



Policy Brief

ISRAEL'S BRIDGE TO DEVELOPING ECONOMIES

FINANCING INNOVATION
FOR SUSTAINABLE DEVELOPMENT

Acknowledgements

We would like to thank the leadership of Richard Blum and the generous support of the Blum Family Foundation for this project. The report was written by Glenn Yago, Steven Zecher, and David Denker; and edited by Dinah McNichols.

About the Milken Innovation Center, Jerusalem Institute

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. 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 (UC-Berkeley) enabling interdisciplinary problem solving in key areas of energy, health, technology, food, water, health and other challenges to sustainable development.

© Milken Innovation Center 2018

EXECUTIVE SUMMARY

Earlier this decade, economic output in developing markets surpassed developed markets. By 2030, the middle class of the developing world will represent about one-third of the global economy. In short, developing markets are the key drivers of the global economy.

Despite its success as a startup nation, Israel has not realized its potential to transfer technology and experience to the developing world. Israeli exporters and tech companies continue to miss out on development project opportunities abroad because initial project and trade financing at home is either too costly or impossible to obtain. Additionally, development finance programs along with programs that help coordinate trade, investment, and technology transfer are largely nonexistent.

This policy brief shows that Israel must create a full-service and integrated development finance platform. This new mechanism will provide flexible financing tools to mobilize private and public capital for development ventures, and build a pipeline of investable projects.

The Israeli development finance platform, run as a public authority or a public-private corporation will be built upon three pillars:

1. Financial Capital;
2. Capacity Building: Social and Human Capital; and
3. Project Development.

Israel's growth exemplifies how ingenuity overcomes adversity. For seventy years, necessity, deprivation, and isolation pushed Israel to pioneer innovation. Israel is well positioned to transfer tech solutions to new start-up nations. Israel must waste no time in building the necessary development finance platform to bridge the Israeli economy to the developing markets.

INTRODUCTION

Israel has grown to exemplify the power of ingenuity to overcome adversity. For seventy years, necessity, deprivation, and isolation pushed Israel to pioneer innovations and adapt technologies, processes, and products across numerous fields, from energy and defense to agriculture and medicine.

Nowhere can Israel become more successful in scaling its role as a “startup nation” than through global partnerships with developing economies seeking to emulate Israel’s technology-driven path to development. The past 30 years of research and development in computer, information, and telecommunications technology have driven Israel’s economic miracle, generated demand for Israeli intellectual capital and ensured Israel’s place among developed nations (see figure 1). Knowledge capital exports have been the basis for competitive gains in productivity, income, foreign exchange growth, and wealth creation. Accelerating high tech adaptation to sustainable development challenges will scale and sharpen Israel’s global edge.

Israel is committed to the UN’s 2015 Sustainable Development Goals (SDGs), to the international community’s goals for combatting climate change, and to strengthening bilateral commercial ties with developing markets. Israel’s commitments were formalized in government decisions, including recent resolutions to build economic partnerships in Africa and India.¹ Israel can offer its technical know-how to countries transitioning toward competitive growth in the global economy. As a creditor nation and

now a developed economy, Israel can become a transformative contributor to global growth by building new trading, investment, and innovation partnerships in emerging and frontier markets.

In fact, Israel’s development challenges have gone global. Nearly every problem facing the world, and especially developing economies, has been concentrated in Israel: resource scarcity, ethnic conflict, immigration, fiscal constraints, security, and environmental problems. Challenges of land and water scarcity, climate adversity, energy, health, and the needs of urban-rural development have persisted in Israel since its beginning.² These are also the most urgent issues for sustainable growth in developing economies.

Since its birth, Israel has converted its litany of existential challenges into its key drivers of economic growth. Israel accomplishes this feat, according to Haaretz Business Editor David Rosenberg, by fusing collective action with individual initiative, acting outside of traditional hierarchies, and improvising and innovating technological solutions.³

Israel’s future economic success hinges upon its ability to expand this model of technology adaptation and development into the realms of food, energy, water, and health; and by ensuring the security of delivery systems through cybersecurity.

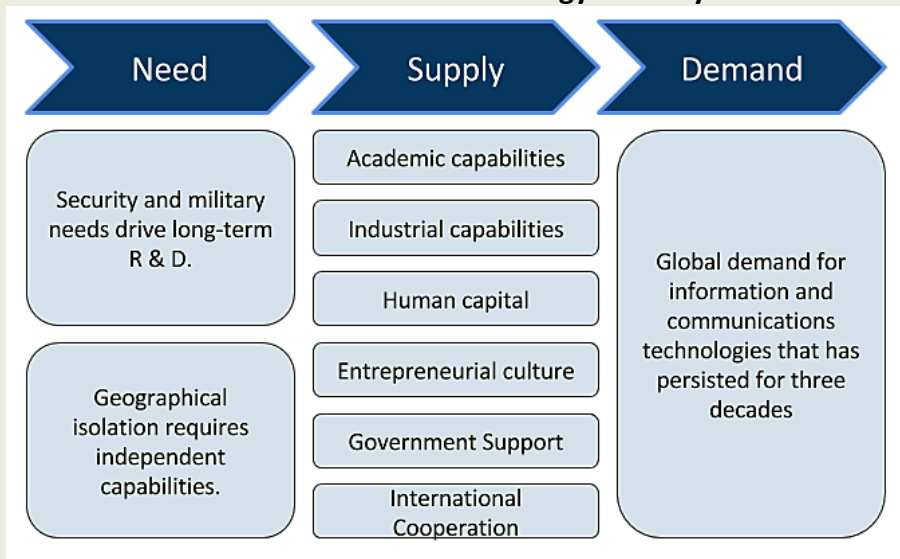
But there’s more to the story: Israel *needs* to partner and co-innovate with developing nations. Developing markets are now the key drivers of global economic growth. In developed economies, Israel’s traditional trading partners, populations are aging, and

1. Government of Israel resolution No. 1585 from 26 June 2016: Strengthening Economic and Partnerships Connections with African States; Government of Israel resolution No. 2783 of 25 June 2017: Strengthening Connections with the Republic of India.

2. Glenn Yago, “Big Ideas,” *Milken Institute Review*, Second Quarter, 2013:85-89.

3. David Rosenberg, *Israel: The Knowledge Economy and its Costs*. Forthcoming, 2018. Palgrave-MacMillan.

Figure 1: Needs-based innovation: The case of the Israeli Internet and communications technology industry



Source: National Economic Council, Prime Minister's Office, 2013

low birth rates are shrinking workforce productivity. Israel can no longer sustain its own economic expansion unless it identifies and cultivates new markets with potential for growth.

Israel's knowledge-based export economy is already its most promising path to future prosperity. Success, however, depends not on traditional export finance or trade, but in finding new niches of opportunity for the export of technology for development and, most importantly, figuring out how to finance that technology transfer. Israel will thus help foster growth in developing nations while increasing the share of Israeli exports and growing the Israeli economy.

The huge potential for Israel to share its tech-based model in developing economies is the subject of this policy brief. So too are the prohibitive barriers to access and engagement. Israeli exporters and tech companies continue to miss out on development project opportunities abroad because initial project and trade financing at home is either too costly or impossible to obtain. Additionally, development finance and programs that coordinate trade,

investment, and technology transfer are largely nonexistent.

This brief discusses strengths and weaknesses of the current system, and proposes policies and programs that will create supply and value chains for trade and investment that also meet the UN's Sustainable Development Goals (SDGs). The brief details the requirements for a successful finance facility that will upgrade Israel's international competitiveness and meet standards for leveraging blended public, private, and philanthropic investment through Israeli development finance.

Israel needs to implement two important innovations: a full-service, self-sustaining development finance facility, and a comprehensive policy initiative supportive of development finance. With the political will and the organizational framework, Israel will build bridges to new markets and customers, strengthen its domestic economy, and shape the global economy for future generations through increased health, energy, food and water security.

GLOBAL SHIFTS AND OPPORTUNITIES FOR CO-INNOVATION

Global demand for limited natural resources has exploded, and the result is a modern economic scarcity problem. Even worse, more than 2 billion people, slightly more than a quarter of the world's population, already lack clean, affordable energy for lighting and cooking, and have little or no access to safe water and sanitation. Income inequality, environmental degradation, and increasing poverty threaten social and economic stability, and not just in developing and frontier economies.

How will humankind allocate limited natural resources to sustain a population approaching 10 billion in 2050 without denying acceptable standards of living to billions and destroying the environment? How will markets emerge to overcome challenges of food and water shortages, improve sanitation and health, and manage the transition from fossil fuels to clean energy?

One thing we do know: The world must find ways to use technological and organizational innovation to decouple growth from the use of increasingly scarce natural resources.⁴ This requires a focused and evidence-based identification of the technological opportunities and investment needs for increasing productivity in health, agriculture, food, and energy. This is the basis for pioneering new Israeli development finance policy and programs.

4. M. Munasinghe, "Is environmental degradation an inevitable consequence of economic growth: tunneling through the environmental Kuznets curve." *Ecological Economics*, 29(1):89-109.

