



ASPEN NETWORK
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ENTREPRENEURS

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WHAT WE KNOW ABOUT

Cultivating Entrepreneurial Ecosystems

Summarizing the existing evidence

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About ANDE

The **Aspen Network of Development Entrepreneurs (ANDE)** is a global network of organizations that propel entrepreneurship in developing economies. ANDE members provide critical financial, educational, and business support services to small and growing businesses (SGBs) based on the conviction that SGBs create jobs, stimulate long-term economic growth, and produce environmental and social benefits.

As the leading global voice of the SGB sector, ANDE believes that SGBs are a powerful, yet underleveraged tool in addressing social and environmental challenges. Since 2009, we have grown into a trusted network of nearly 300 collaborative members that operate in nearly every developing economy. ANDE grows the body of knowledge, mobilizes resources, and connects the institutions supporting the small business entrepreneurs who build inclusive prosperity in the developing world. ANDE is part of the Aspen Institute, a global nonprofit organization committed to realizing a free, just, and equitable society.

About ANDE's Evidence Syntheses

This report is part of a series of evidence syntheses produced by ANDE summarizing the existing research on topics relevant to the small and growing business (SGB)¹ sector. These evidence syntheses are meant to serve as a resource for practitioners to quickly get up-to-speed on the literature regarding topics such as entrepreneurial ecosystems, talent management, and job quality. To read the other evidence syntheses and access the resources cited in this report, visit www.andeglobal.org/knowledge-hub.

¹ Small and growing businesses (SGBs) are defined by ANDE as commercially viable businesses with five to 250 employees that have significant potential, and ambition, for growth. Typically, SGBs seek growth capital from \$20,000 to \$2 million.

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Introduction and Key Takeaways

Entrepreneurship is top-of-mind for policymakers and donors as a key contributor to economic development. Small and medium-sized enterprises (SMEs) are estimated to contribute up to 40 percent of national GDP in developing economies and account for 90 percent of businesses worldwide.²

These statistics reflect formalized and registered businesses; therefore, the actual contribution is likely much higher. While much of the economic research in prior decades has focused on the viability and growth of individual enterprises, recent research has emphasized the importance of the social and economic systems surrounding the entrepreneur – commonly referred to as an “entrepreneurial ecosystem.”³

Entrepreneurial ecosystems comprise the set of cultural, political, and economic elements that allow entrepreneurs to start, sustain, and scale a new business. Drawing on the ecological understanding of an ecosystem, the term emphasizes the inter-dependence of actors whose growth is supported or hindered by the others.⁴ In this sense, entrepreneurial ecosystems marry the study of economic development and entrepreneurship.⁵ Ecosystem elements may include the networks of individuals that serve as formal and informal mentors, local regulations for starting and sustaining a business, academic institutions preparing new talent for the workforce, the cultural elements that influence innovation and risk-taking, and the support organizations with financial and technical resources to help early-stage enterprises grow. Entrepreneurial ecosystems typically refer to a geographic area such as a city, region, or small country where entrepreneurs access the same general set of services and are impacted by the same policies.

While the concept of an entrepreneurial ecosystem is well-established, the evidence base on how exactly ecosystems grow and whether interventions can accelerate this growth is still emerging. This report synthesizes the existing evidence on the complex process of building entrepreneurial ecosystems and offers key lessons from the literature.

2 [Small and Medium Enterprises \(SMEs\) Finance](#). The World Bank. Accessed 25 June 2021.

3 Cavallo, A. et al. (2019). [Entrepreneurial ecosystem research: present debates and future directions](#). International Entrepreneurship and Management Journal.

4 Cantner, U. et al. (2020). [Entrepreneurial ecosystems: a dynamic lifecycle model](#). Small Business Economics.

5 Acs, Z. et al. (2017). [The lineages of the entrepreneurial ecosystem approach](#). Small Business Economics.

KEY TAKEAWAYS:

- + **Mature ecosystems share a common set of characteristics.** The presence and strength of entrepreneur and institutional networks, entrepreneurial culture, accelerators and other support organizations, finance providers, and supportive policy are common among mature entrepreneurial ecosystems.
- + **Ecosystem development involves complex, non-linear interactions among these factors.** There is no singular growth path for ecosystems, as entrepreneurial communities must build upon their existing strengths and resources to identify areas of competitive advantage.
- + **Interventions should build upon local attributes and strengths.** While there is some evidence of successful outcomes from ecosystem-building interventions, policymakers should focus primarily on setting a strong foundation for the ecosystem so it can take advantage of new market opportunities as they arise organically.

The Stages of Ecosystem Development

As a first step to understanding how entrepreneurial ecosystems grow, researchers have created categorizations to define and measure each stage of ecosystem development. Drawing upon frameworks from Startup Genome as well as academic studies, below are the main stages of ecosystem development and examples of ecosystems in each stage.

