and on environment, society and market (impact)?
Who	<ul style="list-style-type: none"> • Did the support programme reach its primary target group (here: start-ups) and which other external or internal stakeholders were reached? • To what extent do the changes that have occurred serve the target groups and stakeholders (outcome) and, beyond that, positive ecological, social and economic developments?
How much	<ul style="list-style-type: none"> • How big is the effect on the target groups (outcome) and on environment, society and market (impact) in terms of scale, depth and duration?
Contribution	<ul style="list-style-type: none"> • To what extent has the support programme contributed to the changes? Would these changes have occurred regardless of the support programme? What improvements or deteriorations in the target groups, other stakeholders, and with regard to the environment, society and market would there be in the absence of the support programme?
Risk	<ul style="list-style-type: none"> • Is the achievement of effects being impeded or even prevented by certain influences or risks? If so, what are the risks and how can the influences be assessed?

Source: Impact Management Project: Five dimensions of impact, and DIN SPEC 90051-1 Specification for sustainability assessment of start ups.

3.2.6 Comparative evaluation: Benchmarking and control groups

Relevant approaches to comparative evaluation have already been presented in Chapter 3.2.3. Hereafter, we elaborate on them and present data collection instruments suitable for effectively supporting them. Besides elaborating on them, this chapter will be explained in more detail here and relevant survey instruments and concepts presented that can effectively support impact evaluation.

Systematic comparison: The benchmarking approach

While the first two approaches to impact evaluation focus on the beneficiaries, the benchmarking approach provides for the possibility to use selected indicators to compare the group of beneficiaries with the average of all start-ups in a country or large start-up groups with similar characteristics.

If the comparison shows that there are clear differences between the supported group and the benchmarking group in terms of performance, development and effects, it can be assumed that this is at least in part due to the start-up support programme. The benchmarking approach can be used individually, but at best it should be combined with the evaluation approaches presented above.



Possible sources of reference and benchmarking data

German Startup Monitor

The [German Startup Monitor \(DSM\)](#) is one of the most comprehensive studies on the start-up ecosystem in Germany and is published annually by Bundesverband Deutsche Startups e.V. (German Startups Association) in cooperation with various partners.

Green Startup Monitor

The [Green Startup Monitor \(GSM\)](#) analyses the significance of green start-ups that contribute to a green economy with their innovative products and services. It is published by the Borderstep Institute for Innovation and Sustainability and Bundesverband Deutsche Startups e.V. and funded by the German Federal Environmental Foundation (DBU).

German Social Entrepreneurship Monitor

The [Deutscher Social Entrepreneurship Monitor \(DSEM\)](#) provides an annual overview of the potential, needs and challenges of social enterprises in Germany.

The study is published by the Social Entrepreneurship Netzwerk Deutschland e.V. (Social Entrepreneurship Network Germany) and the Euclid Network, with support from the Bertelsmann Stiftung, SAP SE and Stiftung Wirtschaft Verstehen.

Borderstep Institute and ImpactNexus

The project “[Score4Impact: Making Climate Protection Investable by Start-ups](#)” is funded by the German Federal Ministry for the Environment as part of its National Climate Initiative. It is developing a database with climate- and sustainability-related reference and benchmarking data of start-ups.

KfW Entrepreneurship Monitor and KfW Start-up Report:

With its annual [KfW Entrepreneurship Monitor and KfW Start-up Report](#), KfW Research presents the latest scientific findings and insights on start-up development in Germany.

For advanced evaluators: Comparison with a control group

Causal effects of support programmes for young companies cannot be estimated and evaluated independently of their context. In addition to the effects of a support programme, there may be other favourable environmental influences and disruptive factors in the start-up ecosystem that influence the development path of a supported start-up. If only the supported start-ups are considered, there is a risk that the identified effect is not attributable to the support programme but to general developments, such as an increasingly supportive market environment. The effect of a support programme can be defined as “additionality”. This represents the difference between the development path of the “intervention group” and a non-supported control group.