5. Glenn Yago and Franklin Allen, "Financing the Developing World," *World Financial Review*, September-October 2011:44-48; Joanna Syroka and Richard Wilcox, "Rethinking International Disaster Aid Finance," *Journal of International*

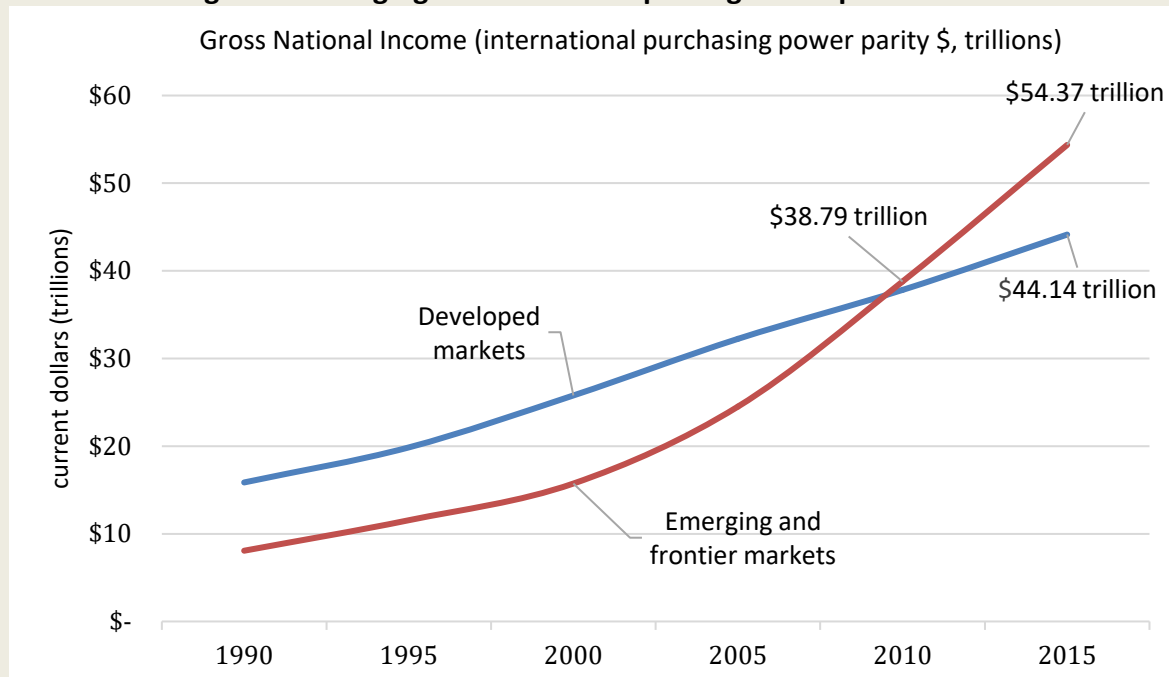
And this: When donor countries integrate technical assistance with blended finance and capital market solutions, the benefits are tangible, and growth accelerates. The focus on tailored investments that target specific needs, not simply through foreign aid, but through technical assistance and technology transfer is a widely accepted principle of modern development economics and finance.⁵ In fact, evidence suggests that traditional government-to-government foreign aid encourages corruption, fuels civil wars, and can lead to unaccountable governance. Thus, the foreign policy mission also becomes an economic and finance mission. Rather than "helping" poor countries through aid, development finance ensures that their citizens build paths out of poverty through job creation and capital formation. Such development finance includes investment in capacity building to effectively adapt, scale-up, and transfer technologies to developing economies.

As noted, frontier and emerging markets in developing economies (largely including low and medium income countries by World Bank definitions) will remain the key drivers of global economic growth in the future. In fact, the developing economies' share of global GDP growth rose from 24% in 1990 to nearly 60% today. Growth rates in these same developing economies track well above those of advanced economies, at 5.2% and higher, compared to 2.2% and lower.

Four Key Structural Changes

Affairs, Spring/Summer 2006, 59/2; "Innovative Financing for Development: Scalable Business Models that Produce Economic, Social and Economic Outcomes," *Global Development Incubator*, September 2014; Sam Jones, "Innovative Foreign Aid—Progress and Problems," *Journal of International Development*, 24, 2012.

Figure 2: Emerging markets are surpassing developed markets



Source: World Development Indicators, World Bank, 2017; MSCI Classification of markets

Four key structural changes in the global demand for capital define the current challenges to realizing Israel's economic potential in developing economies. The solutions will require innovative technologies and the financing structures to deploy them to meet the global challenges of scarcity in food, water, energy, and global health.

1. Shifting centers of global demand require countries to bridge capital gaps and build inclusive markets.

As shown in figure 2, economic output in emerging and frontier markets (i.e., developing economies) surpassed that of developed markets earlier this decade (with GDPs of \$54.37 trillion in developing economies versus \$44.14 trillion for the developed economies in 2015).

Patterns of economic growth are becoming highly concentrated in Sub-Saharan Africa and Asia.⁶ In addition, the global middle class is undergoing an unprecedented expansion, particularly in Asia and India (see figure 3).⁷ Building a bridge to this global middle class becomes the driver for transformative growth.⁸

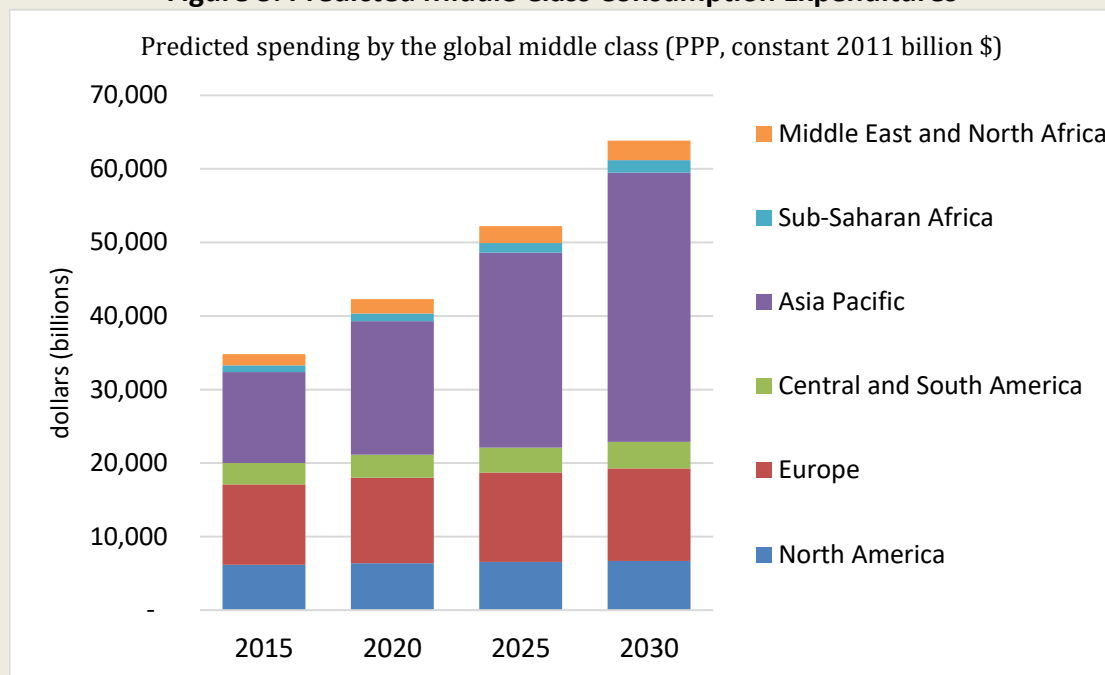
The world last witnessed economic structural change on this scale in the late 19th and early 20th centuries, when the locus of aggregate growth drivers in the world economy shifted the Old World to the New World. The inequality and resulting protectionism that occurred with this shift was at least partly responsible for the later interwar retreat from globalization after World War I and the

6. World Development Indicators, World Bank, 2017; growth weighted by GDP measured in PPP international dollars.

7. Homi Kharas, "The unprecedented expansion of the global middle class: an update," *Global Economy & Development Working Paper 100*, Brookings, February 2017.

⁸ Walter R. Meade and Sherle R. Schwenninger (eds), *The Bridge to a Global Middle Class: Development, Trade, and International Finance*, Milken Institute Series on Financial Innovation and Economic Growth, Springer, 2003.

Figure 3: Predicted Middle Class Consumption Expenditures



Source: Homi Kharas, Brookings Institution

catastrophic reverses of World War II.⁹ The lesson from history is clear: growth shared unequally between and within nations is a recipe for conflict and loss by all parties.

Globalization in the years ahead must include sustainable development. However, current demands for capital to achieve it and the potential resulting stalled growth rates suggest that the consequences could become even more threatening than in the 20th century, when globalization last failed us. Inclusive growth is thus necessary to ensure robust, stable, and growing markets for both developing and developed markets. Developed economies now depend upon the success of these newly developing markets to drive global demand, and are seeking synergies that will benefit both partners.

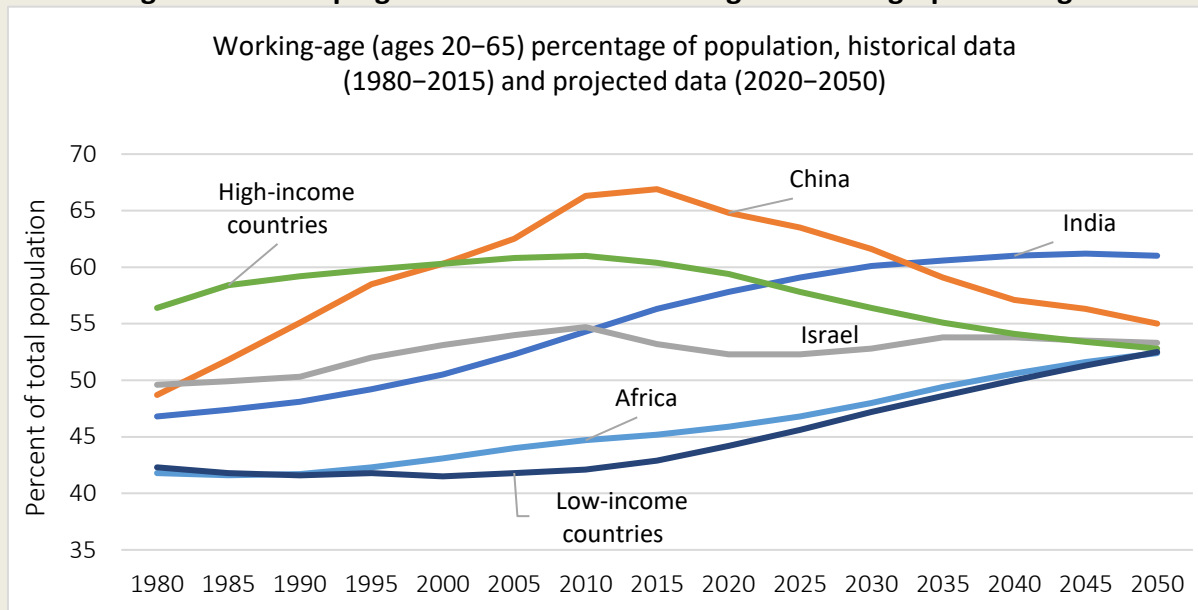
9. See Jeffrey G. Williamson, "Globalization and Inequality: Past and Present, *NBER Working Paper* 5491, March 1996; Jeffrey G. Williamson, M. Bardo, and A. M. Taylor (eds.), *Globalization in Historical Perspective*, NBER and University of Chicago Press, 2003.