THESE STAGES INCLUDE:

- + **The Activation Stage**⁶: Also called the nascent stage⁷ or birth phase⁸, this stage is marked by a low, albeit growing, number of startups (Startup Genome denotes this at less than 1,000), limited founder experience, and significant resource gaps. There are few opportunities for financing, mentorship, and connections, though support infrastructure such as incubators is beginning to emerge. Based on Startup Genome's Framework, Kampala, Uganda is in this phase. While Uganda was ranked as the most entrepreneurial country by the Global Entrepreneurship Monitor in 2014, the startup death rate is still too great for the ecosystem to see significant growth.⁹ However, the city of Kampala is well positioned to reach the next stage of development. With a young, tech-savvy population and a burgeoning innovation environment, many international and local actors are attempting to push Kampala across the initial development threshold. One example is ANDE's Uganda Entrepreneurial Ecosystem Initiative (UEEI), the first phase of which launched in 2018 to conduct a diagnostic assessment of the entrepreneurial ecosystems in Kampala and Gulu, ultimately resulting in a five-year ecosystem development strategy.¹⁰
- + **The Growth Stage**¹¹: Also called the evolving¹² or globalization phase¹³, in this stage, the elements of an entrepreneurial ecosystem become more apparent and specialized.¹⁴ High-profile entrepreneurs emerge with some successful exits, investors become more open to risk and begin offering startup financing, and entrepreneurship becomes a more acceptable career path

6 [Global Startup Ecosystem Report 2020](#). Startup Genome.

7 Cukier, D. and Kon, F. (2018). [A maturity model for software startup ecosystems](#). Journal of Innovation and Entrepreneurship.

8 Mack, E. and Mayer, H. (2015). [The evolutionary dynamics of entrepreneurial ecosystems](#). Urban Studies.

9 Patton, A. [Uganda is a land of entrepreneurs, but how many startups survive?](#) The Guardian. February 2016.

10 [Uganda Entrepreneurial Ecosystem Initiative](#). Aspen Network of Development Entrepreneurs. Accessed 25 June 2021.

11 Mack, E. and Mayer, H. (2015). [The evolutionary dynamics of entrepreneurial ecosystems](#). Urban Studies.

12 Cukier, D. and Kon, F. (2018). [A maturity model for software startup ecosystems](#). Journal of Innovation and Entrepreneurship.

13 [Global Startup Ecosystem Report 2020](#). Startup Genome.

14 Cantner, U. et al. (2020). [Entrepreneurial ecosystems: a dynamic lifecycle model](#). Small Business Economics.

from a cultural perspective. Startup Genome ranks Kuala Lumpur, Malaysia as a growth or early-globalization stage ecosystem due to its strong startup funding landscape (US \$226 million raised by startups in 2019), quality of life, growing talent base, and pro-startup government policies. However, challenges remain, with startups reluctant to expand beyond domestic markets and a preference among young talent to work for large corporations rather than early-stage firms.¹⁵

- + **The Mature Stage¹⁶:** Also called the attraction and integration phase¹⁷, this stage sees globally recognized “unicorn” businesses and exits above US \$1 billion, increasing global connectedness, and effective entrepreneurial policies and programming. At this stage, the ecosystem is globally recognized as a good place to start a business.¹⁸ Silicon Valley is the classic example of an entrepreneurial ecosystem that has flourished into a powerhouse ecosystem. Another is Singapore, which has been ranked by Startup Genome as one of the top ten global ecosystems for startup funding, with a total early-stage funding market of US \$1.4 billion.¹⁹

Though the stages of ecosystem development can be defined in a straightforward way, the growth path between stages is less clear. Most of today’s mature ecosystems developed organically, with intentional ecosystem-building interventions being a more recent experiment in economic development. The following two sections offer insights on how an ecosystem can be enhanced: firstly by identifying the success factors of mature ecosystems, and secondly by exploring case studies of ecosystem-building interventions and their results.

15 Fetalvero, N. [The makings of greatness: How Malaysia can become a top-tier startup ecosystem](#). TechInAsia. December 2020.

16 Cukier, D. and Kon, F. (2018). [A maturity model for software startup ecosystems](#). Journal of Innovation and Entrepreneurship.

17 [Global Startup Ecosystem Report 2020](#). Startup Genome.

18 Some frameworks diverge at this stage, where those that say the number of new startups continues to grow, others say this stage is marked by a reduction in firm creation, called the sustainment or decline phase when fewer resources are directed to supporting startups, requiring dedicated efforts to keep the momentum strong. For example, see Mack, E. and H. Mayer. (2015). [The evolutionary dynamics of entrepreneurial ecosystems](#). Urban Studies.

19 [Global Startup Ecosystem Report 2020](#). Startup Genome.

Factors Critical for Ecosystem Development

Research on mature ecosystems points to several key factors that allowed for their development. While not an exhaustive list of ways to boost entrepreneurial activity, these factors act as catalysts for ecosystem development and point to areas that can be targeted through ecosystem-building interventions.

