

GLOBAL CASE STUDIES

Places of Production: Kiryat Shmona

Neha Bazaj | Anne Hudson | David Kambo Maina | Nina Mascarenhas | Tianyu Su | Gary Tran



LCUD Laboratory for Contemporary Urban Design



דיון

קריית שמונה

המשרד לפיתוח
הגבול והגליל
משרד הדיור והתעשייה



מינהל
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Preface

Today, all eyes are on cities. More than half of the world's population live in urban areas and the trend of urbanization promises to continue (if not accelerate) in the coming decades. Yet there are many diverse narratives of urban change that aren't included in the dominant conversations surrounding urban growth. With megacities driving urbanization, for example, what is to be the role of secondary or even tertiary cities in an urbanized future? And how are cities to accommodate or even encourage this growth as residential needs start to crowd out industrial and economic land uses?

Urbanization, meanwhile is inherently a movement from one location to the other—from an origin and destination. It begs for a relationship between the two to ensure a smooth transition and continuing prosperity on either end. But what is the city's relationship to—and responsibility towards—this origin? And how does this relationship change in the absence of a strong move towards urbanization?

Kiryat Shmona is a city in many ways poised for growth, with a strong resource base, a growing population, and a vibrant industrial sector. Yet as the city looks to the future, it faces many of the aforementioned challenges. Today, the city is striving to define its relationship to its surrounding region, chart a stable yet dynamic economic path forward, and preserve its existing character in the face of inevitable urban growth and change.

In order to support the city in its efforts, this study approached the conundrum from three different perspectives:

- Economic development: How can the city enhance and diversity its existing resources and assets and build an economic plan that is both resilient and flexible in the face of coming changes?
- Regional development: How can the city engage with its surrounding region to develop a coherent vision that promises to better serve all parties involved?
- Physical development: How can the city approach infrastructure development and planning to achieve its social and economic goals through strategic implementation in the built environment?

In addition to a strategic plan developed for the city by the Department of Geography and Human Environment at Tel Aviv University, this document includes pertinent case studies from across the globe, offering lessons and insights that could be applied to the challenges that Kiryat Shmona faces today. Developed under the guidance of Prof. Eran Ben-Joseph, these case studies fall into six general categories: food tech clusters, regional coordination, rural tourism, transportation, mixed-industrial districts and innovation hubs.

We hope that the conclusions and insights offered in this document will support the city of Kiryat Shmona in its efforts to attract innovative industrial partners, strengthen regional partnerships, and to develop an attractive and sustainable living environment for its citizens and visitors.

Prof. Tali Hatuka, Urban planning, TAU
Prof. Eran Ben-Joseph, DUSP, MIT



Guide to the Case Studies

Rooted in the visions developed intensively in Kiryat Shmona, we developed case studies that addressed unifying industrial urbanism strategy groupings that could be applied towards a vision articulated and guided by Kiryat Shmona's residents and leaders.

AREAS OF INTERVENTION

In pursuit of recommendations to better direct and coordinate economic, regional, and physical development in Kiryat Shmona, case studies were broken into the below areas of recommended intervention that both leverage the city's existing resources and confront the city's existing challenges.

Food Tech

Surrounded by rich agricultural land and boasting ideal topographical and climactic conditions, Galil Elyon is uniquely positioned to be a global center for agriculture and food technology innovation. The proof is in the pudding: there already exists a vibrant network of knowledge and research organizations that could serve as a strong anchor for any future expansion. While farmers and producers often end up at the bottom of the proverbial food (value) chain, a focus on food technology could offer Galil Elyon's many farmers and producers a new way to capitalize on their product by reaping the fruits of innovation.

Innovation invariably stems from clustering and agglomeration--and the food tech industry is no different. Food tech depends on resource and knowledge sharing and thus benefits significantly from the physical proximity of key players, including, significantly, academic institutions. This proximity allows for the sharing of services and infrastructure, but also encourages face-to-face interactions during which ideas are shared and innovation is fostered. As Kiryat Shmona seeks to plan for the future of the city, it would be wise to capitalize on the opportunity for a vibrant food tech industry. But to do so requires concerted planning with a focus on clustering, marketing, and partnerships.

Regional Coordination

Many of the challenges facing municipalities today do not comply with geographic boundaries. Citizens, too, are constantly moving across those boundaries for work and leisure; planning for people is planning across geographic boundaries. Galil Elyon is a textbook example of this conundrum: residents from the local Kibbutzim and the larger cities and towns migrate daily amongst one another to live and to work. To capitalize on this movement and to ensure widespread economic prosperity, cities and towns would be wise to adopt a broader strategy that enables better matching between jobs and workers' skills, increasing overall productivity and, as a result, each locality's share in this larger pie.

To promote the economic development and overall well-being of the Galil Elyon region, we propose the creation of two regional coordinating bodies. The first, dubbed the **K8 Growth Council**, would be made up of regional actors in food and agriculture technology and tasked with coordinating efforts to develop and attract businesses in the space to the region. The second, the **Eastern Galilee Association of Governments**, would be charged with leading regional planning efforts around housing, transportation and economic development. This organization would subsume the Eastern Galilee Regional Council, while continuing to provide services to localities in the region such as waste management and veterinary services.

Rural Tourism

Due to globalization and rapid urbanization, many agricultural workers across the world have been forced to abandon their farms, leaving rural areas and cultural traditions behind. In addition, food surpluses due to efficiency gains in industrialized agriculture have led to policies that pay farmers to reduce production, further exacerbating migration to cities. Awareness of the environmental effects of modern industrialization, meanwhile, have captured the public conscience, resulting in a dynamic conservation movement. The result has been a dire need for sustainable rural development. Rural tourism has arisen as a strategic path to revitalize agricultural areas, mitigate rural depopulation, protect the natural environment, and preserve traditional heritage.

As part of a larger comprehensive economic development plan, Kiryat Shmona should establish itself as the regional tourism center for the Upper Galilee. Strategically placed along Highway 90, Kiryat Shmona can utilize its locational advantage to receive and direct visitors to the surrounding region's natural and cultural assets. Isolated destinations would gain prominence if connected in a larger regional network with Kiryat Shmona as its hub. In doing so, Kiryat Shmona would be wise to develop an identity that authentically connects its heritage to its emerging aspirations in food technology. More than simply a brand, such an identity could serve as a core set of values to direct long-term development and preservation in concert with the unique character of the city and region.

Transportation

Transportation policies and their relation to land use have a significant effect on a city's potential for growth. The strategic juxtaposition of the two can affect everything from access to jobs to innovation potential to citizens' activity levels to local development opportunities. This is, of course, no different in the case of Kiryat Shmona. The city stands in many ways at a crossroads for the future of transportation: it has the opportunity to use transportation as a means to attract more visitors and street design as a way to make the city more livable for its own citizens. Conversely, the status quo for transportation in the city can serve as a significant barrier for achieving either of the above goals.

To ensure a more livable and inclusive future, we propose two solutions. We propose the strategic placement of a train station at the northern end of the southern industrial area in the city to allow for eastward expansion and a core accessible enough from the city's existing core to connect with Kiryat Shmona's existing resources and to expand the city in a coordinated manner. We also propose to eliminate plans for the bypass (so as to prevent visitors from circumnavigating the city) and instead to implement traffic calming measures in tandem with a new boulevard along existing route 90 to sew the city together and to offer an area for business and citizens alike to cluster and connect.

Mixed-Industrial Districts

Municipal economic fortunes are ever in flux so there is immense wisdom in integrating an adaptable DNA into any planning rationale. Cities that rely on a single industry or a single category of job growth are exposed to higher risks in periods of decline—they are unable to adapt to changing market fortunes and emerging urban eco-systems. Kiryat Shmona has the opportunity to avoid this fate and to instead cultivate a diverse and stable economy with proper planning and zoning policies. **Flexible base zoning in particular can weave together existing uses and emerging ones to incentivize an assortment of investors and attract a diversity of workers.**

Kiryat Shmona also holds all of the necessary tools to tap into the emerging trend of mixed-

use industrial development. Mixed-use industrial is a unique way to approach both innovation clusters and economic diversification by integrating commercial uses and office space with small- and medium-scale industrial uses, helping to preserve the ever-necessary world of manufacturing. **The opportunity for interaction between diverse yet interdependent industries vastly expands the potential benefits of agglomeration inherent in any close-knit design arrangement.** In our case studies, we explore various models of this emerging development type by examining examples at the building scale, block scale and district scale. We uncover key strategies and catalysts for approaching mixed-use industrial that shows that Kiryat Shmona would be wise to closely consider integrating this approach in any future vision for the city.

Innovation Hubs

Successful food tech clusters inevitably share many characteristics with effective innovation clusters. A concept that has been gaining steam in recent decades, innovation clusters attempt to capitalize on potential agglomeration benefits by sparking interactions between individuals and companies and easing access to (and the costs of) key goods and services through physical proximity. As Kiryat Shmona looks to expand its industrial base in food tech, it would be wise to take advice from other food tech clusters, as noted above, but to also consider lessons from other innovation clusters more generally. Perhaps the food tech cluster approach could be improved and perfected—and a more general approach could also help the city plan for a more

diverse industrial base beyond the world of food tech to ensure long-term prosperity as opposed to being susceptible to the dangers inherent in heavy reliance on any one industry.

There are two key lessons to be learned from our innovation district case studies: there is value in coordinating efforts on the regional level and it is important to have a designated body in charge of innovation cluster development. Buy-in at the regional level incorporates more actors to ensure a more concerted push in pursuit of a successful cluster. So, too, a single body in charge of a cluster ensures that someone is responsible for the success—or lack thereof—of the innovation cluster.



Clustering along a food tech corridor

Wageningen, NL

Holland's Food Valley is a knowledge-intensive agrifood cluster that spans an impressive eight municipalities in a ten kilometer radius. The area is home to a number of science, business, and research institutes all of which are focused on food. Food Valley can be considered a 'regional innovation system' that takes advantage of the intersection of industry, university, and government actors, following the Triple Helix model. Anchored by Wageningen University and Research (WUR), Food Valley serves as an effective example of a cluster that both attracts and produces a number of key players in the food tech space.

Nina Mascarenhas

Background

The title Food Valley was part of the strategy to market an existing cluster of innovative food companies and research organizations. While the core players already existed at Food Valley's inception, the official start of the concept can be traced to 2004 when a virtual organization was set up consisting of the Development Agency East Netherlands, Wageningen UR and

the four WERV (Wageningen, Ede, Rhenen and Veenendaal) municipalities.¹

The public and private research laboratories located in the Food Valley include NIZO food research BV, TNO Quality of Life, Centre for BioSystems Genomics, Innovation Cluster Nutrigenomics, and the Netherlands Plant Protection Agency.

¹ Crombach et al., 2008

These are complemented by innovative companies and start-ups.²

In addition to the physical proximity of companies and knowledge institutes, the cluster organization called Food Valley NL provides networking support for member institutes. The organization facilitates and incentivizes collaboration between educational institutions and businesses in the region.

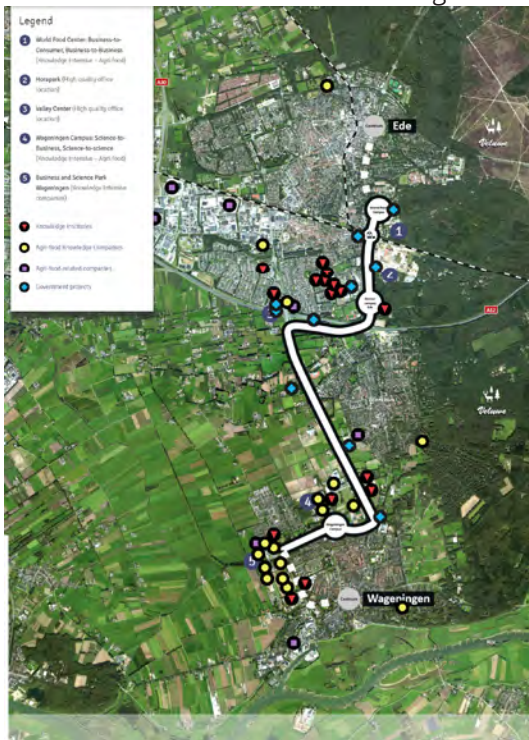


Figure 1 Map of organizations in the food innovation strip. Source: World Food Center.

A number of events were important in the development of Food Valley, including the decision of Dutch baby food company Numico to locate its newly established research arm in Wageningen and the creation of the Top Institute for Food and Nutrition, a € 14 million, 5 year-long research collaboration created by key food tech businesses, universities, and the Dutch government. The Institute has



Figure 2 Wageningen University Campus. Source: Invest in Holland.

since been extended to a long-range program subsidized by the Ministry of Economic Affairs with a budget of € 30 million.³ In 2002, meanwhile, dairy giant Campina decided to concentrate its R&D in Wageningen where research employees, product developers and marketing people would work closely together in the same department; and in 2011, the Biopartner Center Wageningen, an incubator facility for young companies, was founded, creating an environment where young start-up companies could work side-by-side with existing companies.

Organization of Food Valley

Food Valley consists of a concentration of research organizations, food companies, start-ups, pilot plants, and academic institutions, located around Wageningen University and Research Centre (WUR).

WUR itself, considered one of the best agri-food academic and contract research organizations in Europe, has around 6500 employees and 9000 students. It is a merger of Wageningen University, the Van Hall-Larenstein Polytechnic, and the Dutch government's applied research laboratories in agriculture and animal husbandry. The University of Wageningen more generally has 10,000 students, providing the

² Ibid

³ Crombach et al., 2008

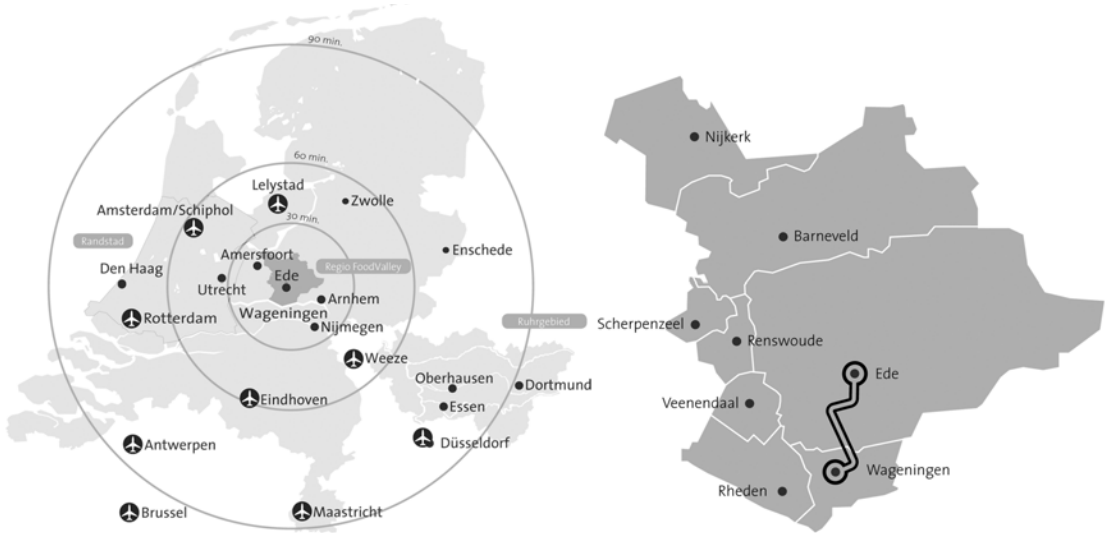


Figure 3 Map of the eight municipalities of Food Valley.
Sources: World Food Center.

region with human capital as well as producing knowledge through research.⁴

Following the Triple Helix Model which recommends collaboration between industry, academia and government, the organizations in Wageningen incorporate elements of each. The World Food Center, for example, is an initiative of the public sector (including the municipality of Ede and the Province of Gelderland), academic institutions (including WUR), and industry (including WFC Development BV) in addition to the World Food Centers Foundation.

As a bridge between research and practice, meanwhile, the Company Restaurant of the Future was a research facility set up to observe consumers in the existing company restaurant of Wageningen UR. The restaurant allowed close observation of consumer eating and drinking behavior through cameras and measuring equipment in a real-life setting. This allowed companies to experiment with new food products, preparation methods and self-service systems in the restaurant.⁵

Challenges Faced

Food Valley has faced—and continues to face—a wide variety of challenges that apply to its location and operations specifically in addition to challenges faced by the food tech industry more generally.

With regards to the latter, one key challenge which impacts the agri-food industry as a whole is the uncertainty of whether consumers will adopt a new product. Reluctance to adopt new products stems from fear of health hazards or loss in quality and has significant adverse consequences for product innovation and development.⁶ Further, innovation in agri-food now requires advances in knowledge that go beyond the scope of a traditional agricultural university. There is an expanding spectrum of knowledge areas and competences involved in innovation including health, nanotechnology, process production industry and logistics, as well as design. This growing demands, in

⁴ Ibid

⁵ Crombach et al., 2008

⁶ Martinez, 2013

turn increase the need for pre-competitive cooperation.⁷

In the Netherlands specifically, meanwhile, the food industry faces the challenge of adequate investment in R&D—the specialty of the Food valley. Dutch companies invest a comparatively small percentage of their annual turnover (1.5-2%) in R&D which poses a challenge to staying at the frontier of international competitiveness.⁸

Finally, one key challenge that the Food Valley must consistently face is its location. Far from Amsterdam, the research cluster is located in the midst of low-density agricultural land, which, in turn, means that it lacks good transportation connections. This presents challenges for companies based in the Food Valley to easily access key urban markets.

Strategies Applied

The strategies applied in the Food Valley context can be broken down into several different categories. As enumerated below, the area evinces organizational strengths, an innovative approach to funding, a strong marketing strategy, coordination across a wide variety of actors, and creative physical design choices, all of which have contributed to its success (and the success of its organizations) in the Food tech sector.

Organizational innovation

■ Triple Helix model: Wageningen University and Research plays a prominent role in Food Valley and is the center of innovation for the region. In keeping with the Triple Helix model, the production, transfer and application of knowledge amongst the Food Valley members



Figure 4 The World Food Center at Ede. Source: World Food Center.

happens through hybrid institutions that are formed from the elements drawn from university, industry and government.⁹

■ Ownership and funding: Food Valley is a public-private partnership with funding from the government, industry actors and an annual membership fee charged to companies for member privileges.

■ Services provided by the Food Valley Consortium include coaching to create spin-out companies where start-ups are connected with business coaches, finance where pre-seed loans of up to €300,000 are made given to entrepreneurs to develop their business ideas. Professional assistance for patenting is also provided to protect intellectual property.

■ The research programs in the Food Valley are developed as public-private partnerships because industrial participation is critical for financial viability. Hybrid institutes combine financing from a conglomerate of industries, the government and research institutes resulting in an annual budget of €25 million to carry out pre-competitive research programs.

Coordination

■ From regional to national: The initiative has had national appeal as a direct result of

⁷ Ibid

⁸ Martinez, 2013

⁹ Stanford University, n.d.

its potential to benefit the Dutch agri-food industry and its adjacent areas of research through expansion and innovation. This has resulted in partnerships across different levels of government and national sectors. Further, political support was received from the Gelderland province of which the Food Valley municipalities are a part. The province decided to adopt the knowledge economy as its main engine of regional growth and identified four knowledge clusters amongst which agri-food life sciences was one.

- There notably exists a strong collaboration between the municipalities of Ede and Wageningen where the Food Innovation is located, facilitating initiatives to improve the accessibility and the living environment of the area to attract more residents (and companies).
- To facilitate interaction with external companies, a Food Valley society was founded whose society membership privileges include access to the science centers of Food Valley. Similarly, the Food Valley NL organization performs vital networking functions between Food Valley members and external actors. Its role includes maintaining the Food Valley website, society meetings, conference, seminars and assisting with the innovation partner search.

Publicity and marketing

- The Food Valley conference held each year helps to bring attention to the developments in Food Valley through press coverage of the event in addition to bringing together various players in the field.
- A series of publications in journals and magazines including Nature and New Food have helped to build the reputation of Food Valley and bring it to the attention of parties and leaders at the national level.¹⁰

Physical strategies

- The Food Innovation Strip is an 11km long cluster of companies, institutes and government along an axis that runs from the municipality of Ede in the north to Wageningen in the south. Along the axis lie Wageningen University and the Wageningen Business and Science Park, the Ede Knowledge Campus, and the World Food Center in Ede. This physical closeness of this network of companies, institutes and governmental agencies fosters effective cooperation.
- The World Food Center sited near Ede, scheduled for completion in 2022 and sited near the railway station, contains facilities that are oriented more towards visitors such as tourists and business representatives. Part of the center is the WFC Experience Center which is expected to draw 330,000 visitors a year, spreading awareness about the journey of food from farm to table.
- AV shuttle transportation along the strip: Wageningen boasts the first autonomous shuttle to operate without a driver on a public road. The electric, driverless shuttle bus regularly ferries individuals across the Food Innovation Strip from the Wageningen University and Research Center to the Ede-Wageningen intercity railway station, serving as a tourist attraction as well as an innovative method to better connect key players along the axis.
- Flexible buildings: To address the changing research needs in the realm of food tech, where lab configurations, experiments, and research initiatives are in constant flux, laboratories on the campus are designed to be flexible and can easily be converted into offices.

¹⁰ Crombach et al., 2008

Conclusion

The Food Valley capitalized on the existing physical cluster of knowledge and business organizations focused on agro and food tech innovation. By forming an organization that could formally coordinate between the players, the municipalities gave a name and identity to the clustering phenomenon that could be marketed to the rest of the world. This marketing plays a key role in promoting the idea of the Food Valley being at the forefront of developments in food technology.

Attracting a few major companies that saw the innovation potential in locating in the region was a big step in the development of the Food Valley. While the companies benefit from the innovative spirit of the start-ups that stem from the university, small companies in turn benefit from the experience and exposure to large, established firms. Thus, in many ways, Food Valley represents a successful execution of the Triple Helix model of collaboration between industry, government and university actors.

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An organic evolution

Aarhus, DK

The Food Agro Park serves, in many ways, as a model for innovation clustering, let alone for the world of food- and agro- tech. Evolving initially organically in the 1980s, the Park has grown exponentially in recent years on the basis of strong efforts to offer agglomeration benefits to park members through events, interactions, and services.

Anne Hudson

Background

It is tough to pinpoint a start date for the Food Agro Park. In the early 20th century, farmers cooperatively cultivated the land where the Food Agro Park finds itself today. The fields originally belonged to the Koldkaer Farm, which traces its roots back to the 13th century, but it was subsequently purchased by the Danish Farmers' Union and the Danish Family Farmers in 1984 along with 110 hectares of land. And it has in many ways grown organically since.

Companies were initially attracted to the area because of its strategic location between

agricultural land and the city of Aarhus as well as the presence (beginning in the 1980s) of an agricultural advisory body.¹ Food Agro Park was officially established in 2009 by the Danish Agriculture and Food Council. The organization works to maximize the natural benefits of the location by catalyzing interactions between various workers (in pursuit of agglomeration economics) and by offering key services to ease the burden of the at times inconvenient location.

The success of the Food Agro Park is notably a direct result of collaboration across different

¹ Hansen, Anne-Marie, 2019



Figure 1 Arrival at Agro Food Park. Source: Agro Food Park

sectors. Since its inception, there has been heavy involvement from government bodies, independent businesses, Aarhus University, and, ultimately, the private organization that now runs the park.

