

Article

Ambition Meets Reality: Mission-Oriented Innovation Policy as a Driver for Participative Governance

Maria Rabadjieva *  and Judith Terstriep 

Institute for Work and Technology, Westphalian University, 45886 Gelsenkirchen, Germany; terstriep@iat.eu

* Correspondence: rabadjieva@iat.eu

Abstract: As a response to the grand societal challenges reflected in the United Nations Sustainable Development Goals (SDGs), the transition towards sustainability has gained momentum in recent years, as has the debate on mission-orientation in innovation policy. Harnessing the positive transformation potential for innovation, is about collaboratively exploring complex and uncertain pathways, especially when the goal is sustainable local economic development. Nevertheless, the demand for participatory approaches posed by the re-emergence of mission-orientated innovation policy, and the conditions for their successful implementation at the local level, particularly in the framework of economic development, are poorly understood and not yet in the focus of the current debate. This article conceptualises participation as a new mode of governance for sustainable local economic development, and links it to mission-orientation in innovation policy. We differentiate forms, degree of involvement and target groups, as well as highlight the underlying rationales and modes of interactions. Based on action-research carried out over three years in the city of Bottrop, Germany, we conceptualise an ideal-typical practice of participatory governance. Our findings show that firms are willing to participate in sustainable local economic development, only if they can internalise at least part of the value-added.

Keywords: mission-orientation; innovation policy; participative governance; economic development; sustainability



Citation: Rabadjieva, M.; Terstriep, J. Ambition Meets Reality: Mission-Oriented Innovation Policy as a Driver for Participative Governance. *Sustainability* **2021**, *13*, 231. <https://doi.org/10.3390/su13010231>

Received: 5 November 2020

Accepted: 22 December 2020

Published: 29 December 2020

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2020 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Being a top priority on policy agendas at the local, national and supranational level, innovation policy experienced a turn from fixing market and systems failure, towards tackling ‘grand societal challenges’ such as climate change, ageing, inclusive and smart growth as well as problems of ongoing economic restructuring [1–4]. This ‘normative turn’ [5] has made way for what has been labelled mission-oriented innovation policy (MIP) [1], transformative innovation policy [4,6] or challenge-oriented innovation policy [7,8]. Notwithstanding their different foci, these novel approaches or ‘paradigms’, share the renewed interest in setting the direction of change to facilitate purposive innovations. Hence, societal ‘mission’ is regarded as a narrative for challenge-based innovation policies [8]. Societal challenges are ‘wicked’ in the sense that they are complex, systemic, multi-dimensional, urgent and open-ended in nature [8,9]. To this end, Hekkert, Janssen and Wessling define ‘challenge-based missions as an urgent strategic goal that requires transformative systems change directed towards overcoming a wicked problem’ [10] (p. 76). Ideally, ‘[a] “mission” gives both a sense of urgency and a sense of meaning’ while expressing values that citizens care for [11] (p. 9). Good examples of mission-orientation are the United Nations Sustainable Development Goals (SDGs) [12] or the European Union’s Horizon 2020 research and innovation programme [13]. The paradigm shift, however, is most apparent in the forthcoming Horizon Europe programme. Influenced by the work of Mazzucato [3], the programme defines five missions (‘Conquering Cancer’, ‘A Climate-resilient Europe’, ‘Mission Starfish’, ‘100 Climate-Neutral Cities by 2030’ and ‘Caring for Soil is Caring for

Live') and clear targets, intending to maximise the impact of research and development, to sustain global competitiveness and to improve peoples' daily life [14]. Likewise, the German Federal Ministry for Education and Research (BMBF) High-Tech Strategy 2025 claims '*we are developing missions and setting ourselves concrete goals which unite the support of science, business and society. [. . .] we are specifically promoting research into issues that are relevant to our economy and society*' [15] (p. 4).

Without a doubt, coping with grand challenges necessitates fundamental societal transformations including, but going far beyond, technology, to institutional and behavioural change [1,4,8,13]. Linnér and Wibeck define transformation as '*deep and sustained, nonlinear systemic change, generally involving cultural, political, technological, economic, social and/or environmental processes*' [16] (p. 222). 'Transformability', in contrast, refers to the capacity for actors and institutions to change part of a system when changes in ecological, political, social or economic conditions make the existing system untenable [9,17], and is viewed as a core characteristic of resilient systems [17,18]. Resilience in this context is not merely about adaptation, but the ability of systems (people, communities, ecosystems, cities, nations) to generate new ways of doing, in other words their adaptive or transformative capacity [19,20]. According to Yan and Galloway [21], transformation becomes possible if the capacity to change exists. Taking 'directionality' as a starting point, MIP also calls for a collective priority setting process engaging a diverse set of societal stakeholders—with different interests, problem perceptions, advocating distinctive solutions—to combine various sources of knowledge in new ways [4,22]. It follows that MIP requires, rethinking how innovation policies are designed, implemented and evaluated [6,8,9]. As Weber and Rohrer [23] rightly pointed out, prevailing rationales legitimising policy interventions derived from neoclassical and innovation systems thinking—market and systems failures—are not sufficient concerning transformational change. Notably, they lack directionality, integration of demand-side, reflexivity in the long-term and coordination among policy fields and levels; additionally, uncertainty of change processes is largely neglected. Highlighting the complementarities between innovation systems and multi-level transition approaches, the authors suggest adding '*transformational failures*' as a complementary rationale for policy interventions [23].

Given the complexity of societal challenges, the contextuality of innovations as a solution to concrete problems including local users [24,25], and the variety of location-specific institutions, it seems rather unlikely that grand challenges will be solved globally [26]. Yet, adaptive capacities of social systems are said to depend on the nature of their institutions and their governance [27]. Arguably, new and more decentralised modes of governance are needed to equally involve and effectively coordinate firms, academia, local governments, intermediaries, NGOs and citizens, in 'missions' [8,28]. Meaningful governance should encourage mutual learning, problem-ownership and co-production, while emphasising directionality. At this stage, national governments continue to be the core actor in innovation policy; however, in recent years challenge-oriented policies proliferate, both at the subnational and supranational level [26]. At the subnational level, cities and regions offer essential opportunities to successfully implement MIP, as they exhibit lower barriers to integration of governance functions, to actively engage people in missions and to grasp demands. The best way to do so is 'engagement by design', in other words through active participation in shaping the mission, setting priorities and governing the implementation [11]. Here, complementarities between policies at the three governance levels (e.g., directionality, anticipatory, participatory and inclusive nature) can bridge local, national, supranational policies and ideally, accelerate the impact of MIP, while circumventing trade-offs. Putting forward directionality can help establish legitimacy for action, whereas new modes of governance give leeway for shared responsibility and accountability.

Nevertheless, governance of MIP also poses particular challenges: first, coordination challenges stemming from the cross-sectoral nature of MIP and calling for coordinated actions across policy levels and fields. Second, implementation challenges, resulting from the diverse interests and capacities of government organisations [29]. Whereas policy mixes

have been proposed as a possible solution in response to coordination challenges [30], only a few studies have considered the alignment of policy design and implementation [31,32].

Hence, rather than focusing on mission-oriented innovation policy initiatives, this paper centres on opportunities, challenges and bottlenecks of meaningful governance structures for local economic development. The growing body of literature reflects the high expectations attached to the idea of MIP and its underlying rationale of transformational change but lacks detailing with regard to implementation at the local level. This poses fundamental research questions: how can such policies be implemented at subnational level? What are the necessary institutional settings and governance structures in support of MIP? What is the role of implementing bodies in transformational change processes? In an attempt to provide initial responses to these research questions, we will proceed as follows: first, we introduce the concept of participatory governance as a new mode of local economic development, towards transformational change. Second, based on the project of «Bottrop2018+—Towards Sustainable and Resilient Economic Structures» funded by the German Federal Ministry of Education and Research (BMBF) See Supplementary, we exemplify the implementation of this mode of governance under real conditions.

2. Participatory Governance as New Mode of Local Economic Development

Breaking grand challenges down into concrete problems, translated into missions, strategies and concrete action, is at the core of MIP. Transformational change, however, cannot be understood without actors who initiate and engage in change processes. As has been outlined above, given the contested nature of problem identification, the contextual nature of problem-solving and the variety of institutional settings, MIP is best implemented at the subnational level of regions and cities. Drawing on the subsidiarity principle in innovation policy, and emphasising the geographical dimension of social and democratic legitimacy, Wanzenböck and Frenken [26] claim that *‘[a] mismatch between the spatial impact of innovation and the spatial scale of governance processes in which social problems are negotiated, framed and decided, would contradict the democratic values as formulated in the subsidiarity principle’* (p. 55). According to Mazzucato [13], Europe’s multi-level governance system is highly suitable for MIP, as it allows Member States and regions to experiment within larger EU-wide missions. This article describes such an experiment within the German context of local economic development.

2.1. Role of LDAs in Implementing MIP

In the German federal government system, cities have a relatively strong position, as the right to self-government is guaranteed by the constitution (‘Grundgesetz’). While the federal government and the federal states (‘Länder’) define the key principles, that is, the legal and financial framework, of innovation policies following EU regulations and directives, the detailed policies, their design and implementation are left up to the municipalities. They develop their own responses to the necessary transformational change, in the form of location-based schemes tailored to the specific local context. In this line, the responsibility of promoting local economic development (‘kommunale Wirtschaftsförderung’) falls within the responsibility of local authorities.

