Evaluation of the Southern Ontario Development Program (SODP): *Final Report*

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List of Acronyms

AIME	Achieving Innovation and Manufacturing Excellence
ARC	Applied Research and Commercialization Initiative
BDC	Business Development Bank of Canada
BERD	business enterprise R&D
BICD	Business, Innovation and Community Development
CA	contribution agreement
CAF	Community Adjustment Fund
CFDC	Community Futures Development Corporation
CME	Canadian Manufacturers & Exporters
CSBP	Centre for Special Business Projects (Statistics Canada)
EODP	Eastern Ontario Development Program
FBI	Food & Beverage Initiative (pre-SOA)
FTE	full-time equivalent
G&Cs	grants and contributions
GDP	gross domestic product
GEI	Graduate Enterprise Internship
GI	general intake (pre-SOA)
IBI	Investing in Business Innovation
ICT	information and communications technology
IRAP	NRC Industrial Research Assistance Program
KI	key informant
MARC	McMaster Automotive Resource Centre
MEDEC	Medical Devices Canada
MNE	multinational enterprise
NFP	not-for-profit
NPV	net present value
NRC	National Research Council
OBI	Ontario Brain Institute
OCC	Ontario Chamber of Commerce
OECD	Organisation for Economic Co-operation and Development
PAA	Program Alignment Architecture
PI	Prosperity Initiative
PI–PE	Prosperity Initiative – Productivity Enhancement
PI–RD	Prosperity Initiative – Regional Diversification
PI–BCA	Prosperity Initiative – Building a Competitive Advantage
PMS	Performance Measurement Strategy
PSI	postsecondary institution
R&D	research and development
RDA	regional development agency
SEB	Scientists and Engineers in Business
SME	small and medium-sized enterprises
SOA	Southern Ontario Advantage
SODP	Southern Ontario Development Program
SOPI	Southern Ontario Prosperity Initiatives
SOSCIP	Southern Ontario Smart Computing Innovation Platform
SR&ED	Scientific Research and Experimental Development
STEM	science, technology, engineering and mathematics
TBS	Treasury Board Secretariat
TDP	Technology Development Program
Y-STEM	Youth STEM
YLF	Yves Landry Foundation

Executive Summary

An evaluation of the Southern Ontario Development Program (SODP) was undertaken by the Federal Economic Development Agency for Southern Ontario (FedDev Ontario) to meet Treasury Board requirements, as well as to provide program management with feedback on the design, implementation and success of the program. The objective of this evaluation was to determine the extent to which SODP continues to be relevant, is on track to achieve its expected program outcomes, and has demonstrated efficiency and economy.

Profile of SODP

FedDev Ontario developed and established SODP in 2009–10 as the core program for its initial five-year mandate (2009–10 to 2013–14). The main objective of this program was to support long-term economic growth in southern Ontario with contributions focused on competitiveness and productivity, innovation and commercialization, and community development and economic diversification.

SODP was initially designed to introduce new funding into southern Ontario during a time of need. FedDev Ontario, with limited capacity at that time and the need to act quickly, developed two initiatives and formed partnerships with third parties to help deliver the program.

Once the priority of quickly delivering SODP stimulus funding was addressed, FedDev Ontario in 2010–11 researched, designed and launched a more focused program aligned with its mandate to promote the development of a strong and diversified southern Ontario economy. This new program was the Southern Ontario Advantage (SOA), made up of seven initiatives.

While the scope of this evaluation was SODP and its initiatives, funding transfers were made from SODP to the following other programs: the National Research Council – Industrial Research Assistance Program (NRC–IRAP), the Business Development Bank of Canada (BDC), the Community Adjustment Fund (CAF), and the Eastern Ontario Development Program (EODP). These transfers were not included in this evaluation, as they have been or are being evaluated separately.

SODP expenditures covered in this evaluation were $597.1 million over the 2009–10 to 2013–14 period. They consisted of $177.4 million for the original SODP (pre-SOA) initiatives and $419.7 million for the SOA initiatives. In addition, total transfers to the other programs were $130.8 million.

Evaluation Methodology

The evaluation of SODP was based on multiple lines of evidence, including primary and secondary data from qualitative and quantitative sources:

- ***Document review*** was carried out to obtain a good understanding of SODP, its initiatives, its rationale, its context and its history. The documents included a review of performance, administrative and financial data; prior research for the SODP interim evaluation; and research undertaken in relation to the continuing need for such a program and the new Southern Ontario Prosperity Initiatives for the 2014–15 to 2018–19 period.
- ***Key informant interviews*** were conducted with 44 individuals, including FedDev Ontario senior management and SODP staff, SODP delivery partners and ultimate funding recipients, and representatives of the Ontario provincial government.
- ***Online survey of small and medium-sized enterprise (SME) recipient firms*** with phone follow-up, was undertaken with 1,992 SME recipients of SODP contributions to obtain information on project results, both actual and expected; economic benefits; value of SODP support to the SME; and satisfaction and feedback in relation to the delivery of the program initiatives.