One proven path to growth will be the accelerated implementation of disruptive innovation that allows new firms and technologies to leapfrog the dominant, entrenched interests that have little incentive to innovate. As companies and countries enable efficiencies and cost savings enabled by innovative finance, they will help overcome the negative potential of globalization.¹⁰

Israel is a prime example of this process. Activist government investment policies shaped markets based upon science and technological achievements in Israel. Its developers and entrepreneurs were enabled to introduce disruptive technologies that accelerated Israel's growth because they reduced costs, increased efficiencies in supply chains, and enabled faster rates of aggregate growth by increasing returns to scale in trade. With the creation of positive externalities and

10. Brezis, E., P. Krugman, and D. Tsiddon, "Leapfrogging: A Theory of Cycles in National Technological Leadership," *American Economic Review*: 1211-1219 (1993)

Figure 4: Developing Economies at various stages of demographic change



Source: World Development Indicators, World Bank, 2017

spillovers from technology transfer to human and social capital formation, the production function of other developing economies will lead to increasing, not diminishing returns to scale.

2. *Demographics shifts (youth bulges) necessitate changes in how jobs are created, and capital is formed.*

Are we seeing a population dividend or demographic time bomb? The “youth bulge,” the increasing share of a population in the 15–29 age group, is a common phenomenon in many developing economies, and runs about seven percentage points higher for these economies than for developed economies (see figure 4).

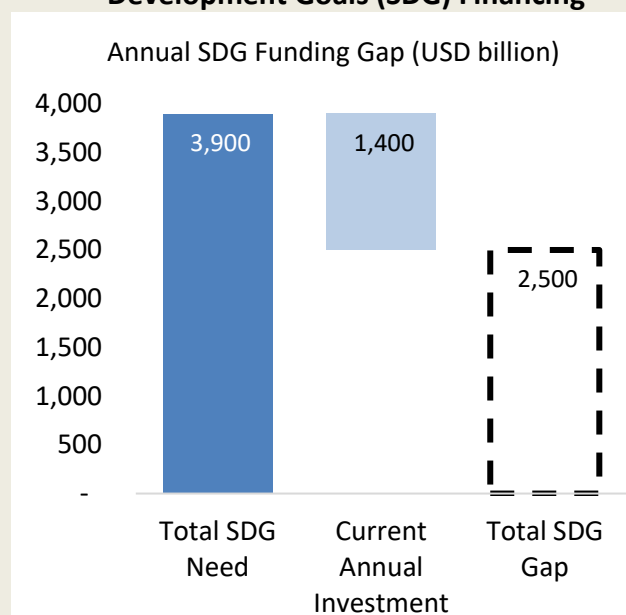
Shifts in population structures have enormous effects on economic transitions. One way to measure the effect of a country’s youth bulge is by its dependency ratio—the ratio of people of non-working-age (below 20 and above 65) relative to those of working age as measured

by relative age cohort size and how they affect performance adjusted income gains and other economic outcomes. When greater numbers of working-age individual are fully employed in productive activities, such that the dependency ratio *declines*, then average per capita income levels should rise. This kind of youth bulge becomes a demographic dividend.¹¹ However, if a large cohort of young people can’t find work or can’t earn an adequate income, this youth bulge is likely to become a source of social and political instability, a demographic time bomb.

The World Bank categorizes countries based on their “demographic dividends,” whether they have reaped the benefits of rapid working-age population growth or not. The median age in Africa is 19, and half of global population growth between 2015 and 2050 will be in Sub-Saharan Africa, making it

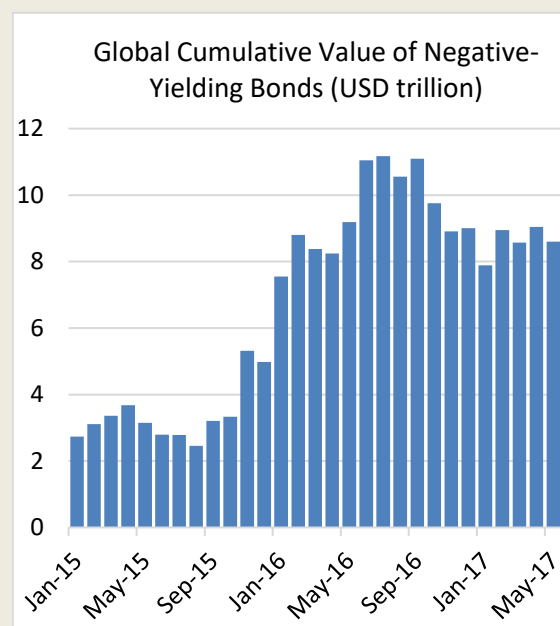
11. “Development in an Era of Demographic Change,” *Global Monitoring Report*, World Bank, 2015-16

Figure 5: \$2.5 Trillion Gap in Sustainable Development Goals (SDG) Financing



Source: World Economic Forum, Business and Sustainable Development Commission; Milken Institute, Center for Financial Markets, 2017

Figure 6: Global Negative Yielding Debt



Source: Milken Institute, 2017

imperative to develop high demographic dividends for the continent..¹²

3. Investment gaps cause countries to fail to meet their Global Sustainable Development Goals or address climate change.

Two major investment gaps must be met to enable a successful transition to global growth by the mid-21st century: meeting sustainable development goals and adapting to reduce climate change.

According to recent reports by the World Economic Forum and the Climate Policy Group, it will take an annual increase of \$367 billion each year for the next 15 years, \$5.7 trillion total, to mitigate climate change risks. Without this investment, average

temperatures will rise by 2°C, causing irreversible environmental damage.¹³

The UN's Sustainable Development Goals (SDGs) identified broad-based objectives and specific targets to accelerate economic growth through sustainable investment. The estimated *annual* cost to achieve these SDG goals globally is \$3.9 trillion. About \$1.4 trillion has already been allocated, leaving a funding gap of \$2.5 trillion. This funding gap won't be met without private-sector participation, the lion's share of global capital flows.

Africa, for example, accounts for nearly half of the annual \$3.9 trillion SDG costs and, at \$1.2 trillion, about half of the annual \$2.5 trillion funding gap. To bridge this gap, development

12. *ibid.*

13. Barbara Buchner, Angela Falconer, Morgan Hervé-Mignucci and Chiara Trabacchi, "Global Landscape of Climate Finance 2012," *Climate Policy Initiative*, 2012; "The Green Investment Report: The ways and means to unlock private

finance for green growth," *World Economic Forum*, 2013; Aron Betru and Christopher Lee, "Clearing a Path for Global Development Finance: Enabling Basel and Development Guarantees to Deliver on Sustainable Development Goals," *Viewpoints*, Milken Institute, September 2017.

allocations to Africa will have to include private investment; even if global development were to increase by 46%, every development aid dollar would need \$12 more in additional private investment.

The good news is that there is significant capital available in the world. For example, there is \$9.9 trillion in cash in global banks, \$8.0 trillion in fixed-rate bond financing trapped in negative yields, and \$5.2 trillion above regulatory minimums sitting in banking institutions. All this capital could be brought to play in positive yield investments. But the dormant capital will come in off the sidelines and target development finance only if risk is properly addressed – and risk is everywhere: project design and development, the procurement process; blended financing, construction, operations, and foreign exchange.

Israel is well positioned to contribute to, and benefit from, the growing investment in targeted projects and can reduce the cost factors for growth through a dedicated development finance facility. Israel possesses competitive technological advantages in eight of the UN's Sustainable Development Goals (see figure 7): hunger, health, education, clean air and water, clean energy, sustainable cities, climate action, and partnerships.

4. Slower growth and productivity in developed economies that will hit returns on investments.

Figure 7: The 17 Sustainable Development Goals (SDGs)



Source: United Nations, 2015

Developed countries have economic problems of their own that inversely mirror the investment gaps in developing countries. Their populations are aging and living longer, requiring longer-term costs to cover retirement pensions, insurance premiums, and health care. Low birth rates mean their working-age populations haven't grown proportionally to support these needs. The results are lower domestic productivity and a smaller tax base to support all those safety nets. Increasingly the yields required to funding long-term liabilities in developed economies, depends upon the productivity of labor and firm performance to deliver higher yield investment performance.

Institutional investors

Many OECD countries face weak economic growth and the associated low interest rates. This is particularly the case with respect to UK and US pension liabilities, which are underfunded, respectively, by £383 billion, and \$3.4 trillion.¹⁴ Their institutional investors are looking globally for new asset classes that can deliver steady income streams and higher

14. "Pensions: Low Yields, High Stress, *Financial Times*, August 2016; and "Pensions & Bonds: the Problem Explained," August 2016.

yield investment returns. Again, the problem isn't a shortage of investment capital, but the need to present those institutional investors with the investment products they are hungry for: well-structured, long-term, fixed-rate investments that mitigate risk to meet SDG and climate change goals, *where demand is growing*, and which offer acceptable returns.

Governments and institutional investors, as well as impact investors, are eager to pursue investments in these areas, aware that the returns they reap will help their own pension funds, insurance, and health needs. Bluntly, their investments in the labor productivity and workers and companies in developing countries will increasingly finance the benefits of their retired and aging populations.

