



Working Group on Impact Assessment

Impact of RTI Policy on Social Innovation

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Focus

Social innovations are drivers and expressions of social change. They often emerge spontaneously and can spread and develop in different ways. With the growing importance of social innovations, there is increasing interest in better understanding their effects and drawing conclusions from them, for example for future policy and measure design. So far, impact assessments of social innovations have focused mainly on individual projects, interventions or organisations. There is a lack of long-term, overarching analyses of impacts, for example with a perspective on systemic or societal aspects (Streicher et al. 2020).

Social innovations are also more frequently being addressed in research, technology and innovation policy (RTI policy), which is increasingly dedicated to social challenges and in its implementation pursues a systemic understanding of innovation more intensely – based on cooperation and interaction between a large number of actors. Due to a lack of ambition and visibility in innovation policy debates, however, the understanding of the effects of social innovations, which for their part often make use of new technologies, lags behind the findings from the impact measurements of technology and innovation promotion and thus also the knowledge regarding preconditions, potentials and hurdles for the development and diffusion of social innovations. At the same time, the demands for impact assessment and evaluation in the RTI sector are growing.

A working group consisting of representatives of the Austrian RTI community therefore addressed the question of how the impact of RTI policy on social innovations is shaped or how it can be shaped. The work on this took place between September 2020 and January 2021 and was divided into three steps: (1) the development of a conceptual approach to the topic; (2) the selection and discussion of examples; and (3) the drawing of conclusions and further questions. The different perspectives among the group, including the Ministry, the Agency, the Council for Research and Development as well as evaluators, helped to critically discuss the topic.

This paper, which is to be regarded as a discussion paper, summarises the main findings of the working group.

Conceptual Approach

The work started with a conceptual positioning of social innovation in the RTI policy field. The term "social" refers to interpersonal relationships and social practices (interaction, participation) in particular. Social innovations are not automatically "good" or "positive" but, like technical innovations, can generate direct and indirect effects as well as lead to unintended or negative consequences. Subsequently, the working group chose a definition of social innovation that focuses on the change of social practices. Accordingly, social innovation is...

"... an intentional (...) new combination of social practices in certain areas of action emanating from certain actors (...) with the goal of better satisfying or answering needs and problems (...) than is possible on the basis of existing practices". "The new does not take place in the medium of technological artefacts, but on the level of social practices (of governing, organising, providing, consuming, partnering, negotiating, etc.)". (Howaldt and Schwarz, 2010, p. 89 – translated from German)

The group then discussed "new, changed social practices (alternatively: actions, ways of doing things, approaches, cooperation patterns, forms of cooperation), triggered or initiated by RTI policy". The subsequent research focused on "new, changed social practices within RTI ecosystems" and how this change is taking place. This was directed to a specific context in which social innovations can emerge. Furthermore, implications for the development of political strategies and instruments were considered.

In the RTI ecosystem, RTI policy can play a role or have a function; the ecosystem approach is based on the assumption that new, application-oriented knowledge is generated through a multi-perspective approach. This includes, for example, the joint development of research questions on current topics (co-design) or the joint development of new products or services (co-production).

In the discussions, the RTI ecosystem was often put on a level with the actual "research process" (e.g. within the framework of funded projects), also with regard to impact assessment and measurability: research as a learning, change and problem-solving process (see the following example "Open Science"). However, the concept of the RTI ecosystem can also be applied to the RTI actor landscape (see example "Maker Communities") or to RTI policy itself (see example "Appointment Procedures"). The following table summarises those aspects within the research process and knowledge transfer considered important by the working group, for RTI policy in general and impact assessment in particular.¹

Table 1: Aspects of social innovation in individual research process and transfer phases