Today the park houses more than 80 companies with over 1,150 people over a total space of 50,000 square meters.

Challenges Faced

Since the Food Agro Park grew organically, it is tough to pinpoint specific challenges that the park itself was tasked with overcoming. Rather, the approach was to seize the natural opportunities that existed and to capitalize on them. Nonetheless, that task was not easy: there were many strategic decisions made in order to establish the park in its current prominence.

Strategies and Innovation

Ownership structure

■ The Agro Food Park is privately owned. This is accompanied by numerous benefits, yet above all it comes with the following perk: it is in the organization's interest to see the park as an entity succeed. It also means that the Park is able to be a little more agile in its decisions, adapting to changing demands and changing market forces.

Funding

■ The park is funded through several sources of income. Companies in the park pay rent in exchange for the right to locate their companies there, but also in exchange for the many services that the Park offers. The Park is also funded through the sale of land to large companies that are eager to take advantage of the large knowledge spillover effects inherent in the Park's natural agglomeration benefits.²

Policy strategies

■ Perhaps the most important strategy, the Park has implemented what it dubs the m3 strategy of networking, facilitating, and knowledge creation. This strategy maximizes the agglomeration potential of the park by offering events, desirable high-quality facilities and numerous services needed by different companies. This ensures interaction between employees and attracts diverse companies, thus offering a platform for engagement and exchange within the realms of food- and agro-tech.³

■ The Park also collaborates with Aarhus University through programs and exchanges to build relationships with students and companies founded at the university, thus attracting both talent and startups to the Park.

Physical strategies

■ In order to capitalize on the aforementioned m3 philosophy (and echoing the strategies found in many innovation clusters more generally), the Food Agro Park ensures the physical proximity of its buildings allowing employees interaction across buildings, thus resulting in agglomeration benefits.⁴

² Hansen, Anne-Marie, 2019

³ Welcome to the Future, 2018

⁴ Hansen, Anne-Marie, 2019



Figure 2 (top) Businesses located in the Aarhus Agro Food Park. Source: Agro Food Park.

Figure 3 (bottom) The Agro Food Park philosophy. Source:

Conclusion

The Agro Food Park is a very successful example of a food tech cluster with a clear and effective philosophy. Albeit started organically, private ownership has since helped to drastically expand and solidify the concept undergirding the effectiveness of the Park. Its m3 strategy echoes that of many innovation clusters, but, similarly to the Food Valley in the Netherlands, offers clear proof that this strategy is also effective in the food & agro- tech worlds specifically: other food tech clusters would be wise to mimic their commitment to proximity and to cultivating exchanges between companies and employees.

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University and industry symbiosis

Davis, US

The University of California, Davis (UC Davis) is the second highest ranked university in the world in agriculture and forestry. As a land grant college, its mission is to engage in teaching, research and service for the greater good. It provides an example of how universities can collaborate with outside industry, and the role that universities can have on the economic development of their surrounding geography.

Neha Bazaj

Background

UC Davis is one of ten University of California campuses, the leading public higher education system in the United States. UC Davis itself was established as a state agriculture school in 1905 with a mission to teach the latest agricultural methods and technology.¹ It soon grew from a vocational institution to a research institution, as its early leaders understood the value of research to improve upon current practices. Today it continues to offer courses and conduct research in agriculture but its

offerings have expanded to include other specialties such as life sciences, humanities, and engineering. It is located in a rich agricultural area, surrounded by farmland on all sides.

Challenges Faced

UC Davis is a publicly-funded university and thus subject to an external budgeting process over which it has little control. In recent years, funding for all ten University of California campuses has been decreasing, with students

¹ 2008 Annual Report, n.d

having to make up the difference.² This is part of a larger trend of the increasing cost of higher education in the United States, which raises questions of the accessibility of higher education to students from lower-income backgrounds.

Two other universities are close enough in proximity (the University of California, Berkeley and Stanford University) that UC Davis also faces competition for top faculty and student talent.

UC Davis produces vast amounts of research, much of which could be adapted into real world applications. Unfortunately, there is currently limited investment in the immediate surrounding region and the university may not be able to fully capitalize on the opportunity to commercialize its research findings.³

Strategies and Innovation

UC Davis has over 40 centers and institutions in food systems, including the World Food Center and the Innovation Institute for Food and Health.⁴ The university serves as a convener of academic and industry thought leaders, to facilitate knowledge-sharing across sectors. Industry also contributes to this partnership, frequently funding research being conducted at the university. In addition to connecting to industry, UC Davis also hosts a number of events that are open to the general public.

The University of California recently launched UC Ventures, a University investment fund intended to help the university capitalize on its own research (Jacobius, 2018). UC Davis has always engaged in this process of technology transfer, but this new venture fund, as well as



Figure 1 (top) Farmers get a first hand look at variety trials underway. Source: UC Davis News.

Figure 2 (bottom) The Robert Mondavi Institute for Wine and Food Science. Source: UC Davis News.

new external investment funds should help to increase this potential.

UC Davis' proximity to agricultural land makes it an ideal location to conduct agriculture research that needs to occur in the field, such as seed trials or new agricultural practices.

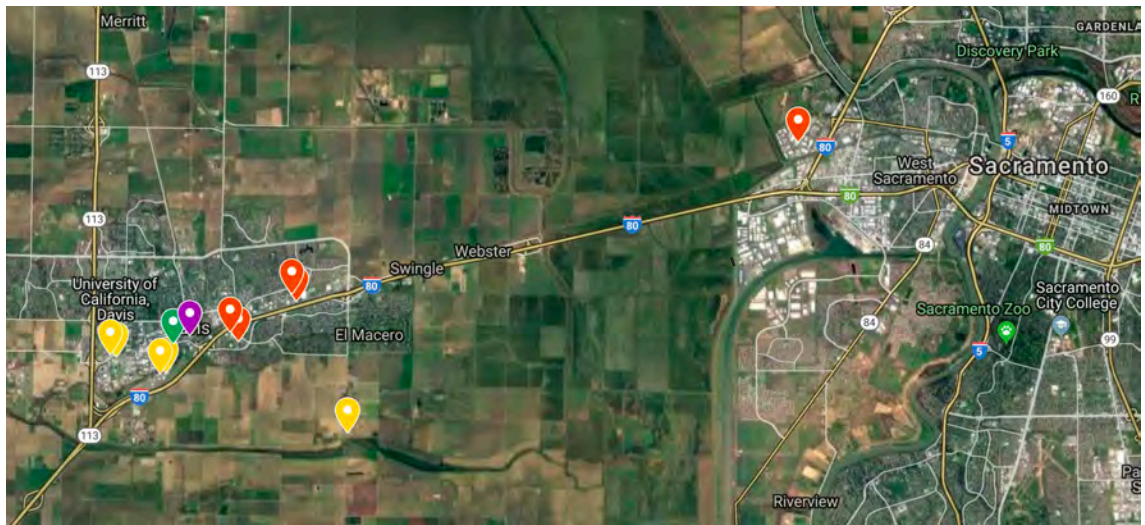
In addition to UC Davis and its various centers, there are a number of external entities involved in food and agriculture that have chosen to locate near to UC Davis. These include agricultural technology and life science companies, investment funds and business incubators. These entities are organized in a linear cluster, located just slightly off the main Interstate Highway in the area.

Although the campus and its institutes are spread out, the topography of the area is quite

² CSU and UC, 2018

³ K. D'Amico, personal communication, February 26, 2019

⁴ Resources, n.d.



- UC Davis Centers & Institutions
- Business
- Investment Fund
- Business Incubator

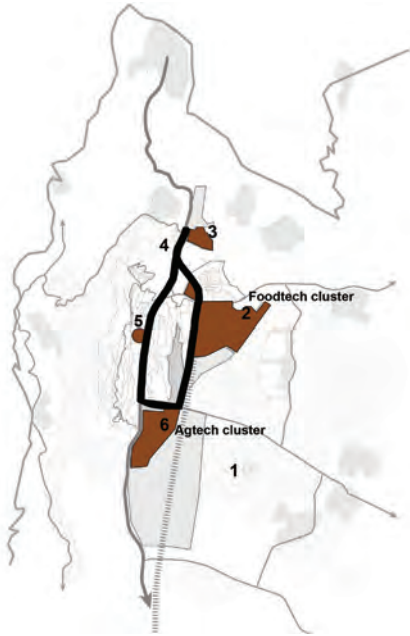
flat which facilitates easy bicycle connections throughout the area.

Conclusion

UC Davis represents the value that a local university can bring to the surrounding region. It can serve local industry through targeted research on issues that are affecting them, and serve as a launchpad for new business through partnerships with industry and investment firms. Particularly relevant is the university's setting in an agricultural region, which makes it uniquely suited to serve agricultural industry.

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Recommendations for the Food Tech Sector

As exhibited in all three case studies, the fields of food- and agro-tech are rapidly innovating, growing, and expanding. There is thus a unique opportunity to capitalize on Kiryat Shmona's existing strengths in these fields to convert those strengths into a successful food & agro-tech cluster. The cluster could, in turn, serve as an economic anchor for the region, attracting both talent and jobs. Yet Kiryat Shmona would be wise to approach the task strategically—all of the case studies evince similar strategies that have been proven to be effective as a result of the blossoming of their respective clusters. We would thus recommend that the city and its companies consider the following strategies to support its growing food- and agro- tech sector:

- Establishing physical proximity for companies is a proven technique for innovation clusters globally—and food tech is no exception. Physical clustering provides two important agglomeration advantages that are critical to innovation: the sharing

of services and face-to-face networking. With the pending International Institute of Culinary Arts, the Beit Asher Food-Tech Quarter and Tel Hai College's strong food tech program, there is great potential to develop a cluster of organizations around the sharing of knowledge in the food tech sector. This strategy is particularly important in a low-density city such as Kiryat Shmona where there isn't a large population to attract and sustain extensive services. Locating food tech actors close to each other enables them to access and attract common amenities and services.

- The establishment of a coordinating organization is important for long-term, effective management. Beyond mere physical proximity, a coordinating organization can organize the programs and networking opportunities in order to effectively capitalize on the agglomeration potential.

In tandem with this, we recommend developing self-sustaining funding that is

not solely dependent on tax incentives, such as membership fees of the organizations, so that the food tech industry is sustainable even if these are discontinued.

■ Having strategic and innovative transportation connections between the locations of various sites within the cluster further eases prospective interactions. Autonomous vehicles experimentations, for example, could serve as an innovative way to improve connectivity while offering the additional benefit of international attention and increased tourism.

■ General practice in existing food tech clusters is to attract a range of companies (both in age and in focus area) to the cluster. Such a range offers both breadth and depth to help ensure that the cluster remains self-

sustaining over time. Attracting a few large companies, meanwhile, can offer an anchor to help spark effective expansion of the cluster.

■ Developing self-sustaining funding such as membership fees for companies participating in the cluster (one that is not solely dependent on tax incentives) offers a long-term strategy for sustaining the cluster.

■ There are unique opportunities for synergy between food tech initiatives and other economic development measures such as tourism. For example, establishing a process wherein new food products can be introduced to tourists through stores or restaurants can allow for the study of consumer response to innovative food products and serve as another way to attract visitors and tourists to the area.

Strategies Applied

	Food Valley	Agro Food Park	UC Davis
Scale	• District	• District	• University
Management	• Public-private partnership	• Privately managed	• Public-private partnership
Funding	<ul style="list-style-type: none"> • Government funding • Annual membership fee for companies 	<ul style="list-style-type: none"> • Rent collected from members • Sale of land to large companies 	<ul style="list-style-type: none"> • Government funding
Program/activities	<ul style="list-style-type: none"> • Centered around Wageningen University • Events for face-to-face interaction and knowledge exchange 	<ul style="list-style-type: none"> • Partnership with Aarhus University • Events and areas for face-to-face interaction and knowledge exchange 	<ul style="list-style-type: none"> • UC Davis serves as center of 40+ centers and institutes • Events for face-to-face interaction and knowledge exchange
Policy strategies	<ul style="list-style-type: none"> • Service provision: regulation and arbitration, intellectual property (IP) • Diversity in company size and scope • Membership privileges • Living laboratories • Economic diversification 	<ul style="list-style-type: none"> • Service provision: law, IT, accounting • Diversity in company size and scope • Membership privileges 	<ul style="list-style-type: none"> • Service provision: technology transfer



A regional focus on economic growth

Sacramento, USA

The Greater Sacramento Economic Council ("Council") represents a collaboration between local and state governments, market leaders, influencers, and stakeholders, with the sole mission of driving economic growth. It offers a model for how regions outside of major metropolitan areas can attract business and business investment.

Neha Bazaj

Background

The Sacramento metropolitan area is home to 2.5 million people, as well as the University of California, Davis, which is ranked second in Agriculture and Forestry in the world.¹ It is also just two hours by car or train from the San Francisco Bay Area ("Bay Area"), itself the source of a vast pool of talent and two other top universities, the University of California, Berkeley and Stanford University.

The region sits at the northern end of California's Central Valley, one of the most productive agricultural regions in the world.² Access to the California Delta, an international shipping channel, allows for products to be shipped around the world. The Sacramento International Airport provides its residents with similar worldwide access.

1 Greater Sacramento Economic Council [GSEC], n.d.

2 Measure of California Agriculture, 2009

For companies considering relocating or establishing new headquarters, Midwestern and Southern cities can often offer even lower costs and greater incentives.

Strategies Applied

Organizational structure

■ The Board of Directors and its Executive Committee are primarily comprised of representatives from private entities. However, it also boasts representation from the region's cities, counties, universities, and the local public utility, resulting in insights and recommendations from a range of interested parties and stakeholders.

Funding mechanism

■ The Greater Sacramento Economic Council is public-private partnership, with the majority of funding coming from the private sector. This allows for both more flexibility and more agility in the organization's approach to its tasks.



Figure 3 Rice fields north of the City of Sacramento. Source: https://commons.wikimedia.org/wiki/File:Sacramento_rice_fields.jpg (Originally photographed 2014, September 25).

Activities

■ The Council engages in a number of activities in its efforts to attract business to the region. The Council is interested in both domestic and international businesses, and will travel

around the world to meet with potential businesses and to market the region.⁷ For those companies that decide to relocate or expand to the region, the Council offers relocation and expansion consultation, including assistance with building permitting processes. It's efforts have been rewarded, including the recent expansion of Israeli irrigation company Saturas to the region. At home, the Council organizes industry conferences and fosters professional networks, in order to facilitate the connectivity of businesses that are currently located in the region.

Conclusion

The Greater Sacramento Economic Council serves as a strong example of an effective public-private partnership working to attract business in the face of stiff regional competition. Although Sacramento boasts a number of assets that are very attractive for businesses, many businesses (particularly international ones) might be unaware of what the area has to offer. The Council thus markets the region, reaches out to potential businesses, both domestic and international, and supports business in their relocation or expansion efforts. Although it often takes multiple touches to bring a business to the region, the Council has had numerous successes since its inception.

⁷ GSEC, n.d.

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A persistent partnership

Durham, USA

The Research Triangle Regional Partnership is regional marketing organization sustained by and committed to ten core counties located in Central North Carolina. It offers a model of intraregional cooperation over competition, with a view that what is good for one municipality is good for the whole region.

Neha Bazaj

Background

The Research Triangle Regional Partnership ("RTRP") represents a ten-county geographic area with a population of 1.9 million.¹ The region is named for the three major universities within it (Duke University, The University of North Carolina at Chapel Hill and North Carolina State University), yet it is home to seven others as well. These universities draw

research dollars to the region and facilitate knowledge sharing with industry. Industry in the region spans advanced manufacturing, life science, technology, agricultural technology and clean energy.²

In addition to access to top universities and a wide range of job opportunities, residents benefit from a low cost of living. Median home prices are \$276,900 in the Raleigh metropolitan

¹ U.S. Census Bureau, 2017

² Our Region, n.d.



Figure 1 The counties that make up the Research Triangle Regional Partnership. Source: <https://www.researchtriangle.org/>.

area and \$271,400 in the Durham-Chapel Hill metropolitan area.³ Businesses similarly benefit from low real estate prices, the lowest corporate tax rate in the US, as well as tax incentives for locating in Opportunity Zones (economically distressed areas) within the region.⁴

The area is notably well-connected with numerous transportation links. Residents and visitors, for example, have access to direct flights to major hubs on the eastern seaboard.

History

The RTRP was originally established by the State of North Carolina as one of a number of regional partnerships to promote regional economic development. However, the state cut funding to these organization in 2010 and many of them dissolved.⁵ The RTRP was able to secure new sources of funding, but is now primarily involved in marketing, as other organizations have taken up economic

development (e.g. the Economic Development Partnership of North Carolina).⁶

Challenges Faced

In spite of the wealth of universities and colleges in the region, there are sharp racial gaps in educational attainment and economic well-being. In its pursuit of economic growth, the region is challenged to ensure that it is inclusive growth; that the benefits of growth accrue to all of its residents regardless of race. Educational institutions and businesses will need to do all they can to ensure job readiness for all residents, particularly minorities.⁷

Further, when state funding was withdrawn, the area was faced with the challenge of finding new sources of funding and, in doing so, reorienting its purpose from a state scale to a regional one.

Strategies Applied

Organizational structure

■ The RTRP's Board of Directors includes representation from all ten member counties.⁸ This includes government officials, representatives from economic development corporations and private entities. It ensures that a wide range of voices are heard as part of the process.

Funding mechanism

■ After the state cut its funding in 2010, the RTRP switched to a different model. Today, about one third of the RTRP's funding comes from small (10-13 cents) per capita

³ Metropolitan Median Area Prices, 2019

⁴ Our Region, n.d.

⁵ M. Trachtman, personal communication, February 19, 2019

⁶ Partners & Allies, n.d.

⁷ Equitable Growth Profile, n.d.

⁸ Our Team, n.d.

contributions from member counties and the remainder comes from private donors.⁹



Figure 2 The 7,000-acre Research Triangle Park hosts more than 170 companies employing more than 39,000 knowledge workers. Source: <https://inhabitat.com/new-master-plan-for-north-carolinas-research-triangle-park-will-stress-sustainable-development/>.

Activities

■ The RTRP is primarily engaged in marketing the region to international companies, with the goal of getting them to establish US branches or headquarters in the RTRP region.¹⁰

Conclusion

When the state cut its funding in 2010, the member counties of the Research Triangle Regional Partnership could have chosen to disband. Instead, they each agreed to allocate a portion of their own limited budgets to maintain the partnership. This is a particularly striking choice for the home counties of the three major universities in the region, who surely did not need the partnership to thrive. According to staff with the RTRP, the feeling in region is that what is good for one of the member counties is good for the region as whole, and that there is value derived for all in working together as opposed to individually.

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A partnership towards preservation Boston, USA

The Charles River Watershed Association ("CRWA") is a grassroots organization that works to protect and enhance the Charles River Watershed. It offers an example of organizing across geographic boundaries to address a shared natural resource challenge.

Neha Bazaj

Background

The Charles River is 80 miles long, and drops 350 feet as it flows through 23 cities and towns on its way to the ocean. The river's full watershed, meanwhile, includes another 12 cities and towns and covers a total of 308 square miles. The Charles River is home to 20 species of fish and the watershed is the most densely populated watershed in New England.

Dams constructed along the Charles River prior to the 1900s slowed its flow and hampered its ability to cleanse itself. Mills and other industrial development along its shores exacerbated this problem by adding pollution

to the river. Early efforts to better manage the basin in the early twentieth century improved the situation. Unfortunately, domestic and municipal waste continued to be dumped into the river unchecked, and population growth placed a strain on freshwater supplies.

The CRWA was formed in 1965 due to increasing environmental awareness generally, and concern about the deteriorating condition of the river specifically. Through its work, the CRWA has helped achieve important victories including the construction of wastewater treatment plants, limits on industrial discharges, the closure of landfills on the shoreline and reductions in sewage discharges into the river.

Challenges Faced

In addition to the changes mentioned above, rapid population growth in the watershed continues to place a strain on freshwater supplies, reducing freshwater flows into the river and its surrounding aquifers. This hampers the river's ability to cleanse itself. In addition, although today there are wastewater treatment plants, these plants don't have sufficient capacity to handle the combined volume of stormwater plus sewage during heavy storms. In these cases, raw sewage is released into the river.

The fact that the watershed crosses multiple jurisdictional boundaries adds political complication to its management, as decisions upstream can have deleterious impacts for communities downstream.

Strategies Applied



Figure 1 The Watertown Dam. Source: <https://watertown.wickedlocal.com/news/20171102/conservation-group-studying-removal-of-watertown-dam?template=ampart>.

Organizational structure

■ Although 35 towns and cities comprise the Charles River watershed, most are not formally involved with the CRWA. The CRWA has a staff

of eight, including one staff scientist, and they are supported by a 14-member Board of Directors and a 34-member Board of Advisors. Board members include representatives from public agencies like the Boston Planning and Development Agency, non-profit agencies like local Community Development Corporations and private entities.

Funding mechanism

■ 70% of the CRWA's budget comes from individual contributions, and the remainder comes from a combination of foundation grants, government grants and corporate sources. As a subject-specific organization, the CRWA is able to leverage personal interest in the subject area as a key pillar of support; this in turn helps to fill the gap of only limited government support.

Activities

■ The CRWA engages in a number of activities to promote better management of water in the watershed and to impede actions that would have negative impacts on the watershed. It collaborates with cities and towns to improve their stormwater management and with community groups on restoration projects. The CRWA also engages in policy advocacy, including developing, promoting and opposing legislation, and, in some cases, even challenging the legality of existing policies. Its advocacy work is based in science, conducted by both professional researchers and citizen scientists.

■ Many decisions regarding the watershed occur via formal planning processes within commissions and planning boards. The CRWA is present at community meetings and decision meetings, making its positions known.

At a more grassroots level, the CRWA is involved in educating the public about the river and the watershed, and in implementing

public projects to improve the watershed such as clean-up days and habitat restoration.



*Figure 2 A summer day on the Charles River Esplanade.
Source: https://commons.wikimedia.org/wiki/File:Charles_River_Esplanade,_Boston,_Massachusetts.JPG (Originally photographed 2005, July).*

Conclusion

The Charles River Watershed Association gives us an example of grassroots organizing to achieve shared interests where political entities are unable to do so. While public agencies surely have an important role to play, they have a defined geographic constituency which may get in the way of considering broader interests. As an independent organization, the CRWA has the flexibility to choose its constituency, to define its own objectives and to intervene as it sees fit. However, the CRWA does not act alone; its ability to engage in dialogue with all the relevant players is an important tool for achieving its goals.

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A regional advisory council for cooperation and collaboration

San Francisco, USA

The Association of Bay Area Governments ("ABAG") is a regional advisory council that works to strengthen cooperation and collaboration among local governments, and to assist them in finding innovative and cost effective solutions to common problems that they face. It provides a model of a regional body that offers both support services and a venue for collaboration for its members without infringing on local decision-making.

Neha Bazaj

Background

The San Francisco Bay Area ("Bay Area") is made up of nine counties, 101 cities and towns, and a population of more than 7 million.¹ The region is made up of big cities, suburbs and even rural towns. The Bay Area has long been the home of modern computer and internet technology. However, companies like Facebook and Google have created huge job centers outside of traditional city centers, and other

companies have followed suit. This has placed new pressures on housing and transportation, as the flows of people have changed over time. While the rural towns of the region boast a rich trade in wine and tourism, recent wildfires devastated some areas which has put additional pressure on the regional housing stock.

¹ ABAG members, n.d.