- ***Mini case studies*** were undertaken with 10 organizations that benefitted from SODP contributions. The objective of these studies was to obtain detailed information on the case study project, how SODP contributed to the project's success, and the impacts achieved. These studies were used in the evaluation to illustrate the program initiatives and were not intended to be generalizable to other projects.
- ***Analysis*** of collected data and cost information was undertaken to provide evidence for addressing the evaluation issues and questions.

In parallel with this evaluation, a Statistics Canada comparison study of SMEs assisted by SODP and similar unassisted SMEs was undertaken to provide information on the achievement of ultimate outcomes. The results of that study have been incorporated into this evaluation report.

Overall, the evaluation methodology provided the necessary evidence for reaching conclusions for all issues and questions. However, the evaluation methods had limitations. These limitations, described in Section 3.4, were taken into account during the analyses and were recognized in the interpretation of the findings.

Key Findings

Key evaluation findings for relevance, achievement of program outcomes, and efficiency and economy are provided below.

Program Relevance

There is a continuing need for a program like SODP to foster innovation, enhance productivity and competitiveness, and encourage the commercialization of research in southern Ontario. SODP was found to complement other federal and provincial government funding programs where they were available to recipients.

> As interviewees noted, FedDev Ontario has built credibility, and program officers have gained experience in assessing projects and know the environment of southern Ontario, so the Agency is able to play an effective role in targeting areas of need.

The requirement for funding in southern Ontario is substantial, but the existence of other programs was not a concern. The evaluation determined that other programs had a different emphasis and that the demand for funding far exceeded the limited funding available from SODP.

SODP was consistent and fully aligned with FedDev Ontario's Program Alignment Architecture (PAA) and strategic outcome and with federal government priorities and strategies, such as the Speech from the Throne (2013), the Budgets for the 2009 to 2014 period, and Canada's Science and Technology Strategy (2007). Further, SODP was found to be fully aligned with federal roles and responsibilities.

Performance: Achievement of Program Outcomes

The evaluation revealed that the SODP achieved the expected outcomes by the end of the program on March 31, 2014, with the initiatives meeting or exceeding almost all their performance targets. It is expected that projects, many of which were completed on March 31, 2014, will take varying lengths of time after project completion to achieve their full impact (e.g., sales and employment).

FedDev Ontario successfully delivered the SODP initiatives to support individuals and organizations, from start-ups to multinationals, by addressing needs across the business continuum within its mandate. The SODP delivery models were efficient and economical in producing outputs and progressing towards expected outcomes. No significant challenges were experienced in delivery, although some adjustments were made along the way.

The SOA initiatives leveraged $2.65 of client funding for each dollar of program funding expended, resulting in total SOA project expenditures of over $1.5 billion based on FedDev Ontario expenditures of $419.7 million. The initiatives were successful in supporting the development and commercialization of innovations and in creating sales, jobs and full-time employment. Of the SMEs in the SME survey, 94 percent rated their

project as "good" to "excellent" in meeting its objectives. The three SOA People Advantage initiatives reached over two million children and youth, funded internships leading to employment, and helped entrepreneurs with their start-ups. The pre-SOA initiatives involved expenditures of $177.4 million and were found to be "very successful" or "successful" in achieving impacts.

Although a high percentage of SMEs met their project objectives, almost half the firms that responded in the SME survey stated that they faced barriers to fully exploiting their project achievements. Barriers included the unavailability of internal or external funding, followed by a lack of key staff, changes in market, establishing a distribution network, and needing to complete related components.

Further, cluster projects take a long time after their completion to reach their full potential, and many will need additional funding assistance if they are to achieve their full potential.[1] These projects, which are large and complex, met their objectives by the end of SODP in March 2014. The projects primarily focused on establishing the clusters, including putting in place the necessary infrastructure. At this point, many clusters have just entered the operating phase and, while committed to sustaining the cluster, are still in the process of ramping up and establishing partnerships with industry to use their facilities and expertise. Many clusters require additional funding to fully exploit their infrastructure, including recapitalization of equipment in future years. Some clusters reported that SMEs, including start-ups, would like to use the facilities but need assistance to pay.

In terms of achieving ultimate outcomes, the Statistics Canada study indicated that the SODP-assisted SMEs were generally more successful in post-funding employment and survivability than firms that were not assisted. However, as most of the projects were only completed on March 31, 2014, the study will need to be repeated in a few years to reassess how project outcomes have contributed to SMEs' long-term performance. Given the total estimated investment of $284 million in the SMEs included in the survey, it is estimated that the minimum ratio of return on SODP contributions to sales generated in the first four years after completion is 1:5[2]. In other words, for every dollar FedDev Ontario contributed to these SMEs, it is estimated it will generate $5.00 in sales.