Phase	RTI Policy	Impact assessment and measurement
Research process	<ul style="list-style-type: none"> • Creating/directing/supporting space, so that society (users, citizens) can be more involved as innovation driver or taking a step back as a policy actor and implicitly opening up spaces. • Offering participation formats • Changing practice in the ongoing research process through interconnecting institutions, actors and stakeholders. 	<ul style="list-style-type: none"> • Participation formats <ul style="list-style-type: none"> • Timing/extent of involvement of relevant target groups (in research questions, design, etc.); • Immediate change(s) in the relevant target groups within the research process. • Infrastructures: What is made available to whom and when? In which way should infrastructures be designed to enable and promote social innovations? • Relevance of networks
Results (output, outcome) of the research process	<ul style="list-style-type: none"> • Changing behaviour in target groups confronted with research results (e.g. as products or services). 	<ul style="list-style-type: none"> • Participation formats <ul style="list-style-type: none"> • Comparing the participation contribution of relevant target groups (pre-post comparison) • Indirect changes within the relevant target groups, e.g. a change in social practice (long-term observation)
Feedback into new research processes and RTI policy	<ul style="list-style-type: none"> • Findings from the research process and (potential) behaviour change flow back into new research processes, measures, policies 	<ul style="list-style-type: none"> • Forms and formats of feedback loops

The working group agreed that RTI policy can create or change the environment for social innovation so that it is encouraged (stimulated, enabled, supported) but also prevented under certain circumstances. RTI policy can call for social innovation, a single intervention (e.g. a programme) can aim at promoting social innovation, for example when it comes to overcoming societal challenges. Social innovation is also a cross-cutting issue in the RTI sector and must therefore be taken into account at various levels. This fact as well as the goals, role and functions of RTI policy in an RTI ecosystem in connection with innovation was discussed in great depth by the working group.

¹ Questions on the use of technology for social innovation were also addressed in the working group (especially in the context of the sharing economy and collective awareness platforms - CAPs). However, it was decided not to go into the topic in greater depth at this point.

With regard to impact assessment and impact measurement, the value of social innovation for participation (i.e. from the perspective of the actors: participation in decision-making and in resources), for inclusion (i.e. from the perspective of systems: the inclusion of actors) and for changing discourse was emphasised. The early involvement of relevant target groups in research processes, the joint formulation of problems, and the observation of changes in these target groups were seen as central. The following table summarises the goals discussed and the possible metrics derived from them. These should be seen as a starting point for further considerations; they should be further differentiated and supplemented.

Table 2: Categories of impact assessment, its goals and potential metrics

	Goals	Metrics
Participation	<ul style="list-style-type: none"> • Development of new target groups • Involvement of relevant target groups, including civil society actors, NPOs, possibly by creating ... 	<ul style="list-style-type: none"> • Characteristics (type, structure) of target groups • Number of projects involving relevant stakeholders • Extent, duration of participation
	<ul style="list-style-type: none"> ○ incentive systems for increasing the willingness to use social innovations in exchange of science and practice, and/or ○ (funding) measures that require or presuppose the participation of specific actors. 	<ul style="list-style-type: none"> • Number, type of measures (funding programmes, competitions, etc.) • Use of measures, participation behaviour of target groups • Role of inter- and transdisciplinarity • Development of and participation in networks • Outputs, outcomes (concepts, products, processes, services)
	<ul style="list-style-type: none"> • Creation, provision of participation formats • Provision of joint infrastructures (testing environments, experimental laboratories) 	<ul style="list-style-type: none"> • Type of participation • Extent of infrastructure usage, type and purpose of use
Inclusion	<ul style="list-style-type: none"> • Consideration of diversity in society • Promotion of participation, equal opportunities, gender equality • Empowerment of individuals • Capacity building of organisations 	<ul style="list-style-type: none"> • Satisfaction of actors • Self-description of actors pre/post (e.g. encouragement, inspiration, appreciation, competence development) • Standards for equality issues
Changes in discourse	<ul style="list-style-type: none"> • Opening up new topics, perspectives • Changes in social interaction • Contribution to acceptance, dissemination and institutionalisation of social innovation 	<ul style="list-style-type: none"> • New competences, new knowledge • Increased networking • Changes in the population (e.g. attitude towards science)

Examples of changes in social practices

The working group researched examples of changes in research processes and other social practices in the RTI sector that illustrate different impact dimensions. These are presented below. Overall, the impression gained from previous literature research was confirmed that there is mainly anecdotal evidence on social innovation as a result of research processes or their feedback to RTI policy. Reasons for this could be the low level of interest in recording and evaluating such results, the low dissemination of suitable analytical concepts, and the mostly short observation periods of impact measurements.