The most recognised and innovative methodological approach for assessing additionality is the (randomised) controlled trial²⁹, supplemented by qualitative research results³⁰. Internationally, this is the dominating approach in impact research and is used widely in scientific studies. In Germany, however, the method is still rarely applied in impact studies and is almost completely absent from start-up research. While the systematic comparison with a control group represents one of the most complex evaluation approaches, it is also able to produce the most accurate evaluation results on the effect of support programmes. It can therefore be classified as the “top tier” of comparative impact evaluation.



Data-collection methods for comparative evaluation

- Evaluation of former beneficiaries’ corporate websites and other publicly accessible sources
- Use of economic databases on former beneficiaries
- Use of data and assessments or commissioning of sustainability rating agencies and sustainability impact assessment institutes
- Use of indicators and evaluations of large-scale general surveys (e.g. German Startup Monitor, Green Startup Monitor, KfW Start-up Report)
- Use of benchmarking databases (e.g. from the Score4Impact project)
- Comparative benchmarking studies on the basis of above mentioned data sources
- Use of own studies/surveys

3.3 Improving and communicating your impact

“As an impact-driven organisation, our first and foremost aim is to create a social and ecological added value and contribute to system innovation for a circular economy. This impact orientation can only unfold and develop optimally with the right support structures in place. The IMPACT Guide provides crucial impulses to sensitise providers of start-up support about the importance of embedding and implementing the impact dimension in their support programmes in the long term.”

Ina Budde
Co-Founder & CEO, circular.fashion

Planning and designing start-up support programmes in an impact-oriented way and using selected indicators to evaluate the achievement of the formulated impact objectives form the basis for establishing processes of continuous improvement to maximise impacts. Communicating these results and learning processes in a transparent manner also forms an important pillar of impact management.

3.3.1 Mission-oriented thinking: Programme design

The grand challenges facing humankind today require increased mission-oriented thinking and action in policy and society. In this regard, the start-up support system and its actors plays an important contributing role. For support programmes, it becomes indispensable to place a central focus on the topic of impact. This means integrating impact orientation and impact creation into the core of the programme and developing the programme along defined impact objectives. Only if all programme participants have a common understanding of impact and the impact objectives at programme and societal level can the programme be analysed with regard to its creation of a measurable added value for the target group(s) and its contribution to positive effects on the environment, society and economy. Thinking in terms of mission and impact in the course of planning the programme thus enables setting in motion learning and improvement processes. These are a prerequisite for continuously enhancing and maximising the desired effects of the programme.



3.3.2 Learn & steer: Using results for programme optimisation

The results of the impact analysis and their internal communication create a good basis for impact-oriented programme management at both the strategic and operational level. The data collection and assessment concept and its selected indicators are hence key to making visible the achievement of impact objectives and changes that are taking place.

Improvements to the support programme towards better achieving the defined programme objectives can be made on the basis of the evaluation results. Here, continuously generated data for the input and output indicators is suitable for operational programme optimisation. By analysing the ratio of output to input, programme efficiency can be reviewed and improved. Moreover, analysing the outputs provides essential information on programme quality through insights into the beneficiaries' satisfaction with the services. On this basis, it can be determined whether the programme offers are in need of change and, if necessary, existing offers can be adjusted and improved or wholly new programme offers can be planned and implemented.

Further, the data collected for the outcome and impact indicators in the course of the impact evaluation are suitable for strategic programme management and optimisation. By analysing the results on the development of start-up quality and start-up performance, the effects on the support programme itself and the funding organisation, as well as on the environment, society and economy, it is possible to identify the need for programme adjustments in line with the set objectives concept. These insights can be used to optimise the programme in line with the objectives at programme and societal level. Ideally, beneficiaries and other programme stakeholders will be involved in the improvement process. If the results suggest it necessary, the programme can undergo a complete reorientation, including making adjustments to the programme's impact logic and reformulating programme objectives.

3.3.3 Legitimate & Motivate: Securing the programme

Presenting and communicating your evaluation results to your target groups is an important step in the programme impact cycle. It enables the legitimisation of your funding approach by decision-making and public players and creates external and internal understanding for the efficiency and effectiveness of your programme's use of financial resources. In addition, credible and transparent communication sets an example for other actors in the start-up support system, who can use your impact management approach as orientation for their own work.

