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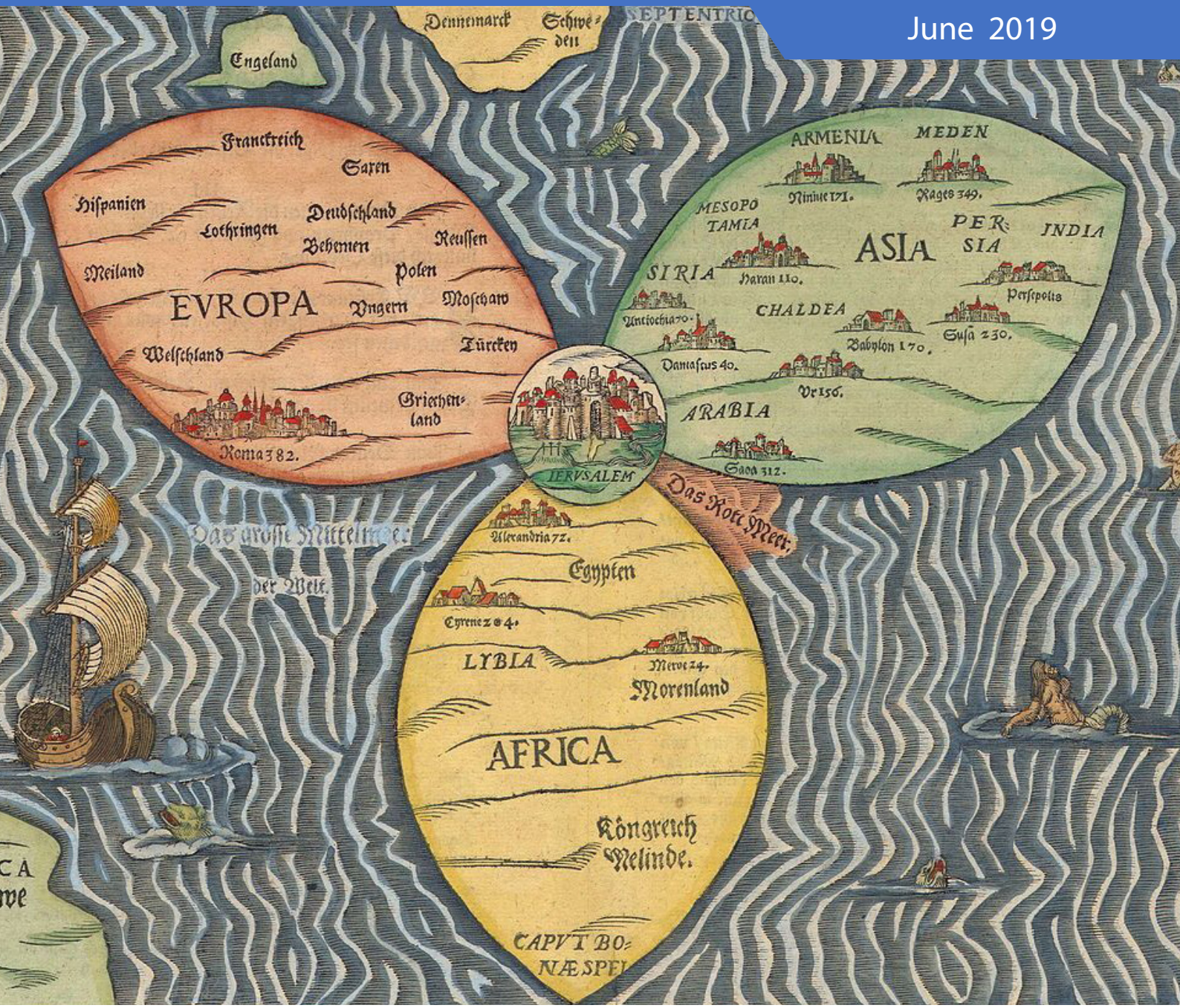

Designing an Israeli development financing platform:

Towards Sustainable Development Goals

Financial Innovations Lab® Report

BLUM LAB
FOR DEVELOPING ECONOMIES
JERUSALEM

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Jerusalem Institute for Policy Research
Milken Innovation Center

Cover: The Bunting Cloverleaf Map (Heinrich Bunting (1545-1606) is from the publication *Iteranarium Sacrae Scriptura (Travel Book through Holy Scriptures)* 1581 and depicts the continents of Europe, Asia, and Africa connected by Jerusalem, both physically and symbolically. His book of maps was the most immensely popular book of the early 16th Century. Bunting's famous 1581 Map depicted the world as a cloverleaf with Jerusalem as a midpoint between Europe, Asia, and Africa. From this transboundary Eastern Mediterranean passage through Jerusalem, between the desert and the sea, emerged writing, bookkeeping, agricultural, monotheism and other social and technical inventions that changed the world in antiquity.

Emerging from Israel's renewal as a modern nation in the global community, this Lab report seeks to support decision-making for the formation of Israel's development finance initiative to build new innovation road maps bridging economic, environmental, social and technological gaps for developing economies to meet sustainable development goals.

Acknowledgments

The Milken Innovation Center thanks the Blum Family Foundation and the Prime Minister's Office for their generous support of this project. We are grateful to those who participated in the Financial Innovations Lab for their contributions to the ideas and recommendations summarized in this report. Thanks to Ron Eifer and Tal Eshkol of the Prime Minister's Office. Special thanks are due to Glenn Yago, senior director with the Milken Innovation Center, and Steven Zecher, project director, for the research and preparation for the Lab, and follow-up and writing of this report. For their research and contributions to the policy discussion, we also thank Doron Koll, a Milken Fellow at the Ministry of Economy; Hadas Karshai, Milken Fellow at the Ministry of Finance; and Anat Carmel, Milken Fellow at the Prime Minister's Office, and also our gratitude to Dinah McNichols for her editing the final report. We would like to thank Leora Shoham-Peters for all the coordination, support, and planning for the Lab. We would like to thank the following international partners in this Lab for their support, Goldman Sachs Asset Management, Citi, International Finance Corporation, CDC Group, Milken Institute Center for Financial Markets, and the Overseas Private Investment Corporation.

Financial Innovations Labs

Financial Innovations Labs bring together researchers, policymakers, and business, financial, and professional practitioners to create market-based solutions to business and public policy challenges. Using real and simulated case studies, participants consider and design alternative capital structures, and apply appropriate financial technologies to them. The Lab was carried out under the auspices of the Prime Minister's Office and the Blum Lab for Developing Economies.

About the Milken Innovation Center

The Milken Innovation Center at the Jerusalem Institute focuses on developing market-based solutions to Israel's greatest challenges as it transitions from a startup nation to a global nation. Through the Milken Fellows program, we train some of Israel's best and brightest young professionals in creating pragmatic financing and economic policy solutions, and then deploy them as resources to government ministries, nonprofits, and other key organizations. Our applied research and Financial Innovations Labs serve as a launching pad for transformative change, using innovative financing mechanisms, programs, and policies to bridge social, regional, economic, and technological and productivity gaps within Israel and between Israel and the world. Our goal is to accelerate economic growth, build human capital, and cement Israel's role as a pioneer in addressing global challenges in water, food, education, health, and energy with solutions that others can replicate.

About the Blum Lab for Developing Economies – Israel

The Blum Lab for Developing Economies is part of the global network of Blum Centers for Developing Economies based at the University of California-Berkeley enabling interdisciplinary problem solving in key areas of energy, health, technology, food, water, health, and other challenges to sustainable development.

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Executive Summary

Israel's dazzling success in high-tech innovation has diverted attention from issues that threaten its long-term economic growth. Over the past decade, growth has been driven by investments in people and technology. Meanwhile, exports as a percentage of GDP have declined by nearly a quarter, as Israel's traditional trade partners, mostly mature economies in Europe and elsewhere, also show signs of slow growth and productivity. Declining goods exports reflect a sharp decline in labor productivity and employment in tradable goods, and the disadvantage to export services—a dangerous spiral that needs immediate correction.

Yet the Israeli firms most likely to succeed at exporting their innovative technologies to new markets come up against the limited access to these markets and high costs of capital.

Essentially two key dimensions are missing:

1. Need to leverage public and private funding to help Israeli business and capital markets participants expand their access to fast growing emerging country opportunities.
2. Need for a "one stop shop" for catalyzing and channeling such financing as well as for project development assistance and technical support in the preparation, development, structuring and implementation of projects in emerging markets.

To scale up its success as a technology innovation leader and achieve the growth necessary to ensure future security, Israel must acquire new trading partners for developing its high-tech know-how. These will be the fast-growing developing markets, mostly in Africa, Asia, and Latin America, that are already responsible, in the aggregate, for nearly 60 percent of the global economy. As they participate more in global trade, their middle classes grow and, the aggregate demand for all goods and services rises. Yet they too face risks to sustained growth, including demographic shifts toward much younger populations who need education, training, and employment; and the challenges of climate change affecting resource demand and internal migration. Even though these countries witnessed increased inflows of foreign investment, those investments are rarely channeled into the kinds of infrastructure that will help them achieve the UN's Sustainable Development Goals---investments in human capital, technology and the environment. Moreover, capital flows to these important developing economies are trending downward, resulting in recent underinvestment. Israel's initiative into international development leverages not only finance, but technology to increase resources for achieving the SDGs and the importance of Israel as a trade partner eager for co-innovation, disruptive technologies, and cooperative relations for growth.

Israel is well positioned to transfer technology solutions to new startup nations. It has operated like a "Global Laboratory". It draws from its own experience with scarcity since the state's founding to help them participate in sustainable, knowledge-based growth. Its own story exemplifies how ingenuity overcomes adversity, deprivation, and isolation. It has faced numerous challenges they face today—including of health and education; water, energy, and food security; and the related cybersecurity needs in these areas—and answered them all with cutting-edge, high-impact technologies that can be delivered elsewhere. Its companies are adroit, quick to test, adapt, and innovate. Their greatest problem is not even of their making: it's how to compete for investment dollars by generating investible projects attractive to large institutional investors—and how to overcome the high costs of doing so.

The Government recognizes that strengthening Israel's trade role in international development—and, specifically, the role of its export entrepreneurs—is the only sure course toward strengthening both

the economy and creating enduring ties of economic cooperation. To determine what kinds of programming and financial structures would best support the ability of private firms to export their projects, products, and services, the Government issued Government Decision No. 4021 in July 2018, with the most far-reaching and crucial element of that mission to date: exploratory work toward the creation of development financial institution (DFI).

This is a financial facility, government-sponsored but independently run, that would invest in and offer support to private Israeli firms' projects, products, and services that promote sustainable growth in developing countries. Because investors and businesses alike are generally reluctant to target these kinds of projects in these markets, they need financial tools—including equity, guarantees, loans, and bonds—specially designed to address flexibility, growth, and returns to compensate for the development, currency, environmental, and performance risks. The resulting projects will be structured to crowd-in private capital to leverage government-sponsored investment and guarantees toward this objective of international development.

This is where a DFI excels. Israeli businesses, most of which are small and focused on small-scale projects, cannot compete for funding with firms from other countries. The innovative nature of their high-tech work requires risk mitigation to lower the cost of capital for projects delivering technology transfer and increase efficiency. Except for export trade credit in the form of bank loan guarantees, they have no other access to domestic capital for larger projects that generate demand for a portfolio of technology solutions. Some companies may be able to secure specialized financing from sources outside Israel, but they are the exceptions. A DFI would allow for the organizing, or "pooling," of multiple projects to create a portfolio of investments that distribute and share the risk and returns. In sum, the DFI would address the unique barriers and opportunities for Israeli businesses; adapt solutions tailored to them; and provide financial instruments that reduce investor risk and capital costs.

Israeli-based financial instruments will level the playing field for local companies by enabling them to draw more private and foreign capital due to the decreased risk, and to create capital structures that enable better margins for project performance, affordable capital for projects and end users, and allow competitive returns to investors.

The DFI being explored would offer more than financial instruments as well. In keeping with other DFIs that have been launched (or are being redesigned and renamed for "relaunch") in recent years—in Canada, the US, and, as in Israel, under consideration in Australia, for example—the Israeli DFI would offer technical, financial, management, and advisory expertise and services throughout the life of a project, from design and development through implementation and operations.

In addition to building economic growth at home, the DFI will bring significant value added through financial diplomacy that supports technological and economic development and fieldwork promotion.

This report that follows is based on a Financial Innovations Lab held in January 2019, hosted by the Milken Innovation Center/Blum Lab for Developing Economies and the Prime Minister's Office. It describes market conditions for Israeli companies, projects in developing economies, lessons from best practices among DFIs, and the recommended DFI structure for Israel.

Introduction

On January 8, 2019, in a joint venture with the Prime Minister's Office, the Milken Innovation Center/Blum Lab for Developing Economies hosted a Financial Innovations Lab to explore the creation of an Israeli development finance institution (DFI). The Lab was attended by 52 professionals from Israel and abroad, from both multilateral and bilateral DFIs, international financial investors, think tanks, investment banks, global banks, and philanthropic foundations. The international participants included:

- Orli Arav, Managing Director and Founder, EMFin Advisory
- Aron Betru, Managing Director, Center for Financial Markets, Milken Institute
- Colin Buckley, Chief Operating Officer, CDC Group Plc.
- Amanda Fernandez, Director, Palladium; Project Director, FinGAP Program, Peru Cocoa Alliance, and Kenya Investment Mechanism, USAID,
- Martin Habel, Manager of IFC's Treasury Clients Solutions team for Africa, Europe, Middle East, and Central Asia
- René Karsenti, President, International Capital Markets Association and former CEO, European Investment Bank
- Michael Kashani, Global Head of ESG Portfolio Management, Fixed Income, Goldman Sachs Asset Management
- John Finnigan, Head of Development Organization, Corporate and Investment Banking Division, Citi
- Trang Tran, Manager of Design Funding Program, Convergence
- Charles Bleehen, Senior Advisor on development financing to the Bill & Melinda Gates Foundation, Larry Ellison Foundation, and the Global Agriculture and Food Security Programme, World Bank Group.

The Lab discussion centered on the need for, advantages of, and design elements of an independent DFI whose sustainable capital structure and blended financial instruments (equity, debt, and guarantees) can meet the needs of private businesses involved in key development sectors, and draw private capital into Israeli-sponsored project partnerships.

This Lab report consists of four main sections. Section I addresses the general need for development finance, including the partnership role of private-sector capital, barriers to attracting private capital to development finance, how countries have responded to this need by creating and re-engineering existing development finance institutions, and why Israel needs its own DFI.

Section II addresses the range of financial instruments used in various markets, how they can increase the flow of capital, how they work, and how they help fund projects.

Section III focuses broadly on some existing DFIs, their structures and missions, strengths and weaknesses, and lessons learned from them for designing an Israeli DFI.

Section IV uses examples of successful DFIs to illustrate how they are organized, governed, funded, and managed. It also proposes several design scenarios for consideration, and the steps for moving forward on design and implementation.

I. Confirming the need for development finance

Introduction

Development finance targets sectors vital for growth in emerging and frontier markets. But it isn't just for developing countries anymore. There are reasons many governments, from the US and Canada to Portugal and Belgium, sponsor development finance institutions. They recognize foremost that poverty, disease, climate change, and food and resource scarcity all speak to the urgent need for sustainable economic and social development. The repercussions from a collapse of habitat or of civil society increasingly move beyond the national tragedy into the realm of regional and global risk.

Governments also see the emergence of large new multilateral DFIs and ambitious global initiatives, and lateral trade shifts, from traditional north-south to south-south partnerships; and they speculate about what these mean for future political alliances and foreign relations.

But they also see another side to the development story, and it speaks to opportunities and outcomes. They know that developing countries will become both producers and consumers in the world economy. And they are finding ways to help them get there that will help businesses and market sectors at home.

A. A bigger role for private-sector activities in development finance

Global Overview

In 2010 or so, the world's developing markets began to surpass developed markets in economic output. Today they account for nearly 60 percent of the global economy, and their share is expected to reach 66 percent by 2030.[1] Despite the recent global economic slowdown, both developing and emerging economies are still expected to grow at a faster rate (4.2–4.6 percent) than advanced economies (2.8–2.9 percent).[2] By 2030 they will likely be responsible for 70 percent of the growth in global output.[3]

This increasing role in global markets means that they are attracting massive inflows of private capital. Globalization, of course, is creating a global middle class, especially in Africa and Asia. In fact, the middle class, and mostly in developing economies, will make up most of the world's population by 2020.[4] By 2030, this expanding demographic is expected to spend $53 trillion a year, or $29 trillion more annually than it does now—about one-third of the global economy.[5]

But the massive inflows of private and commercial investment that are pulling many of these countries into the global marketplace rarely target the development of a pipeline of investible projects that will propel long-term growth. They have been less likely to invest in impact for sustainability—renewable energy, agriculture, water, health care and well-being, for example. Those are the kinds of investments generally associated with higher-risk and slower, lower returns, and have until recent years been the purview of government- or philanthropic-backed development aid or investment.

Yet despite that early lack of private-sector interest in sustainable investing, "ultimately, sustainable development will require investments of all kinds: public and private, domestic and international. It requires the best possible use of each public dollar. … Capital for development also needs to include

domestic and foreign direct investment, bonds, bank-lending, and philanthropy, all of which can be mobilized and used … through innovative financing models."[6]

And in recent years DFIs have responded by moving beyond their traditional finance structures to attract private and institutional investors. Those traditional structures were limited to the simplest financial instruments, such as grants and concessional loans, i.e., loans whose generous terms permitted interest subsidies or forgiveness, and longer repayment periods. As such, the private sector showed little interest. Today's DFIs, however, not only offer sophisticated, risk-adjusted and layered financial instruments and investment pipelines, but they bring a focus on offering management and technical expertise through project's life. They have partnerships with one another, with multilateral finance institutions, with institutional and other private investors, and philanthropies—and they are bringing a financial boon to industries at home. Israel is not alone in investigating the benefits of a DFI. Australia, for one, is doing the same.

Institutions that supply or supplement development finance

- Private, for-profit investors seek market-rate, risk-adjusted returns on their investments.
- Philanthropic funds can be structured as feasibility grants, proof-of-concept grants, and credit enhancement in blended financing. These tend to support NGOs.
- Export credit agencies (ECAs) provide trade credit guarantees on bank loans to existing exporters. Do not technically offer development finance but do offer guarantees, credit, and insurance to support domestic exports.
- Multilateral development agencies are the large financial institutions that anchor development financing. They offer a variety of financing tools for development financing.