Performance: Efficiency and Economy

Based on the evidence, the evaluation determined that the SODP delivery model, which involved delivery mechanisms tailored to each initiative, was efficient and economical in producing outputs and progressing towards expected outcomes. No major changes were identified; however, some improvements were suggested. Partnerships and leverage, including third-party delivery, helped expand FedDev Ontario's impact and increase the reach of FedDev Ontario's programs. SODP was able to leverage its impact as a champion or convener by using its contribution funding as an incentive. The balance between in-house and third-party delivery was instrumental in achieving efficiency and effectiveness. Because of the spending lifecycle of projects, some flexibility in authorities is required if the funding profile, which was flat-lined in SODP, is to match project funding needs.[3]

As indicated by the number of applications, the demand for SODP initiative funding was much higher than available funding, so program staff had a range of qualified applicants from which to select recipients. SODP used an appropriate combination of repayable and non-repayable contributions in program delivery, providing flexibility for targeting different funding audiences.

Since its inception in 2009, FedDev Ontario has matured in building capacity and tools, although there still remains a need to refine some processes and integrate additional tools. Program management was

[1] Clusters are geographic concentrations of interconnected companies and institutions in a particular field.
[2] $284 million/$1.3 billion.
[3] For example, it is difficult to fully expend the funding in the first two years of a five-year program until projects have been approved and announced and have ramped up. An ongoing program (e.g., A-base funding) would allow projects to be continuously approved and would avoid the expenditure peaking that occurs within a five-year program.

supported by a performance measurement system in delivering the SOA initiatives. In a high-level comparison, FedDev Ontario delivery costs for its grants and contributions (G&C) programs were lower than those of four other regional development agencies (RDAs) delivering similar G&C programs. However, this comparison was undertaken at the RDA level and not at the program level, and programming and contextual factors (e.g., scale and type of programs, geography, and use of delivery partners) may explain some of the cost differences.

Funding recipients expressed a generally high level of satisfaction with FedDev Ontario and its delivery partners. Some concerns were the length of time taken for the application, assessment and approval processes; the lack of clarity in the reporting requirements; and the amount of administration required. However, there was recognition that program staff were very helpful and that a certain amount of due diligence is required in dealing with public money.

Third-party delivery, which involves trusted partners, was found to be both efficient and effective. Delivery partners expressed concern that the 5 percent of the contribution amount provided for program administration was insufficient. This was also the general view of FedDev Ontario interview respondents, who felt that 10 percent would be more reasonable for future programs, particularly if it resulted in better performance, such as improved reporting; greater promotion to ultimate funding recipients; increased outreach; and targeted outreach in geographic areas that require additional effort. Ultimate recipients of the funding delivered by third parties were often not aware that the source of the funding was FedDev Ontario. Further, a comprehensive database or databases of the recipients that were funded through the delivery partners was not available to program management.

Recommendations

On the basis of the evaluation, the following recommendations are made for consideration by FedDev Ontario management:

1. Administrative processes

a) Recipient concerns about the administrative processes, including simplifying and speeding up the application, assessment and approval processes and streamlining the reporting process, should be addressed to the extent possible, while meeting the minimum needs of program administration.
b) Implementing initiative service standards and information and communications technology (ICT) solutions to improve performance should be considered. Service standards will assist program management in advising applicants of the time required for project approval.

2. Third-party delivery

a) Consideration should be given to increasing the 5 percent administration fee provided for third-party delivery, particularly if it results in better performance, such as improved reporting; greater promotion to ultimate recipients; increased outreach; and targeted outreach in geographic areas requiring additional effort. The specific percentage of increase should take into account the parameters of the initiative being delivered and the expectations related to delivery.
b) FedDev Ontario should request that delivery partners increase the prominence of FedDev Ontario as the source of funding in their program communications with ultimate recipients.
c) FedDev Ontario should establish a database of third-party funding recipients to facilitate the management of the Agency's third-party delivery projects. The database would identify SMEs receiving contributions for multiple projects and provide contact information for research purposes.

3. Ongoing support

a) FedDev Ontario management should undertake research and analysis into mechanisms that would provide longer term support to recipients. Mechanisms may be needed to assist clusters to realize their full potential and become self-sustaining beyond FedDev Ontario's current fixed five-year funding cycle. Additional support could also be used to assist potential SME users wishing to use the facilities but

lacking the financial resources to do so. Due to the timeframes involved, the five-year lifecycle of FedDev Ontario programs may be an impediment to implementing this recommendation.

b) To aid in future cluster planning, a review of cluster projects should be undertaken after approximately three years of operation to assess their ongoing sustainability, evaluate their success, identify barriers to achieving anticipated results, and document lessons learned.

c) Consideration should be given to addressing barriers identified by SMEs in the survey that limit their ability to fully exploit their project achievements. This could involve additional assistance, financial or other, to help them address key barriers. If the barriers are known prior to the initial funding support, they should be identified as part of the funding application and taken into account in the funding approval decision.