Leapfrogging, Project Pools, and Value Chains

Development finance allows governments and companies in developed markets to build partnerships in developing markets in ways that accelerate the growth process by “leapfrogging” over early stages of technological R&D and avoiding environmental costs. (It also allows for accelerated innovation that can leapfrog over entrenched interests that will not innovate). The remarkable economic transitions of South Korea, Singapore, and Israel illustrate the promise of leapfrogging economic growth within a generation.¹⁵

Such partnerships also enable *co-innovation* through technological adaptation because the parties work to mitigate risks for their backers by creating pools of projects that can create

innovation “continuums” for both countries.¹⁶ The donor country finances work on new technology and adaptation that it applies to the needs of its developing country partner for widespread deployment and potential future adaptation elsewhere.

In addition, the rise of global supply chains—in which the various R&D, operations, manufacturing, and production stages of a business can be located in different countries—makes it easier to invest in and assemble leaner teams. The more dismal economies (i.e., middle-income countries like Russia, Mexico, Brazil, and Malaysia) are locked into entrenched industrial organizations and financial repression, and fail to create the institutional commitment to open their economic strategies. Thus, Mexico may rank 13th as a global export economy in 2016, but assemblage for export is its forte, and the country still faces numerous challenges that hinder inclusive growth.¹⁷

THE ISRAELI EDGE FOR BUILDING ECONOMIC SYNERGIES

Scarcity and need have always been the forces behind Israeli innovation, and technology has generated productivity in the oddest places. Israel's Tivall produces a vegetarian schnitzel substitute, for example, using a high-tech food processor. Today's miniaturized satellite components reduce payload weight in rocket launches. Israel now sells more tomato seeds than tomatoes, thanks to the comparative trade advantage of agritech over agriculture.

15. Brezis, E., P. Krugman, and D. Tsiddon, “Leapfrogging: A Theory of Cycles in National Technological Leadership,” *American Economic Review*: 1211-1219 (1993)

16. Ricardo Hausman, D. Hwang and D. Rodrik, “What you Export Matters,” *Journal of Economic Growth*, 2007; “The Tacit-Knowledge economy,” *Project Syndicate*, October 30, 2013.

17. “Observatory of Economic Complexity,” MIT Media Lab.
<https://atlas.media.mit.edu/en/profile/country/mex/>.

Israel's early experiences with austerity have given it legitimacy as a model and laboratory for addressing major 21st-century challenges.¹⁸ It has a technical edge in just about every sectoral crisis, from food, agriculture, energy, water, health, and cybersecurity to ensure the safety of the goods and services delivered for these critical technologies. By increasing capital for development abroad, Israel can create demand for Israeli innovations and skills in developing economies and expand its own globally traded and technology-driven economy.

An Israeli-African connection bears fruit

With a population of over 1.2 billion, Africa already represents one of the largest sources of global demand and will remain one of the largest and most significant markets on the planet for a long time. As noted earlier, half of the world's population growth between 2015 and 2050 will be in Sub-Saharan Africa.

Israel should have an advantage when it comes to building an innovation continuum with its African trading partners—it has an empathetic understanding of deprivation and hard labor, of seeing patchwork solutions catch fire in the marketplace, and the thrill of reaching milestones in economic growth and sustainable development.

Some companies already have a foothold in Africa. Large companies like Shikkun Binnui and Netafim have a long history there. New investors such as Kaenaat and Vital Capital have also become increasingly present there. Kaenaat, a global impact investment firm with teams in Israel, Africa, and India, broke ground in 2015, setting the foundations for partnership between Israel, Rwanda, and East Africa. Kaenaat invests in new technology

ventures in partnership with Rwanda's industrial sector, and encourages Israeli investors and entrepreneurs to enter the market. Vital Capital has also become quite active in Sub-Saharan Africa with a \$350 million fund focusing on health, agriculture, food processing, and energy.

At Rwanda's Agahozo Shalom Youth Village (ASVY), which was modeled after Israel's Yemin Orde, the Dutch-Israeli firm Gigawatt Global, with a group of finance and granting partners in Norway, England, Finland, and the US, built an impressive 8.5-MW solar field that has increased Rwanda's electricity generation capacity by 6%, and in turn provides jobs for the surrounding community, access to engineering education for ASVY students, and health insurance for many of them. It's current potential pipeline for similar projects is approaching 1000 MW throughout Africa.

And in Kigali, Rwanda's capital, Kigali Innovation City is a project of the Rwandan Development Board, which aims to turn Kigali into a leading innovation community that will include a tech campus, run by Carnegie Mellon University, and space for local and international tech ventures. The project is being developed with the support of \$150 million of partnerships, and was presented as an opportunity for partnership at the 2015 Globes Business Conference in Tel Aviv.

Other Israeli-affiliated companies investing in Africa include: Tahal Group International BV (water resource management); GrainPro (post-harvest); NovaLumos (off-grid solar); Amiram Kenya (agritech); Hazera Genetics and Kaiima (seed technology); Green 2000 (agricultural equipment); Elco Energy & Infrastructure (large-scale turnkey infrastructure); Anyway Solutions (soil

18. Glenn Yago, "Big Ideas," *Milken Institute Review*, Second Quarter, 2013: 85–89.

stabilization); and Electra Infrastructure (infrastructure).

The market potential for East Africa is immense. From 2005 to 2015, according to the Global Impact Investing Network (GIIN), direct foreign investment in the region totaled more than US\$9.3 billion, with almost 50% of that disbursed to Kenya, followed by Uganda (13%), Tanzania (12%), Ethiopia (7%), and Rwanda (4%). Most of the combined Development Finance Institutions (DFI) and non-DFI capital has been in the financial services (30%). DFI tends to target energy and infrastructure, while non-DFI investors tend toward agriculture and affordable housing. To date there have been 20 DFIs in East Africa that have 429 active investments and 107 investments into impact funds.¹⁹

For the same period in West Africa, GIIN reports that more than US\$6.8 billion for 394 deals has been disbursed, almost exclusively by DFIs and mostly in Nigeria and Ghana. Those investments are in energy, manufacturing, and infrastructure, while the non-DFI investments are primarily in financial services. Over half the DFI deals are above US\$50 million in size, and almost all are deployed as debt. DFIs made investments through intermediaries that accounted for 34% of the total capital deployed, usually through commercial banks with the purpose of on-lending to SMEs (as well as to impact funds and private equity funds).²⁰

These numbers should make us sit up. Israel is situated in relative proximity to these countries and has many similar historical experiences. It also has the know-how to rid an economy of dependence on scarce natural resources, and to target technologies that produce social and environmental benefits.

19. "The Landscape for Impacting Investment in East Africa." August 2015, Global Impact Investing Network.

And because of the potential for co-innovation, Israel has the potential to enjoy lower ongoing costs of R&D and technology adaptations, with those costs financed as the new technologies roll out for widespread deployment across new markets based on win-win investment and trading partnerships.

PROBLEM: **ISRAEL'S UNREALIZED POTENTIAL IN DEVELOPING ECONOMIES**

Despite its success as a startup nation, and despite the growing numbers of global institutional and social impact investors waiting to enter developing markets, Israel itself has had very little impact or presence in that arena. Meanwhile, its stake in the rapidly aging markets of the developed economies represents a fading economic strategy. As those markets contract, so do Israel's gains. Its economic strength will be secured only by entering new markets and the greater productivity they offer. This is a race against time. If Israel can adapt its traded-sector technologies and financial services to the needs of these markets, it will reap dividends at home through greater labor force participation, increased labor productivity and less income and social inequality.

As noted, the working-age populations in these new markets are swelling, along with opportunities for their governments to reap demographic dividends as well, from greater earning power, education, health, and the related hallmarks of strong social capital. But they can't touch those opportunities if they don't go after the development assistance that will make job-creation real and sustainable projects attractive to investors. They too are racing against time to achieve

20. "The Landscape for Impact Investing in West Africa: Understanding the Current Status, Trends, Opportunities, and Challenges." December 2015, Global Impact Investing Network.

higher employment and income levels, and more social equality.

Israeli exporters and tech companies continue to miss out on development project opportunities in emerging markets because of the unavailable or high costs of capital for project financing, structural economic barriers, excessive business centralization, and a bureaucratic maze. Its five large industries are concentrated in the non-tradable goods and services sectors (serving mostly the local market) and are responsible for 81% of the Israel's widening productivity gap.²¹

In addition, there is limited export financing accessible to Israeli firms wanting to expand their technology transfer. Israel offers few tools to a very small set of companies operating in select countries. Over 80% of all export activity from the Israeli economy is characterized by short-term (less than a year) exporting. ASHRA, the government-owned export insurance corporation, provides few services for middle- and long-term exports.

Consider these risks to future Israeli prosperity and social inclusion, as reported by the Israel Export Institute:²²

- 61% of all exports are targeted to developed countries with declining global market shares.
- 10 Israeli companies account for 47% of Israeli exports, creating high concentration risk.
- Israeli breakthrough technologies are under-represented in growth markets in Asia, Sub-Saharan Africa, and Latin America.

21 Eitan Regev and Gilad Band, "Causes of widening productivity gaps between Israel and OECD: a multiyear industry-level comparison," Taub Center for Social Policy, 2015; Gilad Brand, "Israel's growth paradox: declining productivity

- Of Israeli tech firms, only 7.5% in the agritech sector, 10.0% in the renewable energy sector, and 13.0% in the water-treatment sector target developing economies.
- Israel's long-term foreign trade insurance capacity is low relative to its global competitors, at only 0.51% of GDP, compared to the global average of 1.19%.
- Looking at comparative economic performance, Israel's exports per capita ranks a low 16th among 21 countries with similar economic characteristics, as shown in figure 8.
- Israel has no development finance facility that mobilizes and leverages private sector initiatives—nothing comparable to the Netherlands Development Finance Company (FMO); the UK's Commonwealth Development Corporation (CDC) Group; Norway's Norfund; the Danish Investment Fund; or the US Overseas Private Investment Corporation (OPIC).

All these statistics underscore the missed opportunities and the distance Israel must travel to gain market share and realize what should be its competitive advantage in emerging markets.