In order to effectively report on the economic, ecological and social impacts of a support programme, it is useful to develop a communication strategy. For this purpose, the following questions can be used for guidance:

- What goals are you pursuing by communicating the results of your holistic impact assessment and evaluation? Here, differentiate between different impact levels of communication: Are you striving for cognitive impact (knowledge goals), affective-emotional impact (change in attitude, increased involvement, shift in perspective) and/or conative impact (action goals)?
- Who is your communication aimed at? Do you want to communicate impact results internally to management bodies, programme staff or other organisational units, or is it an externally-focused communication activity? Specifying your target audience can help you

to pick up on results that are relevant to the respective target group. In addition, this allows you to develop suitable communication formats and channels.

- How often do you plan to report on the results?

To report on the impacts of your support programme in a transparent way, create a systematic overview of the results by placing them in the overall context of your employed impact logic. In addition, disclose information on the impact objectives and the approach of your support programme, present and visualise the results achieved, and also address the overall methodological approach of the impact evaluation.

The questions posed above can also help to decide on the right selection of communication formats, which often range from presentations and videos to reports and publications. It is recommended to start communicating the results internally with the respective programme participants. In addition to written dissemination formats, internal workshops can prove particularly useful, as they provide an opportunity to jointly reflect on the results and can form the basis initiating operational and strategic improvements to the support programme.

As the reasons for impact management of start-up support programmes presented in Chapter 2.3 show, the motivation of those involved in the support programme also plays an important role in securing its success. Reporting and communicating the effects of the programme can serve as a major motivator for programme staff by revealing the impact and meaningfulness of their own actions.

Integrating storytelling in internal and external communication

When communicating the results of your support programme to specific internal or external target audiences, it can prove effective to go beyond merely presenting the numbers and hard facts. Use storytelling to put the data you collected and analysed as part of the impact evaluation in the context of your organisation's overarching system of values and goals - and in this way, effectively reach your target groups.



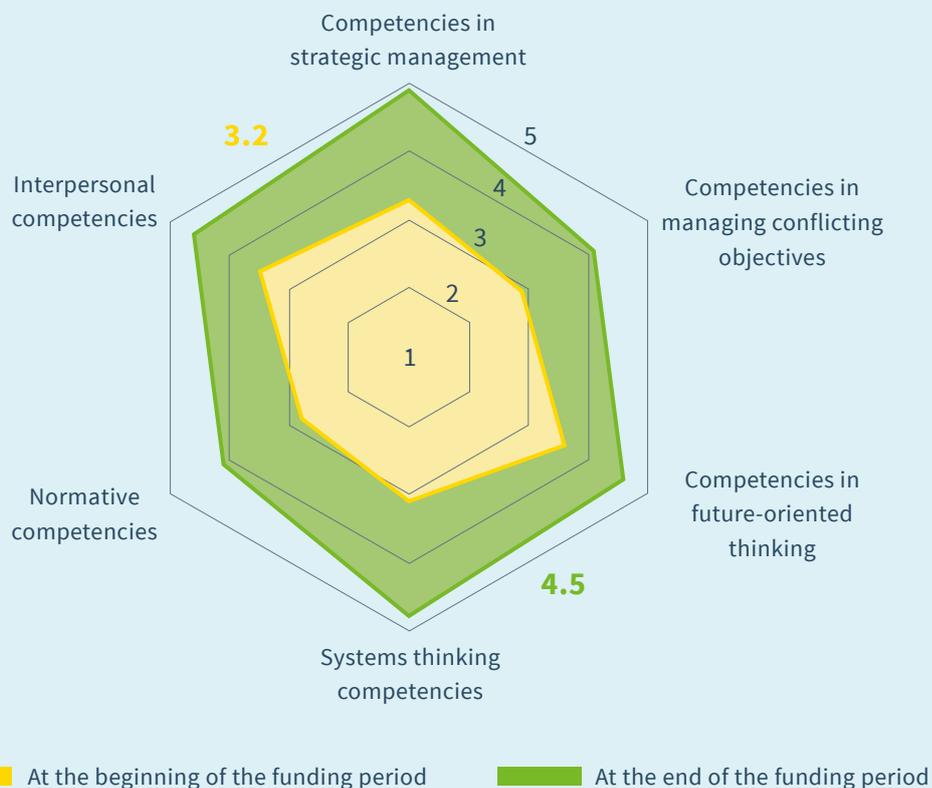
Visualising data for internal and external communication