Local economic development agencies (LDAs) in Germany today often struggle to achieve their goal of establishing future-oriented economic structures because of the complexity of the challenges they face. That is, a continuous change towards a diversified middle-class economic system that is less prone to external shocks, demographic change and a lack of skilled labour force as a consequence thereof, a strained financial situation in the municipalities, and the increasing relevance of sustainability. Consequently, the tasks of LDAs have become more diverse in recent years [33–35]. The emphasis is increasingly on positioning the location in regional, national and international competition, not only to maintain its attractiveness but also to enhance it. Achieving this requires tying established and young companies to the location, promoting start-ups and the expansion of broadband coverage, recognising and responding to new technological, economic and societal trends,

and identifying options for action relevant for the local context. Companies and other local actors, are increasingly demanding to be actively involved in shaping the strategic direction of the local economy. The traditional service portfolio of LDAs is insufficient in coping with all these multifaceted, complex expectations. What is needed are structures and approaches suitable to meet internal and external requirements by bringing together actors from the business sector, academia, local administration, politics and civil society [36–38].

A participatory approach enables local stakeholders to develop a shared vision for future economic development, and to bundle their knowledge, capacities and other resources, to support local economic development, this contributes to overcoming resource constraints, leverage synergies and avoiding redundancy. Its success depends on cooperative management rather than on the promotion of individual interests. Rather than taking isolated actions, the local stakeholders engage in joint efforts to develop the local economy for their own benefit and urban society. It is a long-term, time-consuming process, which requires analysis, insight and above all, mutual trust and interactions between the partners [39]. Such an approach requires rethinking the concept of governance in all its facets, that is, its structures and processes.

2.2. (Participatory) Governance

‘Governance’ is understood in the English-speaking realm as a process of organising multiple actors to shape a shared vision and specific activities [40]. Borrás and Edler define *governance of change* in the context of innovation policy as ‘... the way in which societal and state actors intentionally interact in order to transform ST&I systems by regulating issues of societal concern, defining the process and direction of how technological artefacts and innovations are produced, and shaping how these are introduced, absorbed, diffused and used within society and economy’ [41] (p. 14). In the German context, Fürst [42] distinguishes between self-organisation and regional governance. Self-organisation refers to politic-administrative actors and institutions fulfilling activities delegated from the state. At the same time, local governance can generally be defined as a network-based ‘soft’ form of self-organisation. As such, it includes public (politics, administration) and societal (business, civil society, science) actors, different modes of interaction (competition, cooperation, hierarchies), distinct ideas of space (functional, territorial, symbolic) and varying levels of observation (local, regional, national, European). This broad understanding of governance describes the full range of interaction patterns and modes of collective action. It is not understood from a normative perspective (as ‘good governance’), but as an analytical category to study the processes of self-organisation.

Governance of ‘missions’ in complex socio-economic systems engaging a multitude of stakeholders from public, private, intermediary and NGO domains, necessitates participatory approaches [28,43,44]. Participative governance as a relational approach, challenges established practices of self-organisation in local economic development. It requires new non-hierarchical forms of process-organisation [45], tied to the self-organisation competences of non-state actors [46], and aiming at cooperation and co-production. In contrast to the widespread understanding of participation as the active involvement of citizens in municipal decision-making and planning processes, participatory economic development here refers to the commitment and engagement of local economic actors jointly, to shape transition processes in economic structural development. Within such a governance concept, the roles of LDAs move beyond classical tasks such as location marketing and building maintenance. They also comprise network management, measures to secure and acquire skilled workers at the location, raising awareness and improving the framework conditions for addressing societal challenges [34]. As the implementation body of MIP, the role of LDAs is one of stewardship, in other words to anticipate changes and exploit opportunities, and to orchestrate the transition of the local economy towards sustainable and resilient development.

Sustainability comprises the three interrelated pillars, ecology, economy and society, the triangle of sustainability, and is realised as a balancing of trade-offs between equally

desirable goals in the three pillars [47,48]. Sustainable development encompasses all activities and instruments that promote sustainability within local economic initiatives. The local socio-economic system is said to be resilient when in the event of a disruption, it is capable of maintaining or quickly returning to the desired functions, to adapt to change and to transform into systems that no longer limit current or future adaptive capacity [49]. Such transition processes require iterative, and cooperative governance approaches that on the one hand bring together multiple local actors and stakeholders from business, science, policy, administration and civil society, and on the other, can deal with issues and problems effectively and sustainably. Such participatory governance can strengthen problem-solving skills and the ability to develop economic structures continuously. Changes in policies and strategies are not enough in this context. Rethinking, changing values and the active participation of urban actors are just as necessary as long-term visions instead of short-term activities. Acknowledging the uneven distribution of power, resources, influence, access to information and capabilities, power relations between different institutions and actors and their dynamics need to be considered.

2.3. Transition Management

It is an ambitious task to abstract governance practices from their local context, to allow their application in different locations. Transition management [43] offers a solution by aiming to facilitate and accelerate sustainable transitions through a participatory and iterative process of visioning, learning and experimentation [50–52]. The transition represents a multi-phase, multi-level process, triggered by external changes or innovations in the established structures and practices. For affected actors to better anticipate, adapt to and influence the direction and speed of change, a common understanding of the origin, type and dynamics of change is helpful [53]. So, transition management moves in the area of tension between change as an uncertain, open process on the one hand, and the effort to ‘control’ it on the other. The balance between openness and control is guaranteed by adopting a long-term perspective (at least 25 years), which forms the framework for short-term policy. Setting short-term (operational) goals is based on long-term (strategic) goals and the anticipation of future developments, through the working out of scenarios. These goals are to be formulated in a flexible and adaptable manner (iterative process). The actors need space, and a protected environment to develop alternative regimes and drive innovations. Such participation by and interactions between the actors, is necessary to support politics and to involve actors in the solution through learning processes [54].

Transition management distinguishes between four governance levels at which participatory processes can be stimulated [54]:

- **Strategic:** Defining long-term activities for a shared discussion on the future (e.g., formulating long-term goals).
- **Tactical:** Determining medium-to long-term activities, which aim at changing established structures, institutions and provisions.
- **Operational:** Specifying short-term activities (including experiments) to test, implement and demonstrate new ideas, practices and social relations, and
- **Reflexive:** Activities allowing the collective learning from the dynamics of the present system and the transition processes to the desired future system.

Participation is, however, no end in itself, and no ‘one size fits all’ approach exists. This article argues that applying an all-encompassing participatory process is not as important, as asking whether active participation on all levels is necessary and feasible, and whether the actors have sufficient interest, resources and capacities for the desired participation. The conducted experiment shows that the answers to these questions are not easy and depend on various factors.

3. Methodology: The Case of Bottrop

Participatory governance as a new mode of governance for MIP, was pilot tested in a three-year research project in the city of Bottrop, Germany. It combined a multifaceted

methodology for strategy development, implementation and evaluation (processual dimension; see Appendix A (Figure A1 and Table A1)) with a structure for participative governance. Based on action research conducted with local actors in Bottrop, in the following we summarise the vital methodological points, and the course of the project, which serves as a baseline for the discussion section.

Originally coined by the American psychologist Kurt Levin [55] in the early 1940s, action research (AR) has spread to a wide field of research disciplines [56] and fits the rational of mission-orientated innovation policy, because AR is research carried out in real-time *with* participants involved in change processes. With reference to Greenwood and Levin [56], Karlsen and Larrea define AR as ‘*research strategy for change in real-time where three elements of research, action, and participation are connected and combined in the same process*’ [57] (p. 7). What the distinct approaches of AR have in common is the combination of action, research and participation in a spiral process of action and reflection [58]. The case presented in the following was not designed as AR from the beginning. The necessity for a process perspective on what happened during pilot testing of participatory governance and why it happened, however, has become increasingly important, and AR provided a suitable framework for this. As stated previously, implementing mission-oriented innovation policies is a complex task. Arguably, policymakers, implementing bodies and engaged actors, not only need analysis and new concepts, but also critical reflections, to make sense of challenges, problems and actions, and to cope with them. Through co-generation processes [56]—where data are derived from direct participation and dialogue with practitioners, as well as from surveys, expert interviews and secondary data—AR can contribute to establishing ‘spaces of reflection’ [58].

3.1. Framework Conditions

Located in the federal state North Rhine-Westphalia, Bottrop is a middle-sized centre within the Ruhr metropolitan area in Germany. Because of its location, Bottrop faces very tough regional, European and global competition. The primary goal of the municipality, is to develop a unique, but regionally appropriate, economic profile. For more than 150 years, the mining industry shaped the economic structures and image of the city. In 2018, however, the last mine closed its doors and with it, the subsidised coal mining in Bottrop, and the Ruhr region, came to an end. Considering the importance of the sector as a social and educational partner, the city of Bottrop is facing significant challenges. Next to the considerable regional competition, and the necessary economic restructuring, from one strong sector to a diversified economic structure, with many small and medium enterprises, Bottrop is confronted with an ageing population and an overly strained public budget [59]. The new orientation of the local economy requires new governance approaches to cope with the challenges.