4. Program funding

a) As part of third mandate renewal, FedDev Ontario management should ensure the five-year funding envelope aligns with project funding needs on an annual basis. This would address the difficulty of implementing projects that collectively have funding requirements matching the flat-lined five-year program funding, particularly in the first two years when projects are being assessed, approved and getting underway.

b) As part of third mandate renewal, FedDev Ontario management should consider requesting continuous program funding. Continuous funding would better meet stakeholder requirements, improve internal efficiency, and facilitate strategic investment planning.

5. Ultimate outcomes

a) The Statistics Canada study, *Business Performance Measurement of FedDev Ontario Program Beneficiaries*, should be repeated in the future to assess how project outcomes will have contributed to the long-term performance of supported SMEs. The timing of the study would be based on at least three years' experience after project completion and the availability of data for the analysis in Statistics Canada databases. To the extent possible, future research should look at each initiative separately or in a group of similar initiatives in comparing assisted and unassisted firms.

b) In addition, other methods of assessing ultimate outcomes should be considered, to provide additional lines of evidence to complement the Statistics Canada modelling.

1.0 Introduction

This report documents the evaluation of the Southern Ontario Development Program (SODP) undertaken by the Federal Economic Development Agency of Southern Ontario (FedDev Ontario). The evaluation was carried out by Goss Gilroy Inc., working in conjunction with FedDev Ontario's Evaluation Directorate, during the period from May 2014 to February 2015. An evaluation advisory committee[4] was established to advise the evaluation project team at key points during the evaluation.

FedDev Ontario developed and established SODP in 2009–10 as the core program for its initial five-year mandate in response to the economic challenges experienced at that time in southern Ontario. With SODP ending March 31, 2014, FedDev Ontario undertook this evaluation of SODP to meet Treasury Board Secretariat (TBS) requirements, as well as to provide program management with feedback on the design, implementation and success of the program.

1.1 FedDev Ontario

FedDev Ontario, the federal government's regional development agency (RDA) responsible for southern Ontario, is headquartered in Waterloo, with offices in Toronto, Ottawa and Peterborough. Southern Ontario is Canada's most populous region and a key contributor to the Canadian economy.

Southern Ontario has a population of approximately 12.4 million residents living in 288 communities in 37 Statistics Canada census (2006) divisions, as shown in Exhibit 1.1. In 2011, southern Ontario represented 93.5 percent of the total population of Ontario and 35.9 percent of the population of Canada.

Exhibit 1.1: Geographic Area Covered by FedDev Ontario

FedDev Ontario was launched on August 13, 2009, to help address the economic challenges in southern Ontario. It was created through Budget 2009, which provided $1.0 billion over five years for a new southern Ontario development agency. Its mandate was to "support economic and community development,

[4] The Evaluation Advisory Committee was composed of stakeholders, evaluation experts, and FedDev Ontario program managers and executives.

innovation, and economic diversification, with contributions to communities, businesses and non-profit organizations." In addition to developing and establishing SODP in 2009–10 as its core program, FedDev Ontario was given responsibility for the delivery of a number of other programs, including new economic stimulus and infrastructure programs, as well as pre-existing economic development programs.

In Budget 2013, FedDev Ontario's mandate was renewed for an additional five years, from April 1, 2014, to March 31, 2019, with a budget of $920 million.

1.2 Objectives and Scope of the SODP Evaluation

The objective of the SODP evaluation was to determine the extent to which SODP continues to be relevant, is on track to achieve its expected program outcomes, and has demonstrated efficiency and economy. The evaluation was based on the TBS *Directive on the Evaluation Function*,[5] with a focus on the five core evaluation issues relating to *Relevance* and *Performance (effectiveness, efficiency and economy)*. For each of the five core evaluation issues, key evaluation questions were developed. The evaluation methodology is described in Section 3.0.

The scope of the evaluation was SODP and its initiatives. In addition, funding transfers were made from SODP to the following programs (see Section 2.1.3), which have not been included in the evaluation because they have been or are being evaluated separately:

- National Research Council – Industrial Research Assistance Program (NRC–IRAP);
- Business Development Bank of Canada (BDC);
- Community Adjustment Fund (CAF); and
- Eastern Ontario Development Program (EODP).

1.3 Outline of This Report

This report contains a profile of SODP, including its initiatives, the logic model and performance measurement strategy (PMS) and financial summary, in Section 2.0; a description of the evaluation methodology in Section 3.0; findings on relevance in Section 4.0; findings on performance in Section 5.0; findings on efficiency and economy in Section 6.0; and conclusions and recommendations in Section 7.0.