Translating the results of your programme work into a visual context is indispensable for communicating effectively to external but also internal audiences. A wide range of visualisation techniques can be employed, ranging from presenting information in pie charts to area charts. As the below examples show, “cockpits” can be useful for presenting indicators with Likert-type scales, while spider diagrams can be used for presenting indices such as entrepreneurial orientation, sustainable entrepreneurship competencies or resilience. Quotes drawn from qualitative information can be of interest for providing more personal insights.

Potential contribution of the product/service to solving sustainability challenges



Sustainable entrepreneurship competencies at the beginning and at the end of the funding period



4 Outlook: Tasks and next steps

The impact management of start-up support programmes is still in its infancy. The Impact Guide shows how such an impact management can be established and developed for the benefit of funding agencies, programme managers and beneficiaries. In order to move from the input-output-focused programme evaluation practiced to date towards holistic impact management of start-up support programmes, a number of tasks have to be tackled. In the following, we present the requirements and next steps needed for a full “roll-out” of impact management in start-up support. For this we distinguish between the individual programme level and overarching measures.

Initiatives and impulses at the level of individual support programmes

As the response to the project “IMPACT of sustainability-oriented start-up support” shows, the interest taken by funding bodies, programme managers, accompanying researchers, start-ups and associations in the topic of impact management has increased significantly in recent years. Despite this awareness, however, the prerequisites for establishing effective impact management are still lacking. To move in the right direction, first steps can be taken at the level of individual support programmes:

- **Planning impact:** for example, organising and planning evaluation budgets and setting initial impact objectives.
- **Analysing impact:** Introducing first pilot projects and taking measures that require little effort. For example, this can take the form of including relevant impact-related data in the application documents and querying relevant indicators at the beginning of the support and funding period. Reporting requirements can also be formulated as part of the conditions of funding and participation, e.g. requiring beneficiaries to participate in surveys for before-and-after comparisons or focus groups.
- **Improving impact:** In addition to conclusions drawn from the programme’s internal impact analysis and evaluation, it can also prove useful to exchange experiences in impact management with other support and funding programmes. For this purpose, we propose an “Impact Management Forum” of funding institutions below, which should facilitate regular informal exchange of experiences.

Development of a mission statement for impact-oriented start-up support

Support programmes are an essential instrument for incentivising developments that contribute to meeting societal and environmental policy objectives, developing solutions to the major future challenges (Grand Challenges) and achieving the sustainable development goals. In the long term, new mission-oriented guiding principles for the start-up support system in Germany are important and urgently needed. An important next step would thus be to develop a vision for the national or European landscape of start-up support programmes with a time horizon that is similar to the one set by climate protection policy or the high-tech strategy.

“Impact Management Forum” of start-up support organisations and funding institutions

So far, little experience has been gathered in the rather young field of impact management of start-up support programmes. Therefore, it is all the more important that those who would like to advance in this direction and implement first steps can exchange their experiences and learn from each other. To this end, we propose establishing a nationwide “Impact Management Forum” of start-up support organisations, funding institutions and associations.

Establishment of reference and benchmarking databases

There is a great need for developing and generating reference and benchmarking data for comparison groups. In the future, this will be key to answering the question of where start-up support programmes actually make a difference in the results chain of supported start-ups. In this regard, the reference and benchmarking data being developed in the “[Score4Impact](#)” project funded by the German Federal Ministry for the Environment from 2021 to 2024 can build an important basis. For funding providers and programme managers, making use of specialised assessment service providers, e.g. for self-assessment tools for start-ups, also presents an important option in the future.