STRONG NETWORK CONNECTIONS AMONG ENTREPRENEURS AND INSTITUTIONS

Social networks are critical for new business development. Entrepreneurs use their networks to source capital and find reliable information.²⁰ Interpersonal connections create a high-trust environment that allows for experimentation, inter-sector collaboration, and access to new domestic and international markets.²¹ Networks played a key role in the growth of New York's high-tech entrepreneurial ecosystem, where entrepreneurs formed easily accessible tech meetups and began reinvesting in their peers (for example, successful entrepreneurs started the New York Angels group to invest in more nascent ventures).²² A study by Endeavor on the Nairobi ecosystem found that one of its key strengths is the interest among successful entrepreneurs to reinvest in other up-and-coming local ventures, generating an influx of capital, confidence, and sector knowledge.²³ Connections among intermediaries also play an important role in increasing entrepreneurship support; for example, the Lagos Angels Network was started in 2014 by successful local entrepreneurs and high net-worth individuals with initial operational costs subsidized by infoDev. The network has expanded from 20 to 65 members and closely engages other ecosystem actors by sourcing deals from local incubators and accelerators and partnering with government entities such as the Bank of Industry in Nigeria.²⁴ Evidence shows that weak networks also hinder growth; a study of Atlanta's ICT ecosystem found that while the key technical and financial factors are present for ecosystem development, social fragmentation and a lack of local embeddedness (reliance on local resources and actors rather than external) have stagnated its growth and pushed successful enterprises out of the city.²⁵

20 [Global Startup Ecosystem Report 2020](#). Startup Genome.

21 Katz, B. and Wagner, J. [The rise of innovation districts: A New Geography of Innovation in America](#). Brookings Institution. Accessed 14 August 2021.

22 Cukier, D. and Kon, F. (2018). [A maturity model for software startup ecosystems](#). Journal of Innovation and Entrepreneurship.

23 Endeavor Insight. (2015). [Scaling Up on the Edge of the Rift Valley: How to Accelerate the Entrepreneurship Ecosystem for Local Scaleup Companies in Nairobi, Kenya](#).

24 Moellenbrock, B. and Gonella, C. (2021). [Angel Networks in Emerging Markets: A Guide for Development Institutions](#).

25 Breznitz, D. and Taylor, M. (2014). [The communal roots of entrepreneurial-technological growth – social fragmentation and stagnation: reflection on Atlanta's technology cluster](#). Entrepreneurship and Regional Development.

AN ENTREPRENEURIAL CULTURE

An entrepreneurial culture is defined by societal norms that tolerate risk and failure, celebrate innovation and creativity, and provide a high social status to entrepreneurs.²⁶ In ecosystems with a strong entrepreneurial culture, entrepreneurs are likely to “pay it forward” to other founders by serving as mentors, investors, and advisors²⁷ and serial entrepreneurs show repeated engagement, also known as “entrepreneur recycling.”²⁸ Research on developing economies found that negative perceptions of entrepreneurship are a significant hindrance to ecosystem development.²⁹ A common approach to building entrepreneurial culture is to introduce entrepreneurial concepts in the education system. In the Extremadura region of Spain, the government created a program to work entrepreneurial skill-building into the primary and secondary education curriculum, focusing specifically on social entrepreneurship to achieve the SDGs. An evaluation of the program found that the curriculum built students’ personal competencies related to entrepreneurship and led to improved attitudes toward social responsibility.³⁰

ANCHOR INSTITUTIONS

Universities, large corporations, and R&D laboratories provide a pool of talent and technological innovation that can form the base of a strong ecosystem. A 2016 review of regional entrepreneurship research found that startup rates were higher in regions with more highly specialized workforces and research universities due to increased knowledge exchange and technological spillover.³¹ In Waterloo, Canada, large anchor institutions such as the University of Waterloo and BlackBerry were key to the birth of the local entrepreneurial ecosystem. These institutions have been catalysts in attracting highly skilled talent, particularly within the university setting where there is a supportive environment that encourages collaboration between students and university faculty to “spin-off” new ventures.³² Corporations also have significant potential to contribute to ecosystem growth by offering their expertise and resources. For example, the world-renowned startup accelerator, Techstars, provides acceleration services in partnership with corporates that offer support in creating, managing, staffing, and marketing the program, as well as back-office services and physical space.³³ Large corporates like Microsoft and Nike have also created their own accelerators, which in many cases can culminate in acquisitions or pilot projects that benefit the corporation as well as provide a new investment avenue for startups.³⁴

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- 26 Isenberg, D. [Introducing the entrepreneurship ecosystem: Four defining characteristics](#). Forbes. May 2011.
- 27 Spigel, B. (2016). [Developing and governing entrepreneurial ecosystems: the structure of entrepreneurial support programs in Edinburgh, Scotland](#). International Journal of Innovation and Regional Development.
- 28 Mason, C. and Brown, R. (2014). [Entrepreneurial Ecosystems and Growth Oriented Entrepreneurship](#). Background paper prepared for the OECD.
- 29 Guerrero, M. et al. (2020). [The influence of ecosystems on the entrepreneurship process: a comparison across developed and developing economies](#). Small Business Economics.
- 30 Sánchez-Hernández, M. and Maldonado-Briegas, J. (2019). [Sustainable Entrepreneurial Culture Programs Promoting Social Responsibility: A European Regional Experience](#). Sustainability.
- 31 Muller, S. [A progress review of entrepreneurship and regional development: What are the remaining gaps?](#) European Planning Studies.
- 32 Spigel, B. (2017). [The Relational Organization of Entrepreneurial Ecosystems](#). Entrepreneurship Theory and Practice.
- 33 Hochberg Y. (2016). [Accelerating Entrepreneurs and Ecosystems: The Seed Accelerator Model](#). National Bureau of Economic Research.
- 34 Kohler, T. (2016). [Corporate accelerators: Building bridges between corporations and startups](#). Business Horizons.