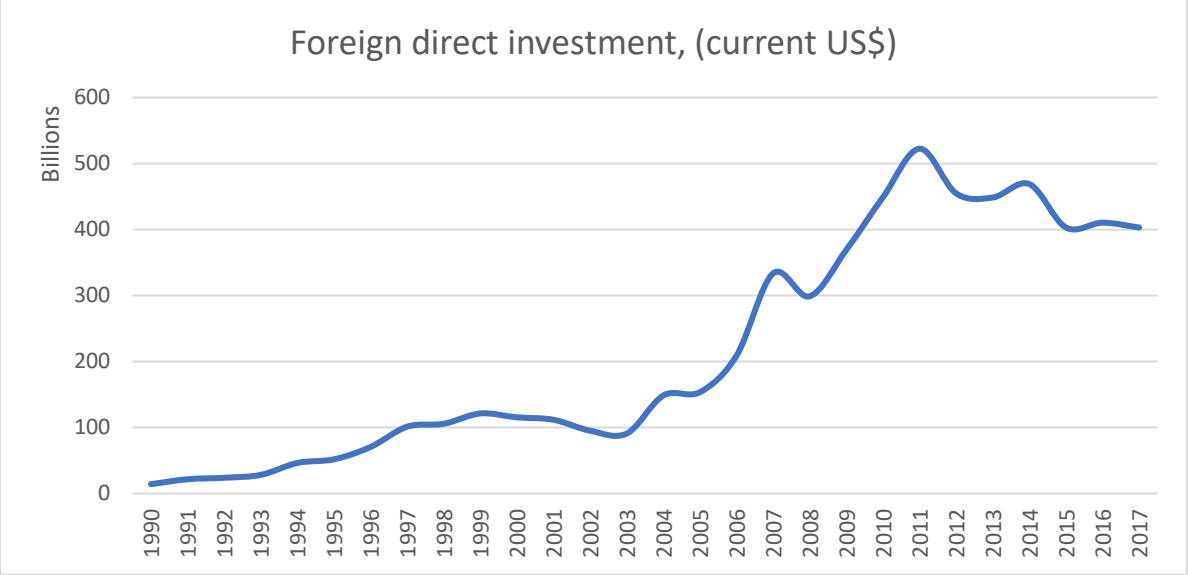
  Development financial institutions (DFIs), are the focus of this investigation. These are government-sponsored financial platforms that provide financing and technical services for investors and projects in developing economies. They are established as publicly supported, private corporations, and ownership may be held in part by the public. They operate under the regulations of the national government.

The new and re-engineered structures have spurred prodigious flows of private capital into these DFIs for development investment.[7] "Since 2002," according to the Center for Strategic and International Studies, "total annual commitments by all DFIs have grown from $10 billion to around $70 billion—an increase of 600 percent. … Official development assistance (ODA) grew by just 50 percent during the same period: from $88.6 billion in 2002 to $137.2 billion in 2014."[8]

From 2012 to 2017, assets of bilateral DFIs grew about 57 percent, from $41 billion to $65 billion.[9] It is said that every dollar now invested by a DFI leverages $12 more in private capital.[10]

And there is a lot of private capital available. Global banks, for example, hold $9.9 trillion in cash; $8.0 trillion in fixed-rate bond financing trapped in negative yields; and $5.2 trillion over the regulatory minimums. Similarly, other international institutional investors and global asset managers are similarly underinvested in developing economies. Many of the important drivers of global investment are under threat as trade tensions and sluggish productivity growth dampen growth.[11] This "dormant" capital could be placed into high-yield social, sustainable and green investments though innovative structures that account for the pricing and risk-and-return profiles of the various capital sources. But it comes in off the sidelines to target development finance only as risk is property addressed.

Figure 1. Foreign direct investment in developing economies



Sources: World Bank, Milken Innovation Center
Note: Developing countries include sub-Saharan Africa, low-income East Asia, India, and low-income Central and South America.

Israel Overview

This coupling of great need with great potential forms a sweet spot for many Israeli firms and sectors positioned to help developing nations participate in sustainable, knowledge-based growth. Many of them have expertise in the very fields and technologies for which there is greatest need and demand.

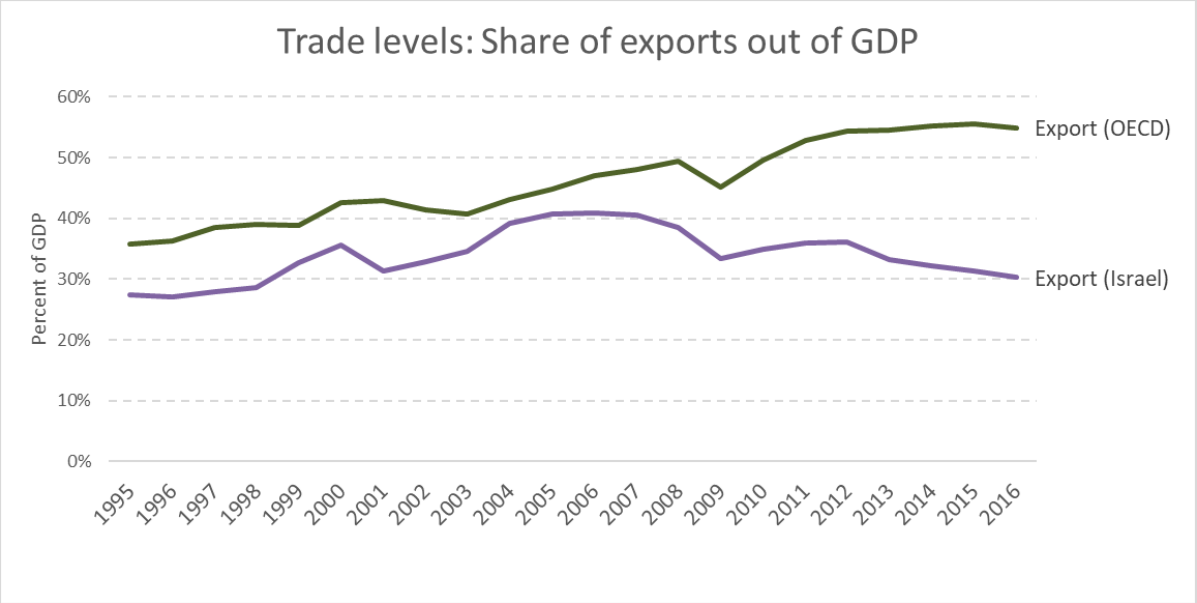
Yet these same firms have trouble moving forward with their projects. The financial costs of scaling up for export and technology transfer are prohibitive, and they face international competition from overseas DFIs that already have access to private-sector capital and technology investment pipelines.

Also, there is currently a limited interest and capital available for financing such projects by Israeli institutional investors, philanthropic institutions as well as Diaspora investors.

The decline we are seeing in the national economy can be attributed directly to a sharp decline in foreign trade that has ripple effects across industries. Israel's foreign trade has been in an accelerated drop with little recovery since 2012. By 2017, it had undergone a dramatic 23 percent drop for the period. Relative to GDP, its trade stands at half the OECD average.

As shown in figure 2, Israel lags behind the OECD average in the share of exports as a percentage of GDP. The bulk of its exports, 75 percent, are shipped off to developed countries whose markets are aging and also declining. In another example of high concentration, only ten Israeli companies account for 47 percent of Israeli exports. Of its tech companies, only 13 percent are in the water sector, 10 percent in renewable energy, and 7.5 percent in agritech.[12]

Figure 2. Israel's share of exports to GDP compared to OECD average



Sources: Milken Innovation Center, Taub Center, World Bank, BOI Annual Report, 2017

The truth is, Israel must diversify into young, expanding, new developing markets, or its export market will continue to shrink. It must also increase the number of exportable technology sectors, or it will continue to experience drops in productivity and income equality, and shed the growth that lends strength to its economic security.

Technology Overview

Understanding the role of technological innovation in trade, development, and environmental economics will be key to creating the drivers of inclusive global growth, notes Paul Romer, recipient of the 2108 Nobel Prize in Economic Sciences.[13] This can mean, for example, thinking creatively to find and fund cross-industry uses for particular inventions, or modifications of those inventions. Every day we seem to see novel applications of computer science, communications and telecommunications, and the biosciences that address traditional challenges of food scarcity and agriculture, energy access and renewability, water and sanitation, construction and infrastructure, and global health. Many of these technologies were developed in Israel, and are essential to Israel's export-led growth.

Thinking about the role of technological innovation means redefining the boundaries between industrial sectors and looking at how disruptive technologies can reduce costs and increase productivity along global supply chains. As innovative industries scale up, they become more competitive and can leapfrog entrenched firms. "[W]hat high-growth countries typically have in common," writes Dani Rodrik, "is their ability to deploy policies that compensate for government and market failures that block structural transformation [i.e., technology transfer, the movement and reallocation of labor and resources]. Countries that manage to affect the requisite structural change grow rapidly, and those that fail don't."[14]

In the coming decade, Israel's choices in its capital and technology investments will lock in energy, urbanization and demographic trends for the rest of the century—which brings us back to a point that

bears repeating: Israel can only maintain its competitive edge in technology if it links trade and development finance, and directs both toward fast-growing emerging and frontier economies looking for robust sustainable growth. New customer acquisition through new trade partnerships with young economies will secure Israel's future as much as theirs.

As noted, Israel's technology innovators have produced solutions to our own historic challenges of isolation, food and energy scarcity, and environmental and economic sustainability. Having grown ourselves into an export-led startup economy, we now need to develop the capacity to leverage our wealth of human capital with development finance as a springboard for technology transfer opportunities.

The Government has announced commitments to help domestic firms build stronger economic ties with developing markets, particularly in India, China, Southeast Asia, Latin America and Africa. In the future, advances might also be made through the Middle East and North Africa Region as well. But Israel has a long way to go; the trade decline since 2012 is deeply concerning, an indication of its diminishing role in the nation's economy and the risks ahead.

B. Challenge and opportunity

It is important to address need in the developing world, but not to lose sight of it in Israel. As we listen to people talk about Sustainable Development Goals, we must remember that challenge gives the gift of opportunity.

The Sustainable Development Goals grew out of efforts to create guidelines for self-sustainable development programs that culminated in 2015 as part of a resolution to which every UN member was a signatory. The SDGs comprise 17 broad-based objectives and hundreds of specific targets and metrics, among them economic growth and productivity; technology innovation in health care, IT, communications; sustainable agriculture; infrastructure for clean, affordable energy, water, and sanitation facilities; and natural resource management.

The enormity of the need in some regions is such that estimated annual costs through 2030 will run between $5 trillion and $7 trillion, according to the UNCTAD, the UN Conference on Trade and Development. Yet official SDG funding receipts for 2017 totaled just $147.2 billion in official development assistance (ODA). Foreign remittance (i.e. pay sent back home), totaled another $613.0 billion. (Brookings estimated ODA at $160 million in 2018, but trending flat.) The funding gap is a chasm, really—a shortfall of trillions of dollars that cannot be met with official development assistance alone.

This is the gap that private-sector development investing has recently begun to target, and Israel should take its place among developed nations with DFIs. As in those countries, a dedicated facility would reduce the cost factors for domestic firms wishing to expand their SDG-related products and services, and for the developing-country businesses and communities with which they could team, and help build stronger growth trajectories for both. In addition, the facility would strengthen the larger economies, both at home and among Israel's development partners.

Israel possesses competitive advantages in eight of the UN's 17 SDGs: hunger, health, education, clean air and water, clean energy, sustainable cities, climate action, and partnerships (see figure 3). Each requires an integrated approach that includes applying precision technologies to new environments,

developing models for sustainable production and delivery, and discovering economic efficiencies, equity, and growth along global supply chains.

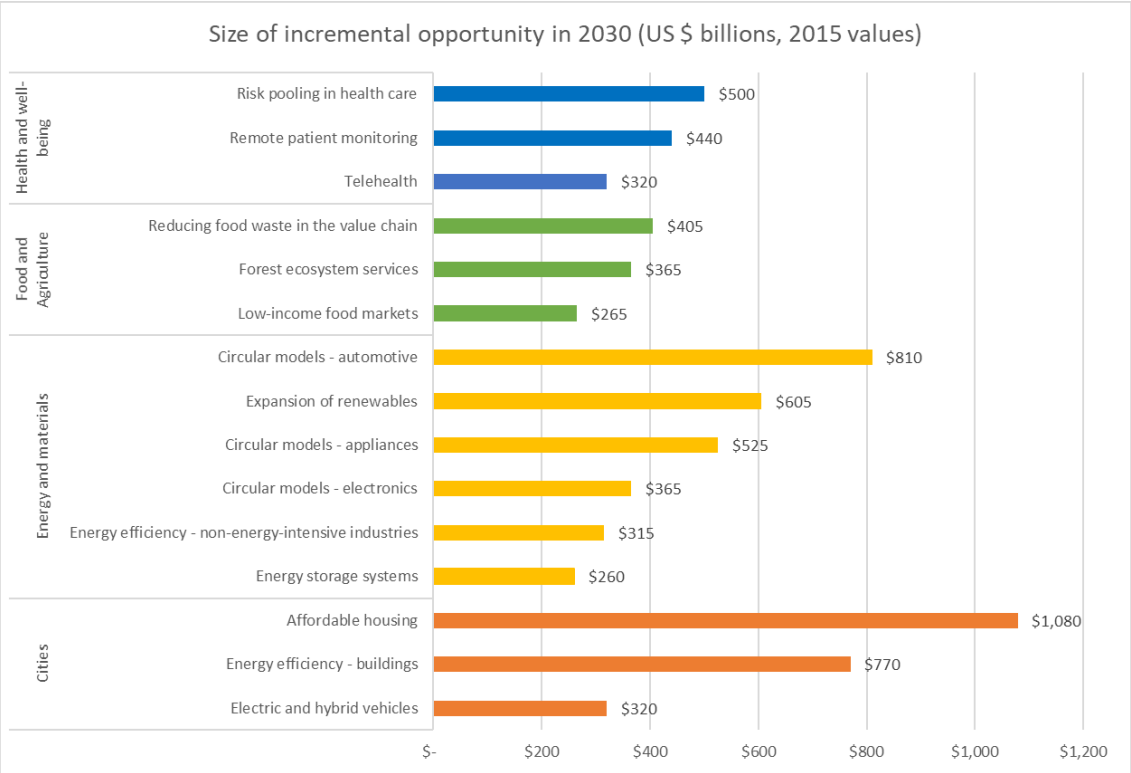
When one considers Africa, Asia, and other regions of the developing world, it is impossible to dismiss the enormity of what Israel stands to gain by investing more in emerging- and frontier-led market demand:

- Developing countries, mostly in Africa and Asia, are experiencing the largest waves of urbanization in history.
- By 2030, more energy, water, transportation, and information/telecommunications infrastructure will come online, and mostly in these economies, than the world's existing stock.
- Their demand for sustainable food and agriculture production will rise 60 percent.
- They will need to integrate digital health and biomedical products and services to address pandemics and health security, antimicrobial resistance, chronic and non-communicable disease, affordable access to health services, and other health challenges.
- They will need enhanced cybersecurity for the production and service delivery for all critical infrastructure, e.g., energy, water, food, and health.

Africa is a case in point for a greater Israeli presence. Its potential for economic growth is immense. From 2005 to 2015, according to the Global Impact Investing Network (GIIN), direct foreign investment there, either through development finance institutions or non-DFI impact investors, totaled more than $9.3 billion targeting Kenya (50 percent); Uganda (13 percent); Tanzania (12 percent); Ethiopia (7 percent); and Rwanda (4 percent). Most investments went toward financial services (30 percent); otherwise, DFIs tended to target energy and infrastructure, while non-DFI impact investors tended toward agriculture and affordable housing.[15]

For the same period in West Africa, GIIN reports, more than $6.8 billion for 394 deals was disbursed, almost exclusively by DFIs, and mostly in Nigeria and Ghana.[16] Those investments targeted energy, manufacturing, and infrastructure, while the non-DFI impact investments were primarily in financial services. More than half of the DFI deals are above $50 million, and almost all were deployed as debt. The DFIs made investments through intermediaries that accounted for 34 percent of the total capital deployed, usually through commercial banks for the purpose of lending those funds to SMEs (as well as well as to impact funds and private equity funds). The untold story is that the developed countries that sponsored the DFIs gained access, knowledge and relationships vital for continued cooperation.

Figure 3. Global business opportunities in SDG sectors



Source: Valuing the SDG Price, Convergence, 2018

This is the kind of engagement and relationship building that Israel is missing out on. A development financial facility would go far to address and allay wariness about investing in these regions. And, yes, risk is everywhere. Some investor concerns are noted here, taken from a 2015 OECD-WEF cited earlier. Among them we quote:[17]

- *Returns appear too low for the level of real or perceived risk*. Private capital providers have a fiduciary duty to maximize risk-appropriate returns while ensuring capital is preserved. … If risk-adjusted returns are less attractive relative to other markets, investors will not allocate capital.[18]
- *Markets are not functioning efficiently*. Local financial markets in emerging and frontier economies are often in a much earlier stage of development than in developed countries, and thus lack the infrastructure, expertise, deep pools of capital, and seamless connection of supply to demand required to function efficiently.
- *Knowledge and capability gaps of private investors*. In many cases, private capital providers lack the in-depth understanding of emerging and frontier markets or sector expertise … to accurately assess risk and make informed investment decisions, increasing the cost of investment and reducing the likelihood of success.
- *Limited mandates and incentives to invest in sectors or markets with high development impact*. Private-sector investors often lack explicit or flexible mandates to invest in emerging and frontier economies and/or in sectors that have potential to deliver social, environmental and economic impact.

In the four years since that report, DFIs are addressing investor concerns about risk and return via greater choices of financial instruments and by creating pipelines of investable projects that range across SDG sectors and markets.[19] This "blended" finance in a single transaction creates an affordable

and sustainable capital structure. Often blended financing deploys a small layer of impact funding (which is more flexible and risk-tolerant) to leverage a larger, conventional, risk-adjusted layer of market-rate financing. This leverages both equity and concessional capital. DFIs with access to blended finance can now make loans, loan guarantees, and equity investments; they can issue risk insurance and authorize feasibility studies for planning and development of bilateral and multilateral projects.[20]

Equally important to the DFI design are the expertise and service, in technical, financial, and project management, that would accompany a project though its various phases, from design and development through implementation and operations.