Creation and further development of methods and data

In evaluation research and practice, a great deal of experience and know-how has been built up over the past decades on how evaluations can be carried out efficiently and effectively. However, impact evaluation is still a young and underdeveloped subfield of evaluation, for which methodological and data-related foundations have yet to be created or further developed in the coming years. Important steps in this direction are, for example:

- Developing and adapting existing international standards on impact management and sustainability assessment and reporting (GRI, IRIS, IMP, etc.), especially for founders and young companies (start-ups) or establishing specific standards for start-ups, e.g. through the internationalisation of the DIN SPEC 90051-1 Specification on Sustainability Assessment of Start-ups.
- Initiation of a research programme by national governments or on a European level for method development and data collection in the field of impact research and analysis of start-up support programmes. Such a programme should be used to further develop national, European or international research and innovation indicators.
- Without the participation of former programme beneficiaries, start-ups and young companies, a sound impact analysis is not possible in the long term. The more start-ups establish and operate their own impact and sustainability management from the outset, the easier it will be to collect necessary data. In order to obtain meaningful comparative data, participation of a large number of start-ups and beneficiaries is important. Therefore, very lean reporting requirements for start-ups that provide them multiple benefits should be examined. Data collection would then not only serve to analyse the impact of support programmes, but also and in particular for the start-ups' own use, e.g. in investor communication.



Further development of the IMPACT Guide

The IMPACT Guide provides an initial methodological framework for embedding impact orientation in start-up support programmes. It can and should also be used to develop internal hand-outs and training tailored to one's own support programme. Since impact evaluation and impact management represent a completely new field of action in start-up support, experience must first be gathered in the coming years. This will also provide insights and produce more experience on how the methodological framework and indicators proposed here can be developed further. We look forward to receiving your suggestions and recommendations!

Glossary

Causality school: In the context of impact management, the causality school primarily follows a mono-causal understanding of impact which means that, in contrast to the contribution school (see “Contribution school”), it ascribes causal links between achieved effects and an intervention and assumes that it is possible to determine what proportion of impacts has been caused by an intervention.

Contribution school: In the context of impact management, the contribution school follows a multi-causal understanding of impact that focuses on the how and why of impact and the role of an intervention in interaction with other influencing factors. It assumes multi-causality and interactions with other factors.

Effects: Effects are changes that occur as a result of an intervention. They can be positive and negative, intended and unintended.

Evaluation: The systematic analysis of an intervention and its design, implementation, results, achievement of objectives and impact “based on empirical evidence. Implies an assessment based on transparent criteria for a specific purpose.”¹ While the assessment of short-term effects has dominated in evaluation practice to date, impact evaluation (see “Impact evaluation”) goes further to also examine and assess medium- and long-term effects.

Impact evaluation: The systematic analysis of effects that are caused by an intervention, especially medium- and long-term effects at outcome and impact level. Impact evaluations counteract the inadequacies of current evaluation practice, which mainly focuses on the assessment of the achievement of objectives and short-term effects at input and output level.

Impact management: Here, impact management is understood as deliberately designing and managing processes and influencing factors in order to achieve intended impacts of support programmes. For example, it includes developing impact objectives and an impact logic in the context of impact planning, developing suitable indicators for data collection in the context of impact analysis, as well as learning and control processes for improving impact.

Impact objective: The short, medium or long-term effects an intervention intends to achieve in the future.

Impact philosophy: Refers to the basic understanding employed by the evaluation to assess and evaluate the effects of an intervention.

Impacts: In the context of impact management, these refer to the higher-system level changes that occur in the economy, society and environment as a result of an intervention.

Indicator: An indicator is understood as an “empirically measurable variable that gives an indication of a construct that is important for evaluation but not directly observable or measurable, and thus makes it accessible for qualitative or quantitative data collection.”²

Inputs: In the context of impact management, these refer to the financial, human and material resources invested into an intervention.

Logic model: A logic model serves as a simplified illustration of the impact logic of an intervention and contributes to impact-oriented thinking and action along all intervention levels (planning, implementing, steering).