ABAG was established in 1961 in response to state legislation that threatened to take away local control over regional transportation assets.² Although it was born in response to a transportation challenge, its mission is to enhance cooperation and collaboration amongst area governments around a variety of region-wide challenges beyond just transportation. Its work encompasses land use planning, housing, transportation, climate change, disaster resilience, and economic equity.³

Challenges Faced

Due in large part to the growth in the technology sector over the last decade, the region is experiencing rapid population growth. Unfortunately, the pace of new housing construction has not been fast enough to keep up with demand. Housing prices have skyrocketed and many are being forced out of the region due to affordability challenges. The region's transportation infrastructure is also

struggling to keep up, and the region is out of space to build additional infrastructure.

While ABAG works with cities and towns to develop regional plans to manage this growth, the body has no legal authority to enforce the provisions of the regional plan. Nonetheless, ABAG and its parent organization (the Metropolitan Transportation Commission) recently convened a broad group of stakeholders to develop a policy package to address the housing and transportation crises. Although ABAG still does not have power to enforce these provisions, the policy package has been taken up by state lawmakers and may get passed into law. This example demonstrates the power of convening and collaborating, even when it is unclear how or if informal agreements will be upheld.

Strategies Applied

Organizational structure

- Membership in ABAG is voluntary, but most of the region's towns, cities and counties have chosen to participate. Each member has one representative in the General Assembly. The General Assembly proposes issues for consideration and reviews the actions of the Executive Board. The Executive Board is made up of 38 people, with representation reflecting the population size of each county. The Executive Board makes operating decisions, appoints committee members, authorizes expenditures, and recommends policy.⁴

Funding mechanism

- ABAG receives small contributions from member towns, cities, and counties, but its major source of revenue is grants to implement regional programs such as the distribution of

² Who We Are, n.d.

³ Ibid



Figure 1 Bay Area traffic. Source: <https://climaterwc.com/2018/01/19/coalition-forms-support-bay-area-traffic-relief-measure/>.

⁴ Who We Are, n.d.

Wenergy efficiency incentives and regional water management projects.⁵

Activities

■ Convening and collaborating are the key functions for this regional planning agency that encompasses nine counties and 101 cities and towns. It does this by organizing workshops and conferences to bring the relevant individuals together. These conversations inform ABAG's policy development and advocacy work. ABAG conducts research to support innovative solutions to regional challenges.

■ ABAG also provides a number of services to its members, such as pooled natural gas purchasing and insurance programs. It is also the conduit for members' applications for federal grant money. ABAG also does some project implementation, such as creating a regional trail system and the aforementioned regional water management projects.⁶



Figure 2 View from near Grizzly peak, looking down Strawberry Canyon onto Berkeley and San Francisco. Source: Turner, A. <https://turnerfamilyexpedition12.wordpress.com/tag/berkeley/>

Conclusion

Organizing across a region with seven million people, nine counties and 101 towns and cities is no small feat. However, the connectedness of the natural resources and people of the region necessitate that it be done. One of the primary difficulties in accomplishing this task is ABAG's lack of authority to implement the regional plans or policies that it develops in collaboration with its members. Thus, while ABAG offers a good model for bringing the relevant players to the table, it is necessary to look elsewhere for effective implementation and enforcement mechanisms.

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⁵ ABAG Budget, n.d.

⁶ Who We Are, n.d.



Cooperation along common interests Ruhrgebiet, GE

Founded in 1920, the Ruhrgebiet has a long history of regional political integration. While the issues that the regional government has been responsible for have evolved over the years, the structure has remained largely the same, proving its institutional strength. The regional government notably focuses on a subset of specific issues, such as regional open space, tourism, and economic growth that are pertinent to all members in the regional body; its structure incorporates all regional voices, yet has a clearly defined executive body that can effectively act on its mission. While the Ruhr region is still facing considerable economic challenges, this case study offers one example of how a regional government can approach the challenge of economic evolution in a stable yet creative manner.

Anne Hudson

Background

Shifting Responsibilities

The Regionalverband Ruhr (originally named the Siedlungsverband Ruhrkohlenbezirk) was founded in 1920 by the cities of the Ruhr and their surrounding districts as a 'special purpose regional association' in order to help regulate the development and management of coal one of the country's most valuable

resources at the time. In addition to economic coordination, this first iteration of the body was responsible for local zoning and land-use planning and, significantly, regulated the open space within and between cities and districts in order to preserve green space for

recreational purposes.¹ The body had a brief period in which the responsibility for regional planning was added to its purview, yet in 1975 the administration of the region was re-organized and responsibility for regional planning handed over to the planning councils

mayors. Representatives are selected by their respective cities and districts. Operations for the regional body are run by three executive bodies—the *Verbandsversammlung*, the *Verbandsausschuss* and the Regional Director. The Director is elected by the Parliament for six-year terms and the *Verbandsversammlung* and the *Verbandsausschuss* are elected by the Parliament for five-year terms.⁴



Figure 1 The districts and cities that make up part of the Ruhrgebiet. Source: Metropole Ruhr.

of the region's three largest cities. During the reorganization, the *Regionalverband Ruhr* (named *Kommunalverband Ruhrgebiet* at this time) gained responsibility for such things as tourism planning, regional studies and public relations, in addition to open space protection.²

2004 marked a major turning point for the body: the State government in Nordrhein Westfalen reformed the Regional Planning Act and endowed the *Regionalverband Ruhr* with regional planning responsibilities once again: it was now tasked with developing regional master plans, promoting the development of the Emscher Landscape Park and managing economic development planning.³

The *Regionalverband Ruhr* consists of eleven cities and four regional districts representing over five million inhabitants. The Ruhr parliament is the overarching decision-making body consisting of representatives from all cities and districts as well as pertinent

Challenges Faced

During the period of industrialization in Germany, the Ruhr area was one of the most economically prosperous regions in the country. A coal and steel powerhouse, the Ruhr area boasted many of the country's biggest industrial companies and enjoyed international prominence. The first signs of crisis in the region began, however, with the economic slowdown that occurred following the two world wars. In the 1960s, changing technology and the declining prominence of coal began a slow and steady economic decline for the region that has lasted to this day. The regional government thus faced the challenge of how to redefine an area that was fully dependent on a single (declining) industry.

4 Metropole Ruhr, accessed April 2, 2019



Figure 2 Wohnbebauung Küppersbuschgelände IBA Emscher Park, Gelsenkirchen, Szyszkowitz-Kowalski. Source: Creative Commons.

1 Keil, Andreas, 2013

2 Ibid

3 Ibid



Figure 3 Locator map of Regionalverband Ruhr in Nordrhein Westfalen. Source: Creative Commons.

It is important to note that many of these challenges are on-going. One of the largest challenges is a persistent negative image of the region on a national scale. The Ruhr is still seen today as a region that is suffering economically, with low wages and poor housing conditions. Yet the Ruhr area (with significant contributions from the Regionalverband Ruhr) has gone to impressive lengths to redefine its image, to attract industry to the area and to offer concrete paths forward for the region and its citizens.

Strategies Applied

A New Economic Plan

■ With the decline of coal following the two world wars, the Ruhr region was forced to re-examine its economic strategy. Under the leadership of the Regionalverband Ruhr in collaboration with key local industries,

the region started pivoting to clean energy technology. The State of Nordrhein-Westfalen introduced a shift in industrial policy as early as 1984 from a coal-oriented policy to an environmentally-oriented one. The strategy has begun to pay off: the Ruhr area boasts over 100,000 jobs in the field of environmental technology and has a competitive advantage in energy supplies and in waste disposal. This economic pivot notably plays to the region's strengths: many clean energy technologies originate from mining technology.

An international competition

■ In order to attract international attention to the region and encourage private involvement in its development, the Ruhr hosted the International Building Exhibition (IBA) in the region from 1989 to 1999. The public-private project resulted in the world-renowned Emscher Park, developed on an area that had suffered from industrial use. Today, the park is a tourist attraction as a result of IBA's ecological and social reconstruction of the area with numerous art and architectural installations.

Organizational structure

■ One of the answers as to why the Regionalverband Ruhr itself has been so effective lies in its structure. All local players have a voice in the parliament, yet the Verband also has sub-organizations that implement the decisions reached by the parliament. These executive bodies, more directly, are effective at realizing the goals set forth by the parliament. The Verband has notably also spawned other suborganizations targeting key areas of responsibility such as the Business Metropole Ruhr GmbH responsible for economic development and the Ruhr Tourismus GmbH responsible for tourism development. Although responsibilities of the regional body have changed over the years, the body itself persists serving as proof of its strong structure.

Common interests

■ Significantly, the Regionalverband Ruhr is responsible for specific areas of activity for which there is common interest across many of the players involved in the body. As noted above, the Verband was started with the purpose of preserving regional green space—and that has remained a significant driving force for the existence of the body. It has also adopted key responsibilities in other areas of common interest, however, such as large-scale infrastructure projects and cultural/tourism development.

Conclusion

The success of the Regionalverband Ruhr is perhaps inherent in its longevity: the regional organization is just shy of 100 years old. A regional body that spans a variety of municipalities and interests, its strengths lie in its approach to regional governance through focusing on specific shared interests. Those interests are also common to other regional bodies and thus can serve as useful lessons to where commonalities might lie, including open space preservation, tourism development, economic development and large-scale regional infrastructure projects among others. Nonetheless, it is important to note that the Ruhr region is still suffering economically and it is thus still in the throes of policy in order to successfully turn the region's fate around. As the IBA example and the region's economic strategy indicate, any efforts to improve the economic prosperity of a region will require collaboration across different levels of government and the private sector.

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A regional coordination platform

Meetjesland, BE

Located in Belgium, Meetjesland lies between the cities of Bruges and Ghent along the country's border with Holland. Sitting within Belgium's Vlaanderen region, Meetjesland consists of 13 municipalities with 164,000 residents in total. Meetjesland has a long history of economic and infrastructural struggles, despite its renown for open space, landscape, and tourism. In 2007, Meetjesland released its Meetjesland 2020: Future Plan, which proposed the "Regional Network Meetjesland (Plattelandscentrum Meetjesland)." This regionally-focused plan, in turn, has sparked innovative coordination across the region to help address the area's many economic challenges, while capitalizing on its opportunities.

Tianyu Su

Background

Located on the border of Belgium, Meetjesland consists of 13 municipalities varying in resident size from 6000 to 32000 (Aalter, Assenede, Eeklo, Kaprijke, Knesselare, Lovendegem, Maldegem, Nevele, Sint-Laureins, Waarschoot, Zelzate, Zomergem and Evergem). In the 2000s, like other rural areas in Europe, Meetjesland faced the challenges

resulting from mono-type agriculture and an imbalanced regional development. The city of Meetjesland in particular has struggled in the realms of economic development and employment as compared to other cities in the region. Nonetheless, it enjoys natural advantages like Kiryat Shmona, including adequate farming land, open space, and

numerous tourism destinations. To better make use of these advantages and address its aforementioned problems, the regional created the Regional Network Meetjesland along with several other regional organizations, including Meetjeslandse Bouwmaatschappij and Regionaal Landschap Meetjesland.

The regional network as proposed by the Meetjesland 2020: Future Plan has been regarded as one the first pilot cases of regional governance in Europe—and a successful one at that. Regional coordination has a long history in Meetjesland in specific fields, like tourism (Toerisme Meetjesland) and housing (Meetjeslandse Bouwmaatschappij), yet Plattelandscentrum Meetjesland has been the first regional coordination organization overseeing all aspects of regional development. Specialized regional organizations effectively integrate local governance (Figure 5), while also providing a basis for a higher-level regional network.

Yet there are also other initiatives in the region that serve to establish coordination across municipalities, such as the Europe-wide push to encourage multifunctional agriculture (MFA). As advocated for by the EU (The Future of Rural Society) and the UN (Agenda 21), the MFA initiative aims to eliminate the challenges of mono-type agriculture in Continental Europe. Meetjesland has served as one of the first testing grounds for the initiative's implementation.

Challenges Faced

Although the EU and UN have been advocating for multifunctional agriculture in the region since the 1990s, the region was slow in adopting the initiative. The absence of a strong regional organization ensured that each municipality continued to act in its own self-



Figure 1 Meetjesland Regional Map. Source: Wikitravel. 2014Source: gowanuscanal.org

interest by maximizing profit instead of to the region's benefit through diversification.

The region's infrastructure, meanwhile, had started to show the wear and tear of old age; infrastructure that was in some cases over a century old could hardly meet the requirements of modern agriculture and tourism industry. This resulted in an untenable situation, keeping Meetjesland from larger business opportunities and hindering regional collaboration.

Finally, competition within the region created an additional challenge for municipalities within Vlaanderen. The existing regional bodies in charge of coordination were not able to effectively negotiate between all 13 municipalities in order to enforce initiatives towards more cohesive (and effective) economic development.



Figure 2 (top) Agriculture land in Meetjesland, Belgium.
Source: Plattelandscentrum Meetjesland, 2019. Source: gowanuscanal.org.

Figure 3 (bottom) Tourism destination in Meetjesland.
Source: Plattelandscentrum Meetjesland, 2019.

Strategies Applied

Under the leadership of Plattelandscentrum Meetjesland, a wide array of regional organizations and all 13 municipalities work closely with each other to create a more inclusive and prosperous region.

Marketing

■ Plattelandscentrum Meetjesland set up innovative processes to address economic, cultural, social and community challenges in the countryside through its signature Plattelandslab, which helps to cultivate regional innovation efforts. Most importantly, the body helps to promote the region's agriculture and horticulture sectors through a wide variety of activities, including product showcases

for agricultural products and international marketing efforts.

Tourism

■ Bodies like Toerisme Meetjesland, meanwhile, help to strengthen tourism in the region through the management of visitor centers (in Boekhoute, Eeklo and Ursel) as well as through museums and monuments. Toerisme has created a region-wide website for tourism as well as cycling routes for visitors to explore the region.

Landscape preservation

■ Regional bodies such as the Regionaal Landschap Meetjesland ensure an ongoing commitment to environmental preservation in the beautiful region. Through a wide variety of efforts, the organization promotes regional character, recreation, recreational co-use, nature education, support for nature and integrated and area-specific management. It also offers support to municipalities and heritage actors in the field of landscape heritage.

Conclusion

The Vlaanderen region has long faced considerable economic challenges despite its vast natural wealth. While regional coordination was traditionally difficult in the area as a result of agricultural competition, recent developments in regional coordination have eased cooperation and helped the region to prosper. A variety of regional bodies working on specific issues pertinent to all local municipalities (such as tourism and landscape preservation) have ensured that there is widespread support for coordinated economic efforts.

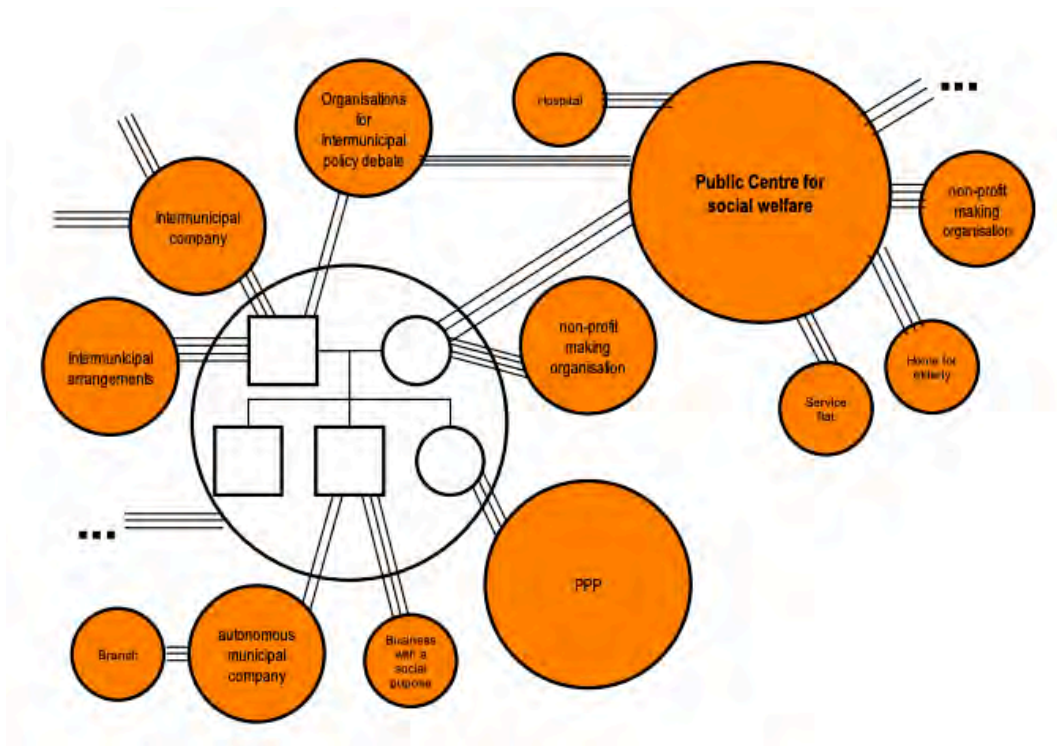
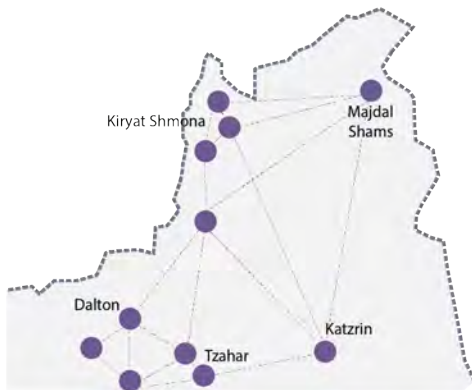


Figure 4 The complexity of local governance. Source: Bruneel, 2008.

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Recommendations for Regional Coordination

Regional Growth Council

Similar to the Greater Sacramento Economic Council and the Research Triangle Regional Partnership, Kiryat Shmona and its surrounding region have a shared interest in targeted regional economic growth, creating a unique opportunity for intra-regional coordination. In pursuit of this, the K8 Growth Council would be responsible for coordinating efforts to develop and attract food- and agro- tech businesses to the region. The Council would be made up of regional actors within the realm of food- and agro- tech, including Migal Research Institute, Tel Hai College's Food Institute, the pending food-tech park, local farmers and representatives from the planned small business incubator space.

Given the many actors interested in developing the region as a hub for food and agriculture technology, it would be prudent for these different actors to be in conversation with each other. This would ensure a coordinated approach when speaking with outside

businesses and investors, eliminating duplicate efforts.

The Council could facilitate knowledge sharing opportunities such as conferences and workshops on areas such as new research and new technologies and it could proactively market Kiryat Shmona to outside businesses and investors to increase awareness of the assets the region has to offer. For businesses that decide to relocate or to expand to Kiryat Shmona, the Council could assist these businesses in choosing the right location and guide them through any building or permitting processes.

Galil Elyon Association of Governments

The Regionalverband Ruhr and the Meetjesland area of Belgium, meanwhile, offer innovative approaches for creating effective regional governing bodies. Kiryat Shmona and its surrounding region are arguably in need of similar structures in order to more

effectively coordinate the region's economic development and to preserve the region's natural beauty. An Eastern Galilee Association of Governments could be responsible for leading planning efforts in specific areas that impact all localities in the region, including economic development, population growth and transportation. By addressing these issues as a region, the Association would avoid implementing solutions that would otherwise simply shift the problem from one locality to another. Coordinated planning efforts would also help the region to establish a common voice, which could give the region greater power in its efforts vis-a-vis the central government.

The Association could model its organizational structure after that of the Association of Bay Area Governments. Membership would be open to all localities in the Eastern Galilee, but would be voluntary. Participating localities

would be required to make small contributions towards funding the Association. Each participating locality would have one delegate in the General Assembly, but there would also be an Executive Board where representation would be tied to population size. The majority of decision-making powers would be held by the Executive Board. This structure ensures that small localities are represented but do not have an outsized voice in decision-making processes.

In addition to planning and policy advocacy work, the Association could provide data analysis and other research services to localities that don't have planning staff of their own. The Eastern Galilee Regional Cluster would also continue to provide services such as waste management and veterinary services to the region's localities, but under the auspices of the Association.

Strategies Applied					
	GSEC & RTP	Charles River Watershed Association	Association of Bay Area Governments	Regionalverband Ruhr	Meetjesland
Interest	• Economic prosperity	• Watershed health	• Economic equity, climate change	• Economic prosperity	• Economic prosperity
Mission	• Attract business to the region	• Promote health of watershed	• Facilitate regional collaboration	• Coordinate across interest areas	• Facilitate economic cooperation
Structure	• Public-private partnership	• Non-profit	• Regional advisory council	• Supra-local government body	• Regional advisory group
Key actors	• Local companies	• Interested individuals	• Member governments	• Parliament • Subcommittees	• Regional actors
Power	++	++	++	+++	++
Funding	• Private contribution • Government grants	• Individual contribution • Foundation support • Government grants	• Member contribution • Government grants • Contracts for services	• Member contribution • Government grants	• Member contribution • Government grants
Activities	• Marketing • Industry events • Relocation services	• Collaboration • Research • Policy advocacy • Education	• Collaboration • Research • Policy advocacy • Funding distribution	• Collaboration • Research • Funding distribution • Planning	• Collaboration • Marketing • Policy advocacy • Planning



Agritourism: an Italian invention

Tuscany, IT

Agritourism, a subset of rural tourism, is unique to Italy. In 1985, the Italian government defined agritourism as “activities of hospitality performed by agricultural entrepreneurs and their family members that must remain connected and complementary to farming activities.” As the only country in the European Union that has defined and regulated agritourism, its development presents a distinctive model for mitigating rural depopulation and diversifying agricultural economies. Within Italy, the Tuscany region is one of Europe’s most visited destinations – known not only for Florence and Pisa but for the Chianti wine region and its countryside landscapes as well. Indeed, tourists from across the globe flock to Tuscany for a taste of “slow food” as an alternative to modern industrial life.

Gary Tran

Background

Following World War II, Italy experienced massive rural depopulation as agricultural workers abandoned their farms for industrial cities. In addition, Italy nullified sharecropping contracts in 1964, thereby officially ending the *mezzadria* agricultural economy that shaped the Tuscan landscape.¹ As a result, “pioneers” (including foreigners attracted to undervalued,

abandoned farmhouses and young Italians disillusioned by the economic downturn) began returning to the countryside in the 1970s. “This pioneering set of lifestyle farmers played a leading role in re-development of the wine industry and the developmental transition towards tourism.”² Recognizing the emerging trend of farm accommodations, the National Association of Agriculture and

¹ Senese, Randelli, Hull, & Myles, 2018

² Senese et al., 2018

Tourism (Agriturismo) published the “Guide for Rural Hospitality” in 1975. The guide served as the first database for rural tourism in Italy and included 80 farms with approximately 500 total beds. As a result of pressure for additional farm associations, the Italian government issued “Farm Accommodation Regulations” requiring that tourism activities remain secondary to agricultural production in order to legally qualify as agriturismo. By requiring agriculture as the primary activity, Italy intended to support its farming traditions while maintaining access to European funding through the EU’s CAP and LEADER programs designated for agricultural development.³ The importance of these subsidies cannot be overstated.⁴ The national law also delegated regulation of farm tourism to regional governments, which led to fragmented and decentralized policies within the country. One of the strictest interpretations of agriturismo’s principle of connection, Tuscany’s Regional Law required that at least half of working hours and half of revenue must come from agricultural activity.