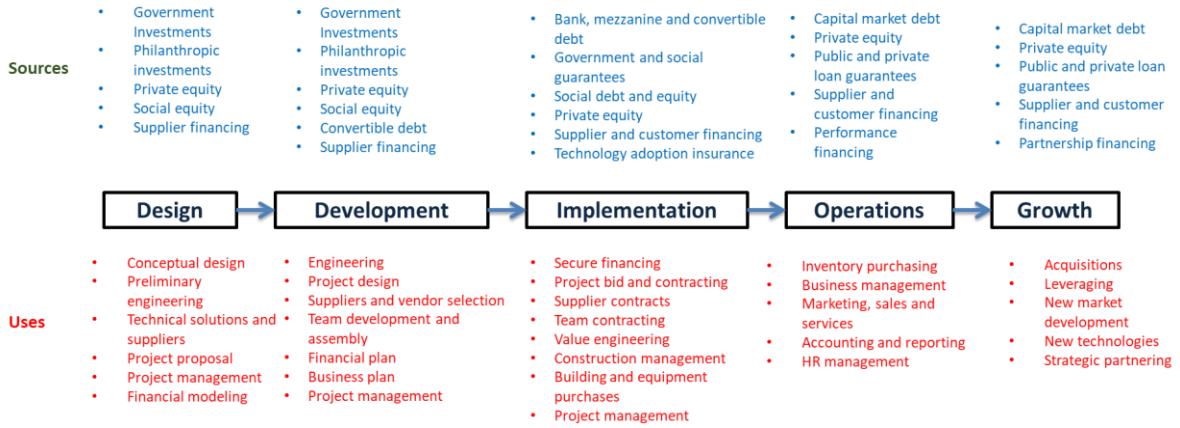
In sum, today's publicly sponsored DFIs provide (1) additionality, i.e., private capital investment that wouldn't be available otherwise, and (2) sustainability, with projects that offer independent economic returns, lessening their reliance on development assistance. The private capital DFIs catalyze reduces the borrowing costs for projects, products, and services that offer sustainable economic growth for developing countries and Israeli businesses, and positive returns to investors.

Lab participants discussed the stages of project development, and the associated sources and funding needs at each. These five stages (D-D-I-O-G, as a mnemonic) will figure throughout this report. They and the functions associated with each are as follows:

- Design: Understand the need or market gap to fill. Have a conceptual design of technologies that may be integrated to meet demand. This early design work is often the most crucial for sourcing possible solutions and their implementation.[21] Typically, financed through a combination of public, philanthropic, and private and social equity.
- Development: Begin engineering, sourcing, and vetting suppliers; develop business and financing plans. Build the project team, design the financial structure and revenue model, and identify and contact financing sources for the subsequent phases. Usually financed through a combination of public, equity, and convertible debt (which may become equity).
- Implementation: Launch the project with secured commitments for financing, contracting, team organization, and purchases of equipment and related construction; manage and execute the project. Financed through bank debt, philanthropic and public subordinated debt, and private equity.
- Operations: Begin ongoing operations. Manage business practice, personnel, inventory, and sales. Operating costs are usually financed through longer-term capital market debt, equity, and public guarantees.
- Growth: Long-term operations and scaling up; find and implement strategic partnerships with suppliers, competitors, and customers; adapt technologies as they advance; expand into new markets. Usually financed through long-term capital market debt financing, equity (usually through new partnerships), and public and private loan guarantees.

Each of the phases, including the activities and sources of funds, is described in Figure 4. The financing applicable to each phase is described in greater deal in Section II.

Figure 4. Sources and uses of funds



Source: Milken Innovation Center

C. The case for Israel's DFI

Israeli technology companies face similar funding hurdles as do companies in emerging markets. It remains onerous, if not impossible, to obtain commercial bank financing for scaling up local projects. For Israeli firms, funding to expand in foreign markets is limited to export trade credit, which does allow for deferred payment, but at a too-short term, usually less than a year, and is restricted to doing business in too few countries. Banks generally play limited credit roles in development finance because the costs to set aside capital to compensate for risk are too high, said Lab member John Finnigan of Citi. Institutional investors, such as pension and insurance funds, may invest in developing economies, but the amount they invest is limited to about 2 percent of their assets.[22] A development financial facility with reduced risk for private capital would enlarge the pipeline of funding and Israeli projects, products, and services.

Domestic Productivity

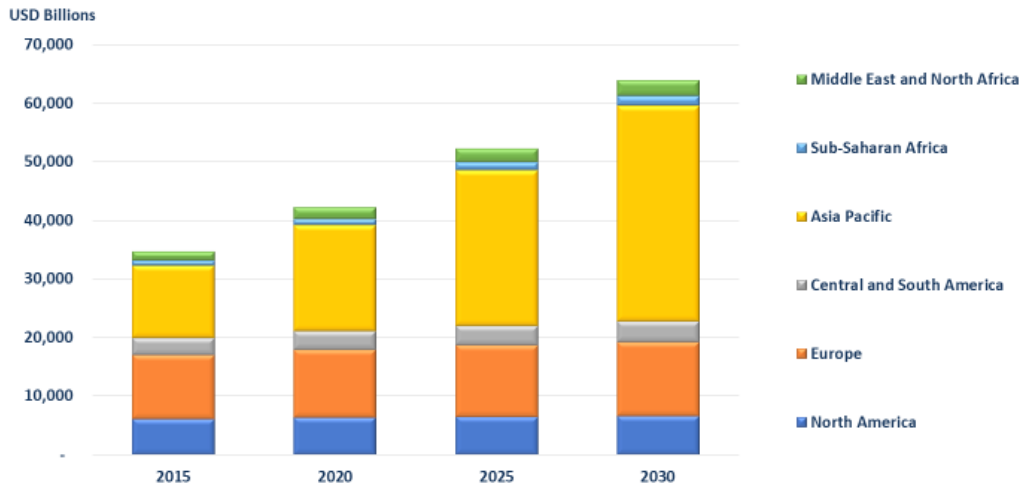
As noted, Israel's foreign trade decline reflects its underperformance in developing markets, as well as the dearth of tradable goods and services across large sectors of the economy. This gap in productivity since the economy peaked a decade ago accounts for the lion's share of income inequality and the absence of inclusive growth at home. Both the Bank of Israel and the OECD note the following barriers to sustaining the kind of economic growth that made Israel famous. [23]

- Exports are concentrated in shrinking markets; only 25 percent go to developing markets.
- Employment is concentrated in sectors that aren't exposed to emerging and frontier export markets; instead, they contribute to low labor productivity.
- Technology services have been neglected in export trade promotion
- Too much reliance is placed in technology startups, an area of increasing volatility, rather than scaling up existing firms for new markets.[24]

The OECD's macroeconomic analysis of Israel's economic growth based on the main factors of production—employment, human capital, private capital, and total factor productivity—examines the gap between Israeli and benchmarked OECD countries (the upper half of the OECD, for example, and of the OECD average).[25] Since the number of hours worked in Israel is similar to that in the benchmarked countries, Israel's lower per capita GDP (30 percent lower) correlates with its lower hourly productivity in output (41 percent lower). The Government's level of spending on public services as a percentage of GDP was about half that in benchmarked OECD countries and below the OECD average.

These data indicate that the high cost of capital, i.e., the cost that justifies the actual level of private capital investment, is responsible for 48 percent of the productivity gap. The lost potential, mainly in traditional manufacturing, construction, commerce, and services, is consistent with the numerous findings that the productivity problem mainly derives from non-tradable industries, meaning they are produced mainly for the local market.[26]

Figure 5. Where new customers are to be found



Source: Brookings Institution, 2017

Export assistance and finance

In 2018 Israel dropped overall in the World Economic Forum's "Global Competitiveness Report" rankings of 140 countries. Although Israel scored well for innovation (16th), it fell four places, to 20th, in just one year, across overall rankings, based on numerous business, financial, institutional, infrastructure, and social indicators. Many of its lower competitiveness rankings relate to issues pertain to gaps in development finance: the ease of receiving credit (45th); regulatory bureaucracy (59th); complexity of fees and payments (81st); and simplicity of export/import duties (81st).[27] In 2018 rankings by Thomson Reuters, Israeli financial institutions didn't break into the lists of the top 24 in either mandated arrangers or book runner categories in project finance.[28] Israel's five largest industries are concentrated in non-tradable goods and services sectors, and are responsible for 81 percent of the country's widening productivity gap, according to BOI.

Some excellent export assistance programs do exist. The state-owned Israel Foreign Trade Risks Insurance Corporation (now called ASHRA) provides limited credit insurance and guarantees for

commercial bank export loans. These guarantees cover medium- and long-term export credit transactions (from one to fifteen years) and Israeli investments abroad. ASHRA's income consists mainly of premiums, with no transfers from the Government. Its guarantee exposure is limited to $3.5 billion. If exporters achieve a minimum domestic content of 40 percent, private credit insurance companies can obtain reinsurance from the Ministry of Finance for short-term export transactions; the reinsurance limit is up to 50 percent of the original insured amount.[29]

In addition, the Government assumes long-term risk to "top up" risk taken by private companies (up to 33.3 percent), to a limit of $1 billion. Yet even with these assurances and the Israel Export Institute's support and promotion, export financing remains limited. Over 80 percent of all export finance activity is still short term, inflexible, and concentrated in a few countries. Long-term foreign trade insurance capacity (at 0.15 percent of gross national income, formerly GNP) is less than half the global average (1.2 percent).

Clearly there would be advantages and synergies if ASHRA and other existing facilities be absorbed within the new DFI as a "one stop shop" (see Technology Transfer Platform chapter as below)

And even though Israeli SMEs generate 42 percent of the national volume of exports, paradoxically, only 15 percent of them export at all, due to their limited capacity and financial resources.[30] These firms receive disproportionally smaller shares of export financing, which is limited to buyer's credit, credit lines, letters of credit, and promissory notes oriented toward goods exports. For firms wanting to enter developing-country markets, the better determinants would be ratings for the project, its impacts, and related services.

Israel's total export elasticities suggest considerable room for growth and improvement by new development policy initiatives based on higher export insurance ceilings, new free trade agreements, and expanded development finance to projects and programs targeting developing economies.[31]

Israeli exporters, investors, and tech companies at the Lab reported that they routinely miss out on development project opportunities because of problems with initial project and trade financing at home.[32] The equity financing they need (at times as high as 70 percent of the total project cost for early phase work), the absence of programs and services (a platform) that could help invest in and manage these types of projects, and the prospect of returns (relative to alternatives closer to home) limit the availability of equity for their projects. As for bank financing potential, as noted, development projects don't conform in terms of amounts, loan-to-value ratios, and the liquidation value of collateral in a foreign country.[33]

Israel lacks finance programs, along with programs that help coordinate trade, investment, and technology transfer. Equity, subordinated debt, guarantees, loss reserves, insurance, and other forms of risk-mitigation just aren't available to Israeli firms. As a consequence, they have no access to those massive capital flows into DFIs that are available to their international competitors.

This leaves the startup nation at risk of becoming a "left-behind nation," in part because the low-growth segment of the economy is not exposed to trade and export. The returns to Israel's high levels of human capital are dismal: less job creation and financial inclusiveness, more income inequality, a lower standard of living.[34]

Government Decision 4021 and the inter-ministerial committee created to address this issue will look at the state of development efforts, which are often siloed within ministries and agencies. The focus of an Israeli development finance platform should be to catalyze capital access for Israeli businesses and their development-partner firms, institutions, and non-profits.

There is enormous reason for optimism. In 2018 the concept of sustainable development investment moved into the mainstream. The institutional investors who are signatories to UN agreements have committed to integrate environmental, social, and governance factors into their investment decisions. They now manage combined assets of $83 trillion.[35]

D. Barriers facing Israeli companies and projects

The Lab's primary focus was on the financing needs during each of the phases of a project, with barriers broken out, first, into project structure challenges and then into financing structure challenges. They are depicted in figure 6.

Project structure covers how the a project is organized; how its technology is integrated; how regulations may impact the project; how the project must be adapted to the size and characteristics of the specific regional market; how to scale the project and put in place effective management and operating teams; and how to position the project with strategic partners.

The barriers and obstacles change at various points along the D-D-I-O-G value chain, and many may overlap and recur. Development finance facilities are so successful because they remove these barriers and the investor risk associated with them.

Challenges in project structure along the project phases

Design

- The technology, invention, discovery, or application exists but hasn't yet been adapted or integrated into a real-world solution. It is an essential part of the solution but must be integrated, bundled, and adapted to address market conditions and needs.
- The sourcing channels, i.e., the suppliers and service providers who sell to the market, are difficult to break into. These channels are crucial for bringing successful solutions because they comprise existing supplier relationships, know-how, and financing sources.

Development

- Regulations may restrict the adoption of new solutions; regulators may not be familiar with the technology or how its applications. Also, the inertia of existing regulation can create a substantial barrier to new approaches.
- Support infrastructure (e.g., transportation or water and energy supply) may not be widely available or compatible. The technology must then be adapted or upgraded to allow a fit with current infrastructure conditions of the target market.
- Local conditions may be subject to fluctuation. Local soil conditions or extreme weather can affect outcomes and pose risks for the client. Getting the client to move beyond these risks and purchase the new system is a huge challenge.

Implementation

- Employment pool has limited experience or skills. It may prove difficult to find personnel familiar with the market, stakeholders, regulations, financing sources, and the technologies.
- If a solution or technology has been designed to work at a scale larger than is needed in the developing market, say at the smallholder (family subsistence) farm or village level, a redesign will be required.

Operations

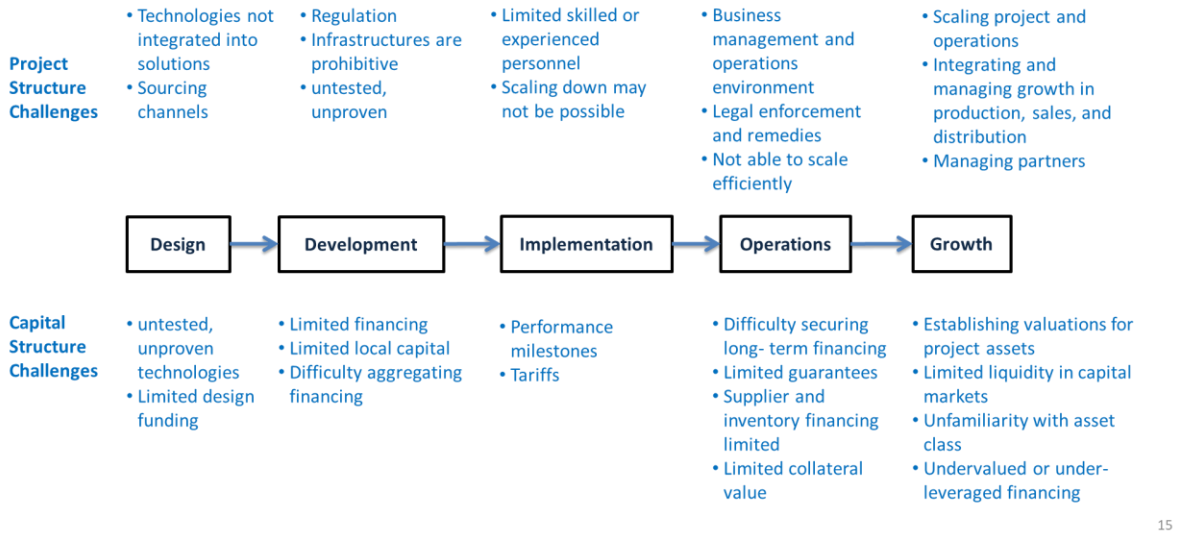
- The business environment may be uncertain. The business requires predictable operating environments, with permitting, employment practices, work rules, health standards, payment systems, and security. Disruptions cost time and money, and may chase operators away.
- Legal protections may be weak. Contracts must be enforceable in a timely and expected fashion. Without legal protections, projects and investors will seek other markets.

Growth

- Technology or solution not also able to scale efficiently. As a project succeeds in its initial market, the operator may be ready to increase scale as a logical next step.
- Growth across the project may lack synchronization. As a project moves from operations to growth, there may be challenges finding enough employees, equipment, and buildings for expanded production, and sales and distribution channels.
- Finding, vetting, and engaging managing partners is a major challenge. Growth involves strategic partnerships, e.g., supplier networks, competitor relationships, and distribution

channels. These may be formal partners or value chain partners with an interest in working together, and are key to efficient operations and growth.

Figure 6. Barriers and obstacles



Sources: Milken Innovation Center

Challenges in capital structure along the five project phases

The *capital structure* covers how the project organizes financing for the project, manages its revenues, and returns capital to investors.

Design

- The technology is new and unproven in the target market, and poses a financing gamble. The risk increases the cost of capital.
- Funding is limited and hard to secure for design development, which involves assessing specific market needs, identifying solutions and potential impacts, assessing the financial viability of the project, and hiring project team members.

Development

- Financing is limited. Through this phase and the next, short-term financing with deferred payment terms is necessary, but not typically available from local banks or the capital markets. It is available from international banks, but complying with terms and conditions can be prohibitive.
- There is limited local capital available to leverage financing. Local funding sources are scarce, with the result that projects may lack proper planning.
- It's difficult to pool financing from multiple source due to conflicting terms and conditions. This is a particular risk for early stages of project development. Projects with complicated capital structures and conditions require specialists who can steer them to the appropriate investors.

Implementation

- Different financing sources may require different performance milestones. Measuring program and financial performance to comply with investor requirements can be complicated, e.g., balancing direct and indirect outputs with outcomes, and returns on investment with project capacity.
- Tariffs add to project costs and can jeopardize project margins. Importing expensive equipment and technology supplies may result in complicated, subjective, or surprising import tariffs.

Operations

- It is difficult to secure long-term financing in the current banking regulatory environment. Projects require permanent financing, usually from pension and insurance fund investors, in this phase to refinance the short-term loans that covered earlier development and implementation phases. Securing long-term financing from these sources requires a conduit or facility to provide the platform for the financing.
- Limited guarantees are available to shift the risk from lenders. Projects require guarantees from the sponsoring government to provide a credit enhancement, shift risk, and give a clear signal of good faith and support. Designing the finance structure of the guarantees can be a challenge.
- Supplier and inventory financing are limited. It can be expensive and difficult to secure financing terms to a supplier for the equipment or inventory, especially in developing markets.
- There is limited collateral value. The project in a developing market may offer limited assets to secure the financing, especially under liquidation conditions. Finding additional collateral or guarantees is costly and difficult.