EARLY-STAGE FINANCE

A 2016 analysis of successful ecosystems found that a “strong, dense, and supportive community of VCs, business angels, seed investors” and other types of capital should be “available, visible, and accessible across sectors, demographics and geography.”³⁵ In most cases, venture capital and angel investors are attracted to ecosystems that are further along in development, creating a gap in earlier-stage ecosystems that donors and government initiatives can help fill. For example, USAID’s Middle East and North Africa Investment Initiative (MENA II) in Lebanon offers training to angel investors, provides matching capital for angel investments, and lowers investor risk through a 50% equity guarantee. To date, the program has trained more than 125 angel investors and led to \$3.7 million in investments.³⁶ Governments have also stepped in by creating and implementing publicly backed venture capital funds in the hopes that a successful first round of investment would attract private venture capital to the market. A 2020 analysis of these types of funding schemes from a European sample finds that they are less effective in closing the funding gap for older companies in developing economies or economies perceived to be corrupt. However, when these funds are syndicated with private investors, the likelihood of closing the funding gap improves.³⁷ The Ghana Venture Capital Trust Fund (VCTF) provides another example of a government-led intervention. Created in 2004 in response to demand for more accessible equity and quasi-equity financing for local ventures, it has used its seed funding to leverage more than \$85 million in private sector funding for SMEs by forming venture capital funds in partnership with local institutions.³⁸ It also created the Ghana Angel Investor Network in 2011 and played a key role in establishing the Ghana Alternative Market (GAX), a listing on Ghana’s stock market specifically for SMEs with growth potential.³⁹

ACCELERATORS AND OTHER ENTREPRENEUR SUPPORT PROVIDERS

Research on the effectiveness of accelerator programs shows that graduating startups are more likely to attract equity financing than ventures that have not participated in these programs, even after accounting for selection effects.⁴⁰ There is evidence that the presence of accelerators has a spillover effect on regional investment activity as well. A study examining a sample of 59 accelerators located in 38 metropolitan regions across the United States found that establishing an accelerator in a metropolitan region increases the number of early-stage investors and can “create an entrepreneurial cluster where it did not exist before.”⁴¹ Similarly, research in Bangalore found that accelerators connect entrepreneurs to the broader ecosystem by applying their expertise to the effective matching of entrepreneurs to the right ecosystem players.⁴² Donors play an important role in funding and supporting these programs. USAID’s Partnering to Accelerate Entrepreneurship (PACE) program, designed to catalyze small business growth in developing countries through increased private investment, is one such example. Established in 2013,

35 Stam, E. and Spigel, B. [Entrepreneurial Ecosystems](#). Working paper.

36 Moellenbrock, B. and Gonella, C. (2021). [Angel Networks in Emerging Markets: A Guide for Development Institutions](#).

37 Alperovych, Y. (2020). [Bridging the equity gap for young innovative companies: The design of effective government venture capital fund programs](#). Research Policy.

38 [Venture Capital Trust Fund: Profile 2017](#).

39 [Venture Capital Trust Fund website \(About page\)](#). Accessed 14 August 2021.

40 Lall, et al. (2020). [Are we accelerating equity into impact-oriented ventures?](#) World Development.

41 Fehder, D. and Hochberg, Y. (2014). [Accelerators and the Regional Supply of Venture Capital Investment](#). SSRN.

42 Goswami, K. et al. (2017). [Accelerator Expertise: Understanding the Intermediary Role of Accelerators in the Development of the Bangalore Entrepreneurial Ecosystem](#). Strategic Entrepreneurship Journal.

PACE's interventions include directly investing in early-stage businesses, de-risking investments through guarantees, promoting collaboration between private capital and philanthropy, supporting intermediaries in piloting new support mechanisms, and researching and disseminating relevant findings.⁴³ A critical component of PACE's strategy is tackling the support and financing gap through a multifaceted approach that combines innovative financing structures and capacity development services.

A STRONG POLICY ENVIRONMENT

Supportive regulations and government programming play a crucial role in encouraging entrepreneurial activity.⁴⁴ In particular, policies that “decriminalize bankruptcy, shielding shareholders from creditors, and allowing entrepreneurs to quickly start over”⁴⁵ are generally effective at promoting entrepreneurship.⁴⁶ But evidence also emphasizes the importance of policies formulated for specific contexts – be it rural, high-tech, specific sectors, etc.⁴⁷ An example is the Plan for the Modernization of Agriculture policy instituted by the government of Uganda.⁴⁸ By incentivizing private companies to work with smallholder farmers in distributing more effective inputs, the small farmers were able to improve their outputs to the point of earning a sustainable income.⁴⁹ Another example is Chattanooga, a city of roughly 500,000 people in the U.S. that in 2010 was the first metropolitan area in the United States to receive a gigabit fiber optic internet connection. The mayor's office created the Chattanooga Forward Task Force to determine the most effective way to harness this new high-speed internet connection and raised entrepreneurship as one of the city's most important public policy priorities.⁵⁰ The mayor's initiative created an “Innovation District” and collaborated with the private sector, a local university, and two private foundations to build the ecosystem, resulting in the establishment of new support programs such as accelerators and incubators.⁵¹ Further successes of this initiative include the increase in external funding for the top 16 startups in the city and the overall shift in Chattanooga culture that now celebrates and values entrepreneurship.⁵²

43 Integra Government Services International LLC. (2021). [Strategic Review of the USAID Partnering to Accelerate Entrepreneurship \(PACE\) Initiative](#).