[5] http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=15681&section=text

2.0 SODP Profile

FedDev Ontario developed and established SODP as its core program in 2009–10 in response to the economic challenges being experienced in southern Ontario. The objective of SODP was to support economic growth over the long term with contributions focused on competitiveness and productivity, innovation and commercialization, and community development and economic diversification. Six areas of activity were identified in the SODP Terms and Conditions:[6] community economic development; innovation; information and communications technology (ICT); trade and tourism; human capital; and business financing.

2.1 SODP Description

SODP consisted of the initial SODP initiatives, referred to here as the pre–Southern Ontario Advantage (pre-SOA) initiatives and the subsequent SOA initiatives. The pre-SOA and SOA initiatives are described below.

2.1.1 Initial SODP (Pre-SOA Initiatives)

SODP was initially designed to introduce new funding into southern Ontario during a time of need. FedDev Ontario, with limited capacity at that time and the need to act quickly, developed two initiatives and formed partnerships with third parties to help deliver the program. The first SODP initiative was the general intake (GI), with $130.1 million in funding,[7] launched in October 2009 and closing in late December 2009. The GI had broad criteria, and its projects focused on stimulating local economies and enhancing the growth and competitiveness of local businesses and communities. Although GI met the goal of supporting projects quickly, according to the evidence, its effectiveness was affected by the following:

- Demand for funding in southern Ontario far exceeded funding available; and
- Southern Ontario's innovation ecosystem is complex, with many partners, stakeholders and opportunities.

However, GI did identify the need for more strategic and longer term support focused on productivity and competitiveness, in order to have a greater impact on the large and dynamic southern Ontario economy. This point was reinforced by the successful results of the second intake, which focused on the food and beverage industry. With $18.0 million in funding, the Food & Beverage Initiative (FBI) intake was smaller than the GI. The FBI was launched in November 2009 and also had a closing date in late December 2009. FBI projects focused on small and medium-sized enterprises (SMEs) in the food and beverage industry, in recognition of that industry's key role in the southern Ontario economy. FBI was designed to help firms expand, modernize, innovate, or improve their competitiveness.

In addition to the two intakes, partnerships were established with three not-for-profit (NFP) organizations, which helped deliver the program by undertaking contribution programs on FedDev Ontario's behalf. These three NFP delivery partners and their contribution programs were the following:

- Canadian Manufacturers & Exporters (CME), with its SMART Program;
- Ontario Chamber of Commerce (OCC), with its Export Market Access Program; and
- Yves Landry Foundation (YLF), with its Achieving Innovation and Manufacturing Excellence (AIME) Program.

FedDev Ontario[7] Includes $103.5 million during the pre-SOA period, plus $26.6 million for two continuing pre-SOA projects during the SOA period.

[7] Includes $103.5 million during the pre-SOA period, plus $26.6 million for two continuing pre-SOA projects during the SOA period.

In the initial SODP (pre-SOA) program, FedDev Ontario received 2007 applications, of which 90 were approved. Three of the approved applications involved the NFP delivery partnerships noted above. In addition, organizations that applied to the NFP delivery-partner funding programs resulted in a further 810 approved projects. In total, 897 projects involving $177.4 million in contributions were undertaken, as shown in Exhibit 2.1.

Exhibit 2.1: Overview of the Initial SODP (Pre-SOA)

Initial SODP (pre-SOA)	Projects	Expenditures ($ millions)
General intake (GI)	50	130.1*
Food & Beverage Initiative (FBI)	37	18.0
Delivery partnerships	810 (3)**	29.3
• Canadian Manufacturers & Exporters (CME)	*349*	*15.7*
• Ontario Chamber of Commerce (OCC)	*186*	*1.6*
• Yves Landry Foundation (YLF)	*275*	*12.0*
Total	**897*** **	**177.4***

Source: FedDev Ontario Business, Innovation and Community Development (BICD), October–November 2013.
* Includes $26.6 million for two continuing pre-SOA projects expensed during the SOA period.
** 810 projects were delivered through three delivery-partnership projects.
*** Total for projects does not include the three delivery-partnership projects.

2.1.2 Southern Ontario Advantage (SOA) Initiatives

Once the priority of quickly delivering SODP stimulus funding was addressed, FedDev Ontario in 2010–11 researched, designed and launched a more focused program aligned with its mandate to promote the development of a strong and diversified southern Ontario economy. This new program was the Southern Ontario Advantage (SOA), which had seven initiatives.

In designing the seven initiatives, FedDev Ontario officials researched key areas of need within the region's economy by meeting with stakeholders and industry leaders to identify their challenges. This work was complemented by roundtable discussions across the region, which identified a number of regional economic challenges:

- Addressing a range of skills and labour issues;
- Increasing business investment in research and development (R&D) and productivity;
- Building stronger linkages between academia and business;
- Improving access to capital and venture capital;
- Diversifying export markets and increasing participation in global value chains; and
- Helping communities diversify their economies.