Outcomes: In the context of impact management, these are the changes that occur in the target group(s) as a result of an intervention.

Outputs: In the context of impact management, these refer to the services and offers produced by an intervention and to what extent and with what satisfaction they are used by the members of the target group.

Theory of Change (ToC): A theory of change shows how an organisation or an intervention it carries out intends to trigger a chain of results that leads to intended effects. The application of a ToC helps to illustrate the theoretical assumptions and causal linkages of an intended path to impact and can thus contribute to organisational learning and programme management.

1 DeGEval Gesellschaft für Evaluation e.V. (2017). Standards for Evaluation, first revision 2016, first edition, Mainz: DeGEval. P. 66.

2 Ebd. P. 67.

Appendix

Tabel 3: Factors influencing the success of start-up and business support programmes identified on the basis of empirical studies

Participant-related factors

- (Lack of) competences and skills of entrepreneurs or participants (Jagoda et al., 2016)
- Internal team reasons for abandoning start-up projects (Kulicke, 2013, p. 10)
- Characteristics of the start-up team/start-ups before programme participation (Link & Scott, 2012a)
- Intellectual property rights (patents, word marks, copyrights) of participating teams/start-ups (Link & Scott, 2012b)
- (Low) interest of the participants (Remeikiene & Startiene, 2013)
- (Negative) attitude towards support programmes (Remeikiene & Startiene, 2013)

Programme features

- Breadth and profile of programme design (Bank et al., 2017)
- Reputation of the programme or programme sponsor (Bank et al., 2017)
- Awareness of the programme among target groups (Bank et al., 2017)
- Attractiveness of the programme location for target groups (Bank et al., 2017)
- Fit of programme goals and approach (Kulicke, 2018)

Preparation of the programme

- Planned and well-structured process prior to programme start (Bank et al., 2017)
- Targeted selection of participants (Remeikiene & Startiene, 2013)
- Tipping points for self-reinforcing participant recruitment (Bank et al., 2017)
- Clarification of the participants' interests and motives (Remeikiene & Startiene, 2013)

Input

- Financial resources of the programme (funding, staff, infrastructure, etc.) (Gulotta & McDaniel, 2006).
- Sufficient funding for the programme (Bank et al., 2017; Remeikiene & Startiene, 2013)

Activities

- Design/quality of practical support activities (Kulicke, 2018; Remeikiene & Startiene, 2013)
- Quality and scope of services (innovation, marketing, finance, soft skills) (Heydebreck et al., 2000; Hung Kee et al., 2019)
- Invitation of interesting speakers and/or lecturers (Remeikiene & Startiene, 2013)
- Participation of famous and successful entrepreneurs (Remeikiene & Startiene, 2013)
- Qualification tailored to the target group (Remeikiene & Startiene, 2013)
- Financial offers or referrals tailored to the target group (Rupasingha et al., 2019)
- Surveys on the funding programme (Remeikiene & Startiene, 2013)

Efficiency

- Efficiency of programme implementation (Kulicke, 2018)
- Funding costs per job created ("cost-per-job indices") (Felsenstein, 1992)
- Deadweight effect (Felsenstein, 1992)

Outputs

- Achievement of the goals of the business plan (Kulicke, 2013) or the start-up-related funding goals
- Monitoring programme performance (Remeikiene & Startiene, 2013)
- Resource-based view: strengthening the competitiveness of participating start-ups (innovation, intellectual property rights, team competence, marketing competence) as a basis for performance (Pergelova & Angulo-Ruiz, 2014)
- Participant satisfaction (Jagoda et al., 2016)
- (Lack of) fulfilment of the participants' expectations (Remeikiene & Startiene, 2013)

Network-related factors

- Effective cooperation structures (Bank et al., 2017)
- Access to suitable expert networks (Bank et al., 2017)

Environment-related factors

- Policy-induced/-supported target markets (Link & Scott, 2012b)
- Access to attractive (lead) markets (Bank et al., 2017)
- Tax breaks and incentives for venture capitalists to invest in start-ups (Chen & Phillips, 2016)
- Market opportunities and hurdles (Kulicke, 2013, p. 10)