Participatory processes are not totally new for the city. As part of the ‘City of the Future’ competition funded by the Federal Ministry of Education and Research, and the ‘Innovation City Ruhr’ Initiative, the city of Bottrop elaborated jointly with citizens, politicians, administrators, business and science, a municipal ‘Vision 2030+’ as well as project and implementation plans for the most critical future tasks. In addition to climate and structural change, topics of demographic change and its demands on social coexistence were addressed. While the ‘City of the Future’ process is aimed at the entire city, ‘Innovation City’ focused on specific city districts. In both projects, different local actors were involved in participative governance processes, however not specifically for local economic development. There was a need for a framework building on the lessons learned from the previous processes, and allowing expanding and coordinating participation in a strategic manner. To initiate transformational change towards sustainable and resilient local economic development, the three-year project Bottrop 2018+ was carried out between 2016 and 2019. The goal of this project reflects the SDGs, namely Goal 8, which aims to ‘*promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all*’. The overriding objective of Bottrop 2018+ was to pave the way

for participatory governance processes as the most suitable framework for translating the formulated visions into actions, durable over the long term.

3.2. Piloting Participatory Governance: The Experiment Bottrop 2018+

Bottrop 2018+ aimed at co-producing a participatory structure for economic development by capitalising on the engagement of and existing synergies among the local actors. The project followed an ambitious work programme, combining quantitative and qualitative status quo analysis with strategy and structure development, followed by an implementation phase and accompanied by a continuous reflection through critical appraisal (see Appendix A (Figure A1 and Table A1)).

By means of ‘*governance as process*’, initially an extensive socio-economic analysis based on public statistics [59] provided detailed information on the local framework conditions (e.g., economic structure, employment, population, age structure, educational attainment, etc.). Next, an extensive qualitative analysis of the existing governance structures, anchored in the Office for Economic Development and Location Management of the City of Bottrop (the local LDA), was carried out to understand the actors’ entanglement and the trust base for local economic development in the city [36]. Interviews with experts from regional and local business development networks, associations and the business sector revealed that awareness of sustainable and resilient economic structures had to be improved. Furthermore, the interviewees perceived and appreciated the LDA in Bottrop in its traditional role as a service provider [36]. Physical proximity, reliability and quick response to inquiries, minimal bureaucracy and the well-established regional networks, were highlighted as strengths. The predominantly reactive behaviour of the LDA as a whole, however, was viewed critically. The experts expressed the need for an active approach that includes the various local interest groups in economic decision-making. Interview partners also emphasised as weaknesses, the strong dependency on politics, weak city marketing beyond the city boundaries and the lack of a joint economic development strategy. The experts also stressed the desire of economic actors for greater involvement in the implementation of activities and measures [36]. These results explicitly showed that Bottrop has room and willingness for participatory governance approaches. The socio-economic and qualitative governance analysis jointly formed the basis for subsequent activities.

The restructuring of the practices for local economic development (phase 2) presented an all-encompassing, multi-level, multi-actor approach, based on ‘Strategic Alliances’ (STA) [60–62], in other words, the *structural dimension* of participatory governance. STAs are not a new phenomenon and have been subject to many management studies [63]. If transferred to local economic development, STA means broadening the scope of actors involved in the development of the local economy including delegation of responsibility. Local stakeholders join forces and resources to define a common ‘mission’ and make joint efforts to achieve this mission. The STA approach builds on transition management, and aims to activate and connect local actors to form a ‘*collective*’ [62]. Contrary to the common practice where the city administration or the LDA takes the lead in strategic development, the STA approach requires that the participants together set up a dialogue process, make decisions and define an action structure that enables them to design common strategies for sustainable and resilient economic development.

As shown in Figure 1, a cross-sector platform, the ‘*Economic Alliance*’ (EA), is at the core of the STA in Bottrop. Open to all local actors directly involved in, or affected by economic development, the EA functions as a governance structure and transition management agency, at the level of the city’s economy. The EA establishes transition arenas in the form of thematic and sector-specific strategic alliances [61]. In Bottrop, these were ‘Cooperative and digital Production in Craftsmanship’, ‘Trade-practices of the Future’ and ‘Sustainable Start-ups’. The three thematic STAs define the strategic framework for thematic cooperation, development of joint goals and definition of responsibilities. As an operative level for strategy implementation, each of the three thematic alliances defines at least one ‘*real-world laboratory*’ (in German ‘*Reallabor*’) as an experimentation space. Real-world laboratories

bring together relevant stakeholders, and allow space for developing and testing solutions in accordance with the mission and strategy defined, while processes of co-design and co-production, which enable collaborative learning, take centre stage [36,64].

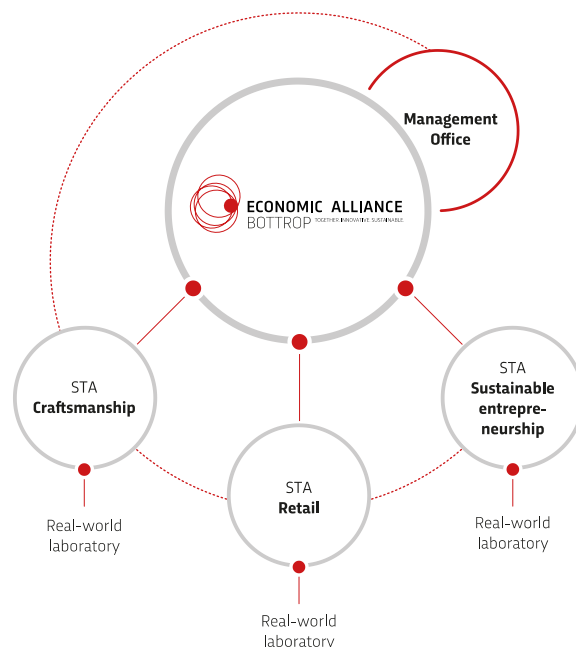


Figure 1. Strategic Alliances approach in Bottrop 2018+.

At all levels, non-hierarchical, lateral governance formats structure interactions of actors (see Appendix A (Figure A1 and Table A1)). The shared problem-centric view, the development of a shared vision and identification of thematic priorities take place at the level of the EA; hence, the EA sets the direction of the transformation processes (meta-level). The strategy in a thematic area is elaborated by the thematic strategic alliances (STA). The implementation of specific measures and experimenting, is allocated to the real-world laboratories, where the local actors connect at an operational micro-level to experiment with new solutions. The STAs define the structures and goals for the real-world laboratories, and act as a meso level between them and the overarching EA platform. The LDA established a management office to ensure smooth stakeholder management, to coordinate project activities and to steward and orchestrate the whole process.

All formats were open for interested actors in Bottrop. It was envisaged, however, that the strategic levels of the EA and STAs would mainly involve CEOs of companies, and entrepreneurs, while the real-world laboratories would engage professionals and employees. The theoretical conceptualisation of the approach, however, proved to be too complicated for a successful practical implementation in Bottrop.

4. Results: Lessons from Practice

The involvement and requirements for the city administration, companies and other local actors in participatory governance, are particularly demanding. First, all actors must reflect and question their traditional roles. The LDA needs to step away from the mentality of a service provider, and reflect future demands in a changing economic environment. Companies must acknowledge their responsibilities not only for sustainability but also for the city as a business location. Here a sense of problem ownership, and thus, a push for getting things changed, is crucial. Political actors need to be open to bottom-up processes and cooperative decision-making, which goes hand in hand with delegating power to local actors. These revised roles were not only new to the actors, but proved challenging in practice. During the course of the project, it became evident that the theoretical concept—structure and processes—overstrained the capacities, resources and

commitment of involved actors. Critical reflection led to rethinking and adapting the initial project approach. Despite the excellent start, marked by strong motivation and trust between the actors, already knowing each other and familiar with participative governance approaches, the proposed '*strategic alliances*' approach did not bring the expected results. Although the actors were successful in defining a shared vision for the future economic development directed towards sustainability and resilience, they soon fell back into their 'old' roles and behavioural patterns. The business sector showed restraint in self-organising and decision-making processes, which, as stated above, are the core of the STA approach. Instead of non-hierarchical bottom-up structure development, the LDA was expected to take the lead and continuously guide the process for all involved stakeholders. The political actors partly abandoned the initial idea of participative governance as an instrument for implementing MIP. These dynamics resulted in a somewhat negative feeling, which gave rise to questioning the new form of governance. Instead of establishing the EA as a platform for joint decision-making, the emphasis shifted towards EA as an arena for cross-sectoral business interaction only and the level of the thematic STAs was abandoned. Additionally, some employees of the LDA's felt tensions and resistance to the newly proposed structure. Communication problems about the necessity and the desired results of the new structure, in the beginning, led to an internal rejection of the process.