With these challenges identified, initiatives designed to foster innovation, enhance productivity and competitiveness, and encourage the commercialization of research were developed and subsequently announced on June 17, 2010. The SOA vision for southern Ontario was to capitalize on new opportunities for innovation, build strategic advantages to position the region as a global leader, achieve greater global success, and once again be a driving force in the Canadian economy. The SOA initiatives were designed to address needs across the business continuum from the start-up phase, through the traction and growth phases, to the mature phase. The seven SOA initiatives and their objectives and launch dates are given in Exhibit 2.2, grouped by the four Advantage categories.

Exhibit 2.2: SOA Initiatives

SOA initiative		Objective	Launch date
People Advantage			
Y-STEM	Youth STEM (Science, Technology, Engineering and Mathematics)	• Encourage youth to pursue education and careers in STEM • Improve youth's understanding of the business of science	29 Nov 2010
GEI	Graduate Enterprise Internship	• Develop business and management skills in graduate students and recent graduates of STEM programs to complement their technical skills • Provide career networking opportunities • Build the next generation of potential managers • Enable small and medium-sized enterprises (SMEs) to benefit from the technical knowledge of STEM graduate students and recent graduates	24 Sep 2010
SEB	Scientists and Engineers in Business	• Develop improved business and management skills of STEM entrepreneurs • Improve access to financing and/or business support services needed to successfully launch and manage start-up SMEs in southern Ontario	13 Oct 2010
Knowledge Advantage			
ARC	Applied Research and Commercialization	• Support innovation in SMEs by encouraging greater collaboration and partnerships with postsecondary institutions • Accelerate innovation and improve productivity and competitiveness of SMEs	Pilot: 9 Apr 2010 Extension: 12 Dec 2011
TDP	Technology Development Program	• Bridge the gap between R&D and commercialization of market-driven, "game-changing" technologies • Increase collaborations involving private sector and academic and innovation organizations • Leverage private sector investment in game-changing technologies	14 Sep 2010
Entrepreneurial Advantage			
IBI	Investing in Business Innovation	• Accelerate the commercialization of new products, processes and practices • Increase, stimulate and leverage private sector investment • Encourage growth of angel investment funds	15 Oct 2010
Prosperity Advantage			
PI	Prosperity Initiative	• Enhance productivity, diversify the regional economy, and build competitiveness in southern Ontario; consists of three distinct components: o PE–Productivity Enhancement—addressed underinvestment in machinery, equipment and software in Ontario relative to such investments by their counterparts in the United States o RD–Regional Diversification—focused on regions where there are high concentrations of manufacturing industries in structural decline and low concentrations of high-growth industries, which could expose local economies to significant job losses if some plants were to close o BCA–Building a Competitive Advantage—emphasized the development or expansion of geographic concentrations (clusters) of interconnected companies and institutions in a particular field, which can provide a competitive advantage	26 Nov 2010

Under FedDev Ontario's Program Alignment Architecture (PAA), SODP was designed to support two of the three program activities, which in turn supported its strategic outcome: a competitive southern Ontario

economy.[8] The two program activities, Technological Innovation and Business Development, are described below:

- **Technological Innovation**—The initiatives under this program contributed to the region's competitiveness by supporting innovation and the creation of new products, services, processes or markets. The initiatives focused on encouraging the region's labour force to be more innovative, supporting key emerging sectors and strengthening linkages between the region's businesses (especially SMEs) and its postsecondary institutions (PSIs). These elements were considered necessary to improve the region's productivity and to accelerate growth while maintaining and enhancing the region's living standards in the context of a global, knowledge-based economy. This program activity included the three SOA People Advantage initiatives: Youth – Science, Technology, Engineering and Mathematics (Y-STEM), Graduate Enterprise Internship (GEI), and Scientists and Engineers in Business (SEB). It also had two SOA Knowledge Advantage initiatives: Applied Research and Commercialization (ARC) and the Technology Development Program (TDP).
- **Business Development—**The initiatives under this program activity were designed to support the competitiveness of the 360,000 businesses (especially SMEs) in southern Ontario. Funding was provided to encourage the creation of start-up companies and to help existing businesses expand or improve their productivity. Transfer payments in support of this program were made through the Investing in Business Innovation (IBI) initiative, the Prosperity Initiative (PI), and the initial SODP (pre-SOA) projects.

A more detailed description of these seven SOA initiatives, including eligible applicants, beneficiaries, funding type, and funding available to an applicant, is provided in Appendix A. Three of the initiatives had multiple funding streams: SEB had two, IBI had three, and PI had three. In total, there were 12 distinct initiatives or streams in the SOA program.