44 Audretsch, D. et al. (2021). [Entrepreneurial ecosystems in cities: The role of institutions](#). PLoS ONE.

45 Isenberg, D. [The Big Idea: How to Start an Entrepreneurial Revolution](#). Harvard Business Review. June 2010.

46 Ibid.

47 Minniti, M. (2008). [The Role of Government Policy on Entrepreneurial Activity: Productive, Unproductive, or Destructive?](#) Entrepreneurship Theory and Practice.

48 [Uganda's Plan for the Modernization of Agriculture](#). Ministry of Foreign Affairs.

49 (2014). [Entrepreneurial Ecosystems Around the Globe and Early-Stage Company Growth Dynamics – the Entrepreneur's Perspective](#). World Economic Forum.

50 Motoyama, Y. et al. (2016). [Little Town, Layered Ecosystem: A Case Study of Chattanooga](#). The Kauffman Foundation.

51 Ibid.

52 Ibid.

While the factors outlined above must be in place for entrepreneurial ecosystems to fully mature, it is important to recognize that ecosystems do not have a singular path to growth. Most research concludes that ecosystem support initiatives must look beyond individual factors and focus on connections between ecosystem elements to drive entrepreneurial success.

Entrepreneurship researchers argue that “in isolation each [pillar] is conducive to entrepreneurship but insufficient to sustain it”⁵³ and that “how well the elements in an ecosystem are connected is crucial to how the system functions.”⁵⁴

A recurring theme in the literature is the importance of valuing the existing assets and context of each unique ecosystem. Policymakers should utilize local conditions as the building blocks of an ecosystem rather than attempt to emulate the path of other ecosystems with different core strengths.⁵⁵ Many of today’s mature ecosystems have their own “place-specific” qualities that acted as a foundation for entrepreneurial development, such as convenience for international travel (e.g., Oxford’s proximity to the London–Heathrow airport) or a skilled workforce (e.g., Swiss medical technologies can be connected to the “precision skills” developed within the watch industry).⁵⁶ Among examples of mature ecosystems, a certain amount of serendipity was often involved to jump-start their development. For example, the 2008 financial crisis led to the rise of New York City’s tech industry, and the arrival of fiber optic cable in Chattanooga spurred investment in entrepreneurship by public and private actors.

Resource-deprived or geographically distant island nations such as Taiwan, Iceland, and New Zealand have invested heavily in human capital as the basis for developing entrepreneurial ecosystems.⁵⁷ For instance, Taiwan developed strategies to retain its highly experienced and educated engineers that were trained in the United States. Between 1988 and 1998, about 40,000 engineers returned to Taiwan who served as the “backbone” of the country’s IT components industry.⁵⁸ These examples provide evidence that building ecosystems around local conditions and utilizing existing resources is preferable to importing pre-engineered solutions.

Another common thread in the research suggests that entrepreneurs themselves (rather than development organizations) must play the lead role in shaping an entrepreneurial ecosystem for significant growth to occur. As noted by Spigel and Harrison, “State interventions like public venture capital investments, building incubators, or training schemes can add resources to an ecosystem...but without sufficiently thick networks between entrepreneurs based on a supportive culture (that is, to say, a well-functioning system), the resources will likely have limited impact. Thus, the creation of strong, well-functioning ecosystems depends on leadership from the entrepreneurial community to create cohesive and dense networks

53 Isenberg, D. [The Big Idea: How to Start an Entrepreneurial Revolution](#). Harvard Business Review. June 2010.

54 Motoyama, Y. and Knowlton, K. (2017). [Examining the Connections within the Startup Ecosystem: A Case Study of St. Louis](#). Entrepreneurship Research.

55 Isenberg, D. [The Big Idea: How to Start an Entrepreneurial Revolution](#). Harvard Business Review. June 2010.

56 Mason, C. and Brown, R. (2014). [Entrepreneurial Ecosystems and Growth Oriented Entrepreneurship](#). Background paper prepared for the OECD.

57 Isenberg, D. [The Big Idea: How to Start an Entrepreneurial Revolution](#). Harvard Business Review. June 2010.

58 Ibid.

based on a culture of trust, reciprocity, and risk taking.”⁵⁹ This was further emphasized in Endeavor’s study contrasting the growth stories of the Bangalore and Nairobi ecosystems. The authors argued that Bangalore has had more expansive growth due to it being driven by highly successful entrepreneurs rather than by NGO initiatives.⁶⁰

As noted by entrepreneurship researcher Daniel Isenberg, “There’s no exact formula for creating an entrepreneurial economy; there are only practical, if imperfect, road maps.”⁶¹ However, there are some emerging strategies on how government and other actors can intervene to help spur along ecosystem development. The next section presents four case studies of ecosystem-building interventions and whether and how they were effective.