Growth

- It is difficult to establish a valuation for assets of a new project with a new technologies. Without comparable projects in the same conditions, valuation may not support project financing.
- There is limited liquidity in the capital markets. Local capital markets may not be large enough (e.g., with enough securities with buyers and sellers) to provide an efficient platform for capital market financing. Limited markets with limited buyers and sellers have limited pricing performance.
- There is limited familiarity with asset class and asset performance. Buyers and sellers in the local capital market exchange may be unfamiliar with new securities. For that matter, the technologies involved (e.g., agritech, water, and energy) may be unfamiliar to global capital market buyers, especially in the context of developing markets. This requires a platform that can “make a market” between projects and investors.
- Undervalued or underleveraged financing from investors dilutes or wipes out early investors. As a project grows to scale, it is a challenge to accurately represent the value it has created and to have that value represented in the project’s asset price. Without this growing value being reflected in the asset price, it will be a challenge for early investors and owners to protect their investment in the project.

Key challenges to building a project pipeline

With all these project and capital structure obstacles, the discussion among Lab participants focused on key challenges to building an investible project pipeline.

Challenge: Identify real need and the appropriate solutions

Lab participants emphasized the early gaps Israeli companies face in project planning and development assistance. Challenges start at the very early stages of design, and sometimes even before design, in the identification of need. Before designing a sustainable solution, a project developer must identify the need and local conditions, including the level of tech support; capacity of physical, economic, and social infrastructure; and the ability to maintain and manage a project. These early conditions represent some of biggest challenges because needs may be ambiguous or arise in unfamiliar combinations. Firms may rely on reports from humanitarian aid and support organizations in the field; but these organizations are usually limited by their previous experience and expertise, and by their focus on an immediate problem and condition. Thus, the challenges at these early stages are both financial and organizational. Among DFIs, this is one of the toughest challenges because it is costly and difficult to have "feet on the ground" before a project is in design or under development.

Lab participants observed that while financing may be available, specific design funds are needed to set up specific projects; development funding is also needed through the early stages to create a pipeline of projects. Lab participants emphasized the difficulty in the early formation of projects, both to conceptualize them and carry out the professional planning work needed to put together the technologies, teams, and capital.

Challenge: Convince the market that the new solution works

Another challenge is the lack of flexible financing to develop proof-of-concept for a technology and to demonstrate how it will be integrated into a project solution. Lab participants explained that many technologies are chasing the market—and it should be the other way around. The market should determine need and pursue the technologies that best address it.

This challenge suggests a new approach that is become increasingly common: technology solutions are bundled to adapt to specific market needs. For example, Netafim designs precision irrigation equipment, including pumps, monitoring and control systems, measurement and impact systems, and adjustments that allow for the use of the same systems to deliver fertilizer to the plants. In some cases, the precision irrigation systems include a greenhouse that regulates temperature and humidity conditions. Because the system may not be accessible to small farmers, Netafim is developing proof-of-concept demonstrations of the solution by combining large, commercial farms with smallholder farms to show that it is possible to have both technology and financial/project solutions.

Challenge: Provide appropriate capital when it is needed most

The challenge of access to affordable, flexible capital during development and implementation phases is particularly acute. Small and medium companies lack access to business credit from Israeli banks for projects in developing countries. The project assets are built in the developing country, and the Israeli banks have difficulty executing a judgment (collect on a default) on a secured interest on the project assets. While international banks can help with short-term loans during the development and implementation stages, they don't provide development financing unless there is a clear path for long-term financing from another source, usually institutional financing available through a DFI, for example. This problem was described by Chaim Motzen, co-founder of Gigiwatt Global, and EMFin's Orli Arav at the Lab, both of whom were involved in structuring the financing for the Israeli-originated Global Gigawatt project in Rwanda through Norway's DFI, Norfund.

Challenge: Find the skills capacity to put project together.

The barriers worsen when the lack of deal flow limits the attraction of the kinds of specialists who could help push the projects along, as described by Motzen and Arav. Similarly, the lack of independent Israeli investment sources limits Israel's ability to attract other DFI investments to help on these projects.

Challenge: Conflicting and changing regulatory environment.

Many projects in developing economies take the form of a public-private partnership, designed for specific conditions with specialized partners, but there is no general legislative framework for the implementation of public-private partnerships for development, and no specific regulation applicable to finance for these kinds of projects. There are disparate regulatory bodies in energy, water, health, and agriculture, creating additional costs for project finance.[36]

Challenge: Build a pipeline of ready-to-go projects.

Without a flow of ready projects, it will be hard to attract other DFIs and mobilize private capital to Israeli projects, yet this capital is necessary both to build the project development pipeline and to build regular, reliable market contacts. Lab participants noted that single or one-off projects limit the ability to build capacity to manage a project pipeline effectively. Additionally, Israeli projects, especially smaller projects, lack the knowledge to find the right portal for the right type of project financing at the right time. Finally, the intermittent flow of Israeli projects in the development pipeline limit the ability to attract or build the capacity to cultivate and manage a healthy pipeline for a sustainable financing portfolio.

Challenge: Find the right role for commercial banks.

Lab participants made the point that good projects usually find financing. However, it is not easy and not assured. As noted earlier, commercial bank equity and reserve requirements limit long-term credits for development projects. For example, the new conventions for banking capital requirements, known as Basel III, require banks to set aside a large amount of capital, between 9 and 13 percent of the capital on a development loan.[37] This requirement makes these loans expensive for the banks, and, as such, they typically won't offer terms for these projects. At the same time, with a short-term deposit base and liquidity requirements of most commercial banking institutions, their maturity for bank loans typically won't exceed three to five years, making the loans prohibitively expensive and requiring another source for refinancing at the end of the term.

Challenge: Increase financing and capital from Israeli Institutional investors and pension funds through blended finance within a new DFI

Israel has achieved developed country status, but still benefits from a young age structure driving higher savings rates and accumulation of institutional capital. As the recent Bank of Israel Report noted, tremendous growth in the total assets under management by Israeli institutions. As of April 2018, data from the Bank of Israeli, institutional investments by pension and provident funds and insurance companies had increased more than 250% over the past 10 years. Along with the future of the creation of the Israeli Citizens' Fund (sovereign wealth fund based upon the accretion of natural gas revenues), this provides a good link in structuring non-inflationary investments in new start up nations in the developing economies.

Challenge: De-risk the capital structure of development projects.

Of particularly importance was the need to adapt government guarantees to more effectively unblock blended finance solutions. Aron Betru of the Milken Institute's Center for Financial Markets shared a guarantee diagnostic tool, based on the Basel III regulations, for risk weighting of business models to inform the structuring of those tools for an Israeli development finance entity.[38]

Participants noted that Israeli projects lack equity, loans, mezzanine instruments, guarantees, and grants that are being structured into commercial finance elsewhere for projects in developing economies. Some of the limitations on PPP regulations prevent or complicate the use by Israeli firms of mechanisms to structure project finance (e.g., funds, syndication, securitization, and public-private partnerships).

Patient and flexible capital (junior equity, subordinated debt, and guarantees) is needed to de-risk the early (design, development, and implementation) stages of a project. Lab participants described how financing is generally available for good projects, but there is a need for flexible, sympathetic capital to enable blending of sources to create sustainable returns to investors.

An Israeli development finance platform could combine guarantees, syndicated loans, credit lines, and direct investment in companies, and share investment vehicles or funds.[39]

Challenge: Make it easier to be the first mover in a market.

Lab participants also pointed out that the Israeli companies that can break into developing markets are larger, diversified, and well capitalized. These first movers make it easier for the companies that follow. The first-mover position is particularly critical for technology companies that must prove their technology in the market and who thus incur the greatest risk and uncertainty. The larger and diversified firms are more able to absorb the risk and provide their own capital; or, if the technology is known, they can obtain from multilateral and bilateral development institutions.

But the story is different for smaller and medium-size companies, who find that capital from foreign development financing institutions is limited by the complexity of a foreign transaction or the restrictions on foreign company participation. Lab participants reported on the experience of Global Gigawatt, an Israeli first mover in solar fields in Rwanda, which was able to secure a financing commitment from Norfund, but only after it became a Netherlands-registered company based in Israel.

Other large, Israeli/Israeli-affiliated companies investing in Africa as first movers in their sectors have reported issues of lack of competitive project-based development finance. These include: Tahal Group International BV (water resource management); GrainPro (post-harvest storage); Nova Lumos (off-grid solar); Amiran Kenya (agritech); Hazera Genetics and Kaiima Bio-Agritech (seed technology); Green 2000 (agricultural equipment); Elco Energy & Infrastructure (large-scale turnkey infrastructure); AnyWay Solutions (soil stabilization); and Electra Infrastructure (infrastructure). Other smaller Israeli first movers include HomeBiogas, N-Frnds, and Avenews-GT, offering a fintech solution receivables management for banks and smallholder farms, and Farmster, an online marketplace for agricultural produce in emerging markets.

E. How can Israel respond to these opportunities?

A series of recent Israeli government decisions emphasizes the need for a strategic focus on financial diplomacy. Government Decisions 1585 (Africa, 2016), 2783 (India, 2017), and 4012 (International Development and SDGs, 2018) all represent a long-term commitment and appreciation of the sources of future global demand. However, Israel must move forward swiftly.

Israel's high gross savings rate (over 20 percent) means that there are significant institutional assets under management (approximately $215 billion currently) that can contribute to global investment in sustainable development. These funds, along with the sovereign wealth fund to be created from gas revenues, could increase the size of institutional assets fourfold by 2023.[40]

Israel has a solid base of companies at various stages of development and growth in the relevant SDG sectors. According to the Israel Innovation Authority, Israel hosts 600 companies in water technology, energy technology, agritech, and environmental technology. Other sectors, such as life sciences, communications, and ICT (information and communications technologies), also have direct and indirect applications in the developing markets.

Blended Finance in a New DFI

An Israeli DFI could create a series of collective investment vehicles (CIVs) in which development and commercial investors would pool finance, primarily through special purpose funds that blend Israeli government, other DFI, and commercial finance.

This trend toward using CIVs (with other DFIs) seems to focus on growing specific investment funds, to crowd in capital to both projects and companies. These funds (which include catalytic first-lost, credit enhancements, and other risk-mitigation devices) could offer more advantages for mobilizing commercial finance and private/philanthropic investors. They include acceptable return rates, investment-grade ratings, and lower volatility, larger vehicle size, and higher liquidity. Through signaling and demonstration effects, and technical assistance, these funds also lower risk. Examples include the Global Alliance for Vaccine Initiative (GAVI) and its Vaccine Bond financing vehicle, the International Finance Facility for Immunisation (IFFIm), and the Global Energy Efficiency and Renewable Energy Fund (GEEREF) as funds of funds, providing equity for funds that invest in global health and clean energy projects.[41]

Other examples include the 2017 French Sovereign Green Bond (OAT) ($10.7 billion); the Climate Bonds Green Bond Framework and Green Climate Fund (through the Agence Française de Développement, or AfD; the African Development Bank's Africa Climate Change Fund; and the $2 billion Cornerstone fund, a joint venture of IFC and French asset management company Amundi designed to buy green bonds issuances that would not otherwise attract institutional investors.[42] Lab participants agreed that Israel could play a distinct role in the global field of development finance by using its technological prowess to provide SDG solutions. Indeed the Israeli DFI could act as a powerful entity through its own funding in financial markets comprising highly rated, innovative funding instruments, for example in green and sustainable bond markets, collective funds, themed bonds such as "Diaspora" Export or Green bonds offerings, thus offering attractive investment opportunities to both Israeli and international institutional pension funds and private investors.

The finance facility would have the capacity to:

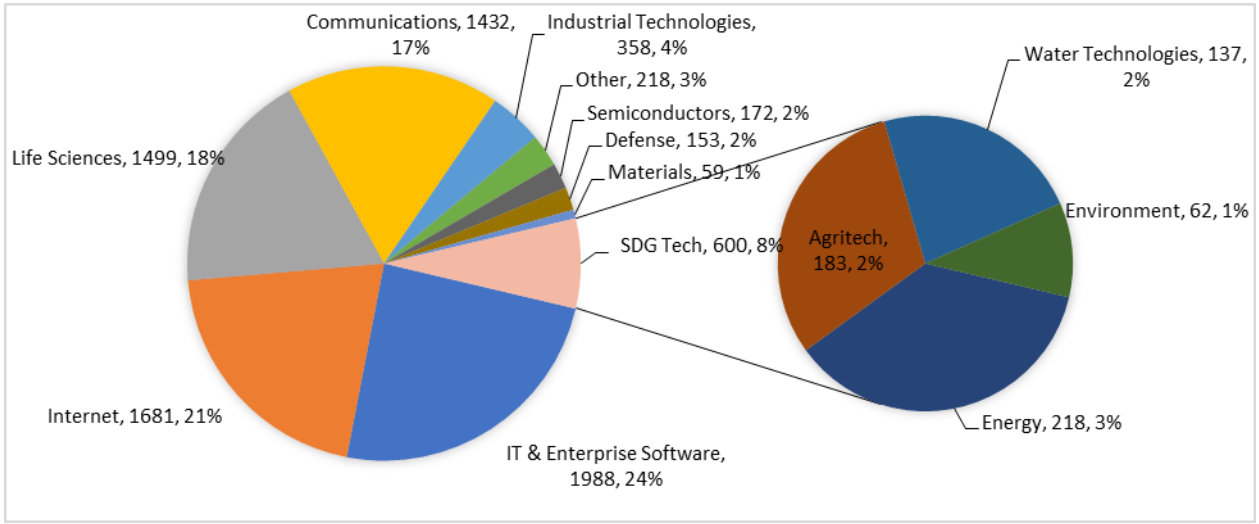
- identify and mitigate risk factors for project completion, technical efficacy, performance, along with counterparty, market, political and credit risk
- define performance indicators along the life cycle of the project
- measure, monitor, and evaluate performance data
- enable outcomes-based financing.

Technology transfer platform

As part of this process, Israel could create a technology transfer platform for development, placing existing and new policy tools under its authority.

- It would combine the dispersed and uncoordinated international programs of the Ministries of Finance, Economy, Agriculture, Energy, Water and Infrastructures, MASHAV, Regional Cooperation, Environmental Protection, Nature and Parks Authority, Fuel Choice and Smart Mobility Initiative, JDC, Jewish Agency, and Israeli Innovation Authority.
- It would combine the international offices of the Small and Medium-Business Authority, Water Authority, Volcani Center, and other R&D centers of the Ministry of Science and Technology (unrelated to the Israel Innovation Authority).
- The Israel Development Corporation (Israel Bonds) could leverage its marketing and retail distribution platform for dedicated development finance-themed bonds (in food, water, energy, global health) for Israeli tech deployment targeting the SDGs, and diaspora bonds for other communities.

Figure 7. Devtech companies in Israel's technology sector



Sources: Start-up Nation Central, Israel Innovation Authority

Among the core development technology (a.k.a. devtech) and SDG tech sectors, 293 companies are in initial revenues and another 53 are in revenue growth.[43] Of those in revenue, 98 are agritech, 103 are water technology firms, and 109 are involved in energy. The remaining 36 firms are involved in

environmental technologies. Most of these companies are positioned to participate in the developing markets with the support of a development finance platform.

Lab participants agreed that an Israeli DFI could become a market maker between global investors, including Israelis, and projects in developing markets. Its objectives would likely include:

- **Increasing Israeli exports.** Israeli companies must sell globally, and their only growth sectors are in the developing markets. The DFI should provide the tools to help Israeli companies increase sales exports.

- **Creating sustainable partnerships to leverage Israeli strengths.** Israeli R&D and startups have core competencies based on serving Israeli needs. There is a global market for many of these solutions. But Israel must build partnerships with developing markets and other DFIs. These partnerships will also drive diplomatic ties that are important for Israel geopolitically and economically.

- **Increasing aggregate demand for Israeli goods and services.** In many cases, the design phase of projects requires special efforts to include Israeli products and services through proof of concepts, beta sites, and the development of marketing channels. All these activities, which need the support of an Israeli DFI, require financing and support.

- **Achieving SDGs.** In addition to doing well in term of economic growth here and elsewhere, Lab participants agreed that Israel should also do "good." By using its technologies, and with financial help of a DFI platform, Israeli companies can help the world achieve SDGs.

II. Benchmarks for Financial Tools

As part of the Lab, we identified benchmarks for financing tools and the DFIs deploying those tools.

Financial tools improve capital structure

Lab participants reviewed a number of DFI financing tools, including grants, equity, impact loans, credit support, market-rate loans, and capital market loans.[44] Grants include a combination of recoverable design grants to support the design of the project, and technical assistance grants to support the design and development phase. Equity is common in several forms, including straight market-rate equity in exchange for a common stock; impact equity, usually subordinated to the market-rate equity in both payment and stock preference; and convertible loans, which are "quiet loans" with a subordinated claim on the project, deferred payments, and the potential to convert to equity at an agreed-upon time.

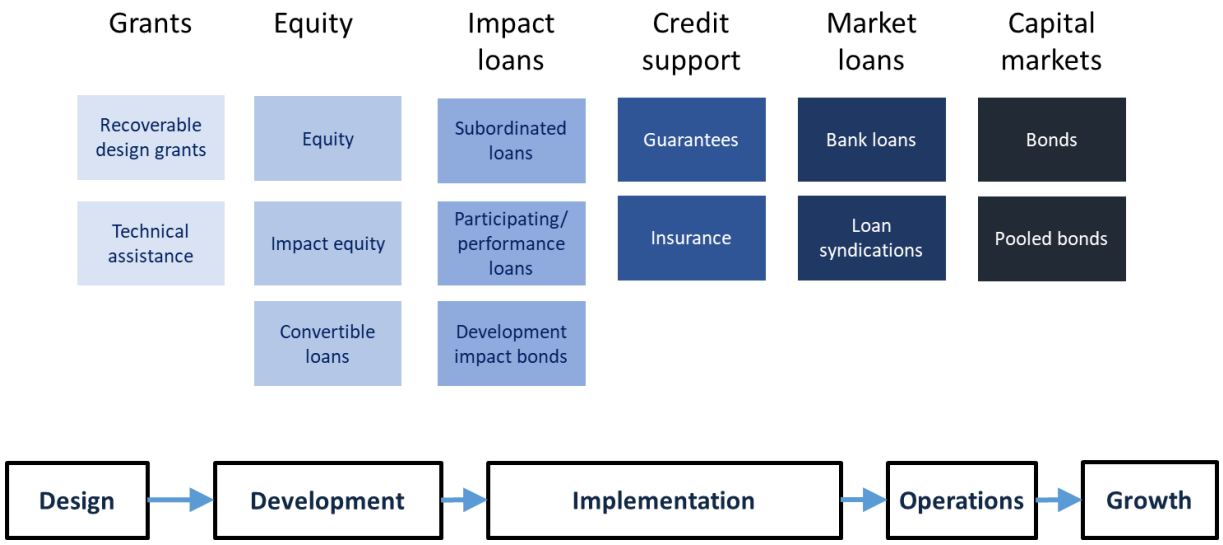
Impact loans are subordinated lower-cost loans to improve the cash flow and collateral position for a senior lender; participating or performance loans are based on cash flows; and development impact bonds are pay-for-performance loans.