Israel needs to create policies that promote flexible financing for use in multiple sectors like food, agriculture, energy, water, health, and cybersecurity. It needs mechanisms to mobilize large pools of private and public institutional capital for development projects, and to leverage the assets of global pension, insurance, and sovereign wealth funds for projects designed to meet sustainable development and climate change goals. It needs quick access to the appropriate channels to link domestic institutions and

and returns to human capital," Milken Fellows Program, 2014.

22 Netanel Kahana, "Enhancing Israeli Export to Africa," Milken Innovation Center, July 2017

firms both to new investing partners and to appropriate host-country participants.

Some new programs have sought to address the policy gaps, including new government guarantees for small and medium enterprises (SMEs); the Foreign Trade Administration's project and aid assistance programs; the underfunded but invaluable activities of MASHAV (the Foreign Ministry's Agency for International Development Cooperation); the Tel Aviv Stock Exchange's effort to create an SME market; and an upcoming effort to provide support through the Inter-American Investment Corporation by the Ministry of Finance. Israel has also become a donor to the Inter-American Development Bank's Multilateral Investment Fund.

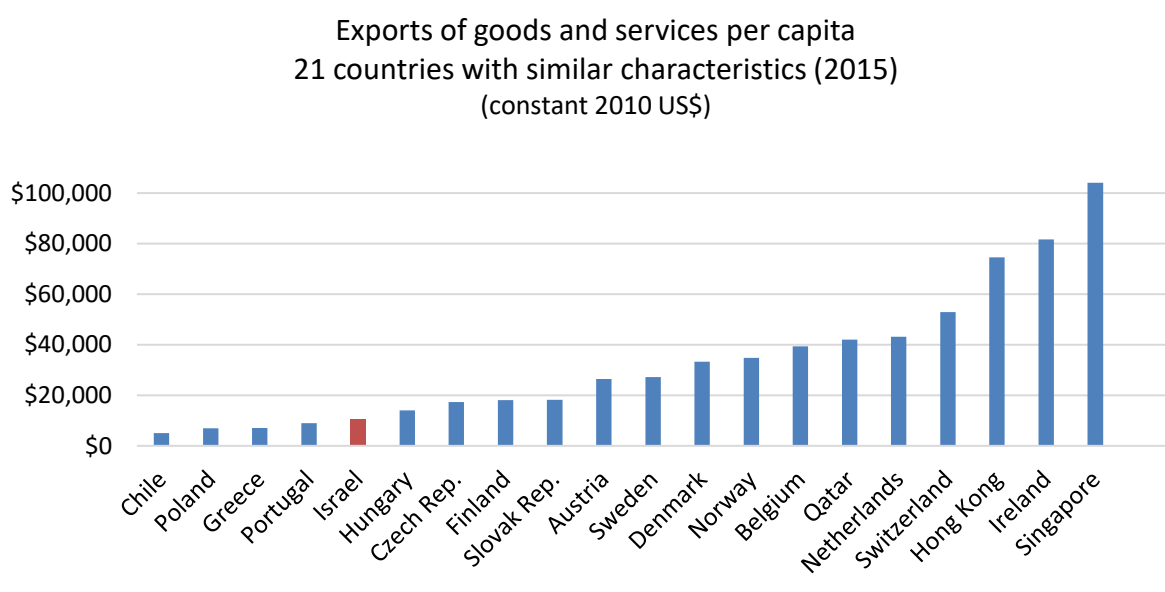
These green shoots of initiatives are important and central to Israel's future economic strategy. But none of them address the fundamental lack of an integrated development finance that can build future markets for Israeli exports.

The pressing question remains: How do we make a definitive fix? This brief argues that

every issue boils down to one solution that will ensure prosperity for Israel's knowledge-based export economy: an integrated development finance platform.

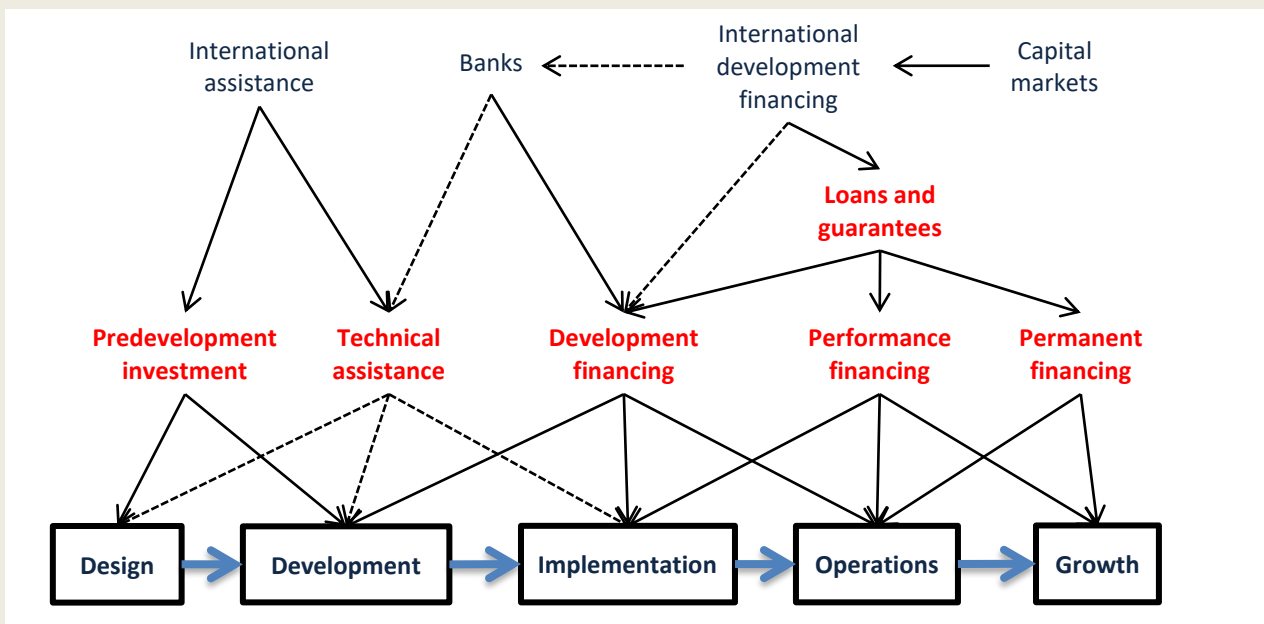
Israel needs a system-wide change to the structure of its development finance. This is the only way we can support our firms in their investment opportunities in the changing global economy. Surging markets require great creativity in technology deployment and solutions for sustainable growth. A full-service, self-sustaining integrated development finance platform will address how Israeli firms can finance and insure their development processes; help them access finance through blended domestic and international public, private, and philanthropic ventures; and help Israel continue to "grow" social and human capital at home and abroad.

Figure 8: Israeli Exports Relative to other Countries



Source: World Development Indicators, World Bank, 2017

Figure 9: Project Deployment: What needs to be strengthened?



Source: Milken Innovation Center

SOLUTION: DESIGN A FULL-SERVICE, SELF-SUFFICIENT DEVELOPMENT FINANCE PLATFORM

Because there is no integrated development finance facility, current efforts to connect Israeli partners and host-country market participants are limited. Similarly, there is no continuity in partnerships with international development finance agencies like the World Bank, International Finance Corporation, or with bilateral partners like Germany's Kreditanstalt fuer Wiederaufbau (KfW), the French development agency Agence Française de Développement (AFD), or the US Agency for International Development (USAID). Nor is there continuity to speak of in partnerships with regional development boards or financial institutions like the African Development Bank, the Asian Development Bank, or the Asia Infrastructure Fund.

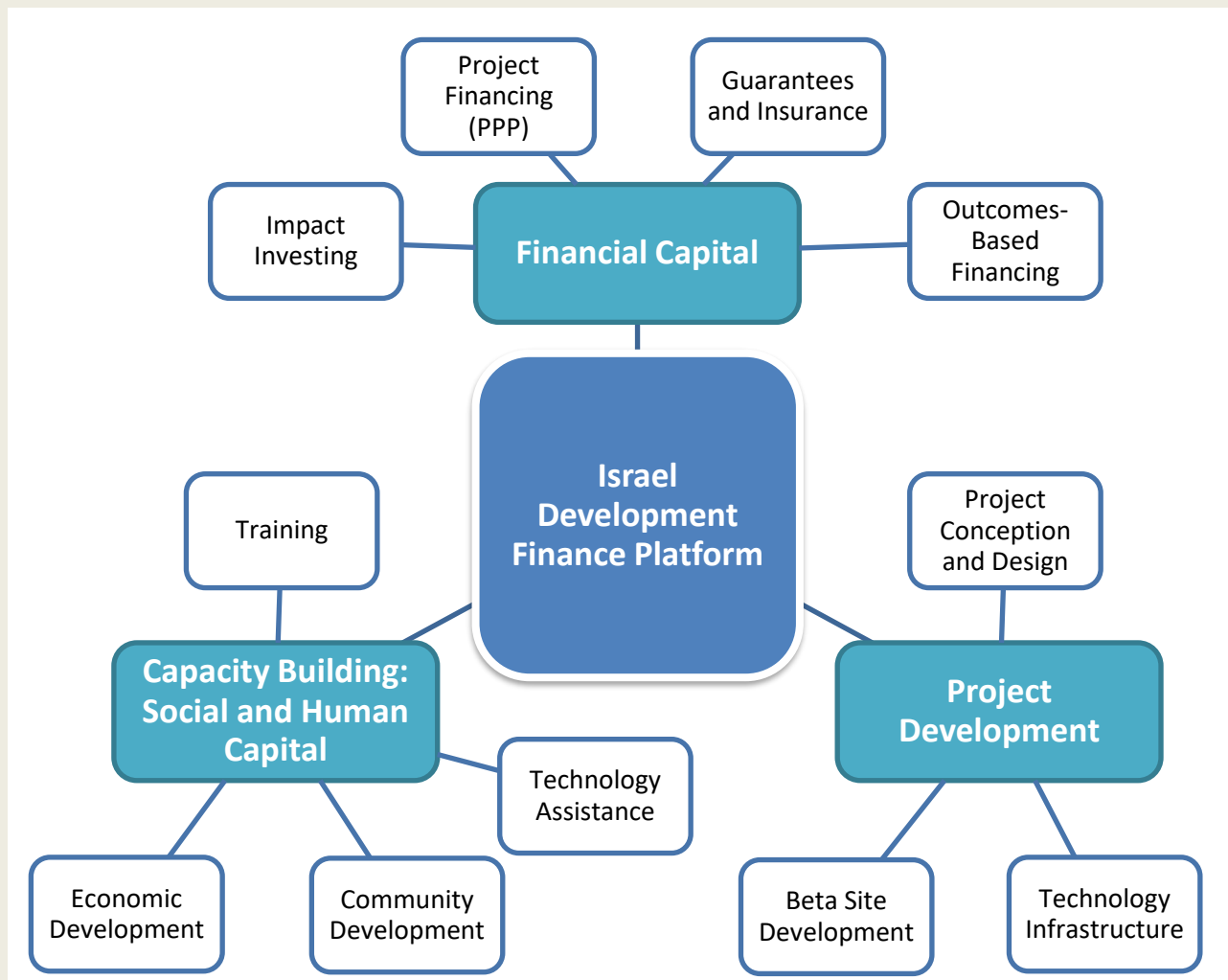
The German Development Bank, Euler Hermes, the European Bank for Reconstruction and Development, and other successful export development finance institutions provide full suites of services to