Based on its action research orientation, the project dynamics led to experimentation with other methods for enabling participation. For example, a 'Balanced Score Card' (BSC) process was initiated to facilitate a 'directional' dialogue in the LDA, among the employees, and between the LDA and local economic actors. The BSC process focused on achieving agreement on shared strategy, a detailed plan for the economic structure of Bottrop, representing the shared vision and defining long-, middle- and short-term goals and measures. The implementation of the strategy remains to be completed even after the end of the projects. Next, several scenarios were developed and discussed with the local actors, to determine the future of the EA beyond the project term. The second round of expert interviews with intermediaries accompanied this process, so as to obtain a broad reflection of the process. All actors agreed that a cross-sector network is a necessity in achieving a sustainable and resilient local economy in Bottrop. The nature and intensity of participation, however, requires a revision. The business sector in Bottrop expressed a willingness to work together in experimentation spaces as real-world laboratories, and implement the developed strategy in cooperation. Collective decision-making, however, and engagement at a meta-level was disregarded as too time and resource consuming [61]. Instead, local actors formulated the demand for:

- Continuous and effective coordination of activities;
- An interface enabling collaboration between all local actors (politics, administration, intermediaries, economy, and academia);
- Keeping an overview of the sustainability strategy in Bottrop;
- The EA acting as a source of inspiration and driving force.

while the overall responsibility is assigned to the LDA to ensure directionality of activities, smooth and efficient processes and elaboration of proposals for future strategic activities.

The experiences during the course of the process, led to several lessons about participative governance as an implementation instrument for mission-oriented strategies. These findings have been decontextualised from the case of Bottrop and are discussed in the following section.

5. Discussion

An essential component in the concept of 'Bottrop 2018+' was its openness. This openness required intensive collective work on the content, structures and processes. The approach provided a rough design, but the specific topics and their implementation had to be defined by the local actors in an open discussion. The demands on creativity and input for the structure, the working method, the breakdown of challenges into problems, the definition of topics in response to these and strategy implementation, proved to be

too ambitious for the actors involved. Indeed, one reason is the relatively short project duration of three years. It was expected to establish a self-organised and self-managing network of partners, and to develop and implement a mission-oriented strategy. As stated above, trust, identity, accountability, problem ownership and taking responsibility, take time. The relatively small size of the city of Bottrop, with a limited number of engaged companies, and the complex and probably overwhelming project structure, are additional reasons for the difficulties experienced.

The three-years' experience in Bottrop, clearly shows that a well-designed, demand-centric approach for an all-encompassing restructuring of the local economic development practices, is not necessarily successful. Instead, specific framework conditions, including power relations and actors' capacities, need to be considered when initiating and aiming to sustain participatory processes. In the following section, vital success factors derived from the process are summarised.

1. **Openness to change:** The participatory process requires all actors to reflect critically on their current roles and associated behavioural patterns, and generally be willing to change them. LDAs must dissociate from the mentality of a service provider, and better anticipate future requirements in an everchanging economic environment. Companies have to take more responsibility, not only for their own company and its sustainability, but also for the 'city' as a business location, and more generally the urban society. Politicians must have the courage to approach companies and make decisions in dialogue. Only then will the change from reactive to active economic development for the benefit of companies and society, succeed. In Bottrop, this openness was only partially given. While the initial socio-economic and governance analysis revealed the willingness for change, it quickly became apparent that the STA approach is too challenging and that the openness to change requires additional efforts especially as regards firms' added value (see factor 3).
2. **Common understanding:** A common understanding of the objectives of mission-orientation and its rationale, is necessary. It must be clear what the vision of a 'sustainable and resilient local economy means, or to be more precise, what is behind sustainability and resilience. Exclusively communicating knowledge derived from theory is not enough, as it remains abstract. Instead, sustainability and resilience must become tangible in everyday life, to give meaning to the multiplicity of local actors with their distinct logics and interests. Thereby enabling actors to take ownership of these terms, will allow to recognise the benefits that come with them, and consider sustainability and resilience as a goal when developing strategies or when implementing measures. That means, however, breaking sustainability and resilience down into concrete problems, and issues of concern for the actor groups involved, in a multilateral dialogue process. Within Bottrop 2018+ project multiple attempts to achieve a better understanding of sustainability and resilience were made. While the actors agreed from the beginning to the common vision, its operationalisation proved challenging. Likewise, the developed and introduced monitoring methodology was disregarded as too complex. Instead, the actors called for illustrating sustainability by good practice and specific business-related examples. Doing so, proved crucial to maintaining actors' motivation (see factor 3).
3. **Motivation:** Enabling such an intensive dialogue and the joint solution finding, requires a high level of motivation. The actors must recognise their personal, normative or moral benefit of participation, and thus the necessity for active involvement in shaping the local economy to classify a (permanent) commitment as worthwhile. It is essential to elaborate and communicate the specific added value for the various groups of actors, in due consideration of the multiple motives of those involved (e.g., economic or political motives). Closely related to this are problem identification and problem ownership [61]. Actors are motivated to take part in processes and activities if they perceive them as a solution to their problems or challenges. It is essential to actively make the benefits of participation for the different actor groups

visible to increase their motivation and long-term commitment. Although a common future structure has been adopted at the end of the project, in Bottrop this task is yet to be implemented. Balancing the 'desirable' and the 'feasible' emerges as continuous and dynamic negotiation process.

4. **Trust:** It is generally accepted that trust is created through transparency, open communication, reciprocity and repeated interaction. Arguably, ab initio all instruments, mechanisms and processes require openness and clarity on the possibilities and consequences of decisions just as motives for engagement. Results from expert interviews showed that transparency and openness are ensured in Bottrop because of the good (cooperation) work with the LDA and the skills of its employees. However elsewhere, trust-building measures may be required before starting with the participatory processes.
5. **Avoiding parallel structures:** Restructuring economic development, and particularly LDAs, does not mean starting from scratch. Instead, it is vital to begin with what is already there (e.g., existing sector-specific networks). Avoiding parallel structures is of central importance here. When it comes to involving all relevant actors, it is first necessary to clarify what activities and initiatives at a local level the actors are already engaged in, and what the relevant issues are. The aim is not to replace existing networks, but rather to strategically involve and interconnect, and in addition to that, supplement them. Participatory governance is complementary to sector-specific initiatives and aims at cross-sector and cross-structural cooperation. Parallel structures can lead to rejection or resistance to the overall process ('everything already exists') or groups of actors withdrawing ('I have no more time for that'). However, it must be taken into account that not all structures are suitable for achieving the set goals. A re-evaluation of existing structures against the background of sustainability and resilience, is sensible. This factor was proven essential for Bottrop. Precisely against the background that several LDA employees did not feel included and feared replacement of their work by the new structure. It took some effort to clarify the objectives and structural differences, and to reduce resistance and gain support for the idea of participative governance.
6. **Space for experimentation and reflection:** Development and implementation of joint strategies requires space for experimentation and reflection. 'Space' is understood here not only as a physical place, but also as freedom and flexibility in the processes and structures. For many actors, participation in governance processes means additional work, and it is essential to create spaces in terms of time and resources. The actors need the freedom to contribute their ideas, but also a certain degree of support in the implementation. Appropriate interface management, networking and funding can help to reduce the risk inherent in the uncertain process. In Bottrop, the experimentation space was secured through the real-world laboratories, which were appraised as a suitable instrument. Nevertheless, the demand for leadership and coordination by the LDA was also expressed in the experimentation rooms. This showed, once again, that breaking away from conventional ways of thinking and doing takes a lot of effort and time.
7. **Leadership:** A participation process also requires leaders to take the management position, function as moderators and bridge-builders and, if necessary, push, set, track and enforce topics. This role can be taken as individual responsibility (e.g., an entrepreneur), or collectively (e.g., LDA). The actor(s) taking this role, on the one hand, have to stand out with their commitment to participatory governance and the underlying mission-orientation, and on the other hand must be broadly accepted by the local actors (e.g., reputation as a reliable partner). In Bottrop, it was not clear from the beginning who would be taking the leadership role. At the end of the project, however, it was communicated that the LDA should take the role. Besides, it must be ensured that the 'leader' possesses the necessary capacities, or is supported by acquiring external expertise or additional workforce. For Bottrop, this meant that the

management office and the respective position, should be maintained and funded beyond the project term.

8. **Political commitment:** A participatory approach presupposes openness of politics towards new forms of decision-making and planning, to legitimise the new governance structures, and binding nature of the decisions. Next to business, academia, city administration and intermediaries, policymakers are another actor group to be involved in participatory governance, while considering the specific logics and interests (e.g., thinking in electoral circles). Accordingly, policymakers and other political actors should be 'persuaded' to participate in the new local economic governance as much as the other actors. The fact that policymakers—with the exception of the mayor—quickly withdrew from the process and left it for the business sector to shape the EA as a platform for exchange and feedback, underpins the relevance of achieving political commitment. Decisions that entail a political consent were, however, not taken by the EA in the project term.
9. **Identification and activation of ambassadors:** Participatory governance requires supporters, or promoters to 'push' the idea of participatory economic development, and to make its benefits known among the local actors. So-called 'ambassadors', are people who have the potential to contribute to the formation of opinions at the local level, who have a good reputation, who enjoy the trust of local actors and who are perceived as reliable. They need to be identified and activated at an early stage. In Bottrop, the mayor acted as an ambassador and has accompanied and supported the entire process, which proved to be a strong motivator for all local stakeholders to participate.

The identified success factors should not be considered in any particular order, but weighted equally; all elements have been proven essential in the process. Nevertheless, subject to local conditions, it is likely that some aspects are found to be more important than others when adopting the approach. For example, trust, recognition of the necessity for change and an influential ambassador like the mayor were present in the city of Bottrop from the start. The experimentation rooms and the leadership position proved effective during the process, while additional efforts are necessary to sustain a common understanding and motivation, avoiding parallel structures, and especially securing political commitment. These shortcomings inhibit to make full use the STA's potential for local economic development in Bottrop. The experimentation with additional methods for participation, not bound in any particular structure, helped decontextualizing the process and deriving the subsequent 10-step guidelines. The guidelines should serve to help municipalities in adopting participatory governance as a means for implementing MIP.