Credit support is a necessary ingredient in the DFI tool chest. The credit support can come in the form of a guarantee to shift the risk from the lender to the guarantor. These guarantees often originate from the government and are limited. Another form of credit support is insurance, which can take the form of technical insurance to ensure that the project's technology works or, in the case of agritech solutions in developing markets, insurance that would cover catastrophic drought, rain, floods, or winds.

With these tools, the DFI is able crowd in bank loans and combination bank loans, also known as syndications. These bank loans are used for market-rate credit support through the development phase of a project. Finally, for the long term, the DFI offers a platform for the issuance of revenue bonds.

Lab participants explained the significance and unique aspects for these tools, and that they must be flexible and adapted to market conditions. The use of government funds is commonly used to support guarantees, and the tools should allow for easy and efficient transitions along the development financing value chain.

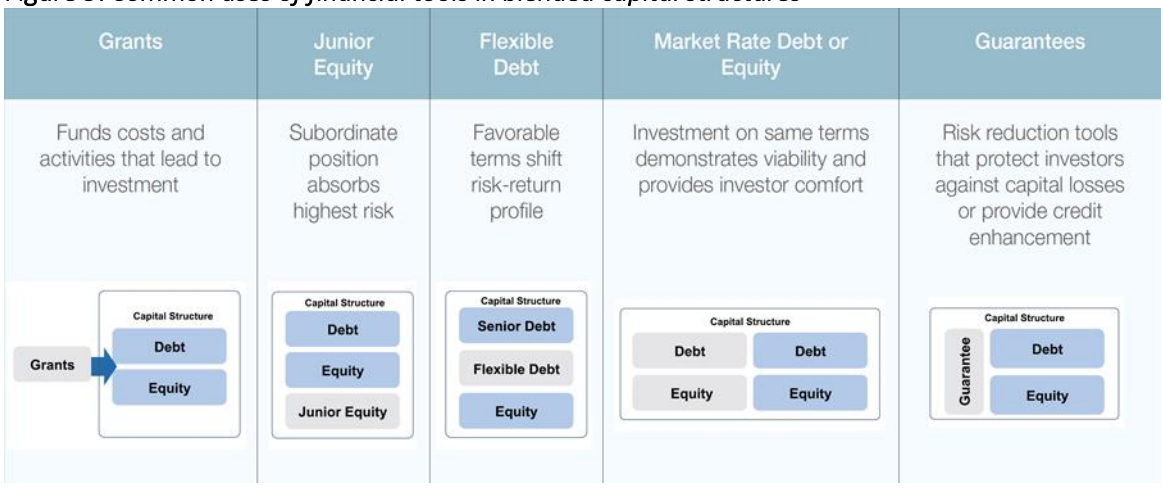
Figure 8. Financial tools for development finance



Source: Milken Innovation Center

Blended finance is critical to the success of a DFI. As noted, blended finance often deploys more risk-tolerant impact funding to leverage conventional, risk-adjusted market-rate financing. Blended structures are particularly useful in the early stages, design and development, to bring in bank financing. Blended finance transactions have grown steadily since 2007, growing by 20 percent between 2012 and 2014. Today blended finance transactions have mobilized over $50 billion toward SDGs.

Figure 9. *Common uses of financial tools in blended capital structures*



Source: OECD-WEF, 2015

How financial tools are put to work

A newer goal for today's DFIs is to crowd in private capital, both market loans and capital market financing. Market loans and bonds don't do the heavy lifting of the more flexible tools, but they do most of the work, often accounting for over half of a project's capital structure. A DFI provides the platform to blend (structure) all these sources for projects. With recent standardization by the International Capital Market Association, the issuance of green bonds, social bonds, and sustainable bonds could bridge the SDG investment gap within the coming decade, said René Karsenti, president of the association.[45]

Presentations by Colin Buckley of CDC Group, the UK's development finance institution, and Martin Habel of the World Bank's International Finance Corporation (IFC) described how blended capital structure works at the DFI program level. An Israeli development finance platform should focus on solutions that maximize crowding in private capital and minimize the public debt burden, they advised. This would enable upstreaming project and development support by scaling up advisory and technical assistance.[46]

The IFC's Managed Co-Lending Portfolio Program (MCPP) engages in infrastructure projects in Africa and Asia, Habel said. Institutional investors require large volumes of bonds, and IFC creates a bond pool with various tranches to meet their various return requirements. This is a dedicated fund, or "blind pool" approach, with investors who take exposure for a set of future loans that include credit enhancement through first-loss coverage or by taking a junior tranche.[47] As part of the program, IFC has joined with other development partners, such as the Swedish International Development Cooperation Agency (Sida) to create a structure that enables a loan-syndication platform, crowding in bank loans led by IFC's senior tranche. IFC has also structured a first-loss subordinated tranche, guaranteed by the Swedish Government. This blended structure is designed to leverage institutional investors at a rate of 1:8. Both standardized portfolio loan syndication platforms and themed bonds and funds could combine the process.

Habel also described IFC work in local currency bond issues. In contrast to dollar or euro-denominated bonds, where investors are repaid in the denomination they invest in, these bond issues are denominated in the local currency, matching the currency of capital costs, labor costs, and revenues, and eliminating the foreign currency risk for the local project. The bond buyers are paid in the local currency, shifting the foreign currency exchange risk in the transaction to them, not the project. If the local currency has depreciated relative to the investor's home currency (e.g., dollar or euro), then the investor takes the loss. And if the local currency appreciates (because of a strong growing market in the developing economy), the investor realizes a gain when the local currency is converted back to the home currency. This approach offers a more reliable source of financing for local projects (both receiving and making payments in the local currency) and an opportunity for investors to diversify and thereby hedge their portfolios. In addition, this approach introduces a particularly valuable product for increasing volume and liquidity that local and regional capital market platforms in the developing economies can promote as they look for investment opportunities attractive to international investors.

Michael Kashani of Goldman Sachs discussed another innovative structure for capital market financing: themed bonds. These bond pools raise capital for SDG-related projects like green bonds in demand among US and European investors. The bonds are attractive because they're tied to high- growth, high-yield sectors that are also tackling pressing sustainability issues. Kashani noted that an Israeli DFI could become a specialized market maker between well-funded investors in the Middle East looking for risk-adjusted rates of return in investment opportunities in the developing markets. Israel's specialty is in

developmental technologies, in agritech, water, and energy, which it can turn to SDG targets. What is needs to build up is a pipeline of investible projects.

Table 1 offers brief descriptions of the major financing tools.

Table 1. Description of select financing tools

What is it?	How does it work?	Why is it important?	Who pays for it?
Recoverable design grants			
Funding to translate the need into a project, including the project and capital structures	▪ Funding is provided to a project sponsor or project leader for engineering, market work, legal work, and financial and impact analysis. ▪ If the project goes forward, the grant is repaid from proceeds of the financing or from cash flows of the project.	▪ The design phase is the first step in the development value chain. It opens the door to projects, technologies, and financial innovations. ▪ The design phase allows the project to translate a new technology into a workable and scalable solution.	▪ Design grants are provided by a combination of project sponsors, financial sponsors, and potential investors through a development financial platform. ▪ Recovery of design grants can be used for new design projects. ▪ With a high loss rate of projects, the funding for design grants will not break even, but the successful projects along the value chain contribute to the funding base for new design grants.
Guarantees			
A pledge to cover part of the debt on a project, transferring a share of the risk for the debt from the lender to the guarantor.	▪ A guarantee is a contract to pay the lender a designated amount (all or a portion) of the debt in the event of either a delinquency or default. ▪ The guarantor makes the payment, which may be a first-loss payment up to a certain amount, or a pro rata payment based on the guarantee's coverage of the loan. ▪ The borrower must repay the guarantor for the advance of the guarantee. ▪ The borrower assigns rights of the assets to the guarantor to cover a portion of the loss.	▪ Guarantees may lower the risk of the loan, saving between 50 and 200 basis points on the debt and improving the financial feasibility of the project. ▪ Guarantees may make a loan possible.	▪ The fee is paid by the borrower on the basis of 0.5–1.25 percent of the outstanding principal. ▪ The guarantee funds are provided by a combination of philanthropic investments, standby social investments, and government funds.

	▪ The guarantees are a limited obligation, capped at the agreed-upon guarantee amount, and are non-recourse to the guarantee providers (e.g., philanthropy, government).		
Subordinate loans			
Secured, amortizing debt paid from the project's net operating income; applicable to revenue-generating projects or projects with a public concession and tariff.	▪ Independent, private, community, or government-direct loans to eligible projects. ▪ Collateral and payments subordinated to senior debt. ▪ Usually includes deferrals, lower interest costs, and longer terms for repayment. ▪ Management through a separate revolving loan fund or contract to a financial institution for underwriting and loans management.	▪ Improves the debt coverage for senior debt, making conventional loan possible. ▪ Lowers the borrowing cost for the project, thereby lowering the product (energy, seeds, water, fertilizer, etc.) cost and making it more affordable. ▪ Improves project cash flow and dividend returns to investors.	▪ Loan fund capitalized by government, DFIs (as funds of funds), and impact investments and capital market loans (securitizing the repayments from loans).
Convertible loans			
Debt that can be converted to equity, usually common shares, of a project.	▪ Structured as an unsecured or subordinated short-term debt. ▪ Principal and interest payments are usually deferred and accrued, payable in either a balloon payment or converted to equity at a designated time. ▪ Debt is usually an interest-only loan with a set amortization and a schedule balloon payment at the end of the term. ▪ Loan may be converted to equity shares of the project based on a predetermined ratio at a specific time in the project life, usually at the next financing round.	▪ Loans may allow better collateral coverage for senior lenders. ▪ Lenders don't take normal equity rights, such as board seats or liquidation preferences. ▪ Documentation is in the form of a loan agreement, so it is simpler than an equity agreement. ▪ Lender has rights of senior claim (over other equity) to assets of the project at maturity. ▪ Loans may be used as a bridge financing until a larger round of financing becomes available or during the implementation of a proof of concept.	▪ Loans may be made by the development lender or one of the equity investors. ▪ Convertible loans typically care an interest rate above the market rates for senior debt.
Participating loans			
A participating loan is a secured debt on a project or company with a share of the project revenues	▪ Loans to project is underwritten based on adjusted credit and collateral criteria. The projects are usually early stage, though very near	▪ The participating loan replaces some of the required equity in a project, boosting the equity returns.	▪ Private investors are the main source of participating loans.

	revenue, so collateral is weak. ▪ The loan carries an interest rate and a fixed term, but the repayments are based on a share of the cash flow of the project, often negotiated based on the pro rata share of the financing to the total project cost. ▪ The repayment of the loan is made from the cash flow payments with a balloon due at the end of the term for unpaid interest and principal.	▪ The loan also does not have a fixed payment, so it does not threaten the cash flow for the project. ▪ The loan does not take shares or equity or management in the project, leaving the owners with undiluted shares and control.	
Equity			
Capital investment in a project or program by private investors, team members, and owners and management	▪ Early investments are made by owners and investors ▪ Investments may be in cash and in-kind services ▪ Investment is in exchange for shares of the project (usually common stock) based on a valuation of the project. ▪ Investment is unsecured and subordinated to all debt and payables. ▪ Returns to equity investors are based on agreed-upon share of the project cash flows and residual value upon sale of the project.	▪ Equity investments are available early in the project, providing needed capital to establish and build out the project or program. ▪ Repayments of equity are deferred until enough cash flows are available, lessening the cash drawn from the project operations.	▪ Private investors are the main source of funds for equity investment, requiring competitive returns on investment with other investments options available to investors. ▪ Upon agreement, equity shares can be diluted by subsequent investment rounds, leaving room for new equity investments during project progress.
Impact Equity			
Capital investment in a project or program by public and philanthropic investors	▪ Investments are made early by interested philanthropic and public investors, sometimes as a seed funding for a project or program. ▪ Investments are in cash based on initial valuations, but distributions are usually based on hurdle rates and thresholds being achieved for market equity investors. ▪ Returns may be subordinated to market equity investors.	▪ Impact equity is used to blend the returns so that market equity rates of return can be achieved. ▪ The distributions of impact equity soften the demands on cash flows, allowing the returns to be retained in the project or program for a longer period.	▪ Impact equity can come from public investment sources, including tax and tariff revenues. ▪ Impact equity also comes from corporate and NGO-based philanthropic sources based on interest in the type of project and the achievement of specific outcomes.
Insurance			

Special funds to cover project or technology failure	▪ Insurance payment is made to beneficiaries, including project investors, upon triggering conditions, such as technology failure or lower than planned performance.	▪ Launch of a new technology has risks of performance. ▪ Because of these risks, project owners and investors, including farmers, are risk averse, preferring traditional methods, and missing the opportunities for lower cost and higher yielding solutions. ▪ Insurance shifts some of that technology and performance risk away from the investors and the owner to the insurance fund.	▪ Initial insurance fund is established with private and/or government equity. ▪ Dedicated fund is supplemented from ongoing project fees – both initial and annual payments. ▪ Insurance funds are invested and proceeds from investments are reinvested in the fund.
Impact Bonds			
Impact Bonds are performance-based loans or equity investment in development projects.	▪ Projects are designed to create cost-saving outcomes, such as lower energy cost or lower water cost or higher yields. ▪ Private investors buy the Impact Bonds based on expected performance and returns tied to the performance. ▪ As a result of the Impact Project, the savings from these outcomes are measured. ▪ If the savings meet the specific outcome goals of the project, investors (buyers of the Impact Bonds) receive their principal plus a performance bonus (usually part of the savings).	▪ Impact bonds mobilize private investors to take the risks (and returns) of performance of the project, shifting the risk from the government or NGO sponsor to the private sector. ▪ With the incentive to performance, the private sector is willing to innovate with the service providers in the project to improve the delivery and outcomes.	▪ The payer to the impact bond buyers is either the project sponsor (government) or a philanthropic or NGO involved in the sector. ▪ If the project does not achieve the performance outcomes, the private sector is left paying for the project.
Bonds			
Senior debt issued in the public or private capital bond markets.	▪ A developer proposes an eligible project to a public or quasi-public bond issuer. ▪ The bond issuer packages the project either alone or along with other projects. The bonds require a senior mortgage on the project being financed. ▪ The bond issuer sells the bonds publicly (e.g., sophisticated investors) or as a privately (e.g., pension	▪ Longer terms for repayment; flexible repayment schedule, and fixed-rate, lower-cost interest improve the financial feasibility of the project. ▪ Project pools can be structured to improve the collateral and credit quality of the bonds. ▪ Financing costs are financeable.	▪ Public and private bond markets are the sources of the funds. ▪ The projects may be guaranteed in part by public or philanthropic sources, but recourse is generally limited to the project assets. ▪ Issues can be structured to accomplish specific financial and non-financial (environmental) objectives, such as Green Bonds or SDG Bonds, which make them

	funds, corporate investment funds, etc.). ▪ The bonds proceeds are loaned to the project and repaid from the project's net operating income. ▪ Depending on the creditworthiness of the project, the bonds may require letters of credit, guarantees, or special insurance.		attractive to specific classes of investors and new investors.
Bank loans			
Senior debt for project development from a commercial lender	▪ Bank lends senior debt to a project based on strict credit and collateral evaluation. ▪ Bank loan terms are based on cost of capital and risk premium. ▪ Bank loan terms are structured according to the credit policy of the bank, including interest, deferrals, principal payments and balloon payments. ▪ Bank covenants govern disbursement of the payments to the project, evaluation of project activities, uses of funds and financial controls and compliance. ▪ Bank loan has priority in liquidation of assets. ▪ Because of capital reserve requirements, banks may be best suited for shorter-term development period loans (during the developing phase).	▪ Banks have the infrastructure to evaluate and manage project credits.	▪ Deposits and bank equity
Loan syndications			
Senior debt for a project from a group of commercial lenders or group of DFIs	▪ A single financial institution usually organizes and leads the formation of a loan syndication. ▪ This lead institution carries the organization, documentation, and loans management.	▪ The participation in a syndication spreads the risk of credit, reducing the amount of capital reserve that must be set-aside for a single institution.	▪ Funding for the loan syndication comes from the participating institutions.

	▪ Participating financial institutions take a share of the loan, sharing the collateral, repayments, and risks of default on a pro rata basis.		
Technical Assistance			
Support for professional advisors on projects during development[48]	▪ After the design phase of the project, the project will need ongoing professional guidance, including engineers, accountings, legal advice, and operations support. ▪ This support will be provided by the project investors and managed by the project owners.	▪ The success of the project depends on the timely and quality advice during development implementation of the project. ▪ Technical support and assistance are key areas that lead a project through the implementation phase.	▪ Initial capital must be provided by the DFI. ▪ A special pool of funds capitalized by the project origination and servicing fees.

Source: Milken Innovation Center

Each of these tools can be used with other tools to create a blended financing capital structure. The terms and conditions of the tools vary, according to the capital source. A capital structure that by design aligns with the interests of diverse investors can support a project through its life cycle.

