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An interview with Israel's chief scientist **CIIRDF offers unique gateway for capturing benefits of Israeli policies and technologies**

Canada is negotiating to renew its long-standing industry R&D collaboration with Israel, which has expanded across the country and into sectors such as oil and gas. In an interview with RESEARCH MONEY, Avi Hasson, chief scientist and chairman of Israel's National Technology Innovation Authority (IA), says countries like Canada can benefit from adopting IA-like innovation programs and policies, while expanding current mechanisms for bilateral collaboration.

"With CIIRDF (Canada-Israel Industrial Research and Development Foundation), there's a lot of hard background work involved but it produces huge value," says Hasson. "CIIRDF's budget is a constraint because there are more projects than financing. But it's a good problem to have."

CIIRDF is a collaboration between Global Affairs Canada and the IA (formerly Office of the Chief Scientist), which reports to the Israel's Ministry of Economy. Under the partnership, each country contributes 50% to industry-led R&D projects in several sectors including the life sciences, cybersecurity and more recently oil and gas.

Since its inception in 1994, CIIRDF has co-financed close to 100 bilateral technology partnerships involving more than 160 Canadian and Israeli companies. And like the IA, CIIRDF does not take an equity position or claim any intellectual property (IP) rights in jointly developed technologies.

Hasson says that the IA is all about global markets, not just Israel with its small domestic market of 8.5 million. He notes that IA-supported projects are closer to market, with competitive concerns complicating the ability to collaborate on R&D. As a result, issues stemming from commercialization are embedded in all evaluation and funding decisions. For a nation the size of Israel, ease of collaboration is essential and the IA and CIIRDF have been successful in expanding their sphere of activity.

"We're about to renew the treaty. Canada can take advantage and hopefully increase funding available to it (CIIRDF)," says Hasson. "In the last five years, there have been new models of management and programs. More agencies and groups can be brought in. Right now there are groups like the National Research Council and NSERC (Natural Sciences and Engineering Research Council) but there are more out there."

"Both nations work together well. There are success stories to share. The most precious resource is time," says Hasson. "Canada is a top-five nation in energy but you need to expose needs and solve problems because new paradigms of innovation emerge through collaboration, allowing great things to happen."

One of the higher profile accomplishments of the CIIRDF model is its technology brokerage role between Israeli tech firms and Canada's oils and gas sector. As an associate member of the Canada Oil Sands Innovation Alliance (COSIA), CIIRDF has been instrumental in presenting oil sands producers with new tech-based solutions to address their growing environmental footprint (R\$, [December 22/14](#)). The alliance stems from Natural Resources Canada's Canada Israel Energy S&T Fund which is also reportedly being considered for renewal (R\$, [February 21/13](#)).

Hasson says new innovation paradigms can emerge by leveraging the intellectual property of Israeli firms

such as IDE Technologies (water desalination) which offers huge advantages for the oil sands and fracking operations.

ISRAEL START-UP NATION

- Israel Innovation Authority – annual budget of US\$450 million
- 45 support programs in five verticals: start-ups, technological infrastructure, growing companies, international activity, R&D programs
- IA supports 200 incubated firms, providing 85% of seed funding
- Life science sector has 1,100 companies, up from 200 in 2000
- #2 in gross expenditures on R&D as a percentage of GDP (4.2%)
- #4 in post-secondary education attainment
- #4 in number of professionals working in R&D
- #5 on 2015 Bloomberg Innovation Index
- #9 in venture capital availability
- 50 venture capital groups active in Israel
- Raised US\$4.4 billion in venture capital in 2015
- 75% of investments in Israeli firms are from foreign investors
- 40 binational agreements signed through the Global Enterprise R&D Collaboration Network
- 24 privately managed technology incubators across the country

Source: Submission to Canada's Innovation Agenda by the Centre for Israel & Jewish Affairs

"We don't pre-allocate strategic sectors, we take a bottom-up approach," says Hasson. "Our goal is economic impact from technological innovation and our indicators are jobs, exports, productivity and value-add. We don't try to solve issues like climate change or cybersecurity. We're building a start-up nation. It's not our core focus but entrepreneurship is part of the nation's DNA."

FLEXIBILITY IS KEY

Israel does not have an innovation strategy, but Hasson says IA's flexibility and financial authority, combined with the nation's concentrated model for innovation involving just three ministries, make a blanket strategy less essential and allow for a neutral perspective which has fuelled the IA to continued success.

Hasson recently submitted a report to the Israeli government, noting the country's slippage in several recent rankings for talent, production capacity and financing of hightech. The report requests an additional US \$130 million for the IA to extend Israel's impressive gains as a start-up nation.

Hasson describes the IA's request for more funding as "nothing unusual" and points to the IA's strategy to overcome current challenges including a talent shortage.

"I'm five times over demand for my budget. We have a well laid out program to overcome the human capital shortage with a short-term and long-term strategy. There's no silver bullet but many different ways to improve."

Israel's efforts to engage more Israelis of Arab origin are a case in point. A delegation of Israeli Arab firms visited Canada last January to attend the Ontario-Galil Business & Technology Partnering Forum and explore matchmaking opportunities.

"Israeli Arabs are still a small part of the tech sector so the first priority is human capital. Arab entrepreneurs visited Canada and the project output of the delegation was amazing," says Hasson.

INFLUENCE OF SHIMON PERES

In choosing which tech sectors hold the greatest potential for growth, Hasson acknowledges the influence of the late Israeli president Shimon Peres — who died last month at age 93 — on the growth of the country's tech sector.

"Peres was a huge supporter of technology. He understood it profoundly and felt it in his gut. He hectored the government on nanotechnology and neuroscience and they finally agreed to support them," he says. "He helped develop both strategies and when he attended the Baycrest Conference (in Toronto in May/12) he trumpeted neuroscience as a new frontier for generating wealth in both countries. ... No one will fill his

shoes."

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