The formalization of agriturismo coincided with the emergence of the Slow Food movement, which began in Italy. In 1986, Carlo Petrini led a protest against the opening of the country’s first McDonalds at the Piazza di Spagna, near the Spanish Steps in Rome, and initiated the movement against fast food, industrialized food production, and mass consumerism.⁵⁶ Three years later, he issued the Slow Food Manifesto as “a proposal for all that wanted to live better.”⁷ In the manifesto, Petrini called for a defense “against the universal madness



Figure 1 Tuscany Wine Map. WineFolly. (n.d.). Tuscany Wine Map. [Map]. Source: <https://winefolly.com/review/chianti-wine-tuscany/>.

of ‘the fast life’” while promoting local food, traditional cooking, and small businesses. Today, the global Slow Food network consists of more than 1,500 local chapters, or *convivia*, in 160 countries.⁸

Agriturismo in Tuscany can be characterized best by its adoption of Slow Food and the slow life represented by locally produced Chianti and traditional food preparation. The region’s tourism offerings uniquely position Tuscany to meet the “demand for authentic, artisan products, [and] heritage food, . . . highlighting a need to connect with ancient traditions and ways.”⁹ In fact, a 2016 Tuscany Regional Survey prepared by its Tourism Board, attributed the growth in tourist visits to “cultured travelers

³ Senese et al., 2018

⁴ Giaccio et al.

⁵ Suro, 1986

⁶ Waters, 2001

⁷ De Santis, 2017

⁸ Slow Food, n.d.

⁹ Randelli & Martellozzo, 2018



Figure 2 Podere Belvedere, Val d'Orcia. [Tuscany Landscape, Color Photograph]. Source: <https://www.theodysseyonline.com/thoughts-on-being-in-italy>.

areas in addition to wine and gastronomic resources.¹²

in search for slow experiences.”¹⁰ Tuscany’s success owes much to the dramatic beauty of its landscape and architectural heritage while direct sales of artisanal goods, such as wine, cheese, and olive oil bolstered by product certifications of origin provide additional value to agritourism activities. The spirit of Slow Food and Tuscan agritourism can be best encapsulated by the predominance of common imagery that “show[s] pictures of the picturesque hilly towns spattered with olive groves and vineyards ... highlighted in the center is typically an old stone villa with brick walls and doors painted rustic red.”¹¹ In fact, the majority of agritourism resides in the inner hill and mountain areas of Italy, which coincides with the prevalence of protected

Challenges Faced

Tuscany’s primary challenges stem from managing its success as a tourist region and improving upon the tourist experience to maintain its brand. The environmental impact of sizeable tourist flows, especially at high peak seasons, endanger Tuscany’s natural landscape. Currently, air pollution and degradation of environmentally fragile coastal areas pose the most notable risks. Despite the presence of passenger rail transit in Italy, access to rural sites leads the majority of tourists to rely on cars, which only adds to air pollution and stresses already “below average” road infrastructure.¹³ Competition from non-farm operators presents an additional challenge for Tuscany’s agritourism. “[T]

¹⁰ Tuscany Tourism Board, 2016

¹¹ Bluett, 2017

¹² Giaccio, Mastronardi, Marino, Giannelli, & Scardera, 2018

¹³ Tuscany Tourism Board, 2016

these activities are surely positive for the rural economy, but many customers, both Italians and foreigners, confuse these experiences with agritourism, and consequently they represent a direct competition with the original on farm tourism.”¹⁴ Also, Italy’s bottom-up approach to agritourism legislation has led to differentiated and fragmented regulation. The lack of comprehensive legislation at the national level inhibits management and implementation of standards.¹⁵ As a result, inconsistent levels of quality in accommodations, personnel, and services serve to diminish Tuscany’s brand.

Strategies and Innovation

The strategies implemented by agritourism in Tuscany rely on a mix of private entrepreneurship and regional planning.

Build upon initial private investment

■ “Pioneers” catalyzed agritourism in Tuscany as “rural gentrifiers” or “permanent tourists” capitalizing on below-market farmhouses, in addition to young Italians seeking refuge from urban life.¹⁶ Over time, agricultural associations lobbied the government to formalize and nurture the emerging agritourism industry.

Define agritourism

■ Enacting legislation that defined agritourism allowed governmental agencies to access multiple funding streams and allocate resources accordingly. Defining agritourism also allowed the development of a promotional network of operators that meet the law’s minimum requirements.

Agriculture as a prominent part of agritourism

■ By defining agritourism as being primarily agricultural, Tuscany not only availed the industry to subsidies but maintained its farming traditions and elevated authentic rural experiences. Depending on the methods of measurement and regulation, requiring agriculture to remain the predominant aspect of tourism does not need to inhibit diversification. In fact, research has shown that farms with agritourism activities have received more subsidy funding that supports diversification.¹⁷

Create a registry and tourism guide

■ Formal registration of farmhouse accommodations created centralized databases for promotion and market research. It is important to note that in order for tourism

17 Giaccio et al



Figure 3 Slow Food Manifesto in Gambero Rosso, November 3, 1987. Gambero Rosso. (1987, Nov 3). Slow Food Manifesto. [Black and White Scan]. Source: <http://www.identitagolose.com/sito/en/44/18078/dall-italia/30-years-of-slow-food-a-nice-italian-story.html>.

14 Santucci, 2013

15 Santucci, 2013

16 Senese et al., 2018

to succeed across a region, businesses must offer a diversity of offerings that meet different demands.

Provide business support and training

■ Transitioning from agriculture to hospitality required developing new business skills and adapting to a different industry. In order to ensure a consistently high level of service and maintain brand identity, new entrepreneurs needed training and support, not only for business operations but for navigation of new policy as well.

Conclusion

The recovery of Tuscany's rural economy can be attributed to the region's natural beauty, architectural heritage, and embodiment of the Slow Food lifestyle. Although the private sector and industry associations initiated agritourism, national and regional councils promoted its development while preserving its ties to farming and traditional culture. The successful building of Tuscany's brand occurred because of policies, primarily intended to prevent rural depopulation, which focused more on agriculture and family affiliation than tourism itself. As a result, agritourism led a resurgence in Tuscany's rural economy, reinforced the region's heritage, and – in the translated words of an Italian agricultural economist – “represented the most radical product innovation that has ever affected Italian agriculture.”¹⁸

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¹⁸ Esposti, 2006

Sidali, K.L. (2011). A sideways look at farm tourism in Germany and in Italy. Retrieved from https://www.researchgate.net/publication/226904153_A_sideways_look_at_farm_tourism_in_Germany_and_in_Italy.

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Green tourism as a way to preserve heritage

Countryside, JP

Modeled loosely after European forms of sustainable tourism, Japan implemented green tourism policies to diversify its rural economy and preserve its cultural heritage. In 1994, nearly a decade after Italy's initial legislation on agritourism, Japan's law defined green tourism as "tourism of extended-stay in beautiful farm and fishing villages to enjoy nature, environment, scenery, lifestyles, culture, and interactions with the locals." Directed more toward tourism than sustainability, Japan's rural development focuses on "experience inns" to renew interest in rural areas and promote urban-rural interaction. Generally, green tourism implies environmentally sound rural tourism, but in the Japanese context, green tourism centers more on city dwellers recovering from urban life by spending time in the countryside and returning to nature.

Gary Tran

Background

The booming Japanese economy in the 1950s and 60s led to rapid urbanization to the detriment of rural areas. Coupled with substantial price drops in rice and other agricultural products, rural workers left the

countryside en masse to find jobs in cities.¹ As a response to the most severe effects in the mountain regions, Japan passed the Mountain Village Promotion Law in 1970, declaring more

¹ Chen, 2013



Figure 1 Ishitera Green Tea Plantations in Wazuka, Kyoto Prefecture. [Tea Plantations in Ishitera, Color Photograph]. (n.d.). Source: <https://www.kyotogram.com/2017/12/06/wazuka-town-sprawling-green-tea-plantations-kyoto/>.

than 60 percent of villages in Shimane, Kochi, and Oita prefectures to be “in danger” due to population loss.² The 1980s Bubble Economy led to a surge in private development and urbanization during the decade. In response, Japan tried to redirect private capital to rural areas with the Resort Development Law of 1987, which encouraged the construction of large facilities such as ski resorts, golf courses, and hotels.³ However, the bubble eventually burst and many private investors experienced financial losses as a result.⁴

Japan only recently introduced green tourism (in 1992) when the Ministry of Agriculture, Forestry, and Fisheries (MAFF) called for a “new policy” and a “new direction of food, agriculture and rural community policy.”⁵ The new direction placed green tourism at the forefront of its policy goals. MAFF created a new category of “experience inns” in which owners must provide experience programs in agriculture, forestry, or fishery in order to be included in a collective promotional network.⁶ The Basic Law on Food, Agriculture and Rural Areas of 1999 also recognized the important multiple roles that rural development and agriculture play in the conservation of “national land, water resources, and the natural environment to the ... maintenance of cultural tradition.”⁷ It is important to note that agricultural development and rural conservation according to the Basic Law are not ends in of themselves but means to the higher objective of preserving Japanese cultural tradition. The target audience for the experience programs is urban residents who had lost connection with their traditional heritage. Accordingly, the Basic Law on Food, Agriculture and Rural Areas of 1999 sought to encourage “exchanges between urban and

2 Hasan, 2016

3 Ibid

4 Arai, 1998

5 Mitani, 2008

6 Mitani, 2008

7 MAFF, 1999



Figure 2 Izumi City Farm Stay Itinerary. [Izumi City Farm Stay Itinerary, Color Brochure]. (n.d.). Reprinted from http://www.izumi-navi.jp/en/feature/document/minpaku_en.pdf.

rural areas . . . in order to obtain a better public understanding and awareness of agriculture and rural areas.”⁸ Furthering this objective of interaction, the Organization for Urban-Rural Interchange Revitalization formed in 2001 as a dedicated agency to link urban and rural communities. The organization maintains a database of experience programs, provides tourism information, and offers management support to inn owners. Essentially, it acts as a centralized travel agency between experience inns and urban tourists modeled after European non-profits such as Gîtes du France and the German Agricultural Society.⁹

Although green tourism in Japan intended to address rural revitalization, depopulation, and economic diversification, the character it has adopted has been based upon nostalgia for traditional Japanese culture. Urbanization has resulted in the loss of the country’s traditional heritage among its urban population. “Furusato literally means ‘old village,’ but its closer English equivalents are ‘home’ and ‘native place.’ The process by which furusato is evoked into existence is furusato-zukuri, or home/native-place making.”¹⁰ In 1984, the Liberal

Democratic Party adopted furusato-zukuri as “the cornerstone of its domestic culture policy.”¹¹ As a result, the Prime Minister in 1988 introduced a Furusato Recreation Project that allocated grants of 100 million yen to rural municipalities to promote furusato-zukuri, which led to nostalgia becoming policy.¹² In this context, the adoption of experience inns as places for urban-rural exchange suits the overarching objectives of Japan’s green tourism. In fact, the JNTO, or Japan National Tourist Organization, purposefully aligns its imagery of Japan with the nation’s inherent natural beauty, cultural tradition, art, and food, “instead of an image of [an] industrial or manufacturing country.”¹³

Challenges Faced

The concept of sustainable development officially emerged in the United Nations Brundtland Report, *Our Common Future*, in 1987 as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”¹⁴ As a result, many European counties have adopted sustainable development practices as part of rural development. In contrast, green tourism in Japan has yet to fully implement conservation as seriously.¹⁵ Japanese policies do not include the term “sustainable development” in any documents.¹⁶

Additional challenges faced in Japan include the relative lack of paid holidays in Japan compared to Europe. The national holiday schedule limits longer overnight stays and

8 MAFF, 1999

9 Mitani, 2008

10 Robertson, 1988



Figure 3 Izumi City Crane Observation Center. [Izumi City Crane Observation Center, Color Photograph]. (n.d.). Source: <http://www.izumi-navi.jp/tw/feature/tsuru>.

11 Hasan, 2016

12 Hasan, 2016

13 Alduais, 2009

14 WCED, 1987

15 Chen, 2013

16 Mitani, 2008

creates excessive demand peaks, which overload accommodations and transportation systems. Also, the top-down approach taken by the Japanese national government has generated a lack of individuality and diversity among municipal experience programs. Despite the strong central planning, consistency in quality also remains a challenge. No quality control scheme ensures that activities align with sustainable development practices, such as the Eco-labeling in the European context.



Figure 4 Izumi City Crane Museum. [Izumi City Crane Museum, Color Photograph]. (n.d.). Source: <http://www.izumi-navi.jp/sp/spots/detail/10>.

Furthermore, criticisms of Japanese green tourism policies include excessive regulation and lack of subsidies. Operating a farm inn requires various permits that demonstrate compliance with site planning, building design, and health codes that impede farmers from starting a new business. Some laws promoting green tourism programs contradict existing regulations for conventional hospitality businesses.¹⁷ In fact, after a 2002 act passed that eased regulations in the 1999 Basic Law, the Nagano Prefecture saw an increase in farm inns as a result.¹⁸ Other critics have cited the lack of government subsidies in supporting

farm inns. Additionally, public subsidies that were disbursed heavily favored building facilities rather than training farm operators where critics claim they would have yielded more benefit. Because insubstantial profit margins from green tourism cannot tolerate excessive costs, both relaxing regulations and increasing subsidies would be necessary to better support the industry.¹⁹

Strategies Applied

The strategies implemented by green tourism in Japan rely primarily on national government planning.

Top-down national planning

- Ministries in the Japanese national government formulated and administered green tourism policies, but faced many challenges as a consequence of using a top-down approach to planning. Nonetheless, the involvement of Japan's central government allowed for greater fiscal support. Japan's Resort Development Law, for example, successfully redirected private investment to rural areas through enabling inexpensive land acquisition and reducing hurdles to bond issuance for financing tourism infrastructure.²⁰

Codification of green tourism

- Adapting European models of sustainable development, Japan formed its own paradigm for rural tourism that aligned with its own cultural values emphasizing *furusato-zukuri*.
- Japan formed the Organization for Urban-Rural Interchange Revitalization as a tourism agency with a centralized system dedicated to the promotion of green tourism.

A clear purpose

¹⁷ Arahi, 1998

¹⁸ Chen, 2013

¹⁹ Arahi, 1998

²⁰ Funck & Cooper, 2013

■ In 2000, Japan introduced the Direct Payment System for Hilly and Mountainous Areas that provided a flat-rate subsidy for “their efforts in conserving environmental and cultural resources.”²¹ Yet beyond sustainability, it is clear that Japan sees green tourism as a key strategy for preserving and promoting its history and culture. With rural-urban interchange as a core goal of green tourism, Japan has sought to reinforce its national narrative and preserve its cultural traditions. As part of this, Japan has pursued international recognition in the form of UNESCO heritage sites. International heritage designations greatly increase recognition for tourism sites and establish access to other sources of conservation support.

A coordinated experience

■ Alongside adaptive reuse of existing farms and farmhouses, Japan invested in new facilities more than European practices of rural development. Despite challenges presented in Japan’s “base facilities,” many rural areas received facilities to serve as community spaces and information centers.

Conclusion

Green tourism in Japan boasts unique attributes suited to the country’s values. While economic motives certainly play a role in the country’s industry, Japan has focused more on connecting its present identity to its past traditional culture. It does so through capitalizing on the country’s natural landscapes and rural practices in the form of experience inns and furusato-zukuri. Green tourism has functioned as a means of rural development, but also as an expression of national identity in the face of urbanization.²²

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²¹ Hasan, 2016

²² Funck & Cooper, 2013

UNESCO World Heritage Commission. (n.d.) Japan.

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A diverse yet concerted tourism strategy

Fredericksburg, USA

In 2015, the Huffington Post identified Fredericksburg as the epicenter of Texas Hill Country and claimed the region as the “New Napa.” With a population of only 11,400 residents, Fredericksburg serves as the main tourism hub for the second-most visited wine-tasting region in North America while celebrating its German heritage and small-town character. Although its exact boundaries lack consensus, by some estimates Texas Hill Country consists of nearly 25 counties and includes a variety of regional landmarks, such as LBJ Historical Park and the National Museum of the Pacific War, as well as natural destinations such as springs, watering holes, and most notably, Enchanted Rock State Natural Area.

Gary Tran

Background

Located on the Edwards Plateau, Texas Hill Country contains rolling hills of wildflowers and oak trees, shaded creeks and caverns, and limestone and granite bluffs that create a truly unique natural landscape. Fredericksburg, the

seat of Gillespie County, lies in the heart of Hill Country.

German immigrants founded Fredericksburg on May 8, 1846, naming the settlement after Prince Frederick of Prussia.¹ Established by

¹ City of Fredericksburg, n.d.-b

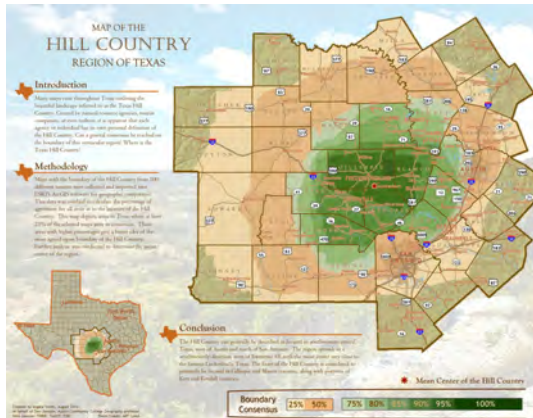


Figure 1 Hill Country Consensus Map. Smith, A.C. (2014, Aug 7). *The Texas Hill Country*. [Map]. Source: <http://angelacsmith.weebly.com/texas-hill-country.html>

the Society for the Protection of German Immigrants in Texas, the settlers developed the town with a broad main street parallel to Town Creek, reminiscent of villages along the Rhine in Germany. In addition, each family was given a 100' x 200' town lot and a 10-acre outlot.²³ The settlers adopted the style of German vernacular architecture as seen in Fredericksburg's fachwerk homes, church-affiliated Sunday houses, and two of its most prominent landmarks: the Vereins-Kirche (Society Church) and the Nimitz Hotel. Fredericksburg's architecture, in addition to its Historic District along Main Street, illustrates the importance of cultural heritage to the identity of the town. In fact, many of Fredericksburg's buildings are designated as Recorded Texas Historic Landmarks, and the entire Fredericksburg Historic District is included in the National Register of Historic Places.⁴ Over time, however, the town's German roots have blended with small-town Texas traditions to create a distinct character unique to Fredericksburg and Hill Country.

2 Kohout, 2017

3 City of Fredericksburg, n.d.-a

4 Texas Historic Sites Atlas, n.d

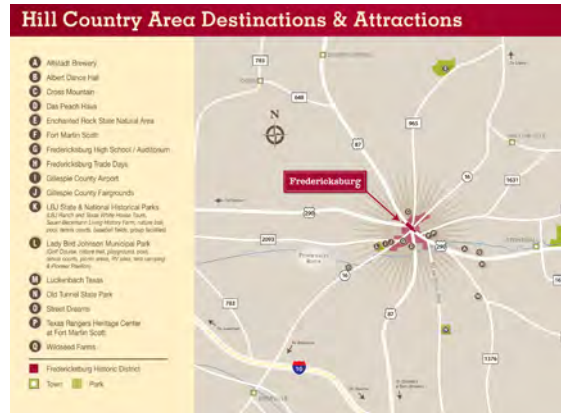


Figure 2 Hill Country Area Destinations & Attractions. *Texas Hill Country Area Destinations & Attractions Map*. Source: <https://www.visitfredericksburgtx.com/plan/area-maps/>

An integral part of the town's current tourism can be attributed to the unlikely development of Texas wine and the entrepreneurship of one couple, Ed and Susan Auler. Inspired by a trip to France in 1973 with the original intent of evaluating French cattle, the Aulers returned to Texas with the ambition of establishing Texas Hill Country as a "world-recognized wine region."⁵ Assisted by universities such as Texas A&M and Texas Tech, the Aulers planted an experimental vineyard in 1975 at Fall Creek Ranch. Five years later, the couple established Fall Creek Vineyards and, in 1986, they founded Texas Hill Country Wine and Food Festival to promote the burgeoning industry. Using his legal expertise, Ed Auler successfully filed the federal government for Texas Hill Country appellation, which was granted in 1990.⁶ Today, Texas Hill Country is the second largest American Viticultural Area (AVA) in the US.⁷

Before the Aulers established Texas Hill Country as a prominent wine region, Fredericksburg was already regarded as a regional tourist destination. Through preserving its history and

5 Fall Creek Vineyards, n.d.

6 Ibid

7 Schiessl, 2017



Figure 3 Fredericksburg Main Street. Litherland, C. (n.d.). Fredericksburg. [Color Photograph]. Source: <http://www.pacificwarmuseum.org/your-visit/fredericksburg>.

small-town character, Fredericksburg provided a distinctive urban experience as a complement to the rural attractions in the greater Hill Country. The town purposefully adapted historical architecture to accommodate modern uses: Sunday Houses were converted to bed-and-breakfasts and landmarks were rebuilt or reused as museums.

Today, Main Street is lined with restaurants, biergartens, and shops offering antiques and local goods. With visitor centers on both the east and west ends of Main Street, Fredericksburg functions as the regional hub to outlying destinations. The east visitor center, located in the Pioneer Museum Complex, serves as the pickup and drop-off point for wine tours to vineyards outside of town. As part of the synthesis between town and country, many wineries distribute their bottles to retailers for sale on Main Street. Additionally, the visitor center directs tourists to other attractions beyond Fredericksburg's city limits, such as Enchanted Rock in Llano and LBJ National Park in Stonewall.

Challenges Faced

Despite the relative success of Fredericksburg and Texas Hill Country, the city and region still face many challenges. Primarily, much of the area that constitutes Hill Country is rural and unincorporated, which makes regional planning difficult. The lack of regional coordination not only hinders economic development but impedes conservation of natural resources, namely water. "The absence of county planning and zoning regulations in more than 90 percent of the region means that the entire Hill Country is a land speculation 'free fire zone.' [E]veryone's property is at risk due to unregulated land development and abuse of groundwater."⁸ Rising land values due to Hill Country's proximity to Austin and San Antonio not only adds to challenges to conservation and resource management but to affordability as well.

In addition, due to Texas' car dependency and lack of public transit, highway and road infrastructure remains a critical aspect of Fredericksburg's development. Main Street, which forms the central thoroughfare of Fredericksburg's Historic District, is actually a segment of State Highway 290. As a result, freight trucks and cargo trailers traverse along Main Street as part of their shipping routes, which diminishes the district's quality of experience. Heavy traffic from both cars and trucks in the historic core creates obstacles to planning initiatives, such as enhancing pedestrian mobility, providing adequate parking, and maintaining a compact center. Encapsulating all of the previous challenges is the struggle to find a balance between promoting economic growth and maintaining existing small-town character.

Strategies Applied

The strategies implemented by Fredericksburg and Texas Hill Country rely on a mix of private entrepreneurship and municipal planning.