Box 1: Changes in research processes and results by Open Science

Open Science describes the opening of scientific production processes and outputs in the course of digitalisation. The central goal is to broaden and accelerate the circulation and transfer of knowledge through access to science. This includes making scientific results openly accessible (Open Access) and making the underlying data openly available (Open Data) (cf. BMBWF, BMVIT and BMDW 2018; "Open Science and Dark Knowledge"). The participation of citizens in research (Citizen Science) creates new ways of participation and interaction, and thus participation in scientific practice (cf. Working Group on Impact Assessment. Group 2 2021).

The provision of open data enables insights into science, industry and society. On this basis, faster and better solutions can be found for social but also political, economic, technological and ecological problems (cf. Desouza and Smith 2014). One example of this is the use of open data for research in the energy sector, for example with a view to developing and testing energy system models or establishing energy communities. For example, the "Open Data Platform" project of the Green Energy Lab research initiative of the Austrian Climate and Energy Fund collects consumer data in the energy sector and uses this data for optimisation purposes and the development of forecast models. The consumers involved can decide for themselves which data they want to pass on. This also creates a greater awareness of their own consumption behaviour and energy costs. (<https://greenenergylab.at>)

Box 2: Changes of research processes and results in projects on equal opportunities

Since 2008, the Austrian Research Promotion Agency (FFG) has been funding FEMtech research projects in research, technology and innovation that incorporate the gender dimension in technology development. The H2020 project EFFORTI (Evaluation Framework for Promoting Gender Equality in Research and Innovation; <https://efforti.eu/>) investigated the effects of FEMtech research projects in terms of research and innovation and how these can be measured. One result according to the case study analysis was an increased gender competence of researchers, which is used to write better research proposals in FEMtech and in other funding programmes. Overall, the quality of the submitted proposals has improved substantially since 2008.

The competences gained in the projects with regard to gender or new research methods are also used in teaching, training and other research projects. The majority of the researchers surveyed stated that they had gained a greater awareness of interdisciplinary or participatory research through participation in the funding programme. In addition to changes in research processes through the inclusion of gender expertise, effects beyond this could also be identified, on a modest scale: 18 of 55 projects planned to apply the project results in practice and a further 12 committed themselves to applying the project results. One interview partner also reported a market launch of the services developed in FEMtech research projects, including an app. (cf. Palmén et al. 2020)

Box 3: Changes of social practices in appointment selection procedures

It is not only in science and research that the gender bias associated with selection processes for filling top positions is considered a central hurdle for women. Non-transparent decision-making processes or the importance of informal networks are considered stumbling blocks – even in formally regulated selection procedures.

One higher education policy programme that addressed this problem and aimed to trigger a change in traditional practices was the excellentia initiative (2007–2011) launched by the Austrian Federal Ministry of Science and Research (BMBWF). Under excellentia, universities received a one-time bonus payment of up to € 70,000 for the additional appointment of women to professorships. The money paid out was to be used for gender equality measures. The bonus payment was intended as an incentive for universities to reflect on existing regulations for appointment procedures with regard to gender bias and to develop alternatives. The evaluation of excellentia shows that this was the case at some universities and that an analysis of the appointment procedures was carried out to determine at which stages of the process the proportion of women decreases.