Table 2. Selected characteristics of financial tools

	Grants	Equity	Impact Loans	Credit Support	Market loans	Bonds
Cost	None	5–15 percent	2–6 percent	50–125 basis points on outstanding credit	5–7 percent	4–6 percent
Term	None	5–7 years	3–10 years	Up to 15 years	3–5 years	Up to 20 years
Collateral and recourse	None	None	Secured interest in project assets	None	Secured interest; corporate and personal guarantees	Secured interest; guarantees; Letter of Credit
Special conditions	Principal recovery upon financial closing	Common stock	Subordinated or shared lien on assets	First loss up to threshold; then pro rata	First lien	Payment deferrals to meet project cash flows
Documentation	Grant contract	Limited partnership	Loan agreement and note; security agreement	Guarantee; escrow agreement	Loan agreement and note; security agreement; syndication agreement	Trust indenture; loan agreement; note; security agreement
Leverage	1:1	1:8	1:3	1:1.5	1:1	1:1 – 1:1.5
Benefits to the business	✓ Match to owner's equity	✓ Leverage return on equity	✓ Create access to capital	✓ Shift risk from business	✓ Increase capital access	✓ More efficient capital source
Benefits to the project	✓ Establish good project design	✓ Core capital to leverage financing	✓ Improve margins on project	✓ Shift risk from investors	✓ Create capital structure	✓ More money; new money
Benefits to Israel	✓ Include Israeli solutions	✓ Crowd-in private equity	✓ Increase investment	✓ Leverage capital investment	✓ Crowd-in private debt	✓ Crowd-in new sources of capital

Source: Milken Innovation Center

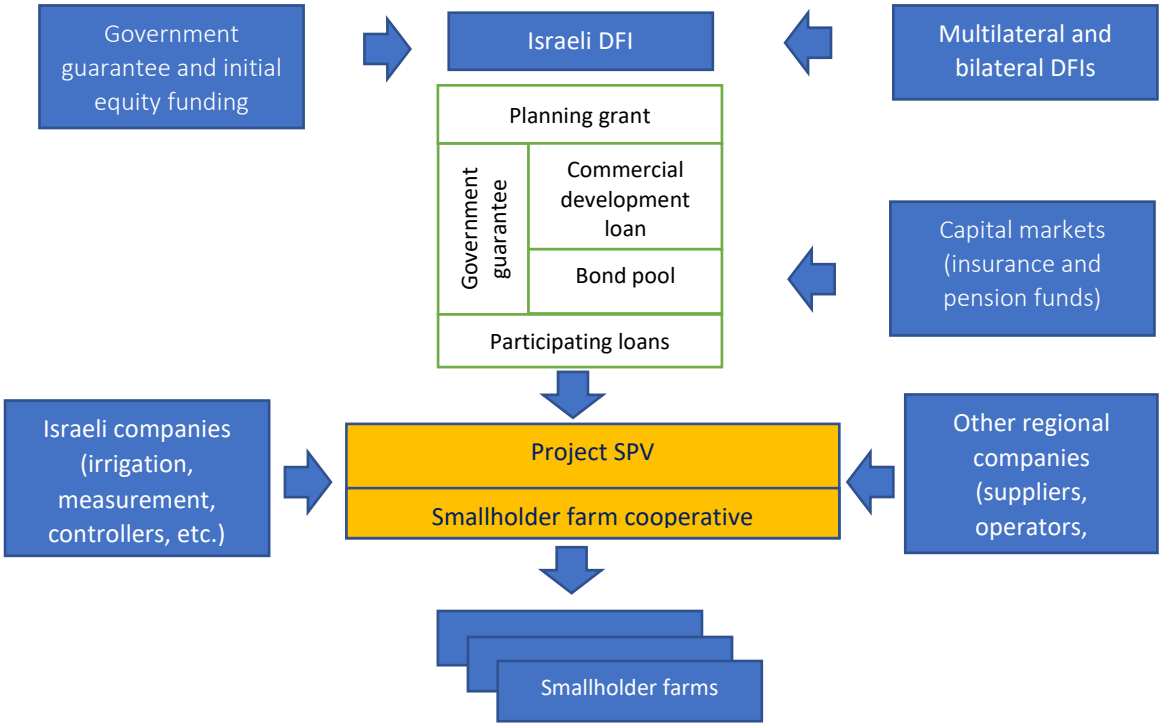
How these tools can help Israeli companies

The right financial tool can fill a specific capital need. For example, a project financing vehicle designed for a smallholder farmer cooperative structure (now used for post-harvest storage and marketing) can help individual smallholder farmers with no ability to secure financing directly. But first, the project entrepreneurs must secure "planning funding" very early on in order to assess the local need, the

partnership with the cooperative, and then to design a credit-worthy entity (the special purpose vehicle) to qualify for the debt on behalf of the smallholder farmers.

Rather than force the firm to secure the planning funding as a separate activity, the funding could be incorporated into the project's capital structure as equity to be recovered and repaid. The prototypical structure described in figure 10 is for a project that would provide irrigation equipment for smallholder farms through a special purpose vehicle in partnership with the farm cooperative. The DFI adds these funds to the capital structure, and they are usually matched by equity from the suppliers themselves. The SPV may or may not include the Israeli companies, but the Israeli companies would be the suppliers to the project.

Figure 10 Possible development financing for a project financing irrigation equipment



Source: Milken Innovation Center

This example includes other financial layers, including the DFI guarantee to cover a bank's short-term commercial development loan during the project's early stages. The guarantee is credit enhancing and makes the commercial loan possible at a competitive price. The project may also require some subordinated debt in the form of a participating loan, which is typically flexible enough to allow repayment to be deferred until the project hits specific debt coverage thresholds.[49] Even then, repayment could be conditioned on revenues, enhancing the ability of the project to support the commercial credit. When the project is ready to begin operations, the guarantee would be transferred to a bond issue that would convert the commercial bank loan to a long-term bond at a competitive interest rate.

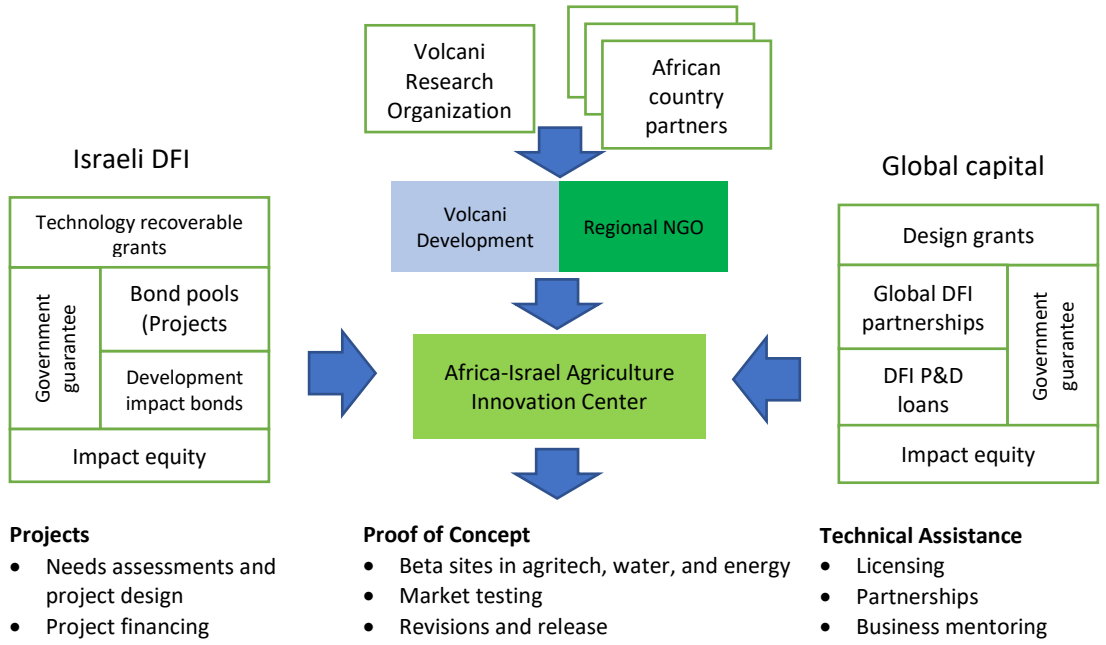
These financial tools are beneficial because they:

- bring matching funding to the project early to allow for proper planning and design
- de-risk commercial debt to lower the price and make the financing feasible

- crowd in private capital market investors to provide low-cost long-term debt to refinance the development loan
- improve, via the flexible financing of a participating loan, the financial metrics of the project, giving it the opportunity to reach revenues.
- create a platform (the center) for bringing other DFIs to the financial table to focus on the project
- bring opportunity to Israeli businesses to help smallholder farms in developing markets—a gain for both sides of the deal.

Figure 11 shows another way a DFI could work to create opportunities for Israeli companies. It addresses the need to create a sustainable innovation center for collaborations between Israeli and African researchers. These co-innovation partnerships focus on specific market needs and adapting the technologies to meet these needs quickly, efficiently, and effectively.

Figure 11 Possible development financing R&D innovation center and research partnerships



Sources: Milken Innovation Center, Volcani

The Israeli DFI could help support the innovation center in several ways, depending on the development stages of specific projects. Initially, the DFI could provide recoverable grants to projects for specific technologies as they are developed. The grants would be repaid when the projects are implemented. Next the DFI could issue research-backed obligations (RBOs), bond pools that would support the development and testing of technologies, and guarantee a portion of these research-backed obligations. This approach benefits both the innovation center, because the investment in it is long term, and investors who stand to reap high returns from the potential scale of the portfolio of projects.[50]

As projects are implemented, the DFI could sponsor development impact bonds (DIBs), an innovative financial tool that provides debt to projects, with repayments to investors based on the performance of the solution. These bonds could crowd in private philanthropic investors interested in the outcomes from innovative solutions.

Depending on the stage of the project, the DFI could provide important guarantees to shift some of the risk from private investors, allowing them and other DFIs to participate in the innovation center through their own planning and design financing, impact equity, and guarantees.

Similarly, the DFI could provide the platform to structure and match impact equity from corporate and philanthropic investors willing to take deferred, long-term returns subordinated to other market-rate private investors. These investments would result in proof-of-concept and beta projects (beta projects being those use real-world testing).

The benefits from DFI support for these types of projects include:

- flexible capital to support a platform (e.g., an innovation center) for joint ventures between Israeli scientists and scientists in developing countries.
- financing tailored to meet the risk profile of early-stage research and development
- create capital structures that invest in projects and then capture the financial benefits.
- shift the risk from the private investor, lowering the cost of funds and increasing access to private capital.

III. The institutions that supply finance

Current sources of finance for development projects include standalone investors, philanthropic funds, government funds (privately managed public funds, too), export credit agencies, multilateral financial institutions, and DFIs.

Standalone investors are private, for-profit development investors seeking market-rate, risk-adjusted rates of return. They may be investment funds comprised of multiple investors in limited partnership structures. They may also be based on an equity investment model but are attracted to projects with viable, proven, and ready revenue models. They rely on connections to the market and usually a connection to the sector being financed, such as energy. Standalone investors are usually sought by projects for their domain expertise with relevant technologies. However, these investors are responsible for managing balanced portfolios capable of mitigating correlated risks (e.g., those from portfolios weighted too heavily in one sector or one market). As a result, they hold a premium on due diligence and investment management.

Philanthropic funds are usually sector specific. The Bill & Melinda Gates Foundation, for example, focuses on food and medicine. Philanthropic funds can be structured to serve as early-stage grants to determine project feasibility, implement proof-of-concept demonstrations, or act as credit enhancement in a blended financing structure. Because they tend to be directed to NGOs, they may not be structured to leverage as much outside capital as possible. In fact, one of the risks of philanthropic funds is that they may not crowd in private capital. And they are less concerned about recovering their capital. Philanthropic funds are the most flexible sources of capital, but they are limited in amount availability, eligible activities, and eligible beneficiaries.

Export credit agencies provide trade credit guarantees on bank loans to existing exporters. ECAs provide an important role in facilitation of counter-party transactions, including trade letters of credit on sales contracts. Indeed, without ECA trade guarantees, banks would not extend credit for these transactions. Israel's ECA, ASHRA, provides guarantees for short-term trade financing in international markets, including developing economies. ECAs like Euler Hermes in Germany, one of the largest ECAs, provide a variety of trade financing tools—but typically not for development project financing.

Multilaterals are the large financial institutions that anchor development financing. These institutions, like the World Bank's International Finance Corporation and the African Development Bank, offer a variety of financing tools. They also have platforms with established project pipelines, with local and regional offices positioned in key markets, and substantial capacity to management due diligence, create project networks, and manage project financings. Their platforms raise capital in the capital markets and invest in equity, debt, and credit enhancements. They lead projects and assemble financing among investors, philanthropy, and bilateral DFIs.

As noted earlier, development finance institutions, which can be single- or multi-state, are platform to provide financing and technical services for investors and projects involved in developing economies. A DFI is usually enabled by statute and regulation by a national government, and carries the government's partial guarantee of repayment in order to leverage capital market investors who can provide partnership capital for operations, and for project and program financing. DFIs can be established as publicly supported private corporations, nonprofits, or as publicly owned entities. They are governed by a board of directors, supported by investment and operating committees, and establish commercial underwriting and operating policies, allowing for design of flexible financial tools or projects in developing economies. For many, the financing sources have changed over the years and now generally include: initial capital from the national government in the form of equity; a combination of equity and

debt; crowding in or leveraging of the global market-rate and philanthropic capital focused on SDGs; and fees, interest payments, and equity returns to cover operating costs and repayments to investors.

Table 3 Institutions supplying finance

	Description	Pros	Cons
Private investors	▪ Private, for profit development investors who are seeking market-rate, risk-adjusted rates of investment.	▪ Attracted to projects with a viable, proven, and ready revenue model. ▪ Rely on connections to the market and usually a connection to the sector being financing ▪ Sought by projects based on their domain expertise and experience.	▪ Usually spread their investments out to create a balanced portfolio capable of mitigating correlated risks ▪ Higher cost on due-diligence and investment management.
Philanthropic funds	▪ Philanthropic funds can be structured as grants to determine project feasibility, implement proof of concept projects to demonstrate a technology, and credit enhancement in a blended financing structure. Often, philanthropic funds are directed to directed to NGOs	▪ Philanthropic funds are the most flexible sources of capital,	▪ Limited in amounts available, eligible activities, and eligible beneficiaries ▪ Not structured to leverage the most capital possible. ▪ May not "crowd in" private capital. ▪ Relaxed "investment" criteria of philanthropic funds may not lead to recovery of the capital investment.
ECA	▪ Export credit agencies provide trade credit guarantees on bank loans to existing exporters.	▪ Facilitate counter-party transactions, including trade letters of credit on sales contracts. ▪ Public support of ECA with backing guarantees may allow bank credit to extend up to 3 – 5 year terms.	▪ Not able to provide credit support for development financing and project financings. ▪ Credit enhancement cost is risk-adjusted, limiting its usefulness in price sensitive transactions. ▪ Terms on trade credit transactions are usually short-term, limited to 1 year.
Multi-lateral development agencies	▪ Multi-laterals are the large financial institutions that anchor development financing. These institutions offer a wide variety of financing tools for development financing.	▪ Lead projects and assemble financing among investors, philanthropy, and bilateral DFIs. ▪ Maintain platforms with established project pipelines, with local and regional offices positioned in key markets, and substantial capacity to management due diligence, create	▪ Usually prioritize and focus on a region, such as Europe, Africa, America, or Asia. ▪ Require membership or shareholder buy-in[51] by countries but offer no tie-in for country-specific companies or technologies.

		project networks, and manage project financings. ▪ Able to raise capital in the global capital markets and invests in equity, debt, and credit enhancements.	
Development financial institutions	▪ Financial platform to provide financing and technical services for investors and projects involved in developing economies ▪ Enabled by statute and regulation by a national government. ▪ Established as a publicly supported, private corporation. Ownership may be held in part by the public.	▪ National government may give a guarantee or partial guarantee, leveraging capital market investors to provide partnership capital for operations and project and program financing. ▪ Established as a publicly supported, private corporation. Ownership may be held in part by the public. ▪ Allows for development of flexible financial tools needed for projects in developing economies. ▪ Investments may be on a project or pooled basis, so long terms are possible.	▪ Difficulty in building project pipeline ▪ Timeframe for achieving sustainable scale ▪ Geographic diversity and reach difficult to achieve ▪ Need focus on key sectors

Source: Milken Innovation Center

Descriptions of each of these institutions, the tools they use, and their respective strengths and weaknesses are described in table 3.

Among its benefits:

- It would serve a primary role as intermediary to global DFI investors for Israeli companies and projects. The DFI acts as a market maker between investors and projects, and brings expertise and experience from both sides of a transaction. Most important, it can leverage Israel's technologies and expertise, and provide a conduit for these technologies into new projects and markets.
- It would provide flexible, lower-cost financing for Israeli companies to engage in in developing markets. With enough financial depth and breadth, the DFI can build a portfolio of investments that balances risk and returns.
- It would serve as well as a "one-stop shop," able to provide information and network sources for financing and technical assistance. Other institutions don't provide these services.
- It would help with technical and support services during early stages of project design and development.
- Israel would take a seat at the global table of DFIs in structuring financial transactions. By providing important investments on behalf of Israeli participants in development transactions,

the DFI can bring in other DFIs and financial institutions (e.g., banks), making more projects possible.
- It would support an ongoing pipeline of projects.

The consensus among Lab participants is that Israel should create a DFI if economic policy seeks to:

- create opportunities for Israeli companies
- open new markets in developing economies
- participate with other DFIs, sharing risk and returns
- have an impact on environmental goals, poverty, hunger, and achievement.

Benchmarks for Development Platforms

Lab participants discussed their own experiences with development financing, and identified four key objectives for a DFI:

1. Focus on SDG market opportunities in developing markets.
2. Create a flexible, commercially oriented platform to crowd in private capital.
3. Advance partnerships with other DFIs to syndicate financings, share risk, and share higher design and development costs.
4. Use blended finance to incentivize risk-adjusted returns for private investors and leverage public and philanthropic investments.

In work prepared by Convergence in 2018, almost all of the 15 European DFIs provided loans and equity investments for projects. Fourteen of them also provided various forms of quasi or impact equity to blend projects. Seven of these DFIs provided guarantees, often acting as a conduit for a sovereign limited guarantee.

With respect to DFI ownership, six of Europe's fifteen DFIs (Belgian Investment Company for Developing countries, or BIO for short; the UK's CDC Group; Norway's Norfund; Denmark's IFU; Swiss SIFEM; and Sweden's Swedfund) are under 100 percent ownership of the home government. six more DFIs (Finland's Finnfund; SOFID in Portugal; France's Proparco; FMO in the Netherlands; Belgium's SBI-BMI; and Spain's COFIDES) are majority-owned (51–90 percent) by the home government. The remaining three (Germany's DEG, Austria's OeEB, and Italy's SIMEST) are owned by either a quasi-governmental entity or a private entity. In cases where 100 percent of the ownership is not vested by the government or a quasi-government entity, the balance of ownership is shared by a consortium of investors, banks, and union organizations. Nine of the European DFIs require no national "tie" to the product or service. The remaining six (Spain, Finland, Denmark, Belgium, Italy, and Portugal), do have such a requirement.