Source: Fichter et al., 2021 (the studies that empirically identified the individual influencing factors are listed in Fichter et al. 2021).³¹

Table 4: Examples of proposed indicators for the programme evaluation and impact evaluation of start-up support programmes

Inputs (Resources, Participants)	Outputs (Services)
<p>1 Resource inputs of the programme</p> <ul style="list-style-type: none"> 1.1 Total programme budget 1.2 Number of programme staff in full-time positions 1.3 Number of hours of programme staff per supported start-up 1.4 Total amount of financial support available and per beneficiary 1.5 Number of actively participating programme partners 1.6 Committed/provided workload of the programme partners in working days <p>2 Quality of applications and programme participants</p> <ul style="list-style-type: none"> 2.1 Number of applications that: <ul style="list-style-type: none"> a. have successfully passed the initial screening of the support programme b. were approved 2.2 Proportion of applications out of all applications that: <ul style="list-style-type: none"> a. successfully passed the initial screening of the support programme b. were approved 2.3 Gender composition: Proportion of female founders among all founders among: <ul style="list-style-type: none"> a. all applications b. approved applications 2.4 Experience of the programme team in number of years in start-up support 	<p>3 Services for beneficiaries and use of the services</p> <ul style="list-style-type: none"> 3.1 Grants approved in euro per calendar year for: <ul style="list-style-type: none"> a. Personnel costs b. In kind/travel/external services c. Consulting services 3.2 Grant paid out in euro per calendar year for: <ul style="list-style-type: none"> a. Personnel costs b. In kind/travel/external services c. Consulting services 3.3 Average consulting/supervision/mentoring/coaching hours per start-up team per calendar year by: <ul style="list-style-type: none"> a. Support programme b. Mentors/coaches 3.4 Average number of events per start-up per calendar year to promote: <ul style="list-style-type: none"> a. Entrepreneurial skills b. Networking c. Funding <p>4 Use of the offers</p> <ul style="list-style-type: none"> 4.1 Number of start-ups participating in the programme per cohort, per year and/or in total. 4.2 Number and proportion of start-ups that participated in programme offer X, Y, Z <p>5 Satisfaction of programme stakeholders (beneficiaries and others, if applicable)</p> <ul style="list-style-type: none"> 5.1 Satisfaction of the beneficiaries with the support and various offers provided with regard to: <ul style="list-style-type: none"> a. Financial support b. Knowledge transfer c. New partnerships d. Efforts of the programme e. Flexibility of the programme f. Events 5.2 Satisfaction of other stakeholders: <ul style="list-style-type: none"> a. Satisfaction of the programme managers with the support programme b. Satisfaction of external collaborators with the support programme 5.3 Degree of need for change to the programme from the perspective of: <ul style="list-style-type: none"> a. Beneficiaries b. Programme managers of the support programme c. External collaborators

Outcomes

(Effects at the beneficiary level)

6 Team development and resources

- 6.1 Development of team quality in the funding period (or 2, 5 or X years after the funding, if applicable, in comparison to a comparison group) with regard to:
 - a. Degree of presence of required competencies in the founding team
 - b. Degree of definition of team roles
 - c. Degree of team members' emotional attachment to the start-up
- 6.2 Development of entrepreneurial orientation of the founding team in the funding period with regard to:
 - a. Degree of positive risk appetite
 - b. Degree of innovation
 - c. Degree of proactive action
 - d. Degree of competitive orientation
 - e. Degree of autonomy of employees
- 6.3 Development of sustainable entrepreneurship competencies in the funding period with regard to:
 - a. Degree of competencies in strategic management
 - b. Degree of competencies in managing conflicting objectives
 - c. Degree of competencies in future-oriented thinking
 - d. Degree of systems thinking competencies
 - e. Degree of normative competencies
 - f. Degree of interpersonal competencies
- 6.4 Development of the funding situation in the funding period (or 2, 5 or X years after the funding, if applicable, in comparison to a comparison group) with regard to:
 - a. Average length of cash runway
 - b. Volume of newly approved funding
 - c. Volume of new debt capital
 - d. Volume of newly received equity capital
- 6.5 Social capital (access to resource providers)