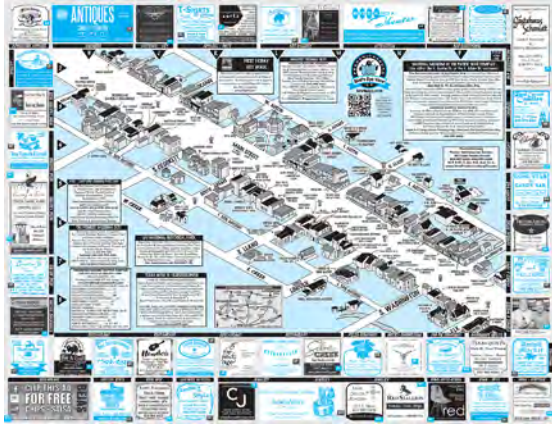


Figure 4 Fredericksburg Main Street Bird's Eye View Map. Retrieved from <https://static1.squarespace.com/static/58d28f641e5b6c1243ac1de3/t/598b5f3f6b8f5b013ee95b25/1502306126765/FBG+Birds+Eye+View+Map+2017.pdf>

Build upon initial private investment

Initially led by Ed and Susan Auler as private entrepreneurs, Texas Hill Country developed an entirely new regional industry from the ground up. Subsequent business development, such as wine tours and festivals, built upon and supported the emerging vineyards.

Preserve existing character

Fredericksburg's Historic District and building regulations preserved the town's German heritage and small-town character. In Fredericksburg's 2006 Comprehensive Plan, planners intended to manage city growth by using the natural landscape as boundaries to expansion in order to conserve green space and environmental resources.⁹

Integrate regional assets

The Fredericksburg Visitor Center directs tourists to sites outside its city limits. Main regional tourist attractions, such as Enchanted Rock in Llano and LBJ National Park in Stonewall, are located in other towns. Additionally, wineries and vineyards promoted by the Fredericksburg also lie in outlying jurisdictions. However, by doing so, Fredericksburg serves as the regional hub and mutually benefits by attracting an inflow of visitors from the larger area.

Create a place-making identity

Fredericksburg's Comprehensive Plan calls for public investment in landmarks, especially at entry points along major routes. Civic features create a sense of place and act as gateways by signifying a visitor's arrival.¹⁰

Promote walkability

Although not implemented yet, the City of Fredericksburg plans to reroute trucks to an alternate highway in order to bypass Main Street. Rerouting heavy traffic will provide a more comfortable pedestrian experience along the historic core's retail and commercial storefronts. The Comprehensive Plan also intends to cluster future business at prominent intersections to allow customers to make several trips in a single walkable area.

Conclusion

Despite its modest size as a town, Fredericksburg serves as the core of Texas Hill Country. In fact, its size is an essential component of Fredericksburg's appeal. Through early recognition of its underlying identity and place-making assets, Fredericksburg has actively maintained the very character that makes the town attractive

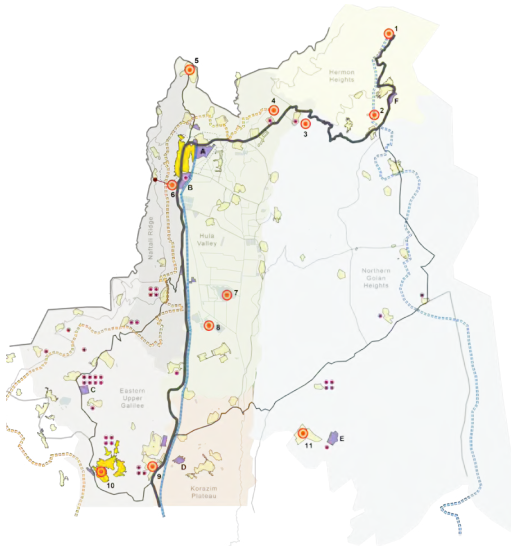
⁹ City of Fredericksburg, 2006

¹⁰ City of Fredericksburg, 2006

for visitors and residents alike. Its Historic Main Street District draws regional tourists and provides a reinforcing civic identity. By acting as a tourism hub to attractions outside its city limits, Fredericksburg forms mutually beneficial relationships within the region and rightfully serves as the epicenter of Texas Hill Country.

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Recommendations for Rural Tourism in Galil Elyon

Regional Tourism

There is a unique opportunity to take advantage of both the history and the natural beauty of the Upper Galilee to cultivate a regional tourism hub. All three case studies offer successful strategies for coordinating disparate sites into a more cohesive whole in order to more effectively draw tourists to the area. An Upper Galilee tourism hub could apply insights from all three:

- Develop a visitor center that can direct and receive tourists to and from outlying destinations. Provide guided tours and programs that promote the area's attractions.
- Incorporate the wine regions to the south of Kiryat Shmona as a sub-component of the larger system.
- Identify and integrate other regional attractions, such as the Golan and Israel National Trail, which the regional hub can serve.
- Form a unified registry of accommodations, including the kibbutzim, for promotion, market research, and quality assurance purposes.

- Coordinate with accommodations operators to ensure a diversity of tourist offers, experiences, and activities.

Food Tech Tourism

In addition to support for standard tourism growth, however, Kiryat Shmona also has the unique asset of a strong and growing food tech industry. The city could capitalize on this strength through establishing an authentic "farm to tech" identity synthesizing food innovation, agricultural production, and the particular lifestyle characteristic of the region. This strategy

- Define rural tourism that embodies the uniqueness of the Upper Galilee and also retains agriculture as a primary component of tourist activities
- Develop landmarks and signage to at major arterial entries as gateways to indicate arrival and to create a sense of place.

■ Prepare a growth management plan that encourages infill development, adaptive reuse of existing buildings, and protection of natural resources.

■ Designate natural and architectural assets for conservation, protection, and promotion as valued features of the city and region and as a means to preserve the area's existing character.

Yet there are also several other lessons from the tourism case studies that Kiryat Shmona would be wise to follow. In the examples of Italy and Japan, the presence of national funding helped to coordinate and streamline the respective regions' efforts towards a

common goal. In the case of the Upper Galilee, Kiryat Shmona and its surrounding region would be wise to seek similar forms of funding from diverse national sources, including agriculture, tourism, economic development, and innovation programs, among others. In addition to top-down support, however, there is also the need for a bottom-up drive. As in the example of Fredericksburg, where local entrepreneurs helped to cultivate the wine culture of the region, Kiryat Shmona would be wise to support budding industries, particularly in the agritourism space. The city could provide business and development support services, for example, to existing companies and emerging businesses.

Strategies Applied

Type of Rural Tourism	<ul style="list-style-type: none"> • Agritourism (AT) 	<ul style="list-style-type: none"> • Green Tourism (GT) 	<ul style="list-style-type: none"> • Heritage • Agritourism (AT)
Organization	<ul style="list-style-type: none"> • Tuscany Regional Govt • Farmers Associations 	<ul style="list-style-type: none"> • Japanese National Govt 	<ul style="list-style-type: none"> • City and County Govt • Private Entrepreneurs
Narrative / Identity	<ul style="list-style-type: none"> • Slow Life: Slow Food values and rustic, artisanal lifestyle 	<ul style="list-style-type: none"> • Nostalgia: Traditional Japanese cultural heritage 	<ul style="list-style-type: none"> • History: German and small-town character
	<ul style="list-style-type: none"> • Initial private investment • Formal registration of agritourism • Promotional Guide • Agriculture as primary activity 	<ul style="list-style-type: none"> • National investment • Formal registration of experience inns • Promotional Guide • Agriculture as primary activity 	<ul style="list-style-type: none"> • Initial private investment • Convention and Visitors Bureau coordination • Retention of agricultural character of adjacent ETJs
Policies	<ul style="list-style-type: none"> • Business support and training • National & European subsidies • Tourism tax • Protected areas 	<ul style="list-style-type: none"> • Business support and training • National subsidies and direct payments • UNESCO/GIAHS designation • Urban/Rural Exchanges 	<ul style="list-style-type: none"> • Direct sales • Managed growth strategies • Hotel tax • Historic District



From hard times to bustling boulevard

West Palm Beach, US

Florida's West Palm Beach has long been in the shadow of its glitzy neighboring island, Palm Beach. When changes in infrastructure reduced the importance of West Palm Beach as part of the Palm Beach tourist industry, the city at first fell on hard times. Yet a creative and clear strategy (completed on a shoestring budget) helped the city to use its central street as a catalyst for positive change in the community. More directly, West Palm Beach's re-envisioning of its central boulevard has resulted in significant improvements to the city. West Palm Beach has been able to successfully attract private investment to the area, create a more vibrant downtown, and stimulate community cohesiveness.

Anne Hudson

Background

West Palm Beach is one of the oldest settled areas in southern Florida. Established in 1893, the town was developed by Henry Flagler to serve as a worker community for his Palm Beach employees.¹ West Palm Beach has thus always been in the shadow of Florida's glitzy island of Palm Beach. In the early 19th century, however, West Palm Beach was able to capitalize on the

prominence of its neighbor by serving as a key transportation link for individuals seeking to vacation on the island. At that time, West Palm Beach was truly a bustling center, deserving of a prominent and lively boulevard, packed with travelers on their way to and from vacation in Palm Beach.² Travelers would use West Palm Beach as their base when boating out to Palm Beach and many of the individuals who

¹ Noble, 1993

² Mikulski, 2006

serviced the island lived in West Palm Beach itself.

When a causeway was built directly connecting Palm Beach to the mainland in the 1970s, however, the role of West Palm Beach in the affairs of Palm Beach-goers began to diminish. The city had less foot traffic and its once lively boulevard soon started falling into disrepair.³ This culminated in a low point in the 1990s when it was solely a destination for drug users and misanthropes, and, as a result, was featured on the PBS Documentary “Crack America.”⁴ Vacancy at that time was as high as 85 percent and property values reached as low as \$10 per square foot. The main thoroughfare, Clematis Street, was a four-lane highway that bisected the downtown and prevented individuals from easily crossing from one side of the city to the other.⁵ In its disrepair and sordid state, Clematis Street served as a gathering place for a lot of the illegal activities going on in the city.

Challenges Faced

The 1970s addition of the causeway linking the mainland to Palm Beach reduced the foot traffic in West Palm Beach and, more generally, the city’s direct connection with Palm Beach’s tourist industry. This, in turn, created a vicious cycle in which the reduced throughfare reduced the money flowing into the city (as well as the tax base as those working in Palm Beach had a reduced incentive to live in the city), which resulted in public infrastructure falling into disrepair—a state of affairs which further reduced the draw of individuals to the area.



Figure 1 View down Clematis Street - West Palm Beach, Florida. Black & white photoprint. State Archives of Florida, Florida Memory. Accessed 31 Mar. 2019. <<https://www.floridamemory.com/items/show/25445>>

The city also faced the considerable challenge of a four-lane highway bisecting its center: the eyesore both created a location for drug users to loiter and prevented the growth of an attractive town center by bisecting the city. When the mayor of the city subsequently decided it was time to turn things around, the battle was distinctly uphill: there was a limited budget, a declining tax base and a city center that was an eyesore.

Strategies and Innovation

West Palm Beach serves in many ways as an ideal example for Kiryat Shmona. It is a historic town, built to support activities elsewhere rather than to support its own industry, with a population clearly distinct from its glitzy neighbor, Palm Beach. When the city fell on hard times, it relied on an energetic and creative mayor who partnered with local businesses to focus on improving the downtown core. The downtown core was namely one of the city’s greatest strengths, replete with history and character, but it was also the location of illegal activities and disrepair, and so a natural place to start to catalyze change.

³ Lockwood, 1998

⁴ Mikulski, 2006

⁵ Ibid

As a result, the city undertook a number of measures to redesign Clematis Street (the city's central roadway), building a boulevard that would signal a different kind of community. The city also worked with the surrounding businesses to change the character of the areas surrounding the street as well and to support growth and development.



Figure 2 Take a bike taxi along Clematis Street. Source: Discover the Palm Beaches Florida.

Pedestrian-friendly design measures

■ First and foremost, the city of West Palm Beach redesigned the four-lane highway to be more pedestrian friendly. It was converted into a two-lane road with parking on either side. Sidewalks now bulge out near intersections to ease pedestrian visibility and crossing. While traffic still moves through downtown, it is clear based on the design that pedestrians are the priority.

Character redesign

■ One of the first design elements included in the boulevard was a public square located at the central point along the boulevard. That square now serves as the center of city life: the city sponsors weekly block parties and regularly hosts public events there. These block parties have grown over time and serve as a central gathering place for members of the community. They draw over 3,000 individuals on a weekly basis.

Façade improvements

■ Improvements to the facades along the boulevard were some of the most important strategies employed by the city. The city teamed up with the private sector to fund the façade redesigns, ensuring the border of the boulevard became more lively and enticing. It funded the project by implementing tax-increment financing, diverting a portion of taxes to investment in the area's development. Costs to the redesigns were thus split 50-50 between the city and the local community.

Zoning strategies

■ Zoning in the city is no longer implemented by use but rather by building type. The city believes that this allows for greater flexibility in the evolution of the buildings themselves and allows the character and land use to evolve over time to serve multiple uses. The historic buildings along the boulevard have a smaller FAR, for example, and different uses, and the city deals with new buildings on a case-by-case basis to ensure that they adapt to—and meet—the community's needs.

Conclusion

Albeit completed on a shoestring budget, the redesign of Clematis Street in West Palm Beach proved so successful that it attracted a \$600 million private development project just a year after its completion. Revenues generated by the tax-increment financing scheme are now above \$5 million annually, offering funds for the city to reinvest in its infrastructure and ongoing livability initiatives.⁶ The redevelopment of Clematis Street served in many ways as the lynchpin for West Palm Beach's growth and prosperity; investment in the boulevard was crucial for re-enlivening the city. Once a prominent support town for Palm Beach, West

Palm Beach has been able to establish its own identity through key re-design measures. Key lessons from this case study include:

- “The decline of West Palm Beach was, to a large extent, due to poor land use and transportation planning which caused its streets to be incrementally transformed to cater only to the mobility of motor vehicles.”⁷ A key approach to reversing that decline was thus to design for pedestrians and alternative modes as opposed to support for vehicular movement through the city.
- “Community redevelopment areas are a useful tool to finance projects and redirect tax money into revitalizing an area.”⁸ Innovative financing mechanisms offer ways for the cities with only limited funds to get local businesses involved in redevelopment.
- West Palm Beach used transportation as a catalyst for character changes and community strengthening as opposed to a logistical solution: it is essential to think of transportation as a conduit for building a city’s character and thus any investments should be considered in terms of their larger impacts context.

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⁷ Lockwood, 1998

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Economic vibrancy along a connective corridor

Syracuse, US

The Syracuse Connective Corridor project, launched in 2005, is a two-mile strip that links three major universities on University Hill to the downtown central business district with the purpose of revitalizing the area. The university has shaped the physical development of the Connective Corridor into an environmentally-friendly and walkable area which, when paired with cultural development, is helping to catalyze private-sector investments in the city. The result has been a growing number of individual projects boasting their own economic growth figures and the increase in transit ridership.

David Kambo Maina

Background

The Connective Corridor extends from University Hill, where the city's college campuses are located, to downtown Syracuse. University Hill is lined with restaurants and other entertainment venues to cater to the student population, while downtown Syracuse includes Armory Square, a major retail and dining hub, and Hanover Square, home to historical sites and institutions. The Connective

Corridor has helped to highlight the perks of living downtown, such as proximity to arts and cultural venues, businesses, and community centers. This, in turn, has sparked the renewal of distressed neighborhoods in the area.¹ The SALT (Syracuse, Art, Life, and Tech) District, for example, is an attempt by Syracuse University,

¹ Rubado, 2010

along with multiple other private and public partners such as SyracuseCoE, to revitalize Near Westside, a neighborhood near the Connective Corridor filled with vacant real estate.²



Figure 1 Multimodal Corridors. Source: http://connectivecorridor.syr.edu/wp-content/uploads/2013/05/DSC_0122-1024x681.jpg

The area had experienced severe disinvestment, resulting in empty warehouses and abandoned department stores that are now being redeveloped into lofts, artists' studios and creative centers for the artistic community. There are also a number of residential developments planned to accommodate people moving into the city, such as empty-nesters and young entrepreneurs, who wish to be near Connective Corridor assets.

The Connective Corridor's aim is to enhance the living experience in Syracuse by connecting major medical institutions, research and development centers, neighborhoods, cultural venues, and business districts. Ultimately, this transportation and urban revitalization project seeks to establish an "innovation ecosystem."³ The methods applied in its successful undertaking were based on the following principles.

- Create an outdoor "stage" to illustrate the city's assets and display products and technologies from local companies.
- Promote cultural tourism and population growth that will bring investment to the city and encourage economic development.
- Create an intellectual and physical infrastructure that fuels partnerships and utilizes local talent.

Challenges Faced

The city of Syracuse and the many partners involved in the project took upon themselves the Herculean task of redeveloping the city's identity through the redesign of a simple transportation corridor. The challenge was how best to approach defining such a corridor beyond connectivity: how to use the strip to effectively provide a geographic focus and identity for economic development in the city.

This inherently came with the challenging task of how to involve all of the adjacent assets to the corridor. The goal, after all, wasn't just to improve the corridor itself (although improving mobility and safety were of course also priorities), but also the surrounding areas (particularly downtown). Thus, there were many difficulties in creating a signature urban strip

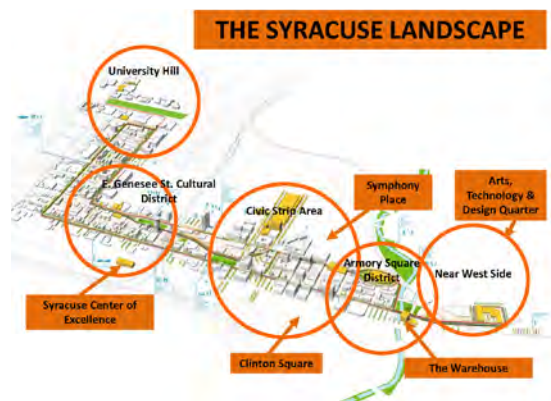


Figure 2 Various Local Assets that are connected, enhanced and benefit from increased visibility. Source: <https://watson.brown.edu/files/taubman/imce/events/2011/Marilyn-Higgins-Presentation.pdf>

2 Cantor, 2012

3 Ibid

that enfranchised the adjacent educational, institutional, commercial, and recreational assets.

Finally, there was the question of how to ensure that the corridor's improvements were sustainable over the long-term. How could one design a transportation corridor and an approach to its maintenance and growth that would ensure that the corridor would thrive for many decades?

Strategies Applied

The Connective Corridor boasts a wide variety of effective strategies that all worked together in order to ensure its successful execution.

Local assets and shared responsibility

■ Several institutions are designated as 'anchors' along the Corridor. The Corridor's path thus highlights the city's cultural and industrial assets in addition to the city's downtown and its three educational institutions: Syracuse University, the State University of New York College of Environmental Science and Forestry (SUNY ESF), and SUNY Upstate Medical.⁴

4 Sharma, 2012



Figure 3 Bikeways along the connective corridor offer clean transit options. Source: http://connectivecorridor.syr.edu/wp-content/uploads/2013/05/DSC_0122-1024x681.jpg

These universities have their own development projects along the Connective Corridor, many of which foster academic-industrial relationships, such as the Central New York Biotechnology Research Center, a collaborative project between SUNY ESF and Upstate Medical Center that establishes an incubator to help launch bio-tech and bio-medical companies.⁵

Strong coalitions

■ Strong partnerships between higher education and anchor institutions has driven the growth of the corridor. These partnerships are as a result of the collaboration of four key players: universities, state and federal government, local government and the private sector.

1. *Universities.* The local universities have a number of programs that connect students and university employees with their surrounding area. Syracuse University's Sandbox incubation program, for example, has launched 50 student-led ventures, many of which have local partners. UPSTATE, meanwhile, is an interdisciplinary center within Syracuse University focusing on design, research and real estate, with the goal of expanding the impact of architecture and planning in the post-industrial city.⁶ Students and faculty members also work in collaboration with state, federal, and local partners on a variety of projects focused on the district. These projects range from creating public art for the Connective Corridor, to creating social media apps, to establishing green infrastructure.⁷

5 Ibid

6 Czerniak, 2012

7 Cantor, 2012

been a priority throughout the project. Façade improvements, funded through a grant program, for example, were completed to augment the new streetscape, many.¹⁵ The “Corridor of Light,” meanwhile, placed lights strategically along the Corridor to illuminate 23 of the City’s most iconic buildings. It includes a public corridor that features visual art and installations, interactive spaces, outdoor video, performance art, along with public workshops and lectures.

■ Green infrastructure has been a priority in the Corridor’s redevelopment to ensure that the infrastructure is sustainable over the long term. There is thus a new network of green infrastructure that captures and manages 26 million gallons of water annually across the corridor through a variety of advanced technologies.

Conclusion

The Connective Corridor serves as a valuable model for revitalizing the city’s urban core and attracting economic growth. Drawing on its public, private, and academic partnerships, the Corridor’s physical assets, economic viability and innovative culture are very effective at attracting investors to revitalize the area. The key principles that helped to achieve this result can be summarized as follows:

- *Providing a geographic focus and identity for economic development.* Public realm improvements have helped to unite and promote many of the city’s civic institutions, tourist attractions and businesses within the SALT district. Public art and strong branding programs in partnership with local businesses, artists, branding consultants and Syracuse University have helped to build the Corridor’s reputation as much more than simple a bus line.
- *Strong institutional involvement in the planning and implementation of the project.* Syracuse University and its institutional partners

have played a significant role in many of the private sector projects within the corridor, such as The Syracuse Technology Garden (an incubator and accelerator). Industry leadership has also been involved through planning, design, branding and administrative duties, helping to realize the Corridor’s professed goal of creating a framework for sustained collaboration with the community and the city.

■ *Combined incentive programs directed towards diversified program and uses.* Incentive programs have been established at the federal, state and city levels targeting industry, institutions, infrastructure, and more. Syracuse University was granted administrative powers, for example, as a result of funds that it was able to raise for a façade improvement program, thus creating a responsibility matrix to help maintain the Corridor’s momentum into the future. Private-public partnerships have been successfully established and maintained through the provision of technical and financial resources offered by the universities and different levels of government.

¹⁵ Higgins, 2019

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Strategic rail development Yokohama, JP

Once a peripheral city with only limited transportation connectivity, Yokohama has strategically utilized its railway station to increase its prominence and attract both residents and businesses. Strategically placed as a new core to balance out the city's existing historic core, the station offers myriad commercial and business opportunities.

Anne Hudson

Background

Yokohama lies within the Metropolitan circle of Tokyo, yet was for many years disconnected from the greater metropolitan core of the capital city. To rectify this, the Tokaido train line was expanded in 1964 to include the city in its path; the Shin-Yokohama train station was subsequently opened later that same year. This was part of a larger national strategy to strengthen key peripheral port cities and thus

there was strong involvement from the central government and other key national actors.

Challenges Faced

The placement of the station within the city of Yokohama stirred up a considerable amount of controversy because of the behind-the-scenes public/private deals involved. Further, the success of the area surrounding the train station was far from guaranteed. Rather, it required



Figure 1 Yokohama at night. Source: Public Domain, <https://en.wikipedia.org/w/index.php?curid=11715662>

effective zoning, land use and transportation policies to ensure effective development and integration with the existing city.

Strategies Applied

Strategic placement

■ First and foremost, the location of the station proved to be the most effective strategy for ensuring the project's success. It was not placed in the historic core of the city, but in close yet complementary proximity. This allowed for independent commercial growth surrounding the station, but its proximity still ensures that that growth is integrated with the existing city.

Transit connections

■ The placement was further optimized through strategic transit connections between the station and other locations within the city. By building on the opportunity to build-out the area surrounding the station, yet integrating this new neighborhood with the city's existing resources, the station placement and its transit connections helped the station contribute to the city's overall growth.

