



The Jerusalem Institute for Israel Studies

Center for Innovation and Development Policy



Regional Development of the Galilee

Targeted policy for promoting
the biotechnology sector

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Introduction

The challenge of achieving economic and social growth on the regional level occupies policymakers around the world: what are the most effective and efficient ways to actualize regional growth and what is the optimal policy mix required to achieve economic and social prosperity? A well-defined and applicable methodology is necessary for thinking about these questions and responding to them. The European Union, for example, invests considerable energy on the study of regional development, with one of the major new outcomes being the concept of "Smart Specialization." Smart Specialization is applied to the regional level with the objective of promoting a synergetic use of public research and innovation investments. The Smart Specialization approach allows each region to specialize according to its own strengths in terms of natural and financial assets, infrastructures, competitive advantages, science base, business activity and specialized human resources. In this framework, different methodologies are explored to analyze the strengths and weaknesses of a region; identify regional drivers of innovation and growth; assess regional functions and needs; define realistic goals; select fields of expertise; and design appropriate policy mechanisms in order to achieve these goals.

Regional development of the Galilee is an essential part of Israel's policy agenda. We maintain that the broad framework of Smart Specialization would be very useful in identifying potential industrial sectors for specialization in the Galilee region and supporting the specialization processes in practice. However, the life-science sector has already been selected and prioritized. One prominent step in this direction was taken in October 2011 with the establishment of Bar-Ilan University's medical school in the northern town of Safed, providing an unprecedented opportunity for developing the region on the basis of specialization in biotechnology. Still, additional complementary policy actions are needed in order to realize the potential positive impacts of the school on the science-based and life-sciences industries in the Galilee and to leverage the success of this significant effort. For cases in which a sector has already been identified and prioritized, the TARGET project (FP7) was designed recently by JIIS and other international partners. The methodological approach developed in TARGET can serve as the basis for designing and implementing successful regional policy in the Galilee.

The TARGET project provided a manual – a toolkit – for policymakers interested in facilitating a well functioning bio-system in their regions. The "**TARGET toolkit**" enables them to thoroughly map the region in question; to assess the position of the chosen sectors within their life cycle; identify the drivers and functions of the innovation system; understand the co-evolution of the different drivers and how they influence one another; design policy measures; maintain necessary policy dimensions required for a successful implementation of targeted policy; and conduct ongoing evaluations for obtaining dynamic and flexible policy processes. The toolkit was designed on the basis of the Evolutionary Life-Cycle (ELC) Model. According to the ELC approach, the development of economic activity moves through different phases of an Evolutionary Life Cycle: a background phase, a pre-emergence or launching phase, and an emergence phase. Movement through the phases is determined by the ability of the regional system of innovation to provide a set of drivers and key functions which deliver innovation from its conception into practice.

The innovative character of the TARGET approach is that it facilitates a thorough understanding of the dynamics of innovation systems, their complex nature and the inter-relations between the academic processes, industrial developments, financial schemes, public institutions and regulations. Moreover, TARGET's policy-oriented approach identifies crucial policy dimensions, such as coordination mechanisms, ongoing assessments and knowledge management, for an effective targeted policy. The TARGET toolkit can, therefore, assist policymakers in defining goals and facilitate the design of efficient, productive and synergetic policy measures for achieving them.



Applying TARGET methodology in the Galilee Region

The Challenge

To design an appropriate policy mix in order to effectively target biotechnology in the Galilee region.

The Objective

To achieve regional growth, characterized by economic prosperity and higher employment rates, by establishing a well functioning biotechnology innovation system in the Galilee.

The Product

A **policy toolkit** for effective implementation of a targeted policy in the Galilee which will include the mapping of the region's capabilities in the field of biotechnology, the specific goals for the targeted policy, and the policy mechanisms and measures required to achieve these goals.

The Process

The research question will be addressed by a **6-stage application process**.