Table 4. European DFIs by country, commitments, and portfolio

DFI	Country	Commitments, 2015 ($M)	Total Portfolio Commitments, 2015 ($M)	Population (000)
BIO[52]	Belgium	131.3	697.3	10,540
CDC	UK	1,084.6	6,723.9	61,417
COFIDES	Spain	354.4	969.7	44,372
DEG	Germany	1,204.6	8,061.3	82,413
FINNFUND	Finland	93.9	674.9	5,359
FMO	Netherlands	1,793.4	10,376.2	16,812
IFU	Denmark	100.8	641.2	5,560
Norfund	Norway	281.9	1,763.4	4,841
OeEB	Austria	262.7	1,090.8	8,288
PROPARCO	France	1,089.2	6,303.5	62,339
SBI-BMI94	Belgium	9.1	24.7	10,540
SIFEM	Switzerland	82.7	622.2	7,334
SIMEST	Italy	242.3	2,350.8	57,818
SOFID	Portugal	2.3	12.3	10,827
SWEDFUND	Sweden	46.4	421.5	9,315

Source: Convergence, 2015

In 2018, the Canadian Government launched a new DFI, FinDev Canada, to help its businesses secure opportunities in developing economies.[53] Canada and the US are two prime examples of the trend toward new or re-engineered funds with expanded mandates and financing capacities, and a focus on developing markets.

The US DFI is the Overseas Private Investment Corporation, or OPIC. It provided $4.39 billion in funding and insurance commitments in 2015 on a portfolio of $19.93 billion. (Under legislation signed into law in 2018, OPIC will undergo not only a name change to become the U.S. Development Finance Corporation, but substantial redesign and restructuring, and tie in with USAID through absorption of its Development Credit Authority and a vastly increased budget.) The World Bank's IFC program, which is a multilateral organization, made commitments of $18 billion in 2015 on a portfolio of $84 billion.[54]

Schematic capital structure for an Israeli DFI

The Israel development finance institution would be closely aligned with the sustainable development goals. It would create opportunities for Israeli companies that meet high standards of innovation value added to projects. Israeli firms would be able to provide additive innovation to existing projects in the community of DFIs building upon the design element from lessons learned from Israel's extensive experience with resource limitations.

The DFI would use its strong sovereign and institutional investor balance sheet to leverage Israeli technologies into SDG areas. Its financial tools would include funds targeting development investment; syndications with other DFIs that benefit from Israeli-led technologies; and securitizations of existing

and future project pools. It would have the capacity to blend equity, debt, and mezzanine instruments with guarantees, insurance, and hedging (through currency exchange funds). It would place a great emphasis on early-stage grants and technical assistance. (Lessons learned from some of these re-examined and re-engineered DFIs were discussed at the Lab.)[55]

The DFI would issue bonds for synthetic securitization of pooled, themed project securities for SDGs, including food, water, energy, health, environmental, and cybersecurity issuances. This would enable strategic engagement of the Ministry of Foreign Affairs in memorandums of understanding with developing economies and export credit agency programs by focusing the MOUs on development targets. It would all accelerate results-based financing and pay-for-results transactions.

Netafim showed how a DFI could blend domestic capital from Israeli institutional investors, capital in domestic countries and from other DFIs, and from different project sponsors for water service providers through a special purpose vehicle.[56] NetBeat ("irrigation with a brain"), for example, combines irrigation and "fertigation" water management services in collaboration with mPrest Systems (the Iron Dome system development)—a useful case study for combining customized design and engineering, agronomy support, and technical and managed irrigation services. Similar efforts could target large-scale urban water utilities, irrigation, small-scale off-grid sanitation (Fluence is an example of this), wastewater collection and treatment, and investments in water catchment and basin districts multipurpose environmental infrastructure.

Fluence offered evidence of how a build-operate-transfer financing structure could accelerate growth of recurring revenues and adoption of distributed water technology solutions with shorter construction times, 37 percent lower capital expenditures, and lower energy use for desalination and wastewater treatment and recycling. Yet right now, its capacity for growth is being restricted because there is no affordable development project finance in Israel that can offer non-recourse debt facilities for what Fluence does.

Amanda Fernandez of the Palladium Group explained how pay-for-results contracts had accelerated adoption of agritech finance in the Financing Ghanaian Agriculture Project (FinGAP), Peru's Cocoa Alliance, and the Kenya Investment Mechanism, where USAID contracts benefit the maize, rice, and soy value chains in northern Ghana, fruits and vegetables in Kenya, and cocoa in Peru. Through incentives, training, and technical assistance, they have assisted thousands of micro, small medium, and large enterprises in the local value chains. As well, financial institutions and business advisory service providers were able to reduce loan processing time, building trust and cooperation. Lab participants also discussed examples of platforms for evidence- and field-based identification, development, and diffusion of agritech solutions—including technology adaptation and transfer, and business models—for smallholder farmers. Business models could be financed by deploying trials and field experiments.[57] The same deployment would apply to energy, health, cybersecurity, and environmental projects.

We previously explained the five stages of project development. Here, briefly, is how it looks from the DFI finance side:

(1) All projects begin with the current and expected needs, based on local or regional conditions in the developing economy.

(2) The DFI must commit its project structuring and development credit support to help set the project perimeters and identify practical solutions.

(3) This includes identifying and securing a commitment for revenue for the project through public-private partnerships.

(4) It may also include a purchase agreement, and investors and local financial services.

(5) Following the local procurement process, the project team must identify the technologies necessary to satisfy the project mission. Meanwhile, the company offering the product or service secures trade financing from its bank, usually with a partial guarantee from the DFI.

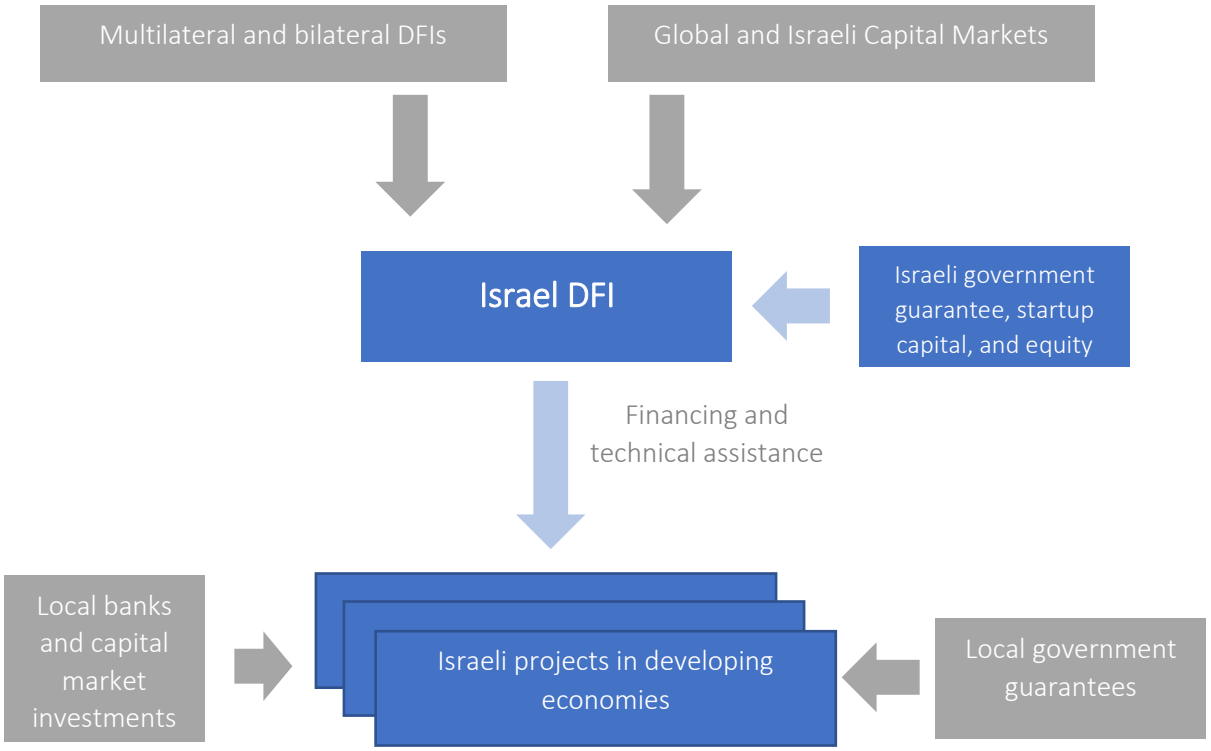
(6) At the same time, the short-term development financing for the construction phase must secure necessary government commitments to the DFI, usually in the form of guarantees for financing.

(7) The government guarantees are needed but aren't enough, and the DFI matches or blends them with other multilateral and bilateral support for development financing during the construction phase of the project, usually from international banks.

(8) The guarantees leverage capital markets investors to invest in the DFI's portfolio of projects, usually through a combination of bonds and insurance vehicles.

(9) Once the project construction is complete and the project implemented, permanent financing is deployed, to refinance the development financing. The source of this permanent financing usually comes through structured long-term financing from insurance and pensions funds in the capital markets.

Figure 12. Diagram of DFI capital structure



Source: Milken Innovation Center

IV. DFI Design Considerations

This section builds on lessons learned from other DFIs, with a focus on specific design elements for an Israeli DFI.

Key Activities

Possible activities and directions for an Israeli DFI are organized into four areas: financing, technical support, partnerships, and new markets.

FINANCING

- **Invest in partnership transactions and syndications:** The DFI must be able to partner with other DFIs. In many cases, projects involve more than one DFI, each with a specialty or some involvement with the project. These partnerships are essential for providing leverage to build effective, scalable transactions in developing markets.

- **Invest in equity, debt, and guarantees:** The DFI must include flexible financing tools that accommodate a variety of project types if it hopes to build sustainable capital structures and project pipelines. The terms and conditions for these tools vary, of course, and will require expertise so that they can be adapted to new projects, blended structures, and partnership arrangements.

- **Invest in guarantees to leverage partnership financings:** The DFI must secure state guarantees if it hopes to participate in large project financings with multiple DFIs.

TECHNICAL SUPPORT

- **Invest in technical assistance services:** The DFI must provide value-added technical assistance for both investors and Israeli businesses during the project design phase to ensure that Israeli technologies are integrated into marketable solutions.

- **Provide support to organize and develop projects into a pipeline:** The DFI must especially exhibit presence and support throughout the crucial early phases of the development value chain. This involves organizational and planning efforts to identify projects and bring them to the starting line and will grow a steady pipeline of projects necessary for a financially stable development financing platform.

PARTNERSHIPS

- **Invest in marketplace/platform for finance, technology, and projects:** The DFI can become a market maker, the meeting place for investors and projects. The added value is its ability to provide expertise and other managerial services for insight on the applications of technology transfer in development projects, and how to finance them.

- **Share trends and market needs with local firms:** The DFI must be able to send market signals to Israeli R&D firms and labs, such as the Volcani Research Organization,[58] about what is missing and needed and how to adapt existing technologies to meet market needs. This feedback, in partnership with the Innovation Authority, will make the DFI an important partner in the development financing marketplace.

NEW MARKETS

- **Invest in Israeli tech to solve SDG obstacles:** The UN SDGs provide a new market opportunity, and Israel is adapting its technologies to meet this new market. The DFI will be the vehicle that enables them to enter the market in a substantial and sustained way. This should be part of the strategic approach needed to move cutting-edge technologies to market-rate solutions, even if it is not a primary motivation. As part of this objective, the DFI would create shared metrics for addressing impact principles for sustainable development and assessment of impact.[59]

- **Invest in proof of concept in target markets:** The DFI, in conjunction with the Innovation Authority and private companies, can finance initial proof-of-concept installations. Lack of finance here is a major financing obstacle for new technologies and solutions entering new markets.

- **Invest in scaling solutions:** In time, and with enough investment, the DFI can help companies build to scale. This is a necessary part of Israel's development strategy. It is not enough to "begin" a solution—firms must be able to scale up for new markets.

GOVERNANCE

The DFI governance could be formed as:

- a separate government agency or authority
- a government corporation led by a management team formed through a government tender for operating a government-owned (or partially government-owned) enterprise, or as an LLC with the government as a limited partner
- a government-sponsored fund with a minority interest leveraged by a private financial sponsor in connection with donor-advised funds from the Diaspora and international communities
- a public benefit corporation or public-private-philanthropic partnership.

FOCUS

- **Predevelopment projects:** Israel could play a major market-making role by shaping markets to pull in new technologies through financing feasibility studies and technical assistance in project design.

- **Blended finance to attract private investors:** The DFI should offer a broad finance spectrum consisting of grants, guarantees, equity, credit lines, and technical and other risk insurance.

BENEFITS OF A PORTFOLIO APPROACH

- A DFI offering blended finance and value-added market, management, and technology expertise would result in a number of benefits, including: a single, coherent platform; entry into new markets; lower governmental operational expenses through consolidation of redundant or siloed agencies and departments, minimizing overlapped authorities and conflicting mandates of multiple agencies; and reduce legacy costs in existing agencies.

Design Elements: Bridging the SDG Innovation Gap

Lab participants emphasized the need to create a DFI and not to utilize legacy organizations "peripheral to the mission" that tend to create their own organizational dynamics that distract from task focus. Instead, the new DFI should act as a change agent to scale innovation to higher levels. Almost no global development organizations depend on legacy systems for this reason.[60] Lab participants warned that legacy organizations are also vulnerable to political and bureaucratic motivations that could result in less-than-optimal allocation of investments and technical assistance.[61] It could help form innovative coalitions linking science and technology to specific SDG challenges where project finance could leverage technological impact. The next table, of DFI design characteristics, is based on the discussion and a summary review of several DFIs.

Table 5. Key design characteristics of example DFIs

	CDC Bank (UK)	DEG (Germany)	FMO (Netherlands)	Lessons from examples
Organization and ownership	▪ Owned by government.	▪ Wholly owned subsidiary of the KfW, Germany's development bank.	▪ Majority ownership by national government; balanced owned by investors, banks, and unions.	▪ Create separate entity. ▪ Owned partially by government. ▪ Operates independently.
Capital structure (DFI)	▪ The UK government invested equity. ▪ Program and project equity is through private equity and debt investments, and structured as limited partnerships.	▪ KfW invested equity into DEG. ▪ DEG raises private-sector debt from the capital market public offerings and private placements.	▪ Raises capital through public offers and private placements. ▪ Dutch government provides a guarantee on its debt.	▪ Create categories of tools to meet project-specific needs, including debt, recoverable grants, equity, and bonds.
Local content	▪ Not required	▪ Not required	▪ Not required	▪ Tie into Israeli-based company and/or scientific or technological IP.
Eligible activities and tools	▪ Technical assistance and planning. ▪ Equity investments in project and businesses.	▪ Technical assistance and planning. ▪ Equity and debt tools in projects and businesses.	▪ Technical assistance and planning. ▪ Equity and market-rate and subordinated debt tools for projects, partnerships, and businesses; bonds and private placements.	▪ Funding of needs assessment and design activity to ensure feasible solution. ▪ Flexible uses of funds to initiate and carry out development projects.

Source: Milken Innovation Center

The following DFI profiles, from the Netherlands, Germany, and the United Kingdom, were discussed as models for consideration of design features for an Israeli DFI:

Profile 1: Netherlands Development Finance Company (FMO)

Founded in 1970, the Netherlands Development Finance Company (FMO) is a Dutch development bank structured as a bilateral private-sector international financial institution and based in The Hague.

Mission: To invest in businesses, projects, and financial institutions by providing capital, knowledge, and networks to support sustainable growth. To empower people to apply their skills and improve their own quality of life. FMO also strives to mobilize more capital and catalyze additional commercial and institutional investors to frontier markets, partnering with commercial banks, impact investors, institutional investors, and development finance institutions to finance loans.

Strategy: FMO recognizes that the world's most underdeveloped regions offer significant opportunities for business and investment. It encourages the growth of responsible and profitable businesses in key sectors for development. FMO enables its clients to operate and grow sustainably for the long term, creating jobs, and generating taxes that strengthen local communities and economies. FMO contributes to the UN Sustainable Development Goals as part of its core business. It seeks opportunities to help investors fund projects that contribute to the SDGs.

Ownership: FMO is a public-private development bank supervised by the Dutch Central Bank. Shareholders have core powers, including decisions on statutory changes, legal mergers, and adoption of the annual budgets.

Organization and Management: The Management Board is responsible for defining and achieving FMO's strategy, business and financial objectives, and development impact. A Supervisory Board oversees the policy of the Management Board, developments at FMO, its business, and its development impact. FMO adheres voluntarily to the Dutch Corporate Governance code for listed banks and applies the modern Dutch Banking Code to the functioning and operation of its boards.

Core Activities: FMO invests across the value chains of food security. It finances long-term projects with market-rate commercial loans, subordinated, unsecured (mezzanine) loans, equity, and guarantees. It also issues debt instruments in euros, dollars, and local currencies. Institutional investors can participate in syndicated loans and FMO-issued bonds. FMO Investment Management provides access to FMO's sustainable investing expertise and deal flow through investment funds. Of the total committed portfolio of €7,867 million, €5,471 million relate to the on-balance loans to the private sector and €2,396 million to the on-balance equity investments and associates.[62]

FMO has a Capacity Development Program to promote and facilitate transfer of knowledge and skills. It contributes to the cost of hiring external consultants, trainers, and experts to facilitate the knowledge transfer and provision of technical expertise as needed. It takes the form of grant-based co-financing of up to 50 percent of the project costs.

Investment and Financial Structure: FMO is a public-private partnership, with 51 percent of shares held by the Dutch State and 49 percent held by commercial banks, trade unions, and other members of the private sector. It has a triple A rating from both Fitch and Standard & Poor's. FMO funds itself in public markets and through private placements aiming for diversification in markets, geography, investor types, and tenor of its funding. The Dutch State guarantees FMO's bonds via an explicit issuer guarantee.

Criteria for Investments:

- Source of the financing opportunity: An initial assessment focuses on country, investment plan, development impact, and its role as financier. Investments target projects that foster the transition to a more inclusive, greener economy.