Strategic zoning and economic incentives

■ The land uses surrounding the station were strategically planned to attract commercial businesses, while also integrating residential and mixed-use areas to serve a wide variety of residents and visitors.

Funding

■ There was notably heavy involvement in the plan by the central government and JR Central, Japan's private train company. The train line and station were part of a larger national strategy and thus the funding contributed to the project from the central government was considerable, serving as a key resource for the station build-out.

Conclusion

The Shin-Yokohama train station serves as a strong example of strategic station placement, effective zoning policies and cooperation across different levels of government. The strategy of creating a secondary municipal core in the form of a train station and a surrounding commercial area were well-executed; the secondary core was also effectively integrated into the city's existing fabric through transit



Figure 2 (above) Yokohama Train Station. Source: Public Domain, <https://en.wikipedia.org/w/index.php?curid=11715662>

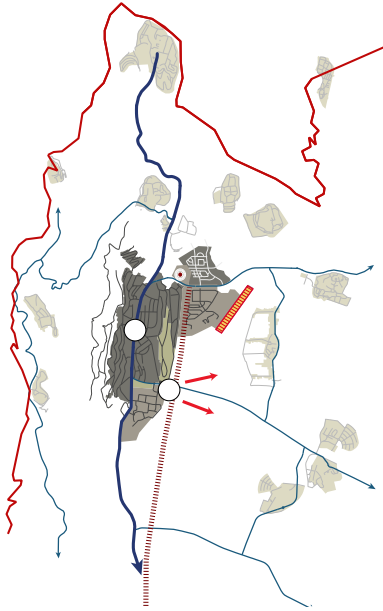


Figure 3 (above) Yokohama Train Station. [Color Photograph]. Source: Source: Public Domain, <https://en.wikipedia.org/w/index.php?curid=11715662>

connections and progressive zoning policies. There are many lessons to be learned from the strategies applied, including the collaboration between different levels of government in the interest of the strategic build-out of the peripheral city—a common interest that should exist in the case of Kiryat Shmona as well.

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Recommendations for Transportation Improvements

Boulevard

Overall recommendation

- The city should resist building a bypass and instead implement traffic calming measures along a newly designed boulevard (in place of Route 90). Multimodal, green infrastructure should serve as key elements of the boulevard re-design. This should be a collaborative effort with local businesses so as to feature those businesses along the boulevard and to increase connectivity between the existing core and the rest of the city.

Character development

- As in West Palm Beach, there is a unique opportunity to build out public space along Route 90 to emphasize the city's strength: natural beauty. In redesigning the street, the city could create several 'viewpoints' to double as public gathering places.
- Multimodal infrastructure, meanwhile, is essential for improving the livability of any street, the impact of which can be seen in the case of Syracuse's transit corridor. In the case

of Kiryat Shmona, multimodal infrastructure would increase the alternative modes that citizens could use and reduce in car use, which, in turn, means an improved pedestrian experience and a greater engagement with the surrounding businesses.

Transit innovation

- Innovative forms of transit can catalyze greater citizen participation and offer new ways to form connections. In Kiryat Shmona, this could take the form of an autonomous vehicle experimentation between Tel Hai, the downtown core, and the southern industrial area.

Public/private collaboration

- It is essential to establish private buy-in to the project; Kiryat Shmona should create formal fiscal arrangements to allow for public/private collaboration around the boulevard improvements (ie 50-50 façade rehabilitation).

Sustainability

■ It would be wise for the city to put its money where its mouth is; should Kiryat Shmona wish to emphasize its natural beauty, then it would be wise and sustainable for the city to invest in green roadway infrastructure.

Train station

Overall recommendation

■ Kiryat Shmona should build a train station at the edge of the southern industrial district (as indicated on the map). The location should strategically compliment and thus strengthen the existing urban core; zoning should be done strategically to integrate commercial, residential and mixed-use in order to effectively and sustainably establish a secondary core.

Strategic location

■ The placement of the train station is of utmost importance to ensure the flow of individuals into the city and to ensure that the existing historic core is not undermined. This can be done by determining where the most potential for growth exists and by selecting an area that can easily connect and support the existing core.

Freight opportunity

■ Transportation is key in supporting industry as well as residential livability. Thus the train is a unique opportunity to explore improving the ease of freight movement through a freight rail line in addition to passenger transportation.

Mixed-use development

■ Kiryat Shmona would be wise to incentivize mixed-use development through formal fiscal and policy structures surrounding the new train station in order to effectively build out the secondary core.

Strategies Applied

Type of infrastructure	• Boulevard	• Corridor	• Train station
Common interest	• Community and economic development	• Economic development	• Economic development
Key actors	• Local government • Private business	• Local government • Private business • University	• Local government • Private business • Central government
Physical strategies	• Façade redesign • Lane reduction • Multimodal infrastructure • Mixed-use zoning • Traffic calming • Character redesign	• Façade improvements • Innovations in transit • Multimodal infrastructure • Green streets • “Corridor of Light”	• Economic incentives • Strategic location • Multimodal connections • Commercial build-out • Transit connections



Non-profit industrial development

New York City, US

The Greenpoint Manufacturing and Design Center (GMDC) is a nonprofit industrial developer in New York City that is dedicated to the creation and preservation of permanent affordable manufacturing space for small- and medium-sized industrial firms. It aims to sustain manufacturing sectors in urban neighborhoods through planning, developing and managing real estate and offering related services. The GMDC acquires and rehabilitates industrial buildings in Brooklyn, New York and rents them out to small manufacturing enterprises, artisans and artists. In addition to the space, the tenants are also provided with job training and a communal environment.

Nina Mascarenhas

Background

Over the past few decades, rezoning has removed 23.4 million square feet of industrial space from New York City which, in addition to moving large-scale assembly line production plants away from the city, has made it difficult for small-scale, artisanal manufacturers to find space to manufacture. The aim of GMDC is therefore to provide local small- and medium-sized manufacturers with long-term leases and affordable rents. These tenants in turn provide jobs to a diverse group of local residents.

This serves as a replicable model to help low-income communities regenerate a business and employment base. The organization acts on the notion that encouraging light manufacturing and artisans in cities is vital to having resilient mixed-use communities.

The GMDC was formally incorporated in 1992 and its first project was the purchase and redevelopment of a 360,000 square-foot neglected historic industrial building complex in Greenpoint, Brooklyn. The complex,



Figure 1 221 McKibbin Street, before renovation Unit 17.
Source: https://gmdconline.org/gmdc_buildings/221-mckibbin-street/.



Figure 2 221 McKibbin Street, after renovation Unit 17.
Source: https://gmdconline.org/gmdc_buildings/221-mckibbin-street/.

called the Chelsea Fiber Mill, was built by Standard Oil in 1868 to manufacture rope and textiles. During the 1970s the buildings fell into disrepair and after negotiations with the city (who owned the property), the complex was bought by the nonprofit North Brooklyn Economic Development Corporation.¹ GMDC then leveraged \$8 million of public and private capital to convert the complex into a multi-tenanted building which rents space to 70 small businesses with a total of over 300 employees.

Challenges Faced

The conversion of industrial buildings to residential uses and the demand for warehouse space to store imported goods has reduced the physical stock of industrial buildings for manufacturing space over the past few decades. The competition for the remaining industrial land drives up prices making it challenging for organizations like GMDC to acquire and renovate buildings while still keeping rents affordable for small manufacturers.² These

manufacturers are squeezed on both sides, however, as they also face competition in areas that are zoned M1 (light manufacturing) or M3 (heavier manufacturing) where a wide range of uses like big box retail, hotels, residential and medical uses are also allowed.³

Strategies and Innovation

GMDC's model is based on leveraging public and private funds to convert disused industrial buildings into space for small- and medium-sized manufacturing businesses.

To accomplish this, it has to perform a variety of tasks included in the process of acquiring and renovating industrial properties. It facilitates collaboration and coalition among stakeholders and works to influence industrial development policy. It also promotes its model by publishing and presenting GMDC projects at conferences and offering assistance to other communities who want to replicate their model.⁴

An example of how GMDC works is the 62,000 square-foot redevelopment project at 221

¹ Atlas Obscura, 2019

² Urban Omnibus, 2012

³ Ibid

⁴ GMDC, 2017



Figure 3 Greenpoint Manufacturing and Design Center
 Greenpoint Manufacturing and Design Center 1155
 Manhattan Avenue. Source: <https://brooklynrelics.blogspot.com/2014/03/chelsea-fiber-mill-greenpoint.html>.

McKibbin Street in Brooklyn in which GMDC partnered with the New York City Economic Development Corporation. The facility offers below market-rate leases to approximately 20 small businesses which are estimated to employ 80-100 people. The cost of the project was \$11 million of which \$4 million came from the city as a capital investment while other funding was secured through New Markets and Historic Tax Credits—a tax credit allocation that aims to finance historic rehabilitation projects in severely distressed low-income communities.⁵

The aspects of GMDC's approach that differentiate them from a for-profit developer are:

- Cost: lease rates are typically 10 to 15 percent below market rate.
- Length of lease: The average lease is five years, which is a much longer term than typical leases. Longer leases reduce the

number of frequent moves that are financially burdensome to a small business.

- Acting in the best interest of the tenants to make sure that they have the required space and assistance they need to successfully run their businesses.

Conclusion

The GMDC supports small manufacturers and entrepreneurs by providing them with affordable space. As a nonprofit organization, its policies are designed to help small businesses with the challenges they face. To do this GMDC creatively finances projects by leveraging policies at the city level that allot funds for development in disadvantaged communities. As a result of the proven success of their model, GMDC has been able to advocate to have policies passed to support such development in other places around the city.

⁵ NTCIC, 2019

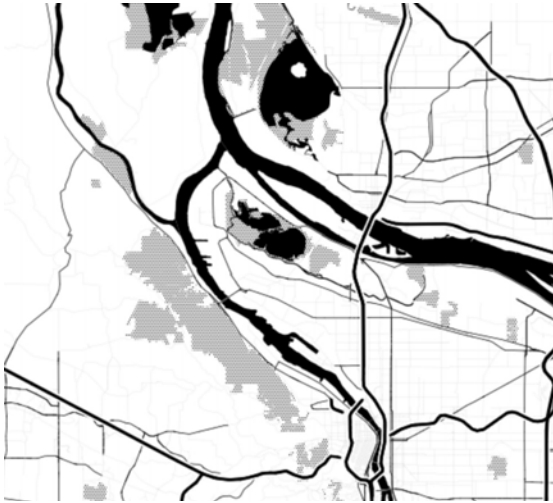
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Creative zoning to ensure industrial longevity

Portland, US

Portland's Southeast Quadrant, which includes the Central Eastside, Clinton Triangle and South Banfield Portal, is currently the most dynamic and evolving part of Portland's Central City. Over the past decade, the Central Eastside (CES) has been an economic development success story, playing an important role in the city's economic and job growth. This success can be attributed to a number of factors, including its unique characteristics and advantages as well as municipal policies.

David Kambo Maina

Background

In 1988, the Central Eastside was adopted as an official district of the Central City in order to preserve it as an industrial sanctuary. Consequently, various zoning tools were adopted to promote industrial uses throughout the district, with the exception of the district's main street and mixed-use corridors. The dominant zone designation, General Industrial 1 (IG1), allowed a minimum amount of office and retail uses by right, with the ability to earn substantially more floor area through conditional use procedures.

Over the decades, the types of industries in the Central Eastside have diversified, as have the transportation modes used to move both employees and products. Workers once arrived by foot or horse but soon came to rely on streetcar, and eventually the automobile, as the primary means to get to work. The district is now served by a dynamic and growing multi-modal system that includes the return of streetcar, as well as bus, trucks, freight trains, light rail, bikes, pedestrians, and cars.

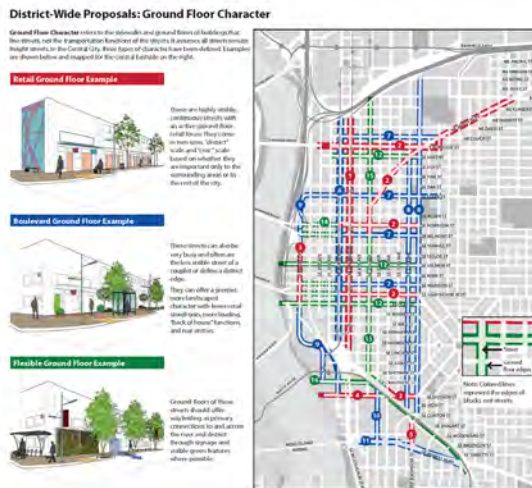


Figure 1 06_Urban Design Proposal Handout.pdf. (2014). Southeast Quadrant Plan Urban Design Proposals. Source: Portland, OR: Bureau of Planning & Sustainability, 2014.

The slow evolution of the Central Eastside into an industrial area has shaped the urban form we see today. With each successive era, the types of buildings and transportation infrastructure

in the district have changed to meet evolving business needs. Where older buildings used to house a single produce distribution company, for example, they now house numerous small-scale manufacturing, industrial service and industrial office users.

The Central East side land use zoning is generally comprised of general industrial (47 acres 65%), mixed-use zones (85 acres 22%), heavy industrial (40 acres 10%) and residential (5 acres 1%).

Challenges Faced

Due to its attractive location, the industrial sanctuary's ability to thrive as an industrial employment center is threatened unless strategically preserved. Yet it is also important to incorporate other uses, integrating and optimizing mixed-use corridors within the industrial area for additional retail, creative

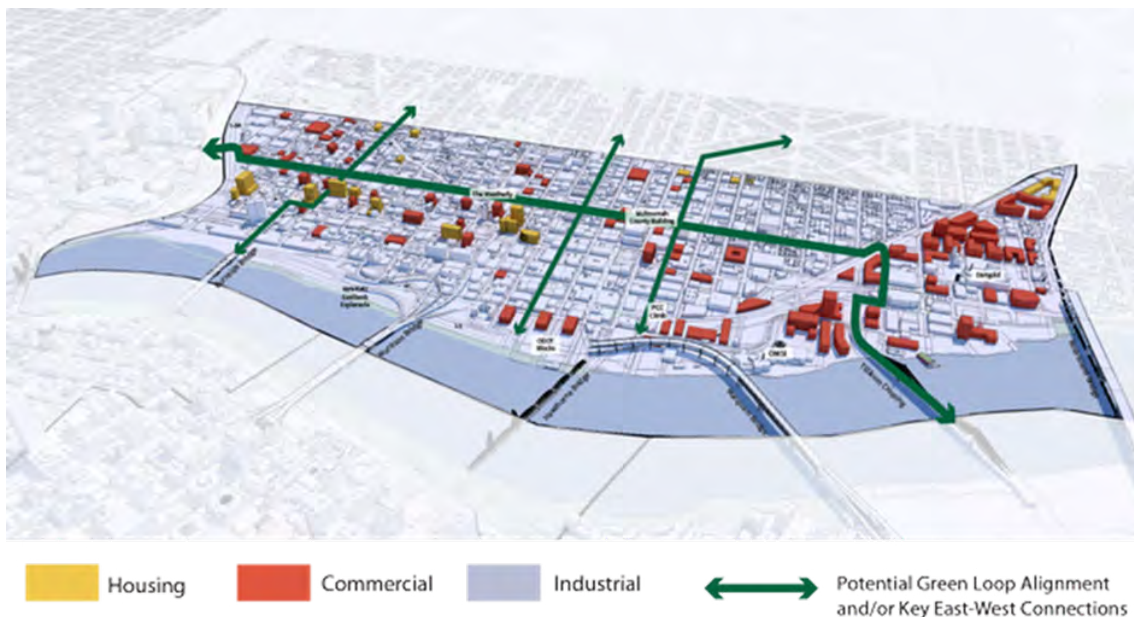


Figure 2 The deliberate mixing of commercial, industrial and residential has created a symbiotic relationship for knowledge exchange and worker retention. Source: Chilson, J. (2017). Walking around Portland's Central Eastside Industrial District. <https://lostoregon.org/2017/05/26/walking-around-portlands-central-eastside-industrial-district/>

from complaints by neighbors. Due to the high potential of conflicts within mixed-industrial zones, meanwhile, neighborhood transitions are managed through urban design guidelines that orient residential and commercial blocks towards mixed-use corridors, while it orients loading zones and other functions that support industrial uses towards the industrially zoned

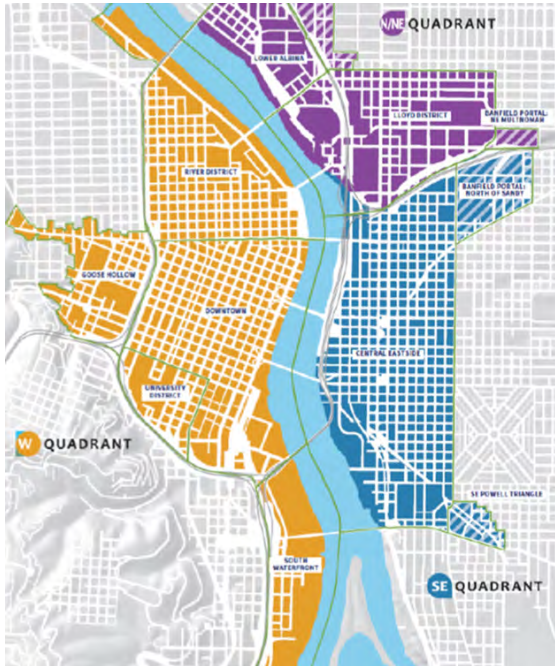


Figure 4 Portland Central City Districts, South East (blue) has been an Industrial Sanctuary since 1988. Source: Retrieved from <https://www.portlandoregon.gov/bds/article/411748>.

areas.

Managed urban growth through tailor-made overlay zoning

■ Growth in the area is managed through the encouragement of higher-density mixed-use development in the portions of the district best served by transit and active transportation. This is done through the creation of an overlay EX (Central Employment) zone which allows for taller and denser development within IG1 (Industrial) zone.

■ This zone also allows a broader mix of uses, including residential, commercial office, retail, institutional, as well as light industrial uses. It notably provides for a higher degree of change/diversity in areas where existing industrial uses are either not located or are not the dominant land use pattern. This applies to station areas, for example, which require higher-density employment for activity and safety and also to support transit ridership.

Integration of access and mobility investments

■ Portland Central Eastside has a long history of transportation innovation starting with the first ferry in 1853 and ending with the Light Rail that opened in 2015. This expansive mobility infrastructure is a direct result of the need to reduce conflicts between modes as a result of the area's diverse (and intense) land uses. Freight movement is particularly important for industrial uses: the district solves any potential conflict with active modes by providing prioritized routes and infrastructure to improve truck circulation and by converting select routes to one-way streets, increasing the number of traffic signals and improving signage.

■ Pedestrian and bicycle infrastructure, meanwhile, has also been developed into a route that has been dubbed the "Green Loop" that connects existing attractions, open space, recreational amenities, and Central City districts through a continuous bicycle and pedestrian pathway.

Conclusion

Portland's Central East Side's success can be attributed to an unwavering insistence on industrial protection. Although threatened like many other industrial zones across the United States with rising rents and competing uses, CES to this day remains an active and dynamic industrial use area. Zoning has played a significant role in that success: the

city effectively created a symbiotic industrial ecosystem through the diversification of industries and businesses. One notable strategy for arriving at that end goal was through diverse overlay zoning strategies. Such strategies allowed for consistent renewal and reinterpretation of some areas, the integration of new forms of mobility, and the provision for an evolving character.

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Rethinking 'M' districts

New York City, US

New York City's industrial areas today face pressures to change their uses to the ever-lucrative realms of commercial or retail as a result of lower industrial rents and ever-changing industrial needs. This, in turn, is forcing the city to rethink its industrial policies. How might it be possible for developers to collect higher rents while still providing industrial space at an affordable rate? The city is exploring exactly that question in the form of its new 'M' districts. The experiment notably depends on (1) what type of industrial uses and mixes work best, (2) building design and site requirements for an efficient mixed-use industrial setup and (3) how likely it is that the private sector can develop these buildings at a broad scale—without public subsidy.

David Kambo Maina

Background

New York's manufacturing districts ('M') are industrial areas rezoned to allow for a range of industrial and commercial uses.¹ Due to the high value of land within the city and

competing land uses, 16 Industrial Business Zones (IBZs) were established in 2006 to protect existing manufacturing districts and encourage industrial growth citywide.² This

¹ NYC Department of City Planning, 2017

² New York City Industrial Business Zones, n.d.

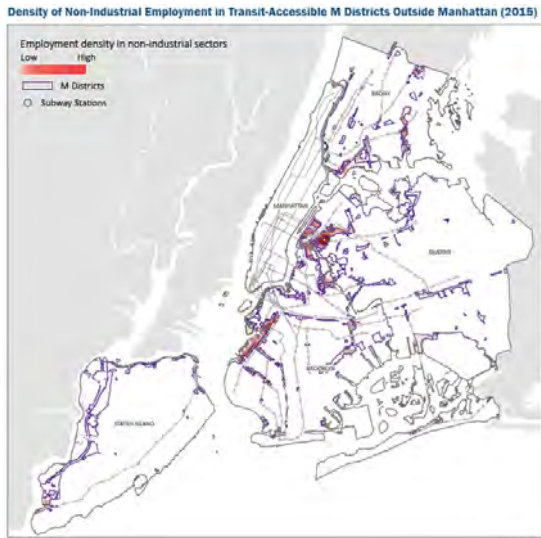


Figure 1 New York City 'M' Districts zones and non-industrial employment. Credit: NYC Planning. Source: NYC Planning. <https://www1.nyc.gov/assets/planning/download/pdf/about/dcp-priorities/data-expertise/can-industrial-mixed-use-buildings-work-in-nyc.pdf>.

designation fosters high-performing business districts offering incentives to locate within the city, such as tax credits for relocation, zone-specific planning efforts, and direct business assistance.

Nonetheless, many of these areas contain aging multi-story industrial loft buildings that are not well-suited to contemporary industry and are increasingly being converted for office and retail use. At the same time, non-manufacturing industrial sectors – such as construction, transportation/ warehousing, and wholesale – are growing and in need of space to settle or expand. 'M' districts are generally the only places that these industrial land uses can locate.

Challenges Faced

New York is facing the challenge of integrating diverse uses such as residential and commercial with industrial needs in face of growing demand for land. This has caused tension in certain neighborhoods (particularly

ones with residential uses) and difficulties in navigating differing transportation and infrastructure needs.

Strategies Applied

There are a number of synergies that New York City is investigating in order to determine the viability of mixed-use industrial within the 'M' districts as a way to absorb the emerging trends in employment markets, residential needs, and to still supply needed industrial space.

Tenanting and operational compatibility

- Small, niche manufacturers, such as artisanal, advanced, and food and beverage manufacturing are most likely to be able to operate in mixed-use buildings. They generally produce fewer fumes, noise, and truck traffic, which can be a nuisance to other tenants with few exceptions. Nonetheless, industrial uses of all kinds are on the whole more compatible with office, retail or self-storage uses as compared to residential uses—despite competing ground floor locational advantages. Residential uses require costlier separation and have an inherent bias against industrial uses.



Figure 2 Artisanal Manufacturing e.g. apparel, jewelry, art. Source: NYC Planning.



Figure 3 A brick factory at 1205 Manhattan Avenue in Greenpoint houses several small companies. Source: New York City, Department of City Planning. m1.page.

- Large, truck intensive industrial businesses, meanwhile, such as wholesale, transportation, and construction produce significant freight traffic, require larger areas and command lower rents. These are more suitable as separate buildings.