support work with developing economies and access to institutional funds through capital markets. This is what Israel needs as well: a full-service, self-sustaining development finance platform.

It could be run as a corporation or a public-private entity. But it must be able to fulfill several functions:

- Integrate and streamline the government's programs that are now siloed in various ministerial and departmental bodies.
- Integrate traditional tools, such as emergency aid and technical assistance, with different types and levels of financial support, including project financing through blended finance structures; outcomes-based financing (pay-for-results, cost-avoidance models for impact bonds, etc.); outcomes philanthropy, public-private-philanthropic partnerships; and leveraged guarantees.

Figure 10: Integrating Israeli development finance



Source: Milken Innovation Center

Note: An Israel Development Finance Platform would incorporate and coordinate the work of existing programs at government ministries (e.g. Ministries of Finance, Economy, Energy, Environment and Foreign Affairs (MASHAV), the Israel Innovation Authority, the Israel Export Institute, the financial services industry, businesses, impact investors, and impact philanthropy.

- Integrate support and technical assistance for project design and development, technology R&D, and capacity building for project deployment.

The Components of an Integrated Development Finance Platform

Based on the analysis of best practices from around the world, Israel's development finance platform should consist of the following three pillars:

A. Financial Capital

The platform will serve as government-funded bridge to leverage public and private funding to help Israeli businesses and capital markets participate in developing markets.

It will offer multiple types of financing needed and expanded financial instruments, including project finance, trade finance, and export insurance.

It will streamline programs that now are siloed across the government by placing

them under one roof. The facility will share deal flow and capital flow with other financing partners, in Israeli, in the host country, and in the international capital markets, which will increase access to financing and markets.

Internationally, many governments work with international agencies and nonprofits to bring project-specific initiatives directly to the capital markets. In 2015 the World Bank Group, for instance, launched the Global Financing Facility for health and nutrition; the World Food Research and Innovation Forum, which was also inaugurated in 2015, bills itself as a “platform available to national and international policy makers, the science, research, business and finance community”; donor governments pledge funding for “vaccine” bonds (Global Alliance for Vaccine Initiatives-GAVI) that the International Finance Facility for Immunization (founded in 2006) then sells in the capital markets; and governments, development banks, private-sector investors, and financiers all support the Global Infrastructure Facility, which since 2015 has lent its expertise to structure the financing and implementation of complex projects. These agencies and organizations understand that the capital is out there, that investors are always looking for returns, and that the field of impact investors is growing. Institutions seeking long-term returns increasingly look upon metrics of risk, reward, and impact.

Israel can aggregate its development technology assets (both domestic and co-innovated with other strategic partners)

for adaptation and project support to cover the spectrum of project activities, from design and preparation to transaction structuring and implementation. When Israel decides to help finance innovation for sustainable development goals, it will unleash a real competitive edge.

B. Capacity Building: Social and Human Capital

By focusing on skills training targeting developing economies, an integrated Israeli development platform will introduce a training program for talented Israeli and international graduate students in financial and technology innovation and international development. The training could also include an exchange program between Israeli, Asian, and African students to gain experience on actual projects that are part of the developing economies focus.

Israel has launched an effort to internationalize its higher education system and increase the number of overseas students.²³ However, much of this effort is not focused on matriculating students, but on short-term programs. Currently, foreign students account for only 3.9% of the student population, but only about 2.3% are matriculating students. By comparison 21.5% of students in Great Britain, 21% in Australia, 13.3% in Canada, 13.1% in France, and 11.5% in Germany come from overseas. These figures suggest that Israel has room to expand as the number of students globally studying abroad is growing, especially from emerging economies.²⁴

23. Israel Council of Higher Education, “Presentation of a New Multi-Year Program: 7 Billion Shekel Supplement to the Higher Education Budget” (Hebrew), 2016

24. *2016 Top Markets in Education*, U.S. International Trade Administration, 5. Estimate for Israel’s overseas student population is David Rosenberg’s calculations based on Council of

C. Project Development

The platform will identify regions and sectors where Israel holds a comparative advantage and use a variety of tools to populate a pipeline of projects. A key challenge to current project growth remains the long lead times to understand needs and the potential technological and business solutions.

The platform will work to cut project development lead times. It will integrate similar programs at ASHRA, the Foreign Trade Administration, and the Israel Innovation Authority, which already facilitate aspects of the project finance value chain but don't operate in an integrated fashion.

Israel has already built similar platforms such as the government's Fuel Choices and Smart Mobility Initiative, and the Israel Life Sciences Fund (through the Israel Innovation Authority). The development finance platform will assist programs by providing proof-of-concept programs and beta sites, multi-company collaborations, tender procurement, and collaborations with other development agencies and philanthropic foundations.

SOLUTION: DESIGN A POLICY INITIATIVE THAT SUPPORTS DEVELOPMENT FINANCE PARTNERSHIPS

Israel has sufficient economic and financial soundness (an 11% savings rate, financial institutional depth and breadth, a growing institutional investor base, structural changes in local capital markets, and a sovereign investment fund to be launched in 2019) to

Higher Education data and includes short-term students. Not counting them, Israel's overseas student population is 2.3%

consider policy initiatives that use development finance partnerships to catalyze growth in emerging economies and derived demand for knowledge based exports at home.

This involves, on the one hand, the work of the new development finance platform, which will aggregate the new technology-based assets designed for development assistance into funding pools appropriate for risky projects with growth potential. Aggregation is important because it increases scale and pulls in more financing, which makes it easier to transfer these investments into more liquid, blended finance vehicles.

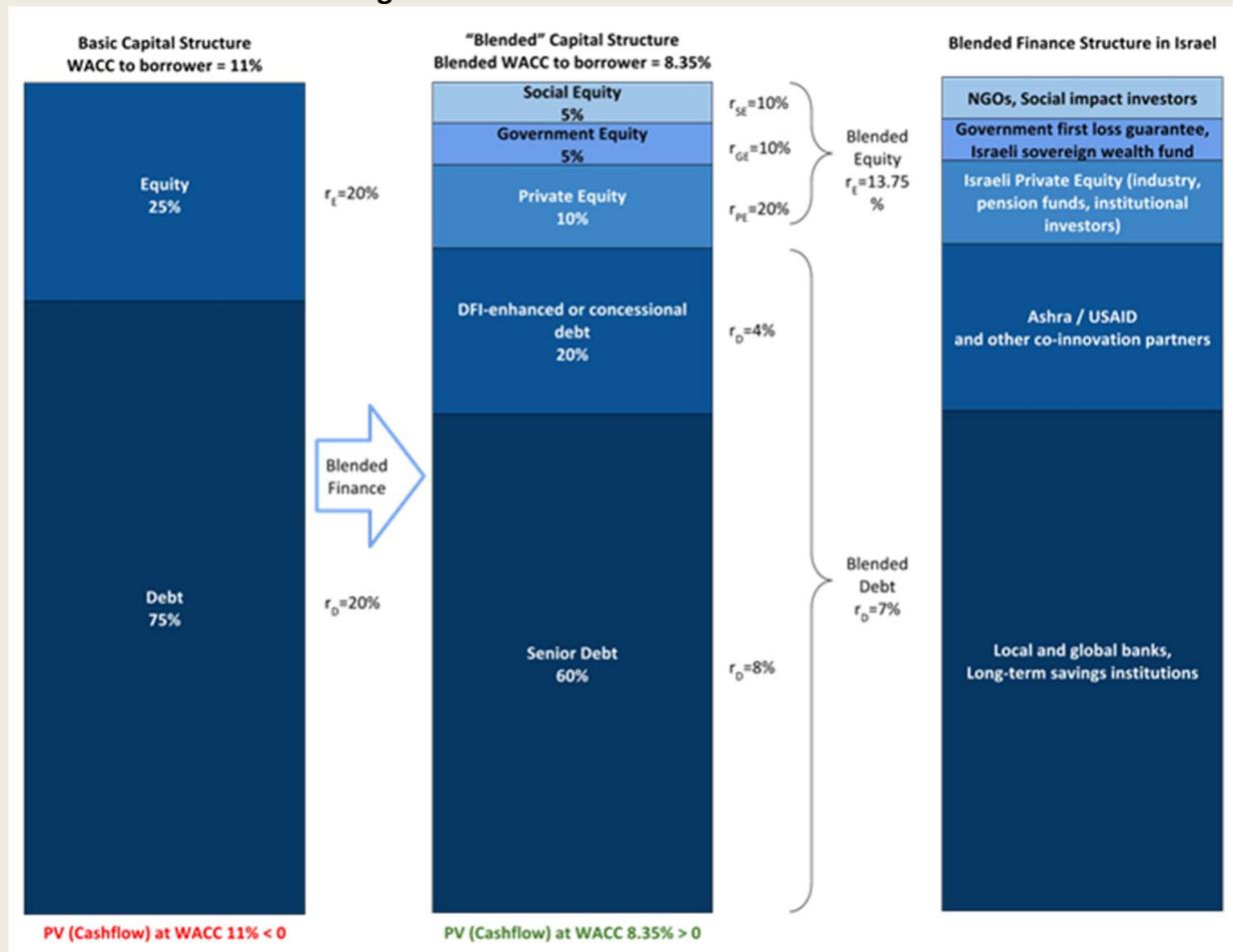
It involves, on the other hand, a modernization of policy—an initiative that aligns with this new era of public-private partnerships that can include combinations of market-based and philanthropic investors, governments, multilateral development banks (MDBs), and bilateral development finance institutions (DFIs) that currently hold more than 90% of the assets they create on their balance sheets through maturity.