- Analysis of opportunity: If the financing opportunity meets investment criteria, FMO continues to analyze risks and challenges. It conducts a Know-Your-Customer assessment to ensure the client complies with anti-money laundering, anti-corruption, and anti-terrorist financing regulations. It also rates the project according to potential effects on environmental, social and human rights conditions, ands governance structures.

- Due diligence: FMO conducts due diligence, including visits to the client and local stakeholders to discuss its financing impact, their business, and environmental, social, and human rights risks. FMO analyzes the client's tax practices and policies, offering tax expert advice if needed. If FMO identifies gaps in meeting international standards or policies, it develops an action plan to mitigate and manage the identified risks and promote positive development in these areas.

- Stakeholder engagement: FMO also offers stakeholders the opportunity to provide input to its decisions on new transactions with a high environmental or social risk profile. FMO discloses the potential investment online to ensure that it has not overlooked any important concerns. From identification to implementation, FMO consults key stakeholders to assess, monitor, and manage the project's impacts.

- Contracting: FMO assesses the environmental, social, and governance risks, identifies where improvements can be made, and establishes action plans. After internal approval, FMO signs a legally binding agreement with the client, and discloses its investments on its website after contracting.

- Monitoring and value creation: Throughout the lifetime of the investment, FMO monitors financial performance and progress on the environmental, social, and governance requirements. It receives annual or more frequent financial reports, conduct (ESG) audits with the help of local consultants, and, depending on the project, visits every other year. If needed, FMO supports its clients with capacity development and technical assistance to improve their business and identify new opportunities.

Partnerships: FMO manages three funds for the Dutch Government, which it invests in higher-risk projects that promise substantial development impact. It also initiated the Electrification Financing Initiative (ElectriFi), funded by the European Commission and Power Africa.

Profile 2: DEG of Germany

Deutsche Investitions und Entwicklungsgesellschaft (DEG), based in Cologne, promotes promote the private sector in developing and emerging market countries.

Mission: DEG's purpose is to promote development cooperation. Founded in 1962, DEG is a subsidiary of KfW, formerly KfW Bankengruppe. A German state-owned development bank, it is based in Cologne and has been a financing partner to private-sector companies operating in developing and emerging countries. DEG helps businesses to develop successfully and sustainably, while generating local added

value and creating qualified jobs. It also enters "difficult" markets and promotes private-sector expansion there.

Strategy: DEG's strategic system of goals includes sustainable returns, a high level of developmental impact, and the provision of financing and supportive advice to German enterprises. DEG focuses its investments to generate positive development impacts in partner countries, and to help its clients open new markets and compete successfully. In doing so, they create qualified jobs and income, and contribute to local added value and economic development.

In addition, many of DEG's customers take on wide-ranging corporate social responsibility. They pay above-average wages, provide insurance coverage, and set up nurseries and health centers. Their involvement often benefits their own staff and families, in addition to the people in the surrounding communities. DEG's investments are designed to enhance local added value in the long term, and to create skilled jobs and generate income.

DEG also provides the private-sector businesses it finances with education, training, and technology transfer know-how. With their investments, these businesses expand local value chains and improve the supply of goods and services in a given country. Their taxes and export earnings contribute to government revenue and foreign exchange earnings, funds that that support investments in infrastructure, education and health.

Ownership: DEG is a wholly owned subsidiary of KfW, Germany's third-largest financial institution. It is a non-profit corporation, serving the public benefit within the meaning of the "tax-deductible purposes" article of the German Fiscal Code.

Organization and Management: DEG is a credit institution according to the Banking Act of the Federal Republic of Germany. The German Federal Financial Supervisory Authority has issued revocable exemptions to DEG, which partially exempt it from the provisions of the act. Nevertheless, DEG does, overall, apply the relevant standards of the Banking Act, especially the minimum requirements for risk management.

Core Activities: DEG provides finance where the market fails to offer financing to enterprises at an adequate level, or at all. DEG provides long-term financing and promotional programs, and advises clients as they implement their investments. Its clients are companies from industry, agriculture, and services; private infrastructure companies in energy, transport, utilities, and telecommunications; and financial institutions and funds that provide small and medium-sized enterprises with reliable access to debt and equity financing. Clients are based in developing and emerging countries, Germany, and other industrialized nations. DEG's portfolio is divided as follows: 29 percent to project financings in the form of debt and equity, 27 percent private business projects in the form of debt, 31 percent to financial institutions (through guarantees), and 23 percent to financing funds in the form of bonds. DEG also provides technical assistance, advice, and support to prospective and current private-sector clients.

Investment and Financial Structure: DEG has €2.5 billion in equity capital from its sole shareholder, KfW. In 2018, DEG provided €757 million in equity and subordinated debt to 1,866 new business projects in Africa, Asia, Central America, and Europe.

Criteria for Investment: DEG uses its own Development Effectiveness Rating system, ranking five key outcome categories: decent jobs, local income, market and sector development, environmental stewardship, and community benefits. DEG has also incorporated the UN's Sustainable Development Goals into its project review and evaluation process.

Partnerships: DEG partners with other DFIs, both single-nation, bilateral funds, and multilateral DFIs like the World Bank's IFC. In these partnerships, DEG participates in syndicated financings in development

projects and shares technical assistance, project due diligence, and support. DEG also has key partnerships with many German financial institutions and multinational financial institutions, providing blended financial solutions for development projects.

Profile 3: CDC Group, United Kingdom

CDC Group plc was established as the Colonial Development Corporation by the Overseas Resources Development Act in 1948.

Mission: CDC's mission is to support the building of businesses throughout Africa and South Asia, to create jobs, and to make a lasting difference to people's lives in some of the world's poorest places. Its mission to "do good without losing money."

Strategy: CDC has a dual objective: to support growth and jobs that lift people out of poverty, and to make a financial return, which it reinvests into more businesses. CDC uses its capital to help create the jobs and economic stability that will enable countries to leave poverty behind.

Ownership: CDC Group is a public limited company owned by the UK Government.

Core Activities: CDC focuses on investing in countries where the private sector is weak, jobs are scarce, and the investment climate is difficult, but particularly in sectors where growth leads to jobs. These sectors are financial services, infrastructure, health, manufacturing, food and agriculture, construction and real estate, and education.

Investment and Financial Structure: CDC has a BP 3.9 billion portfolio, with most of its investments in equity. A small but growing share of the portfolio is in debt financing. A substantial portion of its equity investments are in 197 intermediated equity funds in which it has a limited partnership stake. It also had 84 direct equity investments as of 2017.[63] CDC is predominately invested in infrastructure, financial services, trade, health and education, business services, and communications. A share of its portfolio is also in manufacturing, agribusiness, and finance and construction.

Criteria for Investment: CDC seeks to increase capital flows to underdeveloped markets so countries can finance their own way out of poverty. It typically takes more risks than commercial investors. These risks can include market risks, such as regulatory or political uncertainty, and other risks related to the businesses themselves, such as unproven strategies or inexperienced management teams. However, as a specialist commercial investor, CDC is skilled at assessing and mitigating those risks. It often invests for longer periods and focuses on selecting the right management teams and raising environmental, social, and governance standards.

CDC has created a screening tool that helps it choose the right investments that will have the greatest development impact. The tool prioritizes investments in the most job-creating sectors and into the poorest countries and states. CDC monitors its impact have at three levels:

- At the portfolio level: CDC shows annually how many jobs the portfolio created, both directly and indirectly, using a market-leading methodology developed for CDC by industry experts. It also publishes the taxes contributed to local exchequers and how much third-party capital it mobilizes.
- At a sector and thematic level: CDC collects and publishes annual aggregate data for certain metrics in each sector. It also monitors and reports selected job quality, gender, and climate change indicators.

- At individual investment level: for each investment or fund commitment, CDC defines the impact it wants to achieve and then track progress toward the intended impact.

Partnerships: CDC has partnership with its intermediated equity funds. In addition, it participates in projects with other bilateral and multilateral DFIs and with commercial financial institutions.

Israeli DFI Scenarios

The following profiles for an Israeli DFI are based on the review of various DFI structures and goals and objectives and in subsequent discussions and analysis.

Table 6. Possible Israeli DFI Scenarios

	DFI Scenario 1	DFI Scenario 2	DFI Scenario 3
Mission	Strengthen Israeli commercial activity in global markets	Improve conditions for people and places in need in developing economies	Support initiatives to achieve SDGs
Strategy	Consolidate and focus development agencies into single entity	Increase support for existing development agencies and create new agencies to fill unmet needs	Create new development entity and build global partnership networks
Ownership	Private-sector, for profit organization	Public-Private Partnership, with majority public share	Public or quasi-public organization and ownership
Organization, management, and governance	Board of directors, supervisory board, investment board, professional management and staff; independent from government	Board of directors, supervisory board, investment board, Professional management and contracted professional staff; independent from government	Advisory committee Contracted professional staff
Core Activities	Technical assistance; equity investments	Planning; technical assistance; guarantees; loans and bonds	Planning; technical assistance; private sector financing
Investment and Financial Structure	Limited partnerships in special purpose vehicles (SPVs); dividends to shareholders; retained earnings reinvested in program activity	Corporate fund structure; dividends paid to shareholders	Benefit corporation; no dividends to shareholders; reinvestment of revenues and earnings to public enterprise fund
Criteria for Investments	Commercial investment standards; Israeli content	Commercial investment standards	Commercial investment standards; SDG outcomes
Partnerships	Multi-lateral, bilateral and regional development agencies; philanthropy; host governments	Pension funds; insurance funds; global capital market investors	Philanthropy; government; regional NGOs
Israeli business connection	>50%	>25%	None

Source: Milken Innovation Center

These scenarios are not mutually exclusive. Rather, they contain elements that are either choices or a combination of choices that may be considered for an Israeli DFI design. For example, a DFI may encompass missions from one or more of the scenarios. Similarly, the same applies for core activities and partnerships.

SWOT Analysis

The following is a simple SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis of the possible design for an Israeli DFI.

Strengths

- Development technologies are suited for SDGs
- Experience as a developing country/proof of concept
- High foreign currency reserves
- Growing sovereign wealth fund
- High Israeli DFI and/or potential project bond rating allows access to institutional investors
- High savings rate/pension and robust insurance funding

Weaknesses

- Size and experience
- Devtech is focused on service sectors
- Limited knowledge or exposure to SDGs and internationally based impact investment
- Limited financial infrastructure and programs for development
- Coordination and timing of complicated transactions
- Reliance on other DFIs for deal flow
- Aversion to higher-risk projects/threat to innovation

Opportunities

- Leverage key devtech sectors to match financing and market opportunities
- Create scalable strategic investment partnerships around bundles of devtech solutions (agritech, water, and energy)
- Create a seat at the table to represent Israeli investment in new markets
- Increasing value-added exports
- Achieve SDGs

Threats

- Geopolitics, security, and corruption
- Global economic drivers (interest, markets, currency exchange rates, etc.)
- Financial backbone/infrastructure
- Investment capital may lower appetite for risk
- Institutional inertia can slow down the process
- Others will do it (let others finance our projects)

V. Path Forward

Israel has considerable development strengths and experience, and an opportunity to join other developing nations with a development financial institution of its own. As it considers the choices and models described in this Lab report, there are specific steps that should be taken, listed next, for the necessary components of planning, organizing, and implementing a finance platform to leverage Israel's assets in developing economies.

Institutional path

- Identify the roles of current government and quasi-governmental stakeholders in the international development landscape. These include the Prime Minister's Office; Ministries of Economy, Foreign Affairs, Finance, Energy, and Agriculture; and ASHRA, Israel's Export Credit Agency.
- The planning process must include how to identify and recruit the team to operate the DFI. This will be part of the responsibility of the operator, but the institutional plan must accommodate the necessary financial compensation, independence, and latitude to attract world-class talent.

Operational path

- Map and build a pipeline of project and partners. Identify representative projects, potential markets, and project structures and capital structures. This should also include the market channels to identify new projects, and who and how participants work together to organize and implement projects and financing solutions.

- Specify the features of the blended finance tools and the value-added advisory and support services the DFI can provide. Remember that certain features of the tools (e.g. prices, sizes, fees, terms, conditions) will need to accommodate various kinds of projects; and the various stages of development of each.

- Model a portfolio of project investments using the selected tools. This modeling would be built on representative investments and demonstrate the financial performance of the DFI under a range of scenarios.

Financial path

- Specify needed capital structure for DFI. This should include the amount and source for the initial planning capital, and initial organization and startup capital. It should also specify how much investment will be needed from the Government and other potential sources, under what conditions, and when.

- Determine financial feasibility. Asses the models of projects, tools, investment into the capital structure, and returns to investors under various conditions and scenarios. The plan should include a legal review of the investment strategy, financial tools, and regulatory and contractual/financial arrangements under consideration.

- Based on the various scenarios for investment and returns, the team should identify the risks (development, currency, interest rate, geopolitical, legal, credit, performance, etc.) and mitigation strategies for them.

There are other activities that will be needed in the design and roll-out of Israel's DFI, but these steps will form the basis of the work.

Appendix

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DFI Benchmarks

DFI by financial tools

		Instruments				
DFI	Country	Loans	Loan Guarantees	Insurance	Equity	Quasi-equity
OPIC	US	YES	YES	YES		
BIO	Belgium	YES			YES	YES
CDC	UK	YES	YES		YES	YES
COFIDES	Spain	YES			YES	YES
DEG	Germany	YES			YES	YES
FINNFUND	Finland	YES			YES	YES
FMO	Netherlands	YES	YES		YES	YES
IFU	Denmark	YES	YES		YES	YES
Norfund	Norway	YES	YES		YES	YES
OeEB	Austria	YES	YES		YES	YES
PROPARCO	France	YES			YES	YES
SBI	Belgium	YES			YES	YES
SIFEM	Switzerland	YES			YES	YES
SIMEST	Italy	YES			YES	YES
SOFID	Portugal	YES	YES			
SWEDFUND	Sweden	YES	YES		YES	YES

Source: Development Finance Institutions Come of Age, October 2018

DFI staffing, ownership, and linkage

DFI	Country	Staff	Ownership structure	Tied to national interests
OPIC	USA	230	US Government	Yes (as of 2019)
BIO	Belgium	44	Belgian government	Untied
CDC	UK	158	UK government	Untied
COFIDES	Spain	72	Spanish Government (54%); Spanish banks (45%), CAF (1%)	Yes, required
DEG	Germany	491	KfW, the German development bank	Untied
FINNFUND	Finland	54	Finnish Government (93%), Finnvera, and confederation of Finnish industries	Yes, required
FMO	Netherlands	372	Dutch Government (51%), and commercial banks, trade unions, and others (49%)	Untied
IFU	Denmark	56	Danish government	Yes, required
Norfund	Norway	45	Norwegian Government	Untied

OeEB	Austria	40	Oesterriechishe Kontrollbank AG, the Austrian export credit agency	Untied
PROPARCO	France	168	Majority owned by AFD (64%), the French development agency	Untied
SBI	Belgium	6	Belgian Government (63%) and private financial institutions	Yes, required
SIFEM	Switzerland	17	Swiss Government	Untied
SIMEST	Italy	163	CDP, the Italian national promotional bank	Yes, required
SOFID	Portugal	12	Portuguese Government (60%) and four Portuguese banks	Yes, required
SWEDFUND	Sweden	33	Swedish Government	Untied

Source: Center for Strategic and International Studies

Other Design Issues

Category	Possible directions from Lab discussion
Corporate form	▪ Public benefit corporation ▪ Create new organization to maximize flexibility and opportunities; avoid legacy costs. ▪ Build new organization to increase speed and efficiency; consolidate functions into single development finance agency (across ministries, authorities, and government-sponsored entities); avoid legacy costs.
Eligible programs and tools	▪ Use equity to leverage capital market investors into DFI; project financing for projects in developing markets; to invest in private business to private equity or general partner/limited partner VC structure. ▪ Capital (junior equity, subordinated debt, and guarantees) to de-risk early stages of projects (design, development, and implementation).

Category	Possible directions from Lab discussion
Operations	▪ Make platform and tools efficient, streamlined, and easy to use. ▪ Must have clear and transparent investment policy with professional commercial guidance and management; must attract talent; create clear performance measurements. ▪ Create commercial (underwriting etc.) institution; make it an NGO, however. ▪ Decision making and governance are independent of government.
Management	▪ Executive hired by ownership partners ▪ Senior management hired by management ▪ Annual budget approved by ownership partners ▪ Program Investment committee appointed by Ownership Board
Participations and partnerships	▪ Represent Israel among DFI network; create center of knowledge and choice. ▪ Create partnership platform; don't limit to Israel/ though can be targeted by sector and specialties; focus on targets and geography (narrow). ▪ Adopt uniform underwriting standard to share project due diligence and syndicate financings.
Market targets	▪ Focus on Israel's core sectors (specific solution areas (e.g., devtech) for SDGs); create an intermediary SME fund; provide debt and guarantees with competitive terms and conditions. ▪ Create technology sandbox, i.e., solution workshops for Israeli companies/R&D sources for emerging markets. ▪ Outcomes focus: Identify mix of outcomes that balance financial rewards and performance incentives.
Marketing channels	▪ Ministries and NGO/multinational actors; suppliers and integrators.
Technical assistance	▪ Integrated deal structuring/technical solutions/planning/team building advisory services/one-stop shop for project development assistance/project portal/investment advisory hub.

Category	Possible directions from Lab discussion
Underwriting criteria	▪ Project ▪ Market ▪ Team ▪ Experience ▪ Investment Committee review investment underwriting proposals
Fees	▪ Fees for origination ▪ Fees on outstanding principal for service

Category	Possible directions from Lab discussion
Investment	▪ $500 million over 5 years to build critical mass, sustainable portfolio (given growth, losses, and operating costs), and to attract needed talent
Possible outcomes measures	▪ Number of businesses assisted; volume of capital invested ▪ Technology-sector growth ▪ Scale of impact ▪ Leverage of other DFI and private-sector capital ▪ Impacts: direct and indirect social and economic
Investors	Domestic ▪ Investors ▪ Israeli Citizens' Fund (SWF) ▪ Pension and insurance funds ▪ Government ▪ Local Philanthropy and high-net-worth individuals (HNWIs) ▪ Budget ▪ Dedicated operating revenue ▪ State guarantees Internal (to DFI) ▪ fees and tariffs from services ▪ licenses and royalties ▪ Interest ▪ Participating revenues and exits International ▪ Global DFI financial participation and partnerships ▪ Diaspora communities with interest in Israel and developing economies ▪ International capital markets (pension and insurance funds)

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