Standing Committee on Finance (FINA)

Pre-budget consultations 2012

International Science and Technology Partnerships Canada

Responses

1. Economic Recovery and Growth

Given the current climate of federal and global fiscal restraint, what specific federal measures do you feel are needed for a sustained economic recovery and enhanced economic growth in Canada?

During this period of economic recovery, Canada must focus its efforts and improve program delivery efficiency to significantly increase its investment in international S&T partnerships that open new global markets for Canadian companies. These alliances generate high return by: • Increasing the R&D and commercialization resources and capabilities of Canadian firms; • Growing more internationally competitive and sustainable companies; and • Stimulating greater global commerce. These S&T alliances open new trade doors for Canadian companies, enabling them to acquire knowledge, customers, investment and export opportunities; and capture global market share. The resulting R&D and commercial activity generates new revenues that build our domestic economy, and lead to increased trade, new jobs and wealth creation in Canada. For example, CIIRDF has financed more than 90 technology partnerships that enabled the joint development and sale of more than 50 products since 1995. Based on conservative data provided directly by participating companies, CIIRDF-enabled technologies have generated a minimum of $400M in economic value for Canadian companies alone over the past decade. This value is largely derived from uptake of these innovations by customers outside of Canada and Israel. CIIRDF achieved these results with a modest $1M per year from the Governments of Canada and Israel. Although in the early stages of program development, ISTPCanada is already showing initial signs of substantive return for modest investment. All partnerships facilitated by ISTPCanada are jointly financed by industry, foreign partners, and often provincial governments. This enables the federal government to gain almost four-fold leverage on every dollar invested through ISTPCanada. For example, in one of many bilateral projects, $200,000 from ISTPCanada is being leveraged more than six times as part of Canada-China project valued at $1.2M. And, as importantly, this team has developed a systematic approach to the genetic evaluation of cattle. According to Robert Watson, General Manager of the Canadian company, Alta Agricorp, "We have achieved 70% sales growth year over year for the last five years. We aimed to achieve $2.9M in sales by 2011. We generated $7.25M in total revenue, exceeding our target by 250%. We are now bringing our solution to Brazil and India."

2. Job Creation

As Canadian companies face pressures resulting from such factors as uncertainty about the U.S. economic recovery, a sovereign debt crisis in Europe, and competition from a number of developed and developing countries, what specific federal actions do you believe should be taken to promote job creation in Canada, including that which occurs as a result of enhanced internal and international trade?

In this uncertain economy, the Government of Canada must increase its investment in international S&T partnerships to stimulate increased trade with emerging and high growth economies. Technology now leads to trade and commerce – it is no longer the other way around. By connecting our SMEs and companies to these rapidly growing global markets, we can help our firms to: • Create high-value products and services that drive the application of leading edge technologies across society; this in turn promotes the creation of new high value jobs; • Develop new globally-based clients, revenue streams and investment that enable them to expand their business, recruit new talent and their Canadian employee base • Establish industry-university partnerships that enable students to acquire the skills required to hit the ground running when they enter industry As the pace of innovation continues to accelerate, technology cooperation is required to stay ahead of the game. This is driving emerging economies such as Israel, India, China and Brazil to make significant investments in S&T partnerships with key trade partners. By being a serious competitor in this game, and making the right investments in international S&T partnerships, Canada can reinforce trade linkages with these economies, diversify its markets and build comparative advantage for its companies. For example, CIIRDF has financed a technology partnership between Quanser (Toronto) and an Israeli partner that enabled the development of a unique technology that simulates a laparoscopy procedure. Within three years of release, Quanser and its collaborator have sold over a hundred medical simulators, generating more than $10M in sales revenue, and stimulating the creation of new jobs. According to Paul Gilbert, CEO of Quanser, "This CIIRDF project had a significant impact on our company. When we kicked-off the project in 2007, Quanser had 34 employees. By 2010, our revenues had doubled. The size of our team is now approaching 60 people, and our R&D expenditures have grown to over $2M. This CIIRDF project catalyzed our rapid and dynamic growth. It enabled us to leverage our technology strengths and develop a training product that now is in use globally, with formal distribution channels in 35 countries."

3. Demographic Change

What specific federal measures do you think should be implemented to help the country address the consequences of, and challenges associated with, the aging of the Canadian population and of skills shortages?

With increased investment in international S&T partnerships, the Government of Canada can leverage the many facets of Canada's demographics to address key societal challenges related to our aging population and skills shortages. These alliances: • Accelerate the development and adoption of new technology-based products that address specific challenges facing our aging population. This has been demonstrated in the work done by ISTPCanada and CIIRDF in promoting Canada as a leader (alongside Israel and India) in the development and deployment of new technologies for the detection, diagnosis and treatment of brain diseases and