Proactive government investment policies can make it possible to use the public and private securities market in partnership with major philanthropies to offer the following products:

Themed Bonds

Israel was not only the first Diaspora nation, it was also the first to issue themed bonds, in the form of diaspora bonds for national development. Israel bonds, issued by the US-based Development Corporation of Israel, brought out the first bonds in 1951 and has since raised more than \$25 billion.

Figure 11: Illustration of blended finance



Source: Jeremy Bentley, Citi-Israel, Project Design Workshop, USAID Power Africa/Milken Innovation Center Workshop, December 6, 2017.¹

Note: r_E : return on equity; r_D : return on debt; r_{SE} : return on social equity; r_{GE} : return on government equity; r_{PE} : return on private equity; and; PV: present value; and WACC: weighted average cost of capital.

As national goals now converge with global goals for sustainable development, and as the need grows to create markets in the developing world, Israel could pursue a similar strategy in conjunction with the diaspora bonds of other developing economies for co-branded projects.²⁵

These could include *water bonds*, for pooling Israeli and co-innovated technologies for sanitation, hygiene, wastewater, and precision irrigation. They could take the form of *ag-tech bonds* to address food and

agricultural solutions, from plant/soil science through post-harvest supply chains. *Cleantech* and *green bonds* could address such resource-decoupling applications as sustainable water, low-carbon transport, energy efficiency, renewable energy, climate adaptation, and climate-smart agriculture. *Global health bonds* focus on digital health, and chronic and infectious diseases that have generational impacts on development.

Beyond Israel, climate-themed green bonds have grown tremendously in recent years. In 2014, for example, the Inter-American

25. Sule Akkoyunlu and Maximilian Stern, "An Empirical Analysis of Diaspora Bonds," Graduate

Institute-Geneva, Program for the Study of Global Migration. Research Paper 3 (2012).

Development Bank issued \$500 million in education, youth and employment bonds structured to invest in early childhood care, primary and secondary education, and employment projects that improve the transition from school to work.

Blended Finance

Blended finance is a mix of public and private capital, usually philanthropic funding, for development purposes. It relies on risk mitigation as an incentive. Blended finance can also leverage grant resources and the deeply concessional funding (provided at far below-market rates and/or for longer terms) used for impact investments to mobilize funding that will achieve commercial returns and meet private-capital return hurdles. Such structured finance has historically accounted for market failure and used risk reduction as a means of accommodating investors. Risk-adjusted returns in the capital structure's tranches (subordinated layers) can be configured to make transactions more palatable, and reduce the weighted average cost of capital for projects.

Pooling innovative tech-based projects enables larger-scale blended financing. A recent survey by the OECD/World Economic Forum²⁶ demonstrated that a 10% allocation of OECD development assistance (\$14.2 billion) into blended finance solutions would produce an average leverage ratio of 1:7, adding in over \$100 billion in development finance per annum (three times the current amount of annual aggregate multilateral bank and bi-lateral development finance institution financing to the private sector in developing

countries).²⁷ In a recent example of blended structuring, in 2012 the Danish government and the Danish Investment Fund for Developing Countries launched the 10-year, US\$220 million Danish Climate Investment Fund, using a preferred return structure of 6% to attract institutional investors, meaning that as "preferred" investors, they will be the first to receive returns on any profit, up to 6%.²⁸

There is huge potential for Israel's use of a blended finance facility. With Israel's recent entry into development finance, it could prioritize technology solutions in agriculture, energy, water, health, and related cybersecurity infrastructure that have the potential to reach scale. In developing economies, there is a need to identify and pool small-scale projects to attract private and institutional capital. Figure 11 illustrates a possible application of blended structure for a development finance facility:

The proposed integrated development finance facility would be available to:

- Pool assets and projects across countries or sectors to improve diversification and scale for investors.
- Create tranches of financing (these currently account for 42% of blended financing transactions) using guarantees and risk-sharing instruments that the Israeli government sponsors.
- Optimize Israeli government and institutional financing through credit enhancements for development technology projects, in partnership

26. OECD/World Economic Forum, *Insight from Blended Finance Investment Vehicles and Facilities, Redesigning Development Finance Initiative*, January 2016.

27. "The State of Blended Finance," Business and Sustainable Development Commission. *Working Paper*, July 2017:2–10; See also: Owen Barder

and Theodore Talbot, "Guarantees, Subsidies, or Paying for Success? Choosing the Right Instrument to Catalyze Private Investment in Developing Countries," Center for Global Development. *Working Paper 401*, May 2015.

28. "Case Study: Danish Climate Investment Fund," *Convergence*. September 2017.

with impact investment and philanthropic partners.

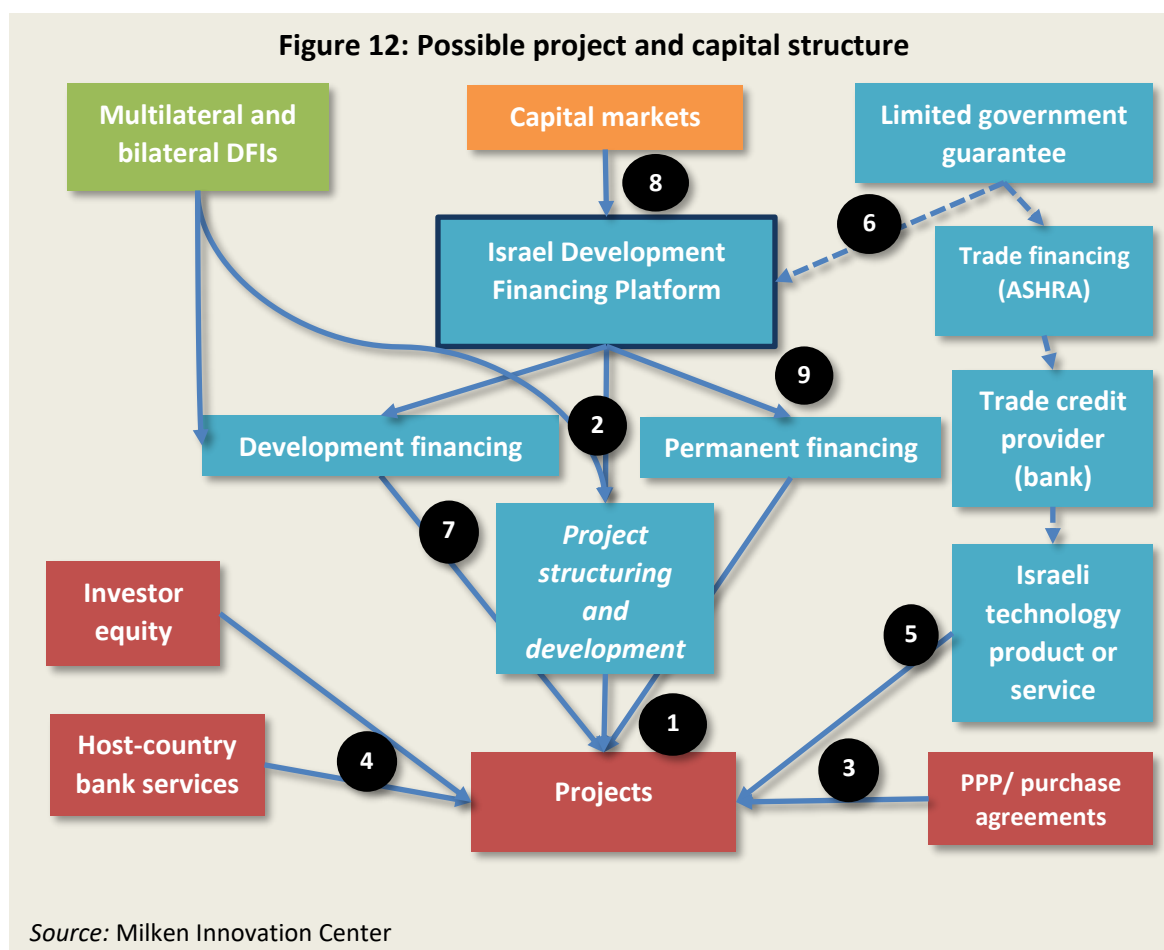
Israel has long proved itself capable of accomplishing serious financial and capital market reforms that enable new capital flows into unpenetrated sectors and markets, such as cybersecurity, defense, life sciences, and information and communications technology. By increasing capital for development abroad, it can create demand for Israeli innovations and skills and expand its own globally traded and technology-driven economy.

An example of this kind of development finance: In 2016 the World Bank Group's International Finance Corporation launched a new five-year, US\$5 billion finance platform called MCPP (for Managed Co-Lending Portfolio Program) Infrastructure. It was created to introduce institutional investors to the potential of blended finance for projects in developing markets. The Swedish

International Development Corporation Agency (Sida) has pledged to provide limited first-loss guarantees on the investments. The co-lending portfolio program could prove cost-effective through the syndication of the revolving loan. Israel could apply a similar structure to its infrastructure-buildings areas of strength just as it has in utilizing catalytic first-loss provisions and other forms of credit enhancement to build successful funds through the Office of the Chief Scientist and Israel Innovation Authority or infrastructure projects from the Trans-Israel Highway to water desalination plants.