59 Spigel, S. and Harrison, R. (2017). [Toward a process theory of entrepreneurial ecosystems](#). Strategic Entrepreneurship Journal.

60 Morris, R. and Török, L. (2018). [Fostering Productive Entrepreneurship Communities: Key Lessons on Generating Jobs, Economic Growth, and Innovation](#). Endeavor Insight.

61 Isenberg, D. [The Big Idea: How to Start an Entrepreneurial Revolution](#). Harvard Business Review. June 2010.

Case Studies of Ecosystem-building Interventions

As is articulated frequently in the research, ecosystems are by nature heterogeneous and require bespoke interventions for growth.⁶² Governments and donors are becoming more interested in designing entrepreneurship growth programs using an ecosystem approach⁶³, and below are some examples of their strategies and the results.

MAPPING AND ADDRESSING GAPS:

NEW YORK CITY, UNITED STATES

The financial crisis in 2008 negatively impacted New York City's economy and acted as an exogenous shock that jumpstarted its urban high-tech entrepreneurial ecosystem. During the crisis, the city lost 90,000 jobs and consumer spending fell by 11 percent by 2009.⁶⁴ In response, the New York City Economic Development Corporation (NYCEDC) and the mayor's office guided the design and implementation of a new initiative to diversify the regional economy with bioscience, fashion, tourism, media, and technology industries.

The first step was for the local administration to understand the current challenges in the technology startup sector. NYCEDC performed an analysis of the tech startup ecosystem by consulting local stakeholders.⁶⁵ The analysis revealed four key challenges inhibiting the growth of the technology sector in the city and designed public policies to address each of the key problems.

62 Brown, R. and Mason, C. (2017). [Looking inside the spiky bits: a critical review and conceptualisation of entrepreneurial ecosystems](#). Small Business Economics.

63 Mason, C. and Brown, R. (2014). [Entrepreneurial Ecosystems and Growth Oriented Entrepreneurship](#). Background paper prepared for the OECD.

64 Mulas, V. Gastelu-Iturri, M. (2016). [New York City: Transforming a City into a Tech Innovation Leader](#). The World Bank.

65 Ibid.

CHALLENGE		POLICY / PROGRAM	
1	Lack of physical space for entrepreneurs	1	Network of co-working spaces/incubators
2	Lack of technology-specialized talent	2	Attraction of science and technology universities (PPP models “Applied Sciences NYC”)
3	Insufficient seed capital available for local startups	3	Seed fund supported by the City (“NYC Entrepreneurial Fund” and “NYC Seed”)
4	Limited and uncoordinated community of tech-led innovators and entrepreneurs	4.1	Competitions (“Big Apps”)
		4.2	Political support for community events and a marketing campaign (in collaboration with the mayor’s office and CDO)

Source: Mulas, V. and Gastelu-Iturri, M. (2016). [New York City: Transforming a City into a Tech Innovation Leader](#). The World Bank.

These interventions jumpstarted the city’s high-tech entrepreneurship and created the second largest ecosystem in the United States, second only to Silicon Valley. In addition to new ventures, established multinational technology companies such as Facebook, Google, and IBM opened offices in New York. By 2015, New York City boasted more than 14,000 new ventures and \$6 billion of venture capital investment.⁶⁶ The high-tech startup sector accounts for 12 percent of its total tax revenue; and since 2008, the ecosystem has generated jobs at an annual growth rate of 18 percent.⁶⁷

CREATING A REGIONAL ECOSYSTEM OUT OF MANY SMALL ECONOMIES:

CARIBBEAN ISLAND COUNTRIES

Most of the Caribbean islands have low GDP, characterized by high levels of subsistence-based micro-entrepreneurship and low private sector productivity, with specific challenges identified as low education levels, limited access to finance, and lack of stability (i.e., crime and corruption).⁶⁸ In 2010, the World Bank, with support from Global Affairs Canada, launched a seven-year CAD \$20 million trust fund called the Entrepreneurship Program for Innovation in the Caribbean (EPIC), which aimed to improve the entrepreneurial ecosystem through financial and technical services in 14 Caribbean countries. The intended aim was “increased competitiveness, growth, and job creation in the Caribbean region through the development of a robust and vibrant innovation and entrepreneurship ecosystem.”⁶⁹ Specifically, the program created two sector-specific programs targeting climate and mobile innovations and three sector-agnostic programs targeting growth-oriented entrepreneurship more generally (with one program dedicated specifically to women).