First, it should be noted that even in mission-oriented policies, participation is not an end in itself, but should be implemented strategically. Therefore, an in-depth analysis of the status quo at the particular location should first be carried out. *Second*, a distinction must be made between the structures ('governance as structure') and the topics, in rethinking economic development ('governance as process'). If the goal is, for example, the transition towards a sustainable and resilient local economy, current projects and activities must be re-evaluated and adapted to the set goals. *Third*, an essential element is the identification of the relevant actors and structured stakeholder management. Stakeholders are all people, groups and organisations interested in influencing or benefiting from local economic development (LDA, city administration, politics, companies, intermediaries, civil organisations, academia, etc.). Active participation of these actors, requires strategic involvement in reference to identified motivations and individual goals. *Fourth*, to effectively reach out to the multiplicity of actors, relevant communication channels need to be identified and, *fifth*, key messages and topics must be formulated in the language of the actors, in order to be heard. *Sixth*, it is crucial to get everyone 'on board'; this explicitly includes the employees of the LDAs, as well as local actors. *Seventh*, efforts should be made to create 'us'. Identification with the challenges, problems, vision and the process, is crucial. Finally, a clear division of roles (*eighth*) is necessary, which goes hand in hand with resource planning for the actors

involved (*ninth*), based on the agreed division of labour (*tenth*). Figure 2 summarises the ten steps while Appendix B (See Figure A2) provides full elaboration on the guidelines.

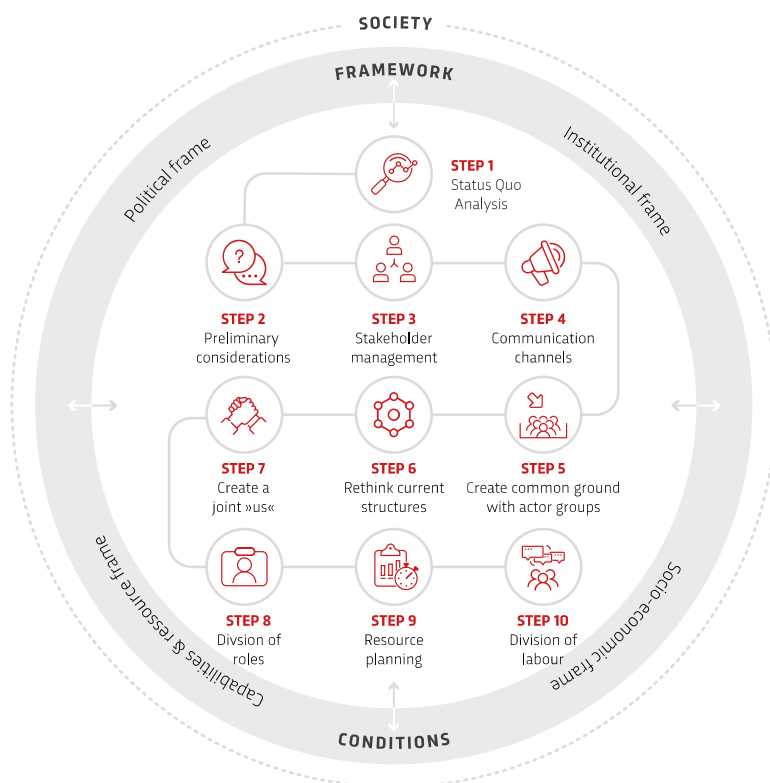


Figure 2. Ten steps to participative governance.

The process outlined is an ideal-typical process model. It illustrates the necessity for an interplay between bottom-up and top-down approaches (*‘Gegenstromprinzip’*), to define, legitimise and operationalise the direction of change, account for the diversity of actors and contexts, and give leeway for reflection. Supportive missions formulated in European, national and supranational innovation policies, which stand for top-down activities, frame local economic development. Likewise, participatory governance is usually stimulated by established structures for economic development (in Germany LDAs, steps 1 to 4) in a top-down manner. Sustaining participatory governance, however, calls for bottom-up activities, for which the business sector demands revision of economic development practices, initiates a self-organisation process and takes responsibility for finding solutions to cope with the problems at hand. The interplay between top-down and bottom-up approaches becomes most evident in steps 5 to 7, which involve all actors influencing or participating in the local economy, in building a collective. Finally, there should be an agreement about how to work together for solving the *‘grand challenges’*, which considers the capacities and resources of everyone involved (steps 8 to 10).

6. Conclusions

This article discusses the success factors and guidelines for implementing mission-oriented policies within the framework of local economic development. Taking the example of a German LDA, the concept of participative governance was scrutinised as a solution to implementing MIP. Participative governance brings together multiple local actors from business, science, policy, administration and civil society, not only for the development of a long-term vision but also for the joint implementation of a common strategy in response to grand challenges, and its manifestations at the local level. The transition management literature provides a baseline for organising such governance; however, no *‘one size fits all’* solution exists. Instead, there is a need to orchestrate the process by organising

participation, communication and exchange of information and knowledge between all relevant stakeholders, while considering the context and broader framework conditions including available capacities and resources. Cross-sector networks, real-world laboratories and balanced scorecards, can be useful instruments for facilitating the exchange, defining problems and finding meaningful solutions. Nevertheless, actual themes, topics and experiments, are context-specific. Explicit attention should first be paid to conditions such as motivation, trust and leadership to customise the process. A helpful guide to this customisation is provided here with the ten steps from status quo analysis and re-evaluation of conditions and structures, through the creation of a collective, to the division of labour and resources. The success factors and ten steps, are aimed at helping LDAs and other intermediaries who are searching for approaches for implementing mission-oriented policies on a local level.

As mentioned previously, ‘engagement by design’, in other words active participation is the best way in shaping missions, setting priorities and governing the implementation of MIP. The main focus so far has been on engaging citizens in decision-making. MIP follows, however, a broader approach which calls for the involvement of a variety of actors from the political, economic and societal sphere. It also requires recognising, analysing and organising participation from the perspective of regional and local economic development. To this end, the introduced 10-steps guideline is viewed as a new solution or proceeding to establish a more decentralised mode of meaningful governance that allows to equally involve and effectively coordinate local actors in ‘missions’.

Supplementary Materials: All deliverables and additional articles to the project ‘Bottrop 2018+’ are available in German at www.wirtschaftsstrukturen.de.

Author Contributions: Conceptualisation, M.R. and J.T.; Methodology, M.R. and J.T.; Validation, J.T.; Formal Analysis, M.R. and J.T.; Investigation, M.R. and J.T.; Writing—Original Draft Preparation, M.R. and J.T.; Writing—Review and Editing, M.R. and J.T.; Visualisation, J.T. All authors have read and agreed to the published version of the manuscript.

Funding: The project ‘Bottrop 2018+—Towards a Sustainable and Resilient Economic Structure’ was funded by the Federal Ministry of Education and Research (BMBF), grant number 01UR1216B.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Acknowledgments: We thank Thomas Merten and Nils Seipel from Faktor 10. This paper and research behind it would not have been possible without their conceptual contributions within the project ‘Bottrop2018+’.

Conflicts of Interest: The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

Appendix A

Figure A1 shows that the experiment with participative governance was carried out within a comprehensive project structure. Three partners were involved with the project: the Office for Economic Development and Location Management of the City of Bottrop (the local LDA) acted as the coordinator, and was supported by two research institutes: Faktor 10—Institute for sustainable development, introduced and accompanied the implementation of the strategic alliance approach as well as conducting the monitoring and assessment tasks. The Institute for Work and Technology was responsible for the status quo analysis at the beginning and the end of the project, the transition process, as well as the overall project evaluation. Table A1 gives an overview of the methods applied and the data used.

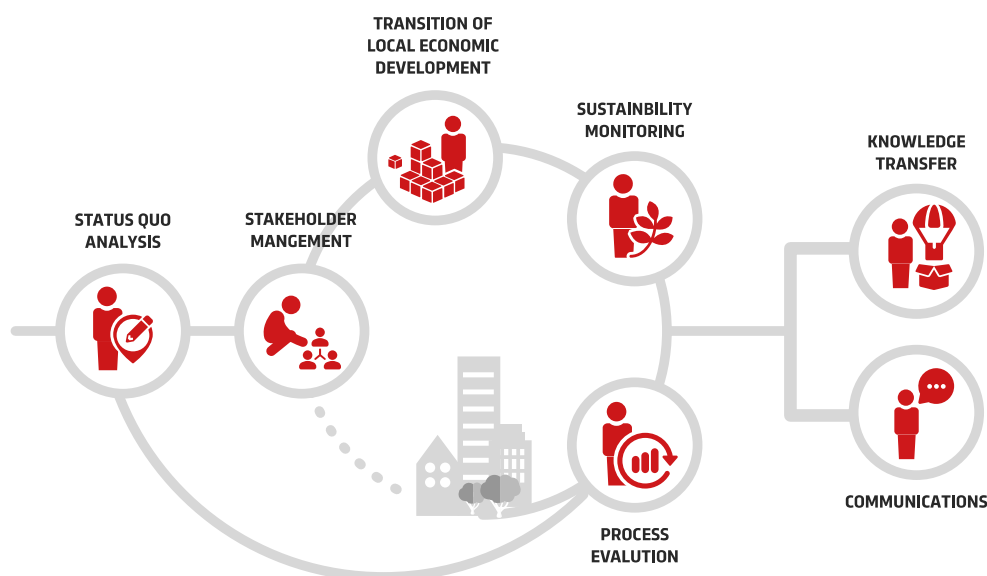


Figure A1. Bottrop 2018+ project rational.