7 Performance and resilience of the beneficiaries

- 7.1 Business development in the period of funding (after end of funding and/or 2, 5 or X years thereafter, if applicable, in comparison to a comparison group) with regard to:
 - a. Average sales growth per year
 - b. Average earnings growth (EBIT) per year
 - c. Average total volume of sales per year
 - d. Average total EBIT per year
 - e. Market share

- f. Degree of successful definition and integration of KPIs
- g. Average number of employees in full-time equivalents
- h. Total number of employees in full-time equivalents
- i. Proportion of supported start-ups that did go into insolvency (survival rate)
- 7.2 Development of the start-ups' sustainability performance in the funding period:
 - a. Sustainability score according to DIN SPEC 90051-1
 - b. Degree of contribution of the product/service to selected SDGs
 - c. Degree of comprehensiveness, systematics and functionality of the corporate sustainability concept
 - d. Degree of successful definition and integration of sustainability-related KPIs
- 7.3 Development of the start-ups' resilience in the funding period:
 - a. Resilience score (degree of availability of required competencies and resources in the founding team), formed on the basis of the following individual indicators:
 - b. Team stability
 - c. Average length of cash runway
 - d. Market stability
 - e. Degree of innovation
- 7.4 Achievement of defined objectives in the funding period:
 - a. Degree of achievement of start-up specific tasks & defined development steps as formulated in the application and/or funding agreement
- 7.5 Start-up rate: Number/proportion of beneficiaries who started a business during/after the funding period

Optional additional outcomes category: Effects on the support programme and the funding organisation

- Defined desired effects on the funding institution/organisation:
- a. within the funding institution
 - b. among direct stakeholders of the support programme

Impacts

(Effects at higher system level)

8 Impact on direct stakeholders of the beneficiaries (e.g. customers)

Changes in stakeholders of the start-ups in the funding period (2, 5 or X years after funding, if applicable, in comparison to a comparison group) with regard to:

- 8.1 Customer satisfaction
- 8.2 Sustainability-related empowerment of customers
- 8.3 Proportion of suppliers that comply with environmental and social standards in supply chains
- 8.4 Average number of memberships in sustainability-oriented associations/networks per start-up
- 8.5 Average number of sustainability-related collaborations per start-up
- 8.6 Number of supported start-ups that achieve a measurable and significant sustainability effect on customers
- 8.7 Proportion of funded start-ups that have achieved a measurable and significant sustainability effect on customers
- 8.8 Energy/water/waste savings per customer
- 8.9 Number of customers benefiting from this

9 Market transformation

Developments in the market transformation of supported start-ups in the funding period (or 2, 5 or X years after funding, if applicable, in comparison to a comparison group):

- 9.1 Number/proportion of supported start-ups that can be classified as “market changers”
- 9.2 Number/proportion of supported start-ups that contribute to the growth of environmentally friendly market segments
- 9.3 Number/proportion of supported start-ups with high market scaling of environmental innovations
- 9.4 Number/proportion of supported start-ups that contribute to the establishment of sustainable industry standards
- 9.5 Number/proportion of supported start-ups that were/are key drivers for the overall growth of the respective market per start-up

10 Society and environment

Development of environmental relief in the funding period or after 2, 5 or X years, if applicable, in comparison with a comparison group:

- 10.1 Degree of environmental relief through most important environmental relief effect per product/service
- 10.2 Degree of diffusion of the main environmental relief effect
- 10.3 Total GHG reduction (in t CO₂ eq.) per year per start-up
- 10.4 Average GHG reduction (in t CO₂ eq.) per year per start-up
- 10.5 Number/proportion of climate-neutral/climate-positive start-ups
- 10.6 Secondary raw material quota and total primary raw materials saved in t
- 10.7 Average impact score of cohort/beneficiaries, change, benchmarking.
- 10.8 Average score of the contribution of the cohort/beneficiaries to individual SDGs: change/benchmarking

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