Based on these results, the processes were then adapted by, for example, defining binding evaluation criteria at the time the position was advertised. This was to avoid that criteria for individual applications were handled flexibly. In other cases, informal practices were formalised. For example, informal interviews outside the appointment committee were no longer held with selected applicants before the hearing. One university introduced the rule that the day before the hearings, the members of the appointment committee attend an informal dinner with all applicants. This is intended to reduce the influence of existing informal networks on the appointment process. (cf. Wroblewski 2015, 2014)

Box 4: Changes of research processes and social practices through the maker movement

"Maker communities" and the "do-it-yourself movement" can be seen as social innovations within the RTI actor landscape. Open workshops equipped with new (e.g. 3D printers) as well as traditional tools enable the implementation of ideas into prototypes. Suggestions usually come from the population itself and are largely put into practice by the population under the guidance or with the help of the community. In order for such workshops to function, they are on the one hand "curated", i.e. organised and supervised, and to a certain extent selective. On the other hand, maker communities are built up that contribute "collective intelligence" so that the ideas of individual civil society actors for innovations are not abandoned for lack of know-how. The social innovation maker community is thus a new social practice for generating innovations, especially in the field of design and technology.

An example of a maker community is the H2020 project CAREABLES (<https://www.careables.org>). The project is integrated into decentralised infrastructures ("maker spaces" in various European countries) and networks them around a common goal: the creation of open, inclusive and digitally supported health products together with the people concerned. Different (offline, online) formats and events are offered in which people with special needs come together with so-called "makers" (often creative thinkers, hobbyists). In the project, the methodology for the co-design of the products is developed and the cooperation is accompanied. Interested parties can download detailed documentation on individual "careables" via the CAREABLE platform, adapt and further develop them. A side effect of the cooperation with makers is the experience of self-empowerment and appreciation among those affected, which improves their quality of life.

Conclusion

RTI policy can stimulate, improve and support (and possibly also prevent) the development of social innovations. The examples presented show how changes in social practices take place in the RTI sector and what effects they can have. They also give indications of where starting points exist and where changes can be actively shaped.

While individual instruments and measures have focused on the promotion of social innovations so far, it often remains unclear what overarching goals lie behind them and what function RTI policy can assume here, or how this function should go about supporting and promoting social innovation.

Against this background, the following questions can be derived:

- ❖ What is the goal and function of RTI policy in the innovation ecosystem with regard to social innovation? Should RTI policy have an explicit function/role in this regard at all?
- ❖ Can the impact of RTI policy on social innovation be controlled by improving policy instruments?

At the European level, various strategies and approaches can be found in this regard, from long-term initiatives ("Innovation Union") and the opportunities of the current research framework programme ("Horizon Europe") to activities at the national level². According to the working group, topics to be considered are in particular the underlying (narrow, broad) understanding of innovation and the role of social innovation in the context of (European) mission orientation.

Participation and interaction of relevant target groups is considered crucial for the development of social innovation. These aspects are also at the centre of impact assessment and measurement, and based on this, the focus is on (type and extent of) acceptance and dissemination. In this context, the members of the working group are addressing the following questions:

² Example: "Impact Innovation. Entwicklung innovativer Ideen und Lösungen" (Austria), <https://www.ffg.at/programm/impactinnovation>, Gesellschaft der Ideen – Wettbewerb für Soziale Innovationen (Germany), <https://www.gesellschaft-der-ideen.de/>

- ❖ How can RTI policy be improved to support and promote the development and dissemination of social innovations?
- ❖ What forms/ways of participation and interaction are appropriate for the development of social innovations, especially in order to involve the wider society?
- ❖ How can the significance of social innovation be increased in the RTI ecosystem? Could more measurability lead to more visibility and higher significance? How can social innovation be better anchored in the frequently implicit multidimensionality of impacts?

New or changed social practices emerge on a small scale and often only become visible after some time. From the working group's point of view, there is a lack of medium- to long-term observations and studies, a research gap. Therefore, the following questions are raised with regard to impact assessment and measurement and the starting points for goals and metrics presented above:

- ❖ What contributions are expected from social innovations (in the medium/long term), for example to transformative processes? Which metrics should be used to measure them? How sustainable are these changes? Which factors favour sustainability?
- ❖ What are the possibilities for recording and evaluating social innovations in the RTI sector consistently over a longer period of time? Which data bases/survey instruments could be used?

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