66 Ibid.

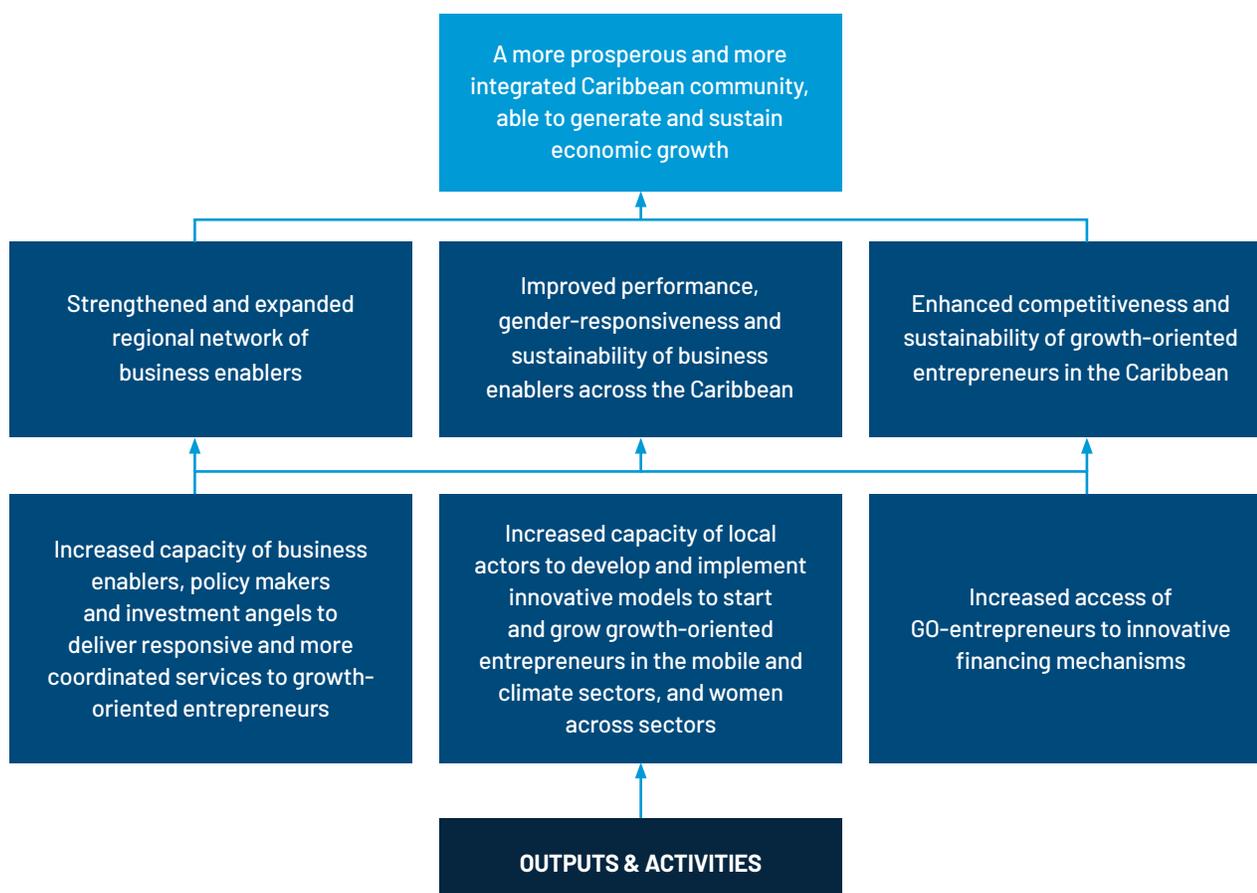
67 Ibid.

68 Drinkwater, S. et al. (2018). [Barriers to enterprise development in the Caribbean](#). Entrepreneurship and Regional Development.

69 infoDev. (2016). [Developing the Caribbean Entrepreneurial Ecosystem: EPIC Making its Mark](#). World Bank Group.

WHAT WE KNOW ABOUT CULTIVATING ENTREPRENEURIAL ECOSYSTEMS

The project purposefully integrated gender and climate and intended to “grow the pool of growth-oriented entrepreneurs, strengthen the capacity of enablers, and enhance access to finance.”⁷⁰



Source: (2019). [Final Evaluation Report World Bank Group – End-of-Program Evaluation of the Entrepreneurship Program for Innovation in the Caribbean](#). The World Bank.

The initiative successfully generated awareness of entrepreneurship and increased capacity of and collaboration among local enablers (for example, the first angel investor network was established by EPIC). There is also some evidence of increased competitiveness among firms. However, based on the program evaluation, the project’s potential impacts were hindered by insufficient effort to engage policymakers in sustaining the project and identifying revenue models to continue the work. In addition, the project aimed to impact multiple countries without sufficient customization for varying size, development levels, and ecosystem characteristics.⁷¹

70 (2019). [Final Evaluation Report World Bank Group – End-of-Program Evaluation of the Entrepreneurship Program for Innovation in the Caribbean](#). The World Bank.

71 (2019). [Final Evaluation Report World Bank Group – End-of-Program Evaluation of the Entrepreneurship Program for Innovation in the Caribbean](#). The World Bank.

ATTRACTING INTERNATIONAL STARTUP TEAMS:

SANTIAGO, CHILE

Over the last decade, the level of entrepreneurial activity in Chile has grown from 17% to 26% in 2020, peaking at 37% in 2019.⁷² This significant growth in entrepreneurship can largely be attributed to the creation of Start-Up Chile, a government initiative designed to attract international entrepreneurial talent and position Chile as one of Latin America's primary entrepreneurship hubs. The program applies a multifaceted approach by combining a coworking and incubator model with favorable policy changes and an ecosystem reinvestment strategy. Participants were initially offered an initial equity-free investment of US \$40,000 and a six-month incubation program⁷³ with mentorship and coaching, culminating in a demo day.⁷⁴