Table A1. Bottrop 2018+—tasks, methods and data.

Tasks	Method	Data and/or Outcome
Status quo analysis: socio-economic situation and governance	Quantitative analysis of data collected official statistics (e.g., DESTATIS, it.nrw, Federal Labour Office)	Population, income, labour market development (unemployment, labour market dynamics, youth and long-term unemployment), school education and vocational training, employment trends and structures, commuter traffic, start-ups, start-up inclination, industrial development, gross added value, enterprises and turnovers, crafts businesses, (environmental protection) investments, tourism
	Semi-structured interviews with local stakeholders including intermediaries, SWOT analysis, QCA	Perception of the existing governance structures; strength and weaknesses of the local economic development agency; chances and risks for the business location Bottrop
Sustainability Monitoring	Desk research, business survey, secondary data analysis	Indicator set and measurement tool, data on sustainability-related activities of local businesses
Communication	The project website, newsletter	
Transition of Local Economic Development (LDA)	Balanced scorecard process	Defined vision for sustainable and resilient local economic development translated into operational goals, measures and indicators including the division of work among the involved actors
	Scenarios Semi-structured expert interviews	Four scenarios to sustain participatory governance
Process Evaluation	Expert focus groups	Three annual focus groups with experts from academia, city administration and local economic development; critical reflection on concepts developed and procedures applied
Knowledge Transfer	Final conference, networking, conference presentations, articles, integration into teaching	Ten articles, www.strukturwandel.de as a single-entry point for all produced materials, handout »10 Steps towards« (in German only), project booklet, six conference presentations, a final conference

Appendix B



Step 1

Status Quo Analysis of the local economic development

- What is the current socio-economic situation?
- What are the current structures (city offices, networks, etc.)?
- Which topics are currently highlighted and which projects are running?
- Who are the relevant actors responsible for and influencing local economic development (as a specific task)?
- How is the governance of local economic development currently structured?
- How strong is the trust base between the local economic actors?



Annotation

A detailed status quo analysis is essential to avoid redundancies and parallel structures. For a comprehensive analysis, the combination of quantitative (socio-economic analysis) and qualitative (expert interviews) methods is recommended.



Practical experience(s) gained

The methodology was successfully applied at the beginning of the project Bottrop 2018+ and provided a good overview of the state of play.



Step 2

Preliminary considerations: Distinction between structures and content

- Generally, one must differentiate between the reorientation of structures and content!
- Are the current structures for local economic development open to new topics such as sustainability and resilience?
- Are the future-orientated topics already recognised and highlighted at the location, but appropriate structures to work on these topics are missing?



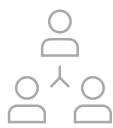
Annotation

Not every structure or working routine offers a suitable framework for working on every topic. If the goal is, for example, the transition towards a sustainable and resilient local economy, then some changes must be considered, or even extensive detailed new structures. Furthermore, the current topics and projects must be re-evaluated and adapted according to the new set vision.



Practical experience(s) gained

This was the case in 'Bottrop 2018+'. The STA approach was suggested as a solution to jointly discuss sustainability challenges. However, with the project's progress it became apparent that the suggested structure is not suitable for the actors in Bottrop. Furthermore, the adaption of the process and structure led to marginalisation of the topics sustainability and resilience. This in turn required additional efforts in different formats. The parallel work on the topics and the structure proved challenging. Rather than working on structure and topics in parallel, focussing on one of them at a time showed more fruitful, yet in contradiction to the time framework of the project.



Step 3

Stakeholder Management

- Who are the relevant actors needed for participatory economic development? What is their role in the process?
- What is their motivation, what are their interests for involvement in local economic development?
- What is the potential benefit of active participation for every actors' group?



Annotation

Stakeholders are people, groups or organisations who are involved in the execution or the outcomes of economic development, who can influence it, are affected by it or are interested in it: existing structures (LDAs, city administration), companies, politics, associations, intermediaries (sectoral agencies), academic institutions (colleges, universities etc.) and others.



Practical experience(s) gained

In Bottrop, most important actors were identified at the beginning of the project based on their engagement and influence in the local economic development. The continuous management was digitally supported by a CRM system, which proved helpful for keeping track of the involvement of actors. Because of the adaption of the process and the complexity of the two topics sustainability and resilience, it was challenging to keep the stakeholders motivated.



Step 4

Communication Channels

- Who will communicate with the stakeholders and how?
- What are the suitable communication channels? Is online communication (e.g., e-mails, newsletters, etc.) preferable, or is personal contact necessary?
- How intensive should communication be? Are sporadic channels of information delivery sufficient (e.g., newsletter) or is a specific person going to act as an interface and actively communicate with all actors?
- What channels are already available to all the actors?
- What events and formats are currently in place and with what aim?



Annotation

Fung (2006) distinguishes six communication modes in participation processes, which vary in the type of communication (information, negotiations, expertise, etc.) and the intensity of the interaction (minimal to very intensive). The exact communication mechanism depends on the goals set, the motivation of the actors and the local conditions, and can be changed and adapted. It is essential to adapt to the communication routines of different stakeholders.



Practical experience(s) gained

In Bottrop communication took place solely through the LDA in the manner customary to the local actors (mainly unidirectional via post, email and phone). The attainability of a single familiar contact person also proved critical. For example, the leaving of the known contact person in the LDA-team challenged the communication with stakeholders. To keep the consistency of information, online channels supported the personal contact. Nevertheless, the communication in Bottrop exclusively focused on the business sector, while neglecting appropriate approaches to reach out to and motivated political actors.



Step 5

Create common ground with every actors' group

- To what extent are the identified actors involved in the process?
- What is necessary to familiarise the actors with the process?
- Which instruments are suitable to involve the actors to a desirable degree?



Annotation

A target address with all actors' groups is necessary. For a successful legitimization, all actors must encounter the process and recognise it on their own. Several meetings with all relevant stakeholder groups may be required. It can be fruitful to address all stakeholder groups separately, before bringing them all together.



Practical experience(s) gained

This step was partially successful in Bottrop. Foremost addressing the business sector, a series of events with different content and in varying formats were carried out. One year into the project, however, the actors expressed exhaustion from the formats requiring a lot of creativity and input from the participants. Instead, actors called for preparatory work from the project team to be complemented with feedback during the events and time for informal exchange were. Also resistance to the structure of the STA inside the LDA became apparent. To cope with this, additional workshops with all employees were carried out and by the end of the project employees' attitudes changed. The political actors, however, stayed mostly detached from the process. Extra effort to address this target group proved to be necessary but could not be carried out in the remaining project period.



Step 6

Rethink current structures

- To what extent does the 'new' process influence the current work processes and content in the present governance structure (e.g., LDA)?
- What changes or adjustments are necessary for internal alignment and practices?
- How can all employees be included in the new process?



Annotation

All employees in the current structure must accept the new vision and participate in the new process to define new tasks for themselves and the local economic development. As elaborated above, this proved essential in Bottrop. At the beginning the project was viewed internally as 'the next short-term project'. It took extra effort to include all employees in the strategy development and implementation measures. Which proved that internal participation is as important as opening the processes for external participation.

Figure A2. Cont.



Step 7

Create a joint “us”

- Are the actors familiar with one another? Have they worked together before?
- Is there a trust base between all the actors or should it be secured in advance?
- What are the benefits for the different stakeholder groups? Are the actors aware of the added value, or does this need to be communicated?



Annotation

The literature on strategic alliances and stakeholder management offers multiple methods for increasing motivation and building trust [60–63].



Practical experience(s) gained

In ‘Bottrop 2018+’ this step was pursued by marketing strategies, mediation of different decision-making procedures and common strategy development. At the end the ‘joint us’ was recognisable in the LDA and partially in the business sector, while political actors need to be engaged somewhat stronger.



Step 8

Division of roles

- What forms of participation, and at which level (strategic, tactical, operational, reflexive) are suitable for achieving the goals set?
- Who and how makes decisions about the economic development and what consequences do they have for the location?
- Who takes on which tasks in what role?
- To what extent do the decisions influence politics?



Annotation

It is crucial to secure a balance between ‘desirable’ and ‘feasible’. It has to be decided whether the actors want to, or should be involved at all levels. One possible instrument for discussing and defining the distribution of roles is the joint development of scenarios with different outcomes and consequences for the stakeholders.



Practical experience(s) gained

Because of the partial rejection of initial roles assigned to distinct actors, balancing between the two extremes of what is desirable and what is feasible proved helpful. It became clear that the LDA must take an interface role as ‘orchestrator’ and driving force. The mayor’s engagement as an ambassador for participatory governance positively affected the other actors’ engagement.

Figure A2. Cont.

**Step 9****Planning of resources**

- What resources (workforce, funding, etc.) are required?
- What resources do the different stakeholders bring?
- Is it possible to acquire additional resources (e.g., through funding programs)?