Stage 1: Mapping the region's capabilities in the field of biotechnology

Empirical findings from around the world suggest that without an initial realistic assessment of a region's capabilities, a viable configuration for a local biotechnology cluster cannot be designed. In many cases, due to a simplistic understanding of the biotechnology sector's dynamics, unrealistic objectives were set. In order to create a baseline for effectively targeting biotechnology in the Galilee region, the necessary first stage is to map the region's biotechnology capabilities. This includes:

1. Surveys directed at all institutional stakeholders (universities, research institutes, hospitals, governmental agencies, venture capital, etc.);
2. An analysis of the current industrial base (areas of expertise, human resources, level of domestic and global networking, development phase of companies, etc.);
3. An analysis of existing regional and national policy support schemes (technological incubators, regional development grants, etc.); and
4. An analysis of the missing elements within the regional innovation system and of elements that are lagging behind or do not function well.

Stage 2: Study of regional needs

Once the Galilee region has been mapped and positioned along the lines of the ELC model, the second stage involves understanding the regional innovation system and its needs. Dealing with a relatively small geographical locale, focusing on *particular trajectories of development* is highly important. Engaging with local stakeholders can provide policymakers with valuable insights into the needs of entrepreneurs, deficiencies in current support schemes, possible business development and a clear distinction between short- and long-term goals. This stage can also be used to assess the efficiency of creating a "virtual platform" or any other policy tool that is found relevant during the first stage.



Stage 3: Defining the goal

Following the realistic assessment (stage 1) and the study of the regional needs (stage 2) the appropriate goal of the targeted policy will be identified and defined.

Stage 4: Foresighting exercise

With ELC-based determination of system needs complete, advanced foresight techniques will be applied to begin the preparation of the policy strategy. The use of foresight methods will facilitate strategic prioritization processes involving all stakeholders. The foresighting process will be based on the organization of structured interactions among a range of actors, including policymakers, research institutes, and entrepreneurs. One possible technique that will be used is scenario building through stakeholder workshops. Scenarios help direct attention to forces of change within the system; possible avenues of evolution; and provide planners and decision-makers an evaluation of existing medium-to-long-term regional visions and possible alternative scenarios for the region, and an assessment of possible impacts of the targeted policy.

Stage 5: Formulation of applicable policy mechanisms

Supporting the emergence of a biotechnology cluster is an ongoing process. Policymakers must develop institutional capabilities that allow for supporting such a process over time. Thus, the team will actively advise and assist in the development of a detailed Action Plan for the region. This includes the design of specific policy tools, as well as emphasis on the different ways to achieve consensus among relevant stakeholders. **It has been found that a lack of local consensus and long-term commitment diminishes the probability of attaining the desired goals.**

Stage 6: Ongoing policy evaluations

Ongoing evaluations are necessary to assess the effectiveness of the policies being implemented and their relevance to the changing regional eco-innovation system. These evaluation methods facilitate system feedback and adjustment to the targeted policy approach for the Galilee region. Policy evaluation of this type will help to determine how policies have affected the biotechnology system functions and, as a result, to what extent system functions have changed and are closer to transitioning to another phase in the ELC. It is important to evaluate the effect of policies in a systematic way that considers the interactions between them rather than trying to isolate the specific impact of individual policies within the strategy.

Main Outcome

A **policy toolkit** for effective implementation of a targeted policy in the Galilee which will include the mapping of the region's capabilities in the field of biotechnology, the specific goals for the targeted policy, and the policy mechanisms and measures required to achieve these goals.



The Jerusalem Institute for Israel Studies

The Jerusalem Institute for Israel Studies (JIIS) is an independent think tank established in 1978, at the initiative of the late Teddy Kollek, veteran mayor of Jerusalem, and in cooperation with the Hebrew University and the Jerusalem Foundation. JIIS conducts policy research on Jerusalem, its many faces and the myriad challenges it poses, as well as on diverse aspects of contemporary Israel. The Institute's studies and recommendations serve as dependable and valuable resources for governmental bodies, leading public institutions, civil organizations and the general public. The JIIS' mission is to contribute to decision-making, policy and planning processes and to influence their outcomes in Jerusalem, in Israel and beyond. To this end, the JIIS produces data-based, accurate and thorough information, conduct interdisciplinary policy oriented research and provide innovative policy recommendations for the benefit of decision-makers, third sector and the public.