What is unique about the Start-Up Chile program is the requirement of participants to reinvest in the local community by earning "social capital points," which is accomplished when participants lead workshops, mentor local entrepreneurs, offer classes and hackathons, etc.⁷⁵ Having these international entrepreneurs engage the local population was a critical component of the government's strategy to bolster Chile's entrepreneurial culture. The government further leveraged its position by implementing entrepreneur-friendly policies that made immigration easy and simplified the process of incorporating in the country such that it could be done in a single day.⁷⁶

Since its launch in 2010, the program has garnered global recognition⁷⁷ and boasts some clear successes. As of 2018, over 1,500 entrepreneurs from more than 80 countries had completed the program and raised a total of more than US \$1 billion.⁷⁸ However, the program has hit some roadblocks in terms of economic impact. Due to Santiago's under-developed venture capital market (local investors tend to prefer locally-founded companies and require a large equity stake⁷⁹), most program graduates seek investment from outside the country and subsequently relocate, often to the United States.⁸⁰ To address this challenge, Start-up Chile created its SCALE program, which provides US \$100,000 to growth-stage companies that are willing to incorporate in Chile and remain for at least 12 months.⁸¹ Start-up Chile's founder noted that "we'll see the real impact of Start-Up Chile in 5-10 years from now, and maybe more."⁸²

72 [Entrepreneurial Behavior and Attitudes](#). GEM Consortium. Accessed 14 August 2021.

73 Programs now last four months and offer \$35,000 USD with a possible extension. See www.startupchile.org/apply

74 West, M. and Karsten, J. (2015). [Start-Up Chile: A "start-up for start-ups" in Chilecon Valley](#). Brookings Institution.

75 Ibid.

76 Ibid.

77 Ravanona, A. (2018). [How Start-Up Chile Put Their Ecosystem on the Global Map and Became a Benchmark for Other Countries](#).

78 Moed, J. (2018). [Start-Up Chile's Impact 2010-2018: Inside The Revolutionary Startup Accelerator](#). Forbes.

79 Feige, D. (2014). [Startup Chile: A Critical Analysis](#). International Affairs Forum.

80 West, M. and Karsten, J. (2015). [Start-Up Chile: A "start-up for start-ups" in Chilecon Valley](#). Brookings Institution.

81 Magee, C. (2015). [Start-Up Chile Launches Follow-on Fund to Boost Local Growth](#). TechCrunch.

82 Moed, J. (2018). [Start-Up Chile's Impact 2010-2018: Inside The Revolutionary Startup Accelerator](#). Forbes.

FOCUSING ON FRICTIONLESS REGULATIONS:

ESTONIA

Although Estonia is a small country relative to its European neighbors, it boasts the second-highest entrepreneurship performance in the European Union (EU).⁸³ However, it still has significant challenges to overcome relating to talent, innovation, and fostering a healthy environment for entrepreneurs.⁸⁴ In an effort to bolster the local ecosystem, the government implemented Startup Estonia in 2013, which takes a multifaceted, multistakeholder approach to attract, train, and finance entrepreneurs from outside the EU.⁸⁵ The intervention aims to reduce regulatory friction for startups, provide technical assistance, and connect participants with funding while educating local investors on how to best meet entrepreneurs' needs. It developed a Startup Visa program, easing the ability of foreigners to start businesses in-country, and a residents permit program that allows startups to recruit internationally. Over 1,000 entrepreneurs have benefited from the program, and another 1,000 founders and employees have used the visa support. It is unclear what the impact is on total startup activity, though this example is important to note given its focus on easing policy restrictions and increasing openness to foreign actors.

83 Muller, P. et al. (2021). [Annual Report on European SMEs 2020/2021](#). European Commission.

84 OECD. (2020). [International Compendium of Entrepreneurship Policies](#).

85 Ibid.

Conclusion

Entrepreneurial ecosystems are intricate webs of systems and actors with extenuating factors unique to each geography. There is no single recipe or pathway for ecosystem growth, making it difficult to isolate the most important factors on which to focus. However, in the past decade the evidence base on entrepreneurial ecosystems expanded significantly, and these resources illuminate several lessons for continued work to spur the development of nascent and growing ecosystems.

- + **Certain factors are common among well-developed, mature ecosystems.** The ecosystems that have reached maturity and are now well-known entrepreneurial hubs tend to have strong networks among entrepreneurs and institutions, an entrepreneurial culture, accelerators and other support organizations, accessible early-stage finance, and a supportive regulatory environment.
- + **Interventions should consider unique local characteristics when developing their strategies.** Just as ecosystems are not simple, interventions need to consider the interconnectedness of ecosystem elements and actors. Identifying the interventions already in place and finding ways to complement them rather than implement a standalone program is an example of this type of consideration.
- + **There is a significant degree of randomness and serendipity involved in entrepreneurial ecosystem development.** While some interventions have spurred growth, a more practical strategy for policymakers and donors is to focus on creating fertile soil as the outcomes will undoubtedly vary regardless. Building a strong foundation for the ecosystem will prepare it for the unexpected shocks and opportunities that may occur.

There is still much to be learned about cultivating entrepreneurial ecosystems, and further research should be conducted to continue understanding where resources should be allocated to fuel ecosystem development. Some key considerations for future research include how diagnostic tools can be used to develop effective interventions, how to identify leverage points, and how to mature the local investment market.



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