**Annotation**

A detailed resource planning for the implementation of measures, and the overall process is necessary, and should consider the division of roles and labour.

**Practical experience(s) gained**

In Bottrop planning of resources was considered in the development of scenarios. During the project the most important resources (employees, marketing, real-world laboratories etc.,) were secured by the funding. At the end of the project a re-evaluation was necessary to decide if and how the structures can be sustained.

**Step 10****Division of labour**

- Which tasks are taken over by the actors of the current structures (e.g., LDA) and how are they distributed internally?
- What tasks will the actors in the newly established structures (e.g., strategic alliance, cross-sector network, advising council, etc.,) take on?
- Who takes over communication and stakeholder management?

**Annotation**

The division of labour is related to the division of roles and the planning of resources, and should be integrated into the development of scenarios.

**Practical experience(s) gained**

In Bottrop five distinct scenarios to sustain the structure beyond the project term were elaborated of which one was adopted. The high degree of creativity and heavy time burden at the beginning of the project were questioned by the involved actors. Taking the leading role, however, was meant for the LDA additional employees and therefore monetary costs. During the development of scenarios, these points were reconsidered. It was agreed to secure the coordination office for the EA with local funding from the city administration, at least for a further year. It is recognised that this issue will be back on the agenda in the medium term.

Figure A2. Ten steps to participatory governance.

References

1. Foray, D.; Mowery, D.C.; Nelson, R.R. Public R&D and social challenges: What lessons from mission R&D programs? *Res. Pol.* **2012**, *41*, 1697–1702. [[CrossRef](#)]
2. Frenken, K. A Complexity theoretic perspective on innovation policy. *Complex Innov. Pol.* **2017**, *3*, 35–47. [[CrossRef](#)]
3. Mazzucato, M. From market fixing to market-creating: A new framework for innovation policy. *Ind. Innov.* **2016**, *23*, 140–156. [[CrossRef](#)]

4. Schot, J.; Steinmueller, W.E. Three frames for innovation policy: R&D, systems of innovation and transformative change. *Res. Pol.* **2018**, *47*, 1554–1567. [\[CrossRef\]](#)
5. Uyarrá, E.; Ribeiro, B.; Dale-Clough, L. Exploring the normative turn in regional innovation policy: Responsibility and the quest for public value. *Eur. Plan. Stud.* **2019**, *27*, 2359–2375. [\[CrossRef\]](#)
6. Diercks, G.; Larsen, H.; Steward, F. Transformative innovation policy: Addressing variety in an emerging policy paradigm. *Res. Pol.* **2019**, *48*, 880–894. [\[CrossRef\]](#)
7. Mazzucato, M.; Kattel, R.; Ryan-Collins, J. Challenge-Driven Innovation Policy: Towards a New Policy Toolkit. *J. Ind. Compet. Trade* **2019**, *20*, 421–437. [\[CrossRef\]](#)
8. Wanzenböck, I.; Wessling, J.H.; Koen, F.; Hekkert, M.P.; Weber, M. A framework for mission-oriented innovation policy: Alternative pathways through the problem-solving space. *Sci. Public Policy* **2020**, 1–16. [\[CrossRef\]](#)
9. Mazzucato, M. Mission-oriented innovation policies: Challenges and opportunities. *Ind. Corp. Chang.* **2018**, *27*, 803–815. [\[CrossRef\]](#)
10. Hekkert, M.P.; Janssen, M.J.; Wessling, J.H. Mission-oriented innovation systems. *Environ. Innov. Soc. Transit* **2020**, *34*, 76–79. [\[CrossRef\]](#)
11. Georghiou, L.; Tataj, D.; Celis, J.; Gianni, S.; Pavalkis, D.; Verganti, R.; Renda, A. *Mission-oriented Research and Innovation Policy—A RISE Perspective*; European Commission: Brussels, Belgium, 2018. [\[CrossRef\]](#)
12. Borrás, S. Domestic capacity to deliver innovative solutions for grand social challenges. In *Oxford Handbook on Global Policy and Transnational Administration*; Stone, D., Moloney, K., Eds.; Oxford University Press: Oxford, UK, 2019; pp. 182–199. [\[CrossRef\]](#)
13. Mazzucato, M. Missions: Mission-Oriented Research & Innovation in the European Union. In *A Problem-Solving Approach to Fuel Innovation-Led Growth*; European Commission: Brussels, Belgium, 2018. [\[CrossRef\]](#)
14. European Commission. 2020. Available online: https://ec.europa.eu/info/horizon-europe-next-research-and-innovation-framework-programme_en#missions-in-horizon-europe (accessed on 28 September 2020).
15. Federal Ministry of Education and Research (BMBF). Research and Innovation that Benefit the People. The High-Tech Strategy. BMBF: Berlin, Germany, 2018. Available online: https://www.bmbf.de/upload_filestore/pub/Research_and_innovation_that_benefit_the_people.pdf (accessed on 31 August 2020).
16. Linnér, B.-O.; Wibeck, V. Conceptualising variations in societal transformations towards sustainability. *Environ. Sci. Pol.* **2020**, *106*, 221–227. [\[CrossRef\]](#)
17. Walker, B.H.; Holling, C.S.; Carpenter, S.R.; Kinzig, A. Resilience, adaptability and transformability in social–ecological systems. *Ecol. Soc.* **2004**, *9*, 5. [\[CrossRef\]](#)
18. Folke, C.; Carpenter, S.; Walker, B.; Scheffer, M.; Chapin, T.; Rockström, J. Resilience thinking: Integrating resilience, adaptability and transformability. *Ecol. Soc.* **2010**, *15*, 20. [\[CrossRef\]](#)
19. Joseph, J.; McGregor, J.A. *Wellbeing, Resilience and Sustainability. The New Trinity of Governance*; Palgrave Pivot: Cham, Switzerland, 2020; pp. 39–70. [\[CrossRef\]](#)
20. Park, S.E.; Marshall, N.A.; Jakku, E.; Dowd, A.M.; Howden, S.M.; Mendham, E.; Flemming, A. Informing adaption responses to climate change through theories of transformation. *Glob. Environ. Change* **2012**, *22*, 115–126. [\[CrossRef\]](#)
21. Yan, W.; Galloway, W. Understanding Change Through the Lens of Resilience. In *Rethinking Resilience, Adaption and Transformation in a Time of Change*; Yan, W., Galloway, W., Eds.; Springer: Cham, Switzerland, 2020; pp. 3–20. [\[CrossRef\]](#)
22. Conen, L.; Hansen, T.; Rekers, J.V. Innovation Policy for Grand Challenges. An Economic Geography Perspective. *Geogr. Compass* **2015**, *9*, 483–496. [\[CrossRef\]](#)
23. Weber, M.; Rohrer, H. Legitimizing research, technology and innovation policies for transformative change. Combining insights from innovation systems and multi-level perspective in a comprehensive ‘failures’ framework. *Res. Pol.* **2012**, *41*, 1037–1047. [\[CrossRef\]](#)
24. Boon, W.; Edler, J. Demand, challenges and innovation. Making sense of new trends in innovation policy. *Sci. Publ. Pol.* **2018**, *45*, 435–447. [\[CrossRef\]](#)
25. Uyarrá, E.; Zabala-Iturriagagoitia, J.M.; Flanagan, K.; Magro, E. Public procurement, innovation and industrial policy: Rationales, roles, capabilities and implementation. *Res. Pol.* **2020**, *49*, 1038–1044. [\[CrossRef\]](#)
26. Wanzenböck, I.; Frenken, K. The subsidiarity principle in innovation policy for societal challenges. *Glob. Trans.* **2020**, *2*, 51–59. [\[CrossRef\]](#)
27. Folke, C. Resilience: The emergence of a perspective for socio-ecological systems analyses. *Glob. Environ. Chang.* **2006**, *16*, 253–267. [\[CrossRef\]](#)
28. Fagerberg, J.; Huttchenreiter, G. Coping with Societal Challenges: Lessons for Policy Governance. *J. Ind. Competition Trade* **2020**, *20*, 279–305. [\[CrossRef\]](#)
29. Kattel, R.; Mazzucato, M. Mission-oriented innovation policy and dynamic capabilities in the public sector. *Ind. Corp. Change* **2018**, *27*, 787–801. [\[CrossRef\]](#)
30. Rogge, K.S.; Pfluger, B.; Geels, F.W. Transformative policy mixes in socio-technical scenarios: The case of low-carbon transition of the German electricity system (2010–2050). *Technol. Forecast. Soc. Chang.* **2020**, 151. [\[CrossRef\]](#)
31. Kern, F.; Rogge, K.S.; Howlett, M. Policy mixes for sustainable transitions: New approaches and insights through bridging innovation and policy studies. *Res. Pol.* **2019**, *48*. [\[CrossRef\]](#)
32. Gironés, E.S.; von Est, R.; Verbon, G. The role of policy entrepreneurs in defining directions of innovation policy: A case study of automated driving in the Netherlands. *Technol. Forecast Soc. Chang.* **2020**, 161. [\[CrossRef\]](#)