Our Forte

- Years of experience and expertise, imbued with in-depth knowledge and a proven ability to compile broad, diverse, accurate and reliable research databases
- An ongoing dialogue and relationship with decision-makers, bridging the gap between theory and practice and between researchers, practitioners and policymakers
- Proven experience in mobilizing change on the basis of policy recommendations and in cooperation with other agents, buttressed by a longstanding record of credibility
- A tradition of concerted teamwork and mutual respect, manifested in an open-minded and inviting atmosphere and reflected in JIIS end-products
- Advanced planning expertise, particularly in regional and municipal planning in the physical, social, environmental and economic fields
- A proven record of exchange and sharing of information with leading organizations in Israel and abroad

Research Clusters

1. Jerusalem: The Jerusalem research cluster explores the range of possible steps for promoting the development, prosperity and strength of Jerusalem, for all its inhabitants. Research areas include: urban planning and physical aspects, demographic and social aspects; economic aspects; and geo-political aspects of Jerusalem.

2. Conflict Management and Resolution: This research cluster develops new conceptual models and practicable alternatives for the management and resolution of the Israeli-Palestinian conflict, particularly in Jerusalem. Research areas include: possible geopolitical options in Jerusalem; proposing a conceptual framework for Jewish-Arab relations; and strategies for managing the conflict.

3. Environmental Policy: The JIIS Environmental Policy Center enhances public management of environmental issues, improves the database for mainstreaming the environment into policymaking and evaluates the efficiency and effectiveness of tools for intervention. Research areas include: indicators for sustainability and their implications for the future; a vision and possible scenarios for sustainability towards 2030; environmental diplomacy; environmental governance; environmental economics; and environmental risk management.

4. Innovation and Development Policy: The work of this research cluster, which is central to this paper, is outlined in detail on the following page.



The Center for Innovation and Development Policy

Our Objectives

- To conceptualize and identify appropriate public policies for generating high levels of industrial/technological growth;
- To study the processes of technology transfer from academy to industry for the purpose of better uptake of knowledge;
- To conduct ongoing assessments of the efficiency of regional, national and international public innovation programs and financial schemes;
- To support policymakers in carrying out policies directed at enhancing innovation processes and R&D capacities in chosen sectors, such as biotechnology.

Our Experience

While achieving to meet the objectives through robust and evidence-based research, the center has developed strong capabilities in the areas listed above and accumulated extensive experience in conducting pilot projects followed by an initial implementation phase for the purpose of full-scale implementation and adoption by policymakers. The center was involved in a variety of regional, national and international projects:

Regional Projects

- An evaluation study of drivers for regional growth in Jerusalem;
- A study for the design of regional innovation strategy for Jerusalem;
- A study of the life sciences' implications on Jerusalem's economic growth;
- Policy research on promoting high education in Jerusalem and its contribution to the city's economic and social growth.

National Projects

- An evaluation study of the MAGNET program which is focused on encouraging industrial pre-competitive collaborative R&D;
- A study on the operation and functions of the semi-public technology centers in Israel;
- A study on the role of consultants and the innovation patterns of the SME sector;
- An evaluation study of the Israeli incubator program;
- A policy research on enhancing R&D collaboration as a tool for supporting SMEs.

International Projects

- IMT, PRIISME and ACCESS projects (FP4): The results of these projects culminated in the launching of a new SME support program funded by the Ministry of Industry, Trade and Labor to SMEs, with the aim of improving innovation processes;
- The IFISE project (FP5) that analyzed Israeli financing schemes for innovation and incubation schemes and their applicability to Italy;
- INCUPUB project (FP5) which examined the role of technology policy in incubating European new technology-based firms;
- J-RIS project (FP6), to define a Regional Innovation Strategy for Jerusalem;
- TARGET project, seeking a new targeted policy approach for the biotechnology sector.



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