The GEI, SEB and ARC initiatives were all delivered by FedDev Ontario's NFP and PSI delivery partners to assist third-party organizations. In addition, part of the Prosperity Initiative, Productivity Enhancement (PI–PE), was delivered by four delivery partners: three that delivered pre-SOA initiatives (CME, OCC and YLF) and Medical Devices of Canada (MEDEC), through its New Horizons for MedTech program. Third-party organizations that wished to obtain contributions via these delivery partners went through a second application process.

Information on the number of applications, approved agreements, and expenditures for each of the seven SOA initiatives is given in Exhibit 2.3. PI accounted for $234.4 million (or almost 56 percent of the total SOA expenditures of $419.7 million). The next largest initiatives, in dollar terms, were TDP and IBI, accounting respectively for $56.9 million (13.6 percent) and $56.4 million (13.4 percent). The smallest were the People Advantage initiatives (Y-STEM, GEI and SEB), which together accounted for $44.4 million (10.6 percent).

2.1.3 Other Programs Funded by SODP

In addition to the pre-SOA and SOA projects supported by SODP, funds were used as follows:

- NRC–IRAP received a total of $44.5 million ($27.5 million in 2009–10 and $17.0 million in 2010–11) to support SMEs in R&D-intensive sectors in southern Ontario;
- Business Development Bank of Canada (BDC) received $50 million in 2009–10, including $35 million in capital to invest in early-stage firms in southern Ontario and $15.0 million to invest in Ontario-based venture capital funds focused on Ontario-based opportunities;
- Community Adjustment Fund (CAF) received $7.5 million in 2011–12 to meet the commitments of extended CAF projects; and

8 A detailed description of the alignment of SODP with FedDev Ontario's PAA and Government of Canada outcomes is provided in Section 4.2.

- Eastern Ontario Development Program (EODP) received $28.8 million to meet program commitments in 2011–12 to 2013–14.

The above SODP funding transferred to these programs is not included as part of this evaluation, as each of these programs is being separately evaluated. Funding transferred to NRC–IRAP and BDC form part of their programs, for which they have an evaluation responsibility. In addition, the CAF and EODP are being separately evaluated within FedDev Ontario; therefore, those transfers have been excluded in this evaluation.

Exhibit 2.3: Key Statistics for SOA Initiative Implementation (as of March 31, 2014)

SOA initiative		Total number of applications received	Approved agreements	Expenditures*	
				($ millions)	(%)
People Advantage					
Y-STEM	Youth STEM (Science, Technology, Engineering and Mathematics)	44	15	13.3	3.2
GEI	Graduate Enterprise Internship	19	10	15.9	3.8
SEB	Scientists and Engineers in Business	14	12	15.2	3.6
	Subtotal People Advantage	*77*	*37*	44.4	10.6
Knowledge Advantage					
ARC	Applied Research and Commercialization Initiative	41	47**	27.6	6.6
TDP	Technology Development Program	19	6	56.9	13.6
	Subtotal Knowledge Advantage	*60*	*30*	84.5	20.1
Entrepreneurial Advantage					
IBI	Investing in Business Innovation	203	106	56.4	13.4
Prosperity Advantage					
PI–PE	Prosperity Initiative – Productivity Enhancement	80	6	32.4	7.7
PI–RD	Prosperity Initiative – Regional Diversification	181	19	74.7	17.8
PI–BCA	Prosperity Initiative – Building a Competitive Advantage	257	32	127.3	30.3
	Subtotal Prosperity Advantage	*418*	*57*	234.4	55.8
Total all SOA initiatives		**863**	**230**	**419.7**	**100.0**

Source: FedDev Ontario: SODP Performance Results (as of March 31, 2014), except the number of applicants is from FedDev Ontario: Key Results from Agency Launch to March 31, 2013.

* Expenditures include payables at year end (PAYE) against 2012–13 and 2013–14.

** Includes 24 agreements in the ARC Pilot and 23 agreements in the ARC Extension, involving 24 different recipients.

2.1.4 Total SODP Funding

The total amount of SODP funding, including the pre-SOA and SOA projects and the transfers to other programs, is $727.9 million, as shown in Exhibit 2.4.

Exhibit 2.4: Total Approved SODP Contributions and Transfers (as of March 31, 2014)

SODP funding components	SODP expenditures ($ millions)
Pre-SOA and SOA	**597.1**
• Pre-SOA	177.4
• SOA	419.7
Transfers to other programs*	**130.8**
Total SODP	**727.9**

* Details provided in Section 2.1.3.