Physical and financial feasibility

- Successful mixing requires balancing between floor area efficiency and conflict probability in a building. Sites larger than the traditional residential/office block scale are required for efficient loading and unloading and surface parking requirements.
- Industrial mixed-use development was notably found to be financially feasible without subsidy, but only under certain favorable conditions. This is largely dependent on the form of industry: higher-end industrial tenants allow for more profitable mixed-use space as compared to more traditional forms of industry. It is also dependent on things like land costs, affordable housing requirements and development costs (off-street loading and parking needs for industrial uses and remediation costs for contaminated areas up for renewal).

Conclusion

To accommodate a growing economy and sustain a diversity of jobs, the favorable integration of competing uses within the M districts can be successfully executed depending on the physical and financial attributes of a site. New York City has been successfully investigating the compatibility of uses through innovative zoning strategies and has discovered that the successful execution of mixed-use buildings can be done through an emphasis on the following:

- Ensuring fewer conflicts with other uses as a result of introducing lower-volume, lower-impact, light manufacturing tenants, such as artisanal and the inclusion of office, retail or self-storage
- Reducing the space requirements through lowering parking and loading requirements and increasing allowable FAR
- Creating incentive mechanisms in targeted, appropriate areas to enable such developments or on an opportunistic basis in cases where such developments are feasible and in appropriate locations within the city
- Favoring low land acquisition costs or low land basis including low remediation and resiliency costs for renewal areas

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A startup incubator with a larger purpose

Boston, US

CommonWealth Kitchen (CWK) is a non-profit culinary business startup incubator in Boston, Massachusetts. Its mission is to help small entrepreneurs overcome the challenges associated with setting up and running a food business such as capital and operating costs, space, markets, regulations and labor. CWK does this by providing shared kitchen space, business assistance and services that food start-ups need to grow. Besides focusing on entrepreneurs who are from disadvantaged groups, the kitchen also benefits the city by improving access to healthy food and strengthening the regional food economy by hiring labor and sourcing ingredients locally.

Nina Mascarenhas

Background

The nonprofit's aim is to create an equitable and resilient local economy. Its model of inclusive entrepreneurship focuses on assisting people who have suffered from racial, social, and economic inequality. Through hiring labor for their businesses these entrepreneurs in turn

support the local economy and communities in which they are rooted.

The CWK space is used by 55 businesses that are owned primarily by low-income women, immigrants, and people of color who create food products that draw from the cuisines of



Figure 1 Commonwealth Kitchen entrepreneurs. Source: Karen Gowan.

their diverse cultures.¹ The kitchen is located in Boston's neighborhood of Dorchester where as much as a fifth of Boston's most economically disadvantaged population resides.²

When CWK was founded in 2009 it was housed in 5000 square foot premises in the Jamaica Plain neighborhood of Boston. In 2014, CWK partnered with the Dorchester Bay Economic Development Corporation and moved into its present location: the renovated former Pearl Meats Factory on Quincy Street. Its current premises total 36,000 square feet and include over 3,000 square feet of dry storage, 2,000 square feet of cold storage and 1,300 square feet of frozen storage as well as shared offices and conference space. It also has dedicated production spaces that can be leased by businesses, including 'graduates' from the incubator program.

The CWK has two types kitchens which serve different kinds of food businesses:

- Start-up kitchen space that helps entrepreneurs turn their ideas into viable food businesses by providing a shared commercial kitchen as well as business and operational support services to back these businesses through the incubation, start-up, and growth phases.
- Commissary kitchen space for established foodservice providers ranging from wholesale 'food manufacturers' to retail 'food manufacturers' to food trucks to caterers who rent the kitchen to prepare and store their food.

In addition to kitchen space, CommonWealth Kitchen offers amenities to food trucks: such as parking, overnight plug-in, food truck-height loading dock and water hookup and drain for filling and draining graywater tanks.

Challenges Faced

- Finding industrial space in the city of Boston. The kitchen originally started in a 5000 square foot building which had insufficient space for storage and larger equipment that expanding businesses needed.³ The rezoning of former industrial land to residential use or commercial

3 Brooks, 2017



Figure 2 Commonwealth Kitchen entrepreneurs, Fresh Food Generation. Source: Jonathan Wiggs/Globe staff. <https://www.bostonglobe.com/lifestyle/food-dining/2019/01/01/>

1 Pyenson, 2019

2 Burnley, 2015

use within the city of Boston has created a shortage of land for businesses like CWK which are limited to areas zoned for industrial uses. The increased competition for the available industrial space drives up prices, which creates the challenge of finding space within the city that is close enough to the shared kitchen's user base yet still affordable for the nonprofit.⁴



Figure 3 Commonwealth Kitchen at Dorchester Source: LUCAS MULDER © 2019 CommonWealth Kitchen. http://www.commonwealthkitchen.org/index_copy.html

- Rising rents and financial feasibility. When choosing clients, the incubator prioritizes diversity and inclusion over profit-making potential. This means that the revenue earned by CWK is not enough to fully fund its operations, making it dependent on external funders to meet operating costs. With a limited budget, Commonwealth Kitchen is finding it challenging to afford the increasing rent of its current location. Further, Commonwealth kitchen is located in a former meatpacking plant. The cost of the building's retrofit significantly exceeded the original estimate and budget, placing an additional financial burden on the organization.⁵

- Unprepared clients. In the early days of the CWK, many new applicants lacked knowledge of what constitutes a viable business idea. Not only did this take up the time of the CWK staff in screening numerous applicants who were

not ready to start a business, but it also affected the outlook of funders who were looking to the number of successful businesses as an indication of the venture's success.⁶

Strategies Applied

CWK constantly tries to explore the needs and challenges that their clients face in growing their businesses and providing solutions to those needs, be it labor, training or the possibility for expansion. The services that they provide their clients include:

- Training support: Together with external workforce training partners, CWK developed a nine-week course for potential incubator clients that teaches business fundamentals specific to the food industry context. This compels participants to evaluate the viability of their business idea before investing time and money into developing a potentially infeasible venture.⁷ The kitchen also has a 13-week start-up class which teaches start-up owners about permitting, licensing, insurance, packaging and labeling, and other essential aspects of operating a food business.⁸

- Employment and skills training for local residents: CWK provides skills training for its workers who mostly hail from the local neighborhoods of Roxbury and Dorchester. In addition to skills building, the experience of working in CWK exposes local labor to entrepreneurs operating in the space, who, in turn, serve as potential future employers.

Structuring a sustainable business

- Effective structure: The current executive director of CWK, Jen Faigel, handles the setting of organizational strategy, raising funds, managing staff and businesses

4 Chesto, 2019

5 Brooks, 2017

6 Brooks, 2017

7 Brooks, 2017

8 Pyenson, 2019

and developing and managing strategic partnerships.⁹ The kitchen's \$2.4 million annual budget, meanwhile, is drawn from a variety of funders, including 1434 Foundation, Bank of America, BioMed Realty, Blue Cross Blue Shield of Massachusetts, Boston Impact Initiative Fund, Cabot Family Charitable Trust and many others.

Having a professionally staffed commissary kitchen on the same premises is a unique aspect that sets CWK apart from other shared-use kitchens. The commissary kitchen is rented out to external food manufacturers and thus provides supplemental revenue for CWK as well as supports incubator clients by offering recipe testing and development and small-run co-packing (outsourced packaging of the food product).

■ **Choice of tenants:** The kitchen has a screening process for its applicants. It chooses to focus on businesses that can scale up and expand, with a greater potential to create jobs. It therefore prioritizes food manufacturers that sell wholesale rather than caterers or pushcart vendors which have limited scope to grow.¹⁰

Conclusion

Commonwealth Kitchen makes it possible for people without resources to start a food business. It not only creates jobs for the people who work there, but benefits the neighborhoods in its surrounding area. The organization allows people without formal training to start a business while keeping alive their cultural traditions and preserving a sense of identity through the commercial preparation of food inspired by their heritage.

CWK has also encouraged strategies that benefit the local economy as a whole, such as

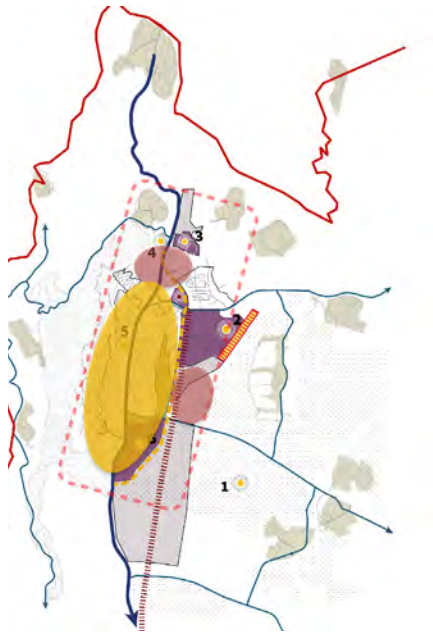
asking clients to commit to hiring and sourcing raw materials locally. Nonetheless, one of the biggest challenges that the startup itself faces is one that is increasingly universal for nonprofits in urban areas: finding affordable yet suitable space for food production.

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⁹ CWK, 2019

¹⁰ Ibid



Recommendations for Mixed-Industrial Zoning Strategies

Based on the case studies, there are a number of cross-cutting strategies that have proven themselves effective in other mixed-industrial contexts that could be applied to the context of Kiryat Shmona.

Zoning solutions

- Adopt a mixed-cluster zoning rationale as a way to support the innovation economy in Kiryat Shmona. The city could create a complementary eco-system and localized advantages by introducing overlay zoning that integrates industrial areas and food tech innovation through incentivizing innovation targets in urban renewal areas located in industrial areas. Further, the city can
- Apply subarea zoning for mixed re-use and contained growth within the city core.
- Adapt & modify Portland's ground floor industrial bonus to incentivize the inclusion of entrepreneurial and emerging industrial spaces into redevelopment projects.
- Ensure low-conflict mixing of land uses when industrial is involved through prioritizing lower-volume, lower-impact light manufacturing

tenants such as specialized food and beverage manufacturing.

- Create a unified 'urban core' designation that reduces development fragmentation by providing integrating interventions at the corridor level and the district level.
- Incorporate emerging uses based on compatibility with existing land uses in an effort to diversify jobs and attract a larger talent pool. These include research institutions, low volume industrial and entrepreneurial-incubators.
- Create freight corridors and multimodal paths to fit diverse (and evolving) mobility needs in the area.
- Adopt design and program elements that promote synergistic relationships through co-locating of producers or innovators at the building, neighborhood and district scale.

Financial and social support

- Develop internship and apprentice programs that both capture the local population and attract external populations

- Link industry needs to higher-education curricula by developing student-led business incubation programs and offering training tailored by collaborating industry professionals.
- Target skill development programs to underserved populations within the city and region. This can be done most effectively through a program such as Boston's Commonwealth kitchen. Organizations like the CommonWealth kitchen would allow people who do not have the high levels of skills to participate in food technology, to also be a part of the economic development initiatives that leverage the region's strong agri-food base
- Shared kitchens with support for culinary entrepreneurs, meanwhile, could be synergized with the region's tourism initiatives to preserve and promote the cuisine of the various cultural

groups of the area such as that of the Druze villages

- Kiryat Shmona should consider the introduction of financial instruments and support that promote viable entry, build credibility and reduce burden to investors while diversifying the tax base and boosting revenues for the city.

- Target subsidies and tax abatements such as in New York's IBZ (Industrial Business zones) for specific/opportunistic renewal projects that advance the innovation environment within the urban core.

- Reduce parking requirements to improve efficiency and increase viability of a diverse mix and mixing of use.

Strategies Applied

	Commonwealth Kitchen	NYC Mixed Industrial Use Districts	Portland Central Eastside Industrial Sanctuary	Greenpoint Manufacturing and Design Center
Scale	<ul style="list-style-type: none"> • Building scale • Small-scale industrial 	<ul style="list-style-type: none"> • Neighborhood block scale • Small-scale industrial 	<ul style="list-style-type: none"> • District scale • Small- and medium-scale industrial 	<ul style="list-style-type: none"> • Neighborhood scale • Small- and medium-scale industrial
Uses/Cluster type	<ul style="list-style-type: none"> • Small-scale food industry • Incubator kitchen & shared facilities 	<ul style="list-style-type: none"> • Small-scale industrial • Mixed-use buildings 	<ul style="list-style-type: none"> • Integrated mixed-use corridors • Light industry • Residential 	<ul style="list-style-type: none"> • Integrated mixed-use blocks • Emphasis on small-scale industrial
Ownership	<ul style="list-style-type: none"> • Private non-profit 	<ul style="list-style-type: none"> • Private developers • Municipal government 	<ul style="list-style-type: none"> • Private developers • Municipal government 	<ul style="list-style-type: none"> • Private developers • Municipal government
Funding	<ul style="list-style-type: none"> • Foundations • Private corporations 	<ul style="list-style-type: none"> • Tax incentives • Private developers 	<ul style="list-style-type: none"> • Municipal government • Private developers 	<ul style="list-style-type: none"> • Municipal government • Private developers
Economic strategies	<ul style="list-style-type: none"> • Workforce development programs • Incubation for start-ups and support for mature companies • Land acquisition 	<ul style="list-style-type: none"> • Workforce development programs • Transportation-oriented development • Job diversification 	<ul style="list-style-type: none"> • Workforce development programs • Protect traditional industries • Cross-industry exchanges • Start-up support 	<ul style="list-style-type: none"> • Workforce development programs • Community interaction and events • Long-term leases and affordable rents



From no-man's Land to successful innovation district

St Louis, US

Seventeen years ago, after decades of economic decline, the St. Louis business community, with the support of the state and regional governments and academic institutions, decided to do something about their plight. The seminal idea was to deal with the drain of intellectual property coming out of local academic institutions. Their strategy was to renew 200 acres of land located between the downtown and the Washington University campus: a no man's land of vacant warehouses, bereft of any amenities. Its eventual success as an innovation district in the Midwest is largely due to 1) taking the long view, 2) creating an autonomous development entity, 3) co-opting community rationale and market freedom, and 4) focusing on creating an eco-system environment.

David Kambo Maina

Background

Cortex is the region's largest innovation hub located close to downtown and built on the intellectual assets and resources of St. Louis' leading universities, a premier health care provider, and the Missouri Botanical Garden. The focal point is the 200 acres of old industrial land that at one time separated these institutions but now stitches them together.¹ The innovation hub is anchored by

its surrounding institutions, central location, affordability, and entrepreneurial culture. There was also notably a state-designated innovation center offering incubator space and support services to startups already operating two buildings in the district when the innovation hub was built, serving as an anchor for expansion.

The district's first major break came in 2005, when Stereotaxis, a successful medical technology company, agreed to serve as the

¹ Wagner, 2016

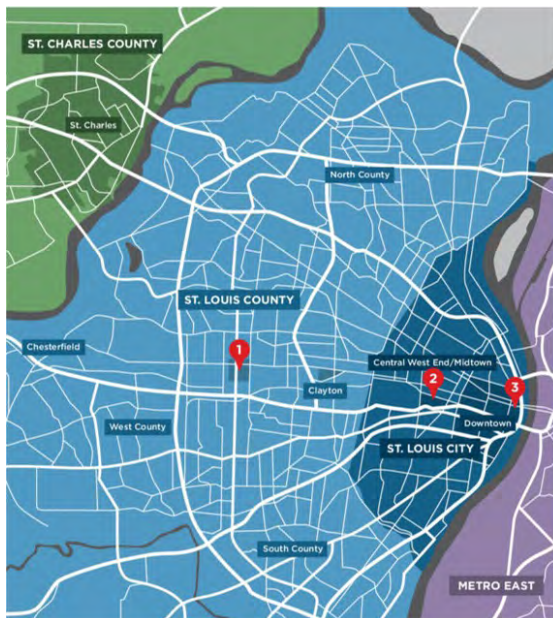


Figure 1 Cortex Innovation District in the context of St. Louis Tech Startup Ecosystem. Source: <https://stlpartnership.com/wp-content/uploads/2018/05/BioTech-EcoSystem3.jpg>

anchor in a new multitenant office/research facility located in the Cortex district. A second major break came in 2006, when the city of St. Louis granted Cortex zoning authority, eminent domain power, the ability to offer tax abatements and permission to enter into binding development agreements governing the use of land within its jurisdiction. This made it possible for the organization to control the character of development throughout the district, even though it owned very little of the property located within it.

A third major break followed shortly thereafter when Solae, a subsidiary of DuPont specializing in soy protein research, agreed to move its world headquarters to Midtown St. Louis. To complete the cycle of decisive breaks through in 2012, Cortex unveiled a new master plan emphasizing the need to create a dynamic mixed-use environment throughout the district. Key elements included enhanced access to public transportation, the attraction

of retail amenities and the integration of attractive common areas into a research park setting.²

The refined objectives helped Cortex obtain approval for approximately \$168 million in public aid from the St. Louis Tax Increment Financing Commission. The district was split into 10 project areas, allowing it to access TIF bond proceeds over time in response to new development proposals with Cortex serving as the master developer responsible for implementing the vision.³ The opportunity to defray some of the costs associated with infrastructure improvements and land assembly via TIF funding sparked a second wave of development throughout the Cortex district. The goal for this wave was to create an environment that would attract a combination of students, young professionals and other knowledge workers through co-working and informal networking spaces and industry-wide incubators.⁴



Figure 2 Cortex 1, the first multitenant office/research facility in the Cortex district, includes approximately 177,000 square feet and was completed in 2006. Source: Washington University in St. Louis Magazine.

² Wagner, 2016

³ CORTEX-TIF-Redevelopment-Plan, 2013

⁴ Read, 2016



Figure 3 Cortex Innovation District implemented a mixed-use programming, integrated transit & open space networks and a diversity of land uses. Source: https://asg-architects.com/wp-content/uploads/2016/06/Cortex_diagram.jpg

Challenges Faced

■ Prioritisation of programming over development pressure. Cortex's continuous success is sustained through the continuous focus on promoting synergistic interactions among tenants. However, this can prove difficult in the presence of intense pressure to attract capital investment and stimulate construction activity.⁵ The long-term viability of Cortex as an innovation district is dependent on its leadership's ability to let programming continue to drive real estate decisions instead of the other way around.

■ Maintaining its identity. The project started as a concentrated effort to promote entrepreneurship in the life sciences and biotech fields. The tenant mix has diversified greatly over time, however. This type of growth is advantageous because it facilitates knowledge spillovers across industries that

lead to innovative new products and services. It can, nonetheless, be difficult to manage because it creates a need to build trust and a common culture among individuals with very different professional backgrounds, while clearly articulating a value proposition that is applicable to companies with very different characteristics.⁶

Strategies and Innovation

Cortex set out to combine its assets with a supportive risk-taking culture that would help it maximize its potential. Cortex has emerged as a leading innovation district by employing a strategy that integrated and harmonized its physical, economic and networking 'assets.'

Industry as driver of cluster building

Cortex effectively leveraged academic and corporate leaders with deep industry ties and expertise in the biosciences. The pioneering institutions (Washington University, University of Missouri St. Louis, St. Louis University, BJC HealthCare and BioSTL) assisted in convincing corporate leadership to co-operate around a shared commitment to growing the bioscience

5 Ibid

6 Read, 2016

cluster and putting St. Louis "on the map," with the understanding that this helps individual corporations to attract talent and innovation.⁷

The city and its partners, meanwhile, conducted a thorough study of the area's economic strengths within plant and life sciences as compared to other leading regions so as to target companies that have the best chance of success. The identified strengths are as follows.⁸

Inclusion as a growth strategy

A key strategic pillar of the Cortex approach is to focus on minority populations as part of the development and incubation process. This was applied as part of the TIF agreement, whereby developers were required to:

- Include minority-owned and woman-owned business enterprises in development project teams, contracts, and purchases.
- Projects funded with TIF proceeds are subject to workforce participation goals requiring 25 percent of labor hours to be performed by minorities, 5% by women and 15% by apprentices participating in approved programs.
- Projects constructed in the district must ensure workforce diversity by including minorities, women, city residents and apprentices enrolled in local training programs.⁹

Development autonomy and innovative financing

Cortex was granted planning authority by the St. Louis city government, including the power for regulatory approvals such as tax abatements and construction activity throughout the

district as a whole.¹⁰ This allowed Cortex as an organization to implement its development strategy over a multiyear period and solidified further its commitment to a long-term plan for the area.

Further, the district was designated as a Tax Incremental Finance area that allowed it to finance redevelopment at the initial stage through TIF bonds.¹¹ This enabled the developers involved to meet initial redevelopment costs that are usually prohibitive, including land acquisition, site preparation, public works and rehabilitation costs.

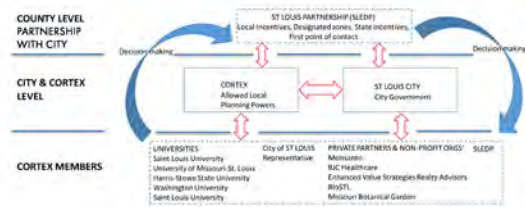


Figure 4 Cortex's Local Planning Authority composition in the context of St. Louis County & City Government. Credit: David Kambo Maina.

Strong civic partnerships

Cortex was established as a non-profit with a flat decision-making structure run by a full-time executive made up of both private members such as real-estate experts and institutions as well as the city and state governments. This was further strengthened by the St. Louis Partnership that enabled co-ordination in economic growth efforts between the City of St. Louis and the county government including revenue pooling and allocation.

7 Zeuli, 2017

8 D-1.-Cortex-Background, 2014

9 CORTEX-TIF-Redevelopment-Plan, 2013

10 Wagner, 2016

11 CORTEX-TIF-Redevelopment-Plan.pdf, 2013

Conclusion

Cortex attributes its success to the long-term commitments made by its institutional partners, coupled with enthusiastic and effective leadership in both the public and private sectors. This was made possible through application of certain guiding principles:

Creating a physical environment conducive to entrepreneurship and knowledge sharing

- Effective leadership and governance structures keep stakeholders with disparate interests aligned. Integrating a mix of land uses and programming, meanwhile, helps the district to plug into local, regional and global circuits of economic activity and makes the district's growth self-sustaining. Finally, the expansion and redefinition of benefits offered to emerging knowledge-based firms ensures that the district remains attractive and effective over the long-term, evolving with the times.

Applying a communicative & inclusionary implementation strategy that fills knowledge and skill gaps

- There is strong political support in St Louis for the integration of social policy goals such as workforce participation and urban revitalization within the framework of a comprehensive economic development strategy. An effective marketing and branding strategy, meanwhile, helps member companies promote this competitive advantage to external parties in the form of a coherent value-proposition.

Integrating tools that enhance the viability & scalability of the underlying vision

- Access to assorted private funds and public TIF incentives serve as a capital base-structure that reduces prohibitive market entry costs. The aforementioned autonomy given to the district to serve as a master developer, meanwhile, is consistent with the established vision to allow for continuity and scalability of the area.

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From neglected garment district to innovative fashion district

Los Angeles, US

The Fashion District in downtown Los Angeles enjoys a rich heritage in the fashion industry. Nonetheless, the area was neglected during the 1990s, facing a range of challenges including safety concerns, ineffective marketing and a lack of development. As a direct result of efforts by the LA Fashion District Business Improvement District (BID), Mayor's Office of Economic Development and several organizations and initiatives, the Fashion District has since been renovated into a culturally, socially, and economically diverse community covering more than 100 blocks. Today, it is known as the most successful innovation area for fashion industry on the West Coast.