33. Morrison, A.; Doussineua, M. Regional innovation governance and place-based policies: Design, implementation and implications. *Reg. Stud. Reg. Sci.* **2020**, *6*, 101–116. [\[CrossRef\]](#)
34. Markert, P. Wirtschaftsförderung und Standortmanagement. In *Praxishandbuch City- und Stadtmarketing*; Meffert, H., Spinnen, B., Block, J., Eds.; Springer: Wiesbaden, Germany, 2018; pp. 204–233. [\[CrossRef\]](#)
35. Lahner, J. *Entwicklung und Regionalökonomie in der Wirtschaftsförderung*; Springer Gabler: Wiesbaden, Germany, 2017. [\[CrossRef\]](#)
36. Welschhoff, J.; Terstriep, J. Wirtschaftsförderung neu denken. Partizipative Governance am Beispiel von Bottrop 2018+. *IAT Forsch. Aktuell* **2017**. Available online: <http://hdl.handle.net/10419/64608> (accessed on 21 October 2020).
37. Rehfeld, D. Auf dem Weg zur integrierten Wirtschaftsförderung: Neue Themen und Herausforderungen. *IAT Forsch. Aktuell* **2012**. Available online: <https://EconPapers.repec.org/RePEc:zbw:iatfor:092012> (accessed on 21 October 2020).
38. Gärtner, S. Integrierte Wirtschaftsförderung: Regionalökonomische Ansätze und Konzepte. In *Wege zu Einer Integrierten Wirtschaftsförderung*; Widmaier, B., Beer, D., Gärtner, S., Hamburg, I., Terstriep, J., Eds.; Nomos: Baden-Baden, Germany, 2004; pp. 13–73. ISBN 3832906223.
39. Lahner, J.; Neubert, F. *Einführung in die Wirtschaftsförderung—Grundlagen für die Praxis*, 1st ed.; Springer Fachmedien: Wiesbaden, Germany, 2016. [\[CrossRef\]](#)
40. Davis, J.S. The Governance of Urban Regeneration: A Critique of the ‘Governing Without Government’ Thesis. *Public Adm.* **2002**, *8*, 301–322. [\[CrossRef\]](#)
41. Borrás, S.; Edler, J. Introduction: On governance, systems and change. In *The Governance of Socio-Technical Systems*, 1st ed.; Borrás, S., Edler, J., Eds.; Edward Elgar: Cheltenham, UK, 2014; pp. 1–22. [\[CrossRef\]](#)
42. Fürst, D. Steuerung auf Regionaler Ebene versus Regional Governance. *Inf. Raumentwickl.* **2003**, 441–450. Available online: https://www.bbsr.bund.de/BBSR/DE/veroeffentlichungen/izr/2003/Downloads/8_9Fuerst.pdf?__blob=publicationFile&v=2 (accessed on 21 October 2020).
43. Loorbach, D.; Rotmanns, J. The practice of transition management: Examples and lessons from four distinct cases. *Futures* **2010**, *42*, 237–246. [\[CrossRef\]](#)
44. Zwicker-Schwarz, D. *Kommunale Wirtschaftsförderung 2012: Strukturen, Handlungsfelder, Perspektiven*; Deutsches Institut für Urbanistik (Difu-Papers): Berlin, Germany, 2013; ISSN 1864-2853.
45. Jann, W. Governance als Reformstrategie—Vom Wandel und der Bedeutung verwaltungspolitischer Leitbilder. In *Governance-Forschung*, 2nd ed.; Schuppert, G.F., Ed.; Nomos: Baden-Baden, Germany, 2006; pp. 21–43. ISBN 3-8329-2149-4.
46. Wiesenenthal, H. *Gesellschaftssteuerung und Gesellschaftliche Selbststeuerung*; VS Verlag für Sozialwissenschaften: Wiesbaden, Germany, 2006. [\[CrossRef\]](#)
47. Kleine, A. *Operationalisierung Einer Nachhaltigkeitsstrategie—Ökologie, Ökonomie und Soziales Integrieren*; Gabler: Wiesbaden, Germany, 2009. [\[CrossRef\]](#)
48. Pruvit, B.; Mao, Y.; Robinson, D. Three pillars of sustainability: In search of conceptual origins. *Sustain. Sci.* **2019**, *14*, 681–695. [\[CrossRef\]](#)
49. Meerow, S.; Newell, J.P.; Stults, M. Defining urban resilience: A review. *Landsc. Urban Plan.* **2016**, *147*, 38–49. [\[CrossRef\]](#)
50. Foxon, T.; Hammond, G.P.; Pearson, P.J. Transition pathways for a low carbon energy system in the UK: Assessing the compatibility of large-scale and small-scale options. In Proceedings of the 7th BIEE Academic Conference, Oxford, UK, 24–25 September 2008.
51. Rotmanns, J.; Kemp, R.; van Asselt, M. More evolution than revolution: Transition management in public policy. *Foresight* **2001**, *3*, 15–31. [\[CrossRef\]](#)
52. Meadowcroft, J. What about the politics? Sustainable development, transition management, and long term energy transitions. *Policy Sci.* **2009**, *42*, 323–340. [\[CrossRef\]](#)
53. Loorbach, D.; Frantzeskaki, N.; Huffenreuter, R.L. Transition Management. Tacking Stock of Governance Experimentation. *J. Corp. Citizsh.* **2015**, *58*, 48–66. [\[CrossRef\]](#)
54. Wittmayer, J.M.; Loorbach, D. *Governing Transitions in Cities: Fostering Alternative Ideas, Practices, and Social Relations Through Transition Management*, In *Governance of Urban Sustainability Transitions*; Loorbach, D., Wittmayer, J.M., Shiroyama, H., Fujino, J., Mizuguchi, S., Eds.; Springer: Berlin, Germany, 2015; pp. 13–32. [\[CrossRef\]](#)
55. Lewin, K. Action research and minority problems. *J. Soc. Issues* **1946**, *2*, 34–46. [\[CrossRef\]](#)
56. Greenwood, D.J.; Levin, M. *Introduction to Action Research: Social Research for Social Change*, 2nd ed.; Sage: London, UK, 2007; ISBN 9781483389370.
57. Karlsen, J.; Larrea, M. *Territorial Development and Action Research: Innovation Through Dialogue*; reprint; Routledge: New York, NY, USA, 2016. [\[CrossRef\]](#)
58. Karlsen, J.; Larrea, M. Regional Innovation System as Framework for Co-generation of Policy: An Action Research Approach. In *New Avenues for Regional Innovation Systems—Theoretical Advances, Empirical Cases and Policy Lessons*; Isaksen, A., Martin, R., Trippel, M., Eds.; Springer: Cham, Switzerland, 2018; pp. 257–274. [\[CrossRef\]](#)
59. Nordhause-Janz, J. Sozioökonomische Analyse der Stadt Bottrop. AP1.3 Bericht des Projekts “Bottrop 2018+ Auf dem Weg zu einer nachhaltigen und resilienten Wirtschaftsstruktur.” FONA: Berlin: Bundesministerium für Bildung und Forschung (BMBF), Germany. 2017. Available online: http://www.wirtschaftsstrukturen.de/media/2017_nordhause-janz_soziooekonomische_analyse_der_stadt_bottrop.pdf (accessed on 22 October 2020).

60. Merten, T.; Bowry, J.; Engelmann, T.; Hafner, S.; Hehn, N.; Miosga, M.; Norck, S.; Reimer, M.; Witte, D. ADMiRe umsetzen—strategische Allianzen zur regionalen Nachhaltigkeitstransformation. Anleitung für strategische Allianzen mit den Schwerpunkten Demografiemanagement, Innovationsfähigkeit und Ressourceneffizienz. Friedberg, Bayreuth, Germany, 2015. Available online: <http://f10-institut.org/wp-content/uploads/2017/05/ADMiRe-umsetzen.pdf> (accessed on 21 October 2020).
61. Merten, T.; Seipel, N.; Rabadjieva, M.; Terstriep, J. Bottrop 2018+ Auf dem Weg zu einer nachhaltigen und resilienten Wirtschaftsstruktur. In *Lokale Wirtschaftsstrukturen Transformieren! Gemeinsam Zukunft Gestalten*; Merten, T., Terstriep, J., Seipel, N., Rabadjieva, M., Eds.; Amt für Wirtschaftsförderung und Standortmanagement der Stadt Bottrop: Bottrop, Germany; pp. 18–25. Available online: http://www.wirtschaftsstrukturen.de/media/02_bottrop_2018_-_auf_dem_weg_zu_einer_nachhaltigen_und_resilienten_wirtschaftsstruktur.pdf (accessed on 22 October 2020).
62. Engelmann, T.; Merten, T.; Bowery, J. Strategische Allianzen als Instrument zum Management regionaler Transformationsprozesse. In *Regionalentwicklung im Zeichen der Großen Transformation*; Miosga, M., Hafner, S., Eds.; Oekom: München, Germany, 2014; pp. 349–374. ISBN 3865816894.
63. Hoffmann, W.H.; Schlosser, R. Success factors of strategic alliances in small and medium-sized enterprises -an empirical survey. *Long Range Plan.* **2001**, *34*, 357–381. [CrossRef]
64. Schneidewind, U. Urbane Reallabore—Ein Blick in die aktuelle Forschungswerkstatt. *pnd | online* 2014, 3 | 2014. Available online: https://epub.wupperinst.org/frontdoor/deliver/index/docId/5706/file/5706_Schneidewind.pdf (accessed on 21 October 2020).