Figure 12 illustrates a possible capital and project structure and describes how the selected capital and project sources interact at the international, Israeli, and host-country levels.

All projects begin (1) with the current and expected needs, based on local or regional



conditions. The development financing institutions must commit their project structuring and development (2) support to help set the project perimeters and identify practical solutions. This includes identifying and securing a commitment for revenue (3) for the project through a public private partnership (PPP) or a purchase agreement and investors and local financial sources (4).

Following the local procurement process, the project team must identify the technologies necessary to satisfy the project mission (5). Meanwhile, the company offering the product or service secures trade financing from its bank, usually with a partial guarantee from the government.²⁹ At the same time, the short-term development financing for the construction phase must secure necessary government commitments, usually in the form of guarantees (6) for financing. These guarantees are needed, but aren't sufficient, and are usually matched or blended with other multilateral and bilateral support for development financing (7) during the construction phase of the project, usually from international banks.

The guarantees also leverage capital markets investors to invest (8) in a portfolio of projects, usually through a combination of bonds and insurance vehicles. Once the project construction is complete and the project implemented, permanent financing (9) 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.

29. This trade financing is supported with a government-sponsored guarantee through

ASHRA, Israel's foreign trade risks insurance corporation.

THE PATH FORWARD

In recent months, USAID issued a development impact bond aiming to reduce maternal and newborn deaths in India. The Government of Colombia launched a climate-finance tracking system to monitor climate bonds. China is increasing its influence via international cooperation at multiple levels, including the development of global green finance. Sweden, Germany, France, Denmark, Holland, and the UK all directly engage developing economies on the financial front to accelerate export growth and enable political stability.

Like these governments, the Government of Israel increasingly recognizes the importance of carving paths to new markets. With its commitment to build new partnerships and its role in developing economies, Israel will draw on decades of experience and a vast reservoir of technical knowledge. As a global laboratory, Israel is well positioned to launch new waves of technology solutions with its new partners, to strengthen their markets and ours, and transform global growth. But, Israel must waste no time in building the necessary development finance platform to bridge the Israeli economy to the developing markets.

What can Israel do right now?

Israel can begin to build the three pillars of the full-service, self-sufficient development finance platform:

1. Financial Capital: leverage the strengths of the Israeli and international capital markets to provide financing for Israeli companies looking to export to developing markets; establish new facilities for project finance, trade finance, and insurance need to build sustainable business relationships in these growing markets
2. Human Capital: train Israeli and international talented graduate students in financial innovation and development. Expand partnerships with developing countries by inviting students to train and build their skills in Israel with Israeli companies and researchers.
3. Project Development: in partnership with Israeli businesses and innovators, and local markets, to identify technological solutions and potential adaptations to fill the pipeline of development-focused project.

Appendix A: Selected SDG-Oriented Investment Opportunities

Food and Agriculture

- Reducing food waste in the value chain
- Reducing consumer food waste
- Forest ecosystem services
- Low-income food markets
- Product reformulation
- Farming technology
- Micro-irrigation
- Sustainable aquaculture
- Reducing packaging waste
- Restoring degraded land
- Cattle intensification
- Urban Agriculture

Cities

- Affordable housing
- Energy-efficient building
- Public transportation
- Car Sharing
- Road safety
- Autonomous vehicles
- ICE vehicle fuel efficiency
- Building resilient cities
- Water and sanitation infrastructure
- Metering and leakage monitoring
- Cultural tourism
- Office sharing
- Durable and modular building

Energy and Materials

- Renewable energy production
- Circular models for automobiles, electronics, and appliances
- Grid interconnection and efficiency
- Energy efficiency
- Energy storage systems
- Resource recovery
- End-use steel efficiency
- Carbon capture and storage
- Energy access
- Green chemicals
- Shared infrastructure

Health and Well-Being

- Risk pooling
- Remote patient monitoring
- Advanced genomics
- Activity services
- Detection of counterfeit drugs
- Tobacco control
- Weight management programs
- Disease management
- Electronic medical records
- Maternal and child health program
- Healthcare training
- Low-cost surgery

Appendix B: Map of Development and Trade Finance Institutions

Multilateral Development Banks

1. International Bank for Reconstruction and Development (IBRD), World Bank Group

- Types of financing: Non-concessional loans, loan guarantees
- Target borrower: Middle-income countries and creditworthy low-income countries
- Lending commitments in FY2016: \$29.7 billion
- Funds: IBRD Equity, World Bank bonds (including green bonds)

2. International Development Association (IDA), World Bank Group

- Types of Financing: Concessional loans, grants
- Target borrower: Low-income countries
- Lending commitments in FY 2016: \$11 billion (not including \$7.1 billion from outside co-investors)
- Funds: Contributions from partner countries, transfers from IBRD net income, grants from the International Finance Corporation (IFC)

3. International Finance Corporation (IFC), World Bank Group

- Types of Financing: Non-concessional loans, equity investments, loan guarantees
- Target Borrower: Private-sector in developing countries (middle-income and low-income)
- Lending commitments in FY 2016: \$16.2 billion
- Funds: Issuance of bonds, including green bonds and local-currency bonds to develop domestic capital markets

4. African Development Bank (AfDB)

- Types of financing: Non-concessional loans, equity investments, loan guarantees
- Target borrower: Middle-income governments, some creditworthy low-income governments, and private-sector firms in the region
- Lending commitments in FY 2015: \$8.8 billion
- Funds: Contributions from non-regional member countries, contributions from regional member countries, borrowings on international markets, and loan repayments.
- Sub-entities: African Development Fund (AfDF), concessional loans and grants to low-income governments

5. Asian Development Bank (ADB)

- Types of Financing: Non-concessional Loans, equity investments, loan guarantees
- Target borrower: Middle-income governments, some creditworthy low-income governments, and private-sector firms in the region
- Lending commitments in FY 2015: \$16.29 billion
- Funds: Contributions from partner countries, net income, repayment of loans, partnerships with other countries and institutions

- Sub-entities: Asian Development Fund (AfDF) – concessional loans and grants to low-income governments

6. European Bank for Reconstruction and Development (EBRD)

- Types of financing: Non-concessional Loans, equity investments, loan guarantees
- Target borrower: Mostly private-sector firms in developing countries in the region
- Lending commitments in FY 2015: \$9.9 billion
- Funds: Contributions from shareholder countries, capital market issuances.

7. Inter-American Development Bank (IDB)

- Types of Financing: Non-concessional loans and loan guarantees
- Target borrower: Middle-income governments, some creditworthy low-income governments, and private-sector firms in the region
- Lending commitments in FY 2015: \$9.9 billion
- Funds: Callable capital from non-borrowing members as guarantee base for bond issuance, contributions from member countries.
- Sub-entities: Fund for Special Operations (FSO), which provides concessional loans to low-income governments in the region; Inter-American Investment Corporation, which provides loans to private-sector companies in the region; Multilateral Investment Fund, which provides grants and equity investments to private-sector initiatives in the region.

Bilateral Development Finance Institutions (DFIs)

1. Overseas Private Investment Corporation (US)

- Types of financing: direct loans and guarantees (medium to long term); SME financing; political risk insurance; support for private equity funds
- Financing and insurance commitments in FY 2015: \$4.4 billion (\$4.2 billion financing; \$387.0 million investment funds; \$160.0 million insurance)
- Overall invested portfolio of projects: \$21.5 billion

2. CDC Group (UK)

- Types of financing: Equity, direct loans, and guarantees (medium to long term); investment through regional private equity funds (Africa and Asia).
- Financing and insurance commitments in FY 2015: £713 million (£238 in investment funds, £475 in direct investments or financing)
- Overall invested portfolio of projects: £3.9 billion

3. FMO-Dutch Entrepreneurial Development Bank (Netherlands)

- Types of financing: Equity, direct loans, and guarantees (medium to long term); investment through regional private equity funds; investment of Dutch Government Fund; Fund for Dutch investment in emerging markets
- Financing and insurance commitments in FY 2015: €2.5 billion (€1.58 billion in new commitments from FMO or Dutch government portfolio; €923 billion in third-party funds invested)
- Overall invested portfolio of projects: €9.26 billion

4. DEG (Germany)³⁰

- Types of financing: Equity, direct loans, support for private equity funds technical assistance
- Financing and insurance commitments in FY 2015: €2.33 billion (€1.26 billion in investment funds, 45% of remainder in direct equity investments, 55% of remainder in direct loans)
- Overall invested portfolio of projects: €7.12 billion

5. PROPARCO (France)

- Types of financing: Equity, direct loans, support for private equity funds, guarantees, management of French government funds
- Financing and insurance commitments in FY 2015: €1.426 billion (€464 million in investment funds, 18% of remainder in direct equity investments, 81% of remainder in direct loans, 1% of guarantees).
- Overall invested portfolio of projects: €5.62 billion

30. DEG is a subsidiary of the German Development Bank (KfW), which has a much larger portfolio of economic development disbursement (see KfW 2015 Annual Report).

Official Development Assistance (ODA) Institutions

1. OECD Development Assistance Committee (DAC)
2. USAID
3. Department for International Development (DFID)

Export Finance and Trade Insurance Companies

1. Euler Hermes
2. China Export and Credit Insurance Corporation
3. Export-Import Bank of the United States (EXIM)
4. Brazilian Export Credit Insurance Agency (SBCE)
5. Belgian Export Credit Agency (Credimundi)
6. IPEX Bank (subsidiary of KfW, German Development Bank)

Milken Innovation Center
Jerusalem Institute
20 Radak Street
Jerusalem 9218604, Israel
Phone: 972-2-563-0175
www.milkeninnovationcenter.org