Tianyu Su

Background

Over 100 years ago, LA's Garment District was first initiated as a center for fashion. The district experienced a substantial growth between 1920 and 1950 when it became a center for sportswear and women's clothing. With contributions from diverse workers hailing from Korea to Iran, the Garment District

gradually grew into a well-reputed innovation cluster for fashion by the 1990s. Yet, echoing a trend seen in urban centers elsewhere in the country, the 90s brought with them a flight from the urban core and the resultant safety concerns produced an undesirable living, working (and marketing) environment that became quite dire by the end of the decade. At



Figure 1 Wholesale vendors on Santee Alley. Source: Tripsavvy, 2019.

the same time, industrial uses (which includes the fashion industry) were being pushed out of urban centers in favor of other uses, such as residential or commercial.

In order to address both of these challenges to the preservation of the fashion industry in LA, key players coalesced from both the public and private sectors. The LA Fashion District Business Improvement District (BID), one of

the most important players in the upgrade of the district, was established and organized by a group of business and property owners in 1995, “dedicated ¹to helping the community be a clean, safe, and friendly place to work, shop, live, and do business.”

The public sector, meanwhile, has been working to stem the reduction of industrial land in downtown Los Angeles. LA’s Department of City Planning released the ILUP Project (Industrial Land Use Policy Project), for example, which recommended four types of industrial land with different strategies and policies. Other players, like the Industrial Development Policy Initiative and the Community Redevelopment Agency (CRA), played crucial roles in helping the government and the public be aware of the significance of industrial land use in the sustainable development of Los Angeles.

¹ BID, 2019



Figure 2 LA Garment District in the early 1990s. Source: Black Archives, 2019.

After more than 20 years of experiments, iterations, and efforts, the LA Fashion District has become a design, production, and distribution cluster of the fashion industry (clothing, accessories, fabric, etc) with more than 4,000 businesses and around 1,500 showrooms. Mega clothing companies like American Apparel and Andrew Christian have manufacturing homes within the district. The district boasts a number of high-profile events throughout the year, including LA Fashion Week, with designers, celebrities, models, and media visiting the district to learn about the latest trends (Wikipedia, 2019).

Challenges Faced

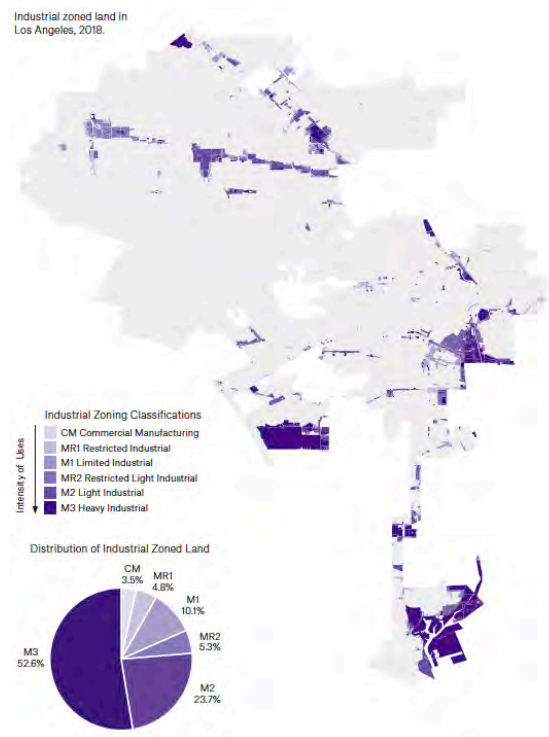


Figure 3 Industrial zoned land in Los Angeles (Garment District/Fashion District in M2 light industrial zone). Source: Hybrid-Industrial Zoning: A Case Study in Downtown Los Angeles by Sarah Brown, 2019.

The LA Fashion District has faced numerous challenges during its 100-year timespan. Yet in no era were the challenges faced more acute than in the 1990s. During that period, the Garment District faced poor living and working environments, the loss of industrial land, and lack of development engine.

- A neglected living and working environment. In the 1990s, downtown Los Angeles, including the Garment District, was known as a dirty and unsafe environment with a high crime rate. The streets and alleys were full of trash and graffiti tags. At the same time, billions of dollars were being poured into Los Angeles Real Estate markets from domestic and foreign investors, drastically driving up property prices.² Many of the units being built were empty and lacking maintenance; in other words the downtown was somehow expensive and undesirable at the same time.

- Significant Loss of Industrial Land. As in many other cities across the country, LA adopted traditional zoning approaches aimed at pushing out noisome uses to the city's periphery. This led to a significant loss of industrial land in the downtown core.³ Like farmland, industrial land is hard to reclaim once replaced by other functions. The repercussions of this trend first started gaining the attention of the public sector in 2003. The Industrial Development Policy Initiative (IDPI), started by the Mayor's Office of Economic Development, found that over 29% of the total workforce in Los Angeles worked in industrial factories while only 12% of building permit valuations were for industrial uses.⁴ Also, around 26% of the industrial zoned land had been replaced by non-industrial land uses, which was found to

2 Los Angeles Times, 1995

3 Brown, 2019

4 IDPI, 2002

be more serious in urban transitional areas like the Garment District.

Strategies Applied



Figure 4 Location of Garment District and zoning (No.16).
Source: *Hybrid-Industrial Zoning: A Case Study in Downtown Los Angeles* by Sarah Brown, 2019.

Over the course of nearly twenty years of targeted development within the Fashion District, a number of player from both the public and private sectors have contributed to the area's success. Collaboration was essential for the area's rehabilitation as shown in the following strategic initiatives.

Business Improvement District (BID)

■ As a local non-profit organization, LA's Fashion District BID was founded by business and property owners in 1995 with the vision of "a district that is evolving into a future that will include residential and creative opportunities while maintaining its roots in fashion." Its 60-member Clean & Safe Team works to maintain a positive public environment for the community, including providing business and property owners, residents, and visitors Emergency Contact Cards to help them feel

safe.⁵ The BID has also collaborated on several commercial, residential, and mixed-use developments to boost the value in the district.

Industrial Development Policy Initiative (IDPI)

■ Working closely with Mayor's Office of Economic Development and Community Redevelopment Agency (CRA), the IDPI helped the government and the public realize the significance of industrial land as a key source of jobs for LA's citizens and as an economic driver for the city. The Initiative highlighted the negative impacts of industrial land loss in Los Angeles and argued for the economic value of industrial land. Meanwhile with the same purposes, the Department of City Planning (DCP) launched the Industrial Land Use Policy Project (ILUP Project), recommending a variety of approaches to industrial land (including employment protection districts, industrial mixed-use districts and transition districts) in order to ensure the sustainability of industrial lands for subsequent generations.

Conclusion

LA's Fashion District offers a number of lessons from its long and storied past. Although long famed for its role in influencing the fashion industry, it fell on hard times in the 1990s as safety concerns and a reduction in land zoned for industrial uses threatened to reduce both patrons and suppliers alike. To reverse those trends, both the public and the private sectors intervened with creative and, significantly, long-term solutions. Businesses in the district banded together to increase safety and improve the aesthetics of the district, while the public sector underwent a series of efforts to offer safeguards for industry in the area.

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The Kista Model for innovation clustering

Kista Science City, SE

In 2000, Wired Magazine ranked Kista Science City as the second most important information, communications, and technology (ICT) cluster in the world, behind only Silicon Valley in California. Currently, Kista is the largest ICT cluster in Northern Europe and home to approximately 1,400 companies and 300 ICT companies, such as Ericsson, IBM, Microsoft, Samsung, Oracle, and Intel. In addition, the Royal Institute of Technology (KTH), Stockholm University, and the Stockholm Science and Innovation School also have campuses in Kista. Together, private firms, universities, and the City of Stockholm have followed the “Triple Helix” model – also known as the Kista model – in which industrial, academic, and governmental actors cooperate to foster innovation.

Gary Tran

Background

Development in the area of Kista, 10 km north of Stockholm, began in 1905 as a military training ground in Järvafältet. The municipality of Kista was established as part of Sweden’s Million Homes Program, the government initiative to build 100,000 homes in the ten years between 1965 and 1974. An economic recession and oil

crisis in the early 1970s prevented immediate development, but “by chance, ... three large companies decided to move to Kista in 1975: Ericcson, RIFA, and IBM.”¹ Afterward, in the early 1980s, the City of Stockholm began working

¹ Sandberg et al., 2007



Figure 1 Kista Science City from the Northwest. Source: <https://commons.wikimedia.org/wiki/File:Kista-flygbild.jpg>

with the Royal Institute of Technology (KTH) and Ericsson to develop Kista as an electronics center. As a result, Kista started becoming known as “Sweden’s Silicon Valley.” In 1985, the Electrum Foundation was established as a collaborative organization between the city government, academic research institutes, and private industry – the “Triple Helix” model of innovation. More and more companies began locating offices in Kista – such as Apple, Microsoft, Nokia, and Sun – and a critical mass in Kista began to form. In 2000, Kista and Akalla combined their business centers and formed Kista Science City.² Two years later in 2002, the Royal Institute of Technology (KTH) and Stockholm University jointly founded the IT University Campus in Kista. In the same year, the Kista Galleria shopping center opened and STING began its business incubator program. Shortly thereafter in 2003, Ericsson relocated its global headquarters to Kista, and construction completed for the Kista Science Tower, Sweden’s tallest office building.³

The Electrum Foundation is an organization that embodies the Triple Helix model of innovation, coined by Henry Etzkowitz and Loet Leydesdorff, in which academia, government, and private industry form a triadic relationship

to promote knowledge-based economic and social development.⁴ Board members of the Electrum Foundation consist of the President of KTH University, the Mayor of Stockholm, and CEOs of major technology and real estate companies. “The mission of Electrum is to promote the development of Kista and bring together the three Triple Helix actors ... to jointly address any issues and challenges faced by Kista’s tenants and other stakeholders.”⁵ Five councils operate under Electrum, each dedicated to a specific component of Kista Science City – higher education, innovation, infrastructure, marketing, and research – in order to identify problems and form task forces to implement actionable solutions. Two Electrum-owned subsidiaries, the STING business incubator and Kista Science City AB, also provide support to innovation development.⁶ STING, or Stockholm Innovation and Growth Organization, offers incubator and accelerator assistance, such as coaching, office space, and access to investment networks in order to nurture emerging entrepreneurs.⁷ Kista Science City AB acts as a non-profit organization that promotes economic development through managing potential investors and facilitating negotiations between real-estate developers and the City of Stockholm.⁸

Sweden’s strong national policies of investment in long-term infrastructure and human capital provide much of the underlying context to Stockholm and Kista’s emergence as innovation centers. In 2000, the national IT policy goal declared that “Sweden is to become the first country to be an information society for all.”⁹

4 Stanford University Triple Helix Research Group, n.d.

5 Van Winden, Braun, Otgaar & Witte, 2014

6 Ibid

7 Kista Science City, n.d.-a

8 Ibid; Van Winden et al., 2014

9 Barinaga, 2010

2 Ibid

3 Selin, n.d.

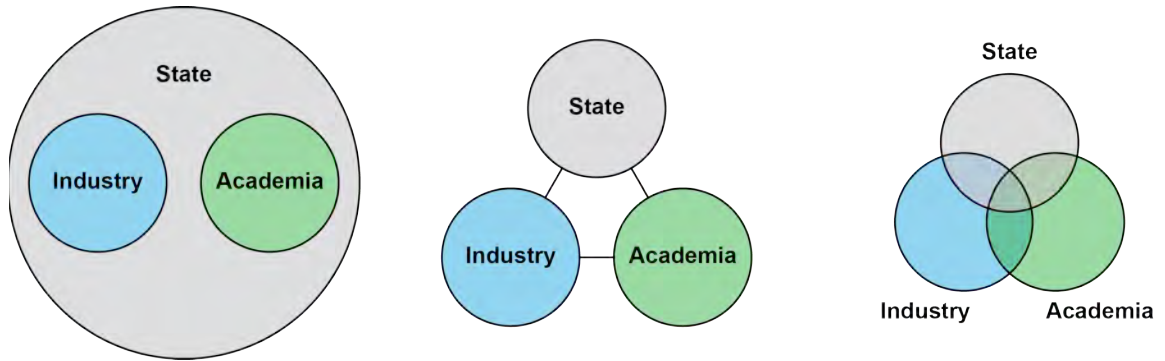


Figure 2 Triple Helix. Source: <http://www.oni.uerj.br/media/downloads/1-s2.0-S0048733399000554-main.pdf>

However, Swedish initiatives began well before the 2000 initiative. In the 1990s, a national tax subsidy for personal computer purchases led to early country-wide adoption of technology through a "huge influx of PCs in homes."¹⁰ In 1994, Stockholm constructed "the world's largest open-fiber network ... with 100% of businesses and 90% of homes tapping into that infrastructure today."¹¹ Moreover, Kista Science City has "enough fiber-optic cable to circumnavigate the Earth 30 times."¹² Consequently, Stockholm's technological sector accounts for 18% of all employment, and programming is the most common job in the city.¹³ The long-term investments that cultivated a technologically savvy society on a national scale have contributed to the success of Stockholm and Kista as cities of innovation.

Challenges Faced

Due to Kista's high level of specialization, Kista Science City lacks urban vibrancy. In the findings of a survey, "respondents identify Kista as professional and competent, but

also boring and nerdy."¹⁴ Attempts to attract cultural amenities to enliven the city resulted in the construction of the Digital Arts Center (DAC) and the NOD Building (nod is Swedish for "node") but their larger urban effects have yet to fully materialize. Additionally, planners tried to promote interaction through the design of buildings and the purposeful placement of facilities in proximity to each other. However, street-life and vitality still suffer from a lack of pedestrian traffic, which has led to limited shops and restaurants due to insufficient customers.¹⁵ The effects of IT agglomeration in Kista have yet to translate to the urban connections found in more vibrant city centers. Interaction and "local production cooperation in Kista, which may include face-to-face contacts and cluster formation, is quite limited."¹⁶ Indeed, during its rapid development in the 1980s and 90s, many companies did not choose Kista for its proximity to other IT companies but for its closeness to Arlanda Airport.¹⁷ As a result, many dynamic start-ups still choose to locate in Stockholm, leaving predominantly larger, established corporations in Kista.¹⁸

10 Knowledge@Wharton, 2015

11 Ibid

12 Ibid

13 Ibid

14 Van Winden, Braun, Otgaar, & Witte, 2012

15 Van Winden et al., 2012

16 Sandberg et al., 2007

17 Ibid

18 Van Winden et al., 2012

Relatedly, Kista does not have a strong network of venture capital. Despite the efforts of STING, start-ups seeking second-round funding face a scarcity of venture capital that drives many businesses to other locations where the investment community is more developed. Also, the availability of qualified labor poses additional challenges. Kista already provides adequate transportation networks to access labor both internationally and within the commuter region, so it has focused on promoting education. Kista opened the Stockholm Science and Innovation School, a high school that works closely with technology firms and provides internships in the industry. However, the pool of qualified knowledge workers still has not kept pace with demand.¹⁹

Kista also suffers from a high degree of segregation. The neighborhoods in the Järva region, in which Kista is located, have a high proportion of immigrant populations that are not socially or spatially integrated. As a result, not many workers in Kista live in the city or Järva region. Recent riots in Rinkeby, a nearby district part of the greater Rinkeby-Kista borough, have recently gained international attention and shows the underlying social tensions in the area.²⁰

“While foreign observers might be persuaded that Kista and its surrounding region constitute an integrated region, the facts on the ground currently do not support this view. Only when the high level of segregation is addressed and Kista becomes a more urban and lively area with attractive housing and facilities, it would actually be possible for visitors to experience [Kista] as a true city.”²¹

19 Van Winden et al., 2012

20 Orange, 2017

21 Van Winden et al., 2012

Strategies Applied

The strategies implemented by Kista Science City primarily relied on national planning in conjunction with the Triple Helix Model of innovation.

Cooperation between industry, academia, and government

■ The Triple Helix model of innovation or the Kista model, represented by the Electrum Foundation, enabled the continued growth of Kista Science City and allowed for challenges to be collaboratively addressed by all the relevant stakeholders. Electrum provided an institutional space for the three sectors to come together and maintain a common vision for the city.

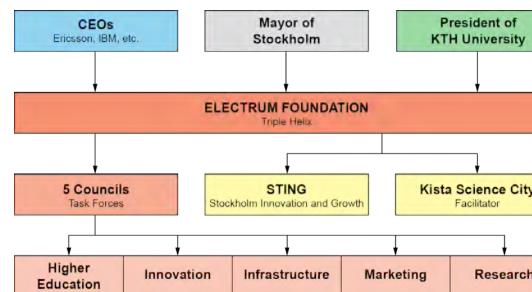


Figure 3 Electrum Foundation Organization. Source: Gary Tran.

Long-term investment in infrastructure and human capital

■ Public investment in both transportation and technological infrastructure allowed for the current development of Stockholm and Kista to emerge. Improvements to commuter rail and the airport enabled access to regional and international labor; and investments in fiber-optic networks facilitated technologies dependent upon connectivity. Furthermore, social programs aimed at promoting technological adoption and entrepreneurship



Figure 4 Kista 1980. [Kista 1980, Black and White Photograph]. (n.d.). Source: <http://www.stepi.re.kr/module/forumDownFile.jsp?cmsCd=CM0037&ntNo=14976&sbN>.

cultivated a population equipped for innovation and comfortable with technology.

Start-up incubation and acceleration

■ STING provided assistance, training, and access to capital for newly formed businesses with a mission to “support new global growth technology companies that are focused on exports.”²² It is important to note that STING has been extremely selective with its program. From 2002-2013, only 92 out of 1,134 companies have gained admission but have accounted for a total of 228 million euros in value.

Promotion of urban vibrancy and interaction

■ Kista’s development of mixed-used buildings and cultural amenities have attempted to address a lack of urban life. However, continued plans for providing civic space and strategically designing areas for interaction must coincide with larger efforts to address regional social issues, such as spatial segregation and immigration policy.

Formation of identity and brand

■ Kista’s reputation as “Wireless Valley” created a strong identity that assists in attracting talent and economic development. However, names

or logos do not achieve effective branding. “It is the accumulated reputation of the ecosystem. The brand is a market for quality, reducing risk for investors and help[ing] to build trust.”²³

Conclusion

Building upon the Ericsson’s initial location in the area, Kista Science City has emerged as one of the world’s most important technology clusters. The combination of substantial government infrastructure and the Triple Helix model of innovation facilitated its current success. Nevertheless, Kista still lacks urban vibrancy to match its technological reputation. In 2000, Kista transformed its name from Kista Science Park to Kista Science City and, in doing so, expressed its ambitions to mature beyond its standing as an innovation center. But in order to accomplish that, Kista will have to rely on more than just technology.²⁴

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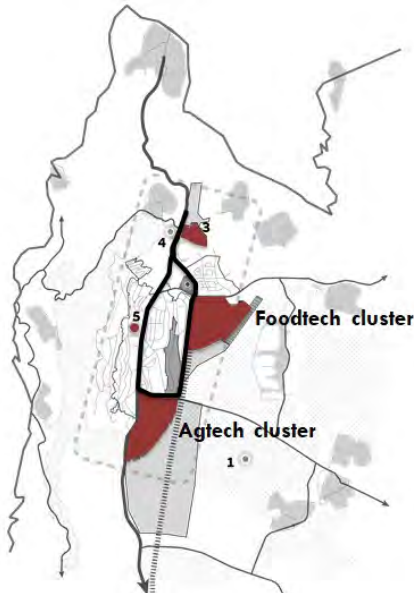
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Recommendations for Innovation Districts

As can be seen throughout the case studies, successful innovation clusters share many characteristics with successful food tech clusters. A concept that has been gaining steam in recent decades, innovation clusters attempt to capitalize on potential agglomeration benefits by sparking interactions between individuals and companies and easing access to (and the costs of) key goods and services through physical proximity—strategies that have been well-executed among existing food tech clusters as shown in Chapter 1.

Yet these innovation cluster case studies also offer additional strategies that have the potential to supplement existing food tech clustering models. Since they generally rely on a greater diversity of industries and are more centrally located in urban areas, the actors tend to be slightly different as do both the physical and policy strategies.

Diversification

■ Albeit generally anchored around a specific subject area, one of the reasons that these

innovation clusters have been so successful is their diversification beyond a single industry. They begin with several anchor companies yet expand their scope over time. Kiryat Shmona would be wise to do the same—to diversify beyond the food tech sector. A diverse industrial base beyond the world of food tech would ensure long-term prosperity as opposed to being susceptible to the dangers inherent in heavy reliance on any one industry.

Regional involvement

■ In many of the innovation cluster case studies, there is considerable regional participation, which, in turn, incorporates more actors into the cluster to ensure a more concerted push in pursuit of a successful cluster. Kiryat Shmona should consider working with regional partners to strategize the development of an innovation cluster. There are a number of existing industries in the region that would benefit from clustering, and regional coordination could ease any shifts in location for those industries and spread the benefits across the different actors involved in the move.

Infrastructure development and maintenance

■ One of the benefits of clustering is infrastructure that is shared and well-maintained. In order to ease business in a particular field, property owners within a cluster generally choose to maintain and expand infrastructure that benefits all businesses in the district. This often includes transportation infrastructure, but could also include other forms of infrastructure specific to that business. Kiryat Shmona would be wise to consider improving infrastructure and access within and to the cluster area and to establish a partnership with local businesses in order to better understand their needs and to ensure their involvement in infrastructure development and maintenance going forward.

Ownership and funding

■ Businesses in an innovation cluster invariably have a vested interest in the cluster's success. It is thus natural for those businesses to support the cluster in the form of funding. This both ensures that those businesses have a voice in determining the direction of the cluster, but it also ensures the fiscal sustainability of the cluster, which is more tenuous if solely relying on public funds. In all three case studies presented above, businesses contribute to the cluster's sustainability fiscally, yet the cluster itself is run by a non-profit that helps to direct and implement the funds. Kiryat Shmona should consider adopting a similar structure. In addition to government support in order to catalyze the creation of an innovation cluster, the cluster would be most effective if sustained through funds contributed by local businesses and managed by a local non-profit entity.

Strategies Applied

Scale	<ul style="list-style-type: none"> • Low-density • Cluster 	<ul style="list-style-type: none"> • Mixed density • Cluster 	<ul style="list-style-type: none"> • Mixed density • Cluster
Management	<ul style="list-style-type: none"> • Local non-profit • Public sector • Research initiative 	<ul style="list-style-type: none"> • Local non-profit • Public sector 	<ul style="list-style-type: none"> • Local non-profit • Public sector • University • Private sector
Funding	<ul style="list-style-type: none"> • Property owners 	<ul style="list-style-type: none"> • Government funds 	<ul style="list-style-type: none"> • Government funds • Property owners
Physical strategies	<ul style="list-style-type: none"> • Infrastructure development and maintenance • Mixed-use buildings • Program and anchor diversification 	<ul style="list-style-type: none"> • Infrastructure development and maintenance • Mixed-use buildings • Program and anchor diversification 	<ul style="list-style-type: none"> • Mixed-use buildings • Program and anchor diversification • Reliance on local assets
Policy strategies	<ul style="list-style-type: none"> • Regional policy involvement • Rezoning initiative 	<ul style="list-style-type: none"> • Regional policy incentives offered • City branding campaign 	<ul style="list-style-type: none"> • Regional policy incentives offered • Increase growth planning