disorders such as dementia and Alzheimer's. It is estimated that 1 in 4 Canadians will suffer from a neurological disease or disorder in their lifetime. The future deployment of such innovations have the potential to significantly reduce the social and economic burden of these debilitating diseases on Canadian society. The Canada-Israel-India Trilateral Brain Roundtable and Technology Partnering Mission recently hosted by CIIRDF, ISTPCanada and other partners aims to stimulate the trilateral development, commercialization and application of promising neurotechnologies. • Attract and retain skilled immigrants to Canada, enabling our firms to capitalize on their expertise and networks in their native country as part of their global R&D, technology commercialization, marketing and sales strategies; this is a strong trend in the Canada-China program managed by ISTPCanada; many lead Canadian researchers on these bilateral projects have well established R&D and business relationships in China; this creates a solid foundation for long-term commerce with the world's fastest growing economy. • Capitalize on Canada's multicultural composition and strengthen Canada's position as an international S&T partner of choice for key trade nations such as China, India and Brazil, opening new markets for Canadian firms; this enviable position is due to: o Canada's world class science and technology base o Canada's potential to be a credible multilateral broker for global R&D collaboration; o The demographics and values that shape our nation, and the partnerships with India, China and Brazil that are championed by many Canadians whose family origins lie in these countries These alliances also promote domestic politics as well, particularly with the Indo and Chinese Canadian communities.

4. Productivity

With labour market challenges arising in part as a result of the aging of Canada's population and an ongoing focus on the actions needed for competitiveness, what specific federal initiatives are needed in order to increase productivity in Canada?

Canada continues to lag other highly developed countries such as the USA in business innovation and productivity. According to Canada's Innovation Imperative, a 2011 report published by the Institute of Competitiveness and Prosperity, this is attributed to: • A lower number of university-educated citizens • A less urbanized society • Reduced investment in, and application of, Information and Communications Technology (ICT) by industry By fostering and investing in international S&T partnerships, the Government of Canada can: • Accelerate the development and adoption of technologies that increase the efficiency and economic competitiveness of sectors such as life sciences, energy, environment, public safety, etc.) • Boost the economic strength of its domestic ICT sector (jobs, exports, global market share); and • Facilitate increased university-industry collaboration that promotes the development of highly skilled people International S&T partnerships also create extended and cost-effective R&D teams that undertake high risk, high reward projects that might otherwise not be possible. They often lead to the creation of new spinoff products; the identification of new applications and markets; and the development of new expertise. This also boosts the productivity of Canadian companies. For example, CIIRDF supported the collaborative development of an ICT application for medicine by Redlen, a Vancouver-based company, and an Israeli partner. According to Eric Erikson, CFO of Redlen, "CIIRDF provided critical seed funding that enabled Redlen to develop a

gamma imaging module for applications in nuclear medicine. Redlen's single high quality Cadmium Zinc Telluride (CZT) crystal is at the core of these modules. Our firm has increased production levels to meet Spectrum's order volumes. This has generated significant operational efficiencies and reduced the overall cost of detector production companywide. This enabled us to pursue new applications for this technology. Drawing directly on the knowledge gained during our CIIRDF project, we have developed several new revenue generating products. The impact of this CIIRDF project on Redlen is perhaps best illustrated by the growth of our detector business. At project launch in 2009, detectors comprised about $1M or 20% of $5.6M in total sales revenue for our firm. In 2011, they generated more than $4.6M representing 63% of our $7.3M total sales revenue."

5. Other Challenges

With some Canadian individuals, businesses and communities facing particular challenges at this time, in your view, who is facing the most challenges, what are the challenges that are being faced and what specific federal actions are needed to address these challenges?

The world of R&D and commercialization is becoming increasingly complex as disparate scientific disciplines and technologies converge, creating powerful R&D capabilities. This creates significant challenges for resource strapped Canadian SMEs – firms that largely comprise and drive Canada's economy. To succeed in this landscape, these companies must adopt new collaborative R&D approaches, identify global markets and pursue customers in these economies. The challenge: many SMEs simply do not have the expertise, resources or investment to undertake global R&D collaboration and technology commercialization. Canada must invest more in direct support to R&D intensive firms to develop, maintain and expand global S&T partnerships. These alliances not only increase the R&D capabilities of firms, they facilitate access to new global markets and revenues. Foreign governments are making significant investments that help SMEs enter and succeed in a challenging global market. For example, China has increased their International S&T Cooperation Program by a factor of 10 over the past eight years, and it is expected to grow at the same rate over the next decade. Other nations are making similar investments. The government of Canada has a responsibility to provide similar incentive if we want our companies to succeed in this fragile economy. Failure to act would be detrimental to our economic future. We must make international S&T partnerships a priority to address these challenges, and help Canadian SMEs become robust global competitors. ISTPCanada is helping Canadian SME's such as Safe Engineering Services & Technologies (SES) overcome key hurdles. SES and Chinese partners have developed software for the safe implementation of power lines in joint-use corridors. According to Farid Paul Dawalibi, CEO of SES, "ISTPCanada made it possible to seize this new market opportunity. With partners in China, we extended our R&D team and acquired the additional resources needed to develop this software. We launched a first product in 2011 that has generated $1.5M in sales to date." The International Science and Technology Partnership Program (ISTPP) managed by DFAIT will be a key component of a forward looking integrated trade policy where ISTPCanada and CIIRDF will continue to be the delivery service agents of choice.