2.2 Logic Model and Performance Measurement Strategy

A performance measurement strategy (PMS) was prepared for SODP in November 2009. The PMS included a logic model and a performance measurement matrix containing a set of performance indicators for SODP overall. SOA initiatives were developed and new logic models and performance indicators were prepared for SODP overall and separately for each of the seven SOA initiatives. The revised logic models and performance indicators were approved by FedDev Ontario Executive Committee in June 2012, together with an updated version of the SODP PMS.[9]

2.2.1 Logic Model

The approved SODP logic model (2012) is provided in Exhibit B.1 in Appendix B. It outlines the key activities being funded by the program; the outputs that will result from those activities; and the immediate, intermediate and ultimate outcomes the program is intended to achieve. The SODP logic model also identifies the key activities, outputs and outcomes for each of the initiatives under SOA and pre-SOA (summarized in Exhibit 2.5). Individual logic models for each of the SOA initiatives were also prepared to show how each initiative fits within the larger program.

2.2.2 Performance Measurement Strategy

In total, there were 20 outputs and outcomes and 38 performance indicators for SODP. The number of performance indicators applicable to each SOA initiative or stream depended on its objectives. The performance indicators for outputs and outcomes for each of the SOA initiatives or streams are provided in Exhibit B.2 in Appendix B.

Program management implemented an in-depth data collection and progress reporting system for each of the SOA initiatives. This system was based on the SODP PMS (2012), which provided performance information derived from project progress reporting from funding recipients. Where the program was delivered through delivery partners (NFPs and PSIs), the partners collected this information from the funding recipients and provided it to FedDev Ontario. This performance information was consolidated by

[9] Southern Ontario Development Program: Performance Measurement Strategy, FedDev Ontario (June 2012).

FedDev Ontario Program Services in a summary report and a series of spreadsheets, one set for each initiative or stream.

In addition to individual project targets identified for recipients in the contribution agreements (CAs), targets were established for each SOA initiative. However, the SOA targets were not set until 2012, after the new PMS was approved. At this point, SOA projects had been launched and were well underway. As a new organization, FedDev Ontario did not have experience with similar programs to help establish program targets, so internal expertise and staff experience with other RDA programs were used to create the targets.

Funding recipients were also required to submit a final report within three months of project completion. These reports were to be prepared and submitted by organizations receiving funding directly from FedDev Ontario or through delivery partners. The initial final reports followed an outline in the CAs and asked for summary and high-level performance information pertinent to the project or initiative. However, these initial final report outlines were prepared prior to the finalization of the SODP logic models and performance indicators in 2012. Consequently, the information provided by the initial final reports is limited in comparison to the information included in subsequent final reports collected by the performance reporting system as of March 31, 2014.

Exhibit 2.5: Relevancy of SODP SOA and Pre-SOA Performance Indicators for Each Initiative and Stream

Program outputs and outcomes	SOA initiative											Pre-SOA
	Y-STEM	GEI	SEB–NFP	SEB–PSI	ARC	TDP	IBI–Angel	IBI–SME	PI–PE	PI–RD	PI–BCA	
Outputs												
1. Education sessions	X		X	X								
2. Internship programs		X										
3. Partnerships and collaborations		X	X*	X*	X	X	X**		X**	X**	X**	X
4. Investments in cash and in kind leveraged against FedDev Ontario contribution		X	X***	X***	X	X	X	X	X	X	X	X
5. Businesses supported			X	X	X			X	X	X	X	X
Immediate outcomes												
6. Enhanced STEM learning opportunities for children and youth	X											
7. Increased support to commercialize innovations			X	X	X	X		X		X	X	X
8. Increased exposure of STEM graduates to business		X	X	X								
9. Increased access to capital			X	X			X	X	X	X	X	X
10. Strengthened businesses and clusters								X		X	X	
11. Increased adoption or adaptation of new technologies					X				X			X
Intermediate outcomes												
12. Increased participation of children and youth in STEM outreach programs	X											
13. Improved employment of STEM graduates in the private sector		X	X	X								
14. Increased commercialization of research			X	X	X	X		X		X	X	X
15. Improved survival rate of businesses and start-ups			X	X				X				X
16. Increased employment opportunities in southern Ontario communities								X		X	X	X
17. Enhanced business productivity					X				X			X
Ultimate outcomes												
18. Increased innovation capacity in southern Ontario	X	X	X	X	X	X	X	X	X	X	X	X
19. Stronger southern Ontario communities	X	X	X	X	X	X	X	X	X	X	X	X
20. More competitive southern Ontario businesses	X	X	X	X	X	X	X	X	X	X	X	X

* Partnerships or collaborations formed with start-up businesses (NFP stream); partnerships or collaborations formed with donors (PSI stream); fellows attracted to PSI (PSI stream).

** "New" partnerships and collaborations.

*** Total value of investments in start-up businesses leveraged by source (NFP stream); total value of endowments for commercialization fellowships (PSI stream).

2.3 Stakeholders

FedDev Ontario worked with a variety of stakeholders to deliver SODP. Key stakeholders included SMEs and start-up enterprises, Not-For-Profits (NFPs) such as industry and sector associations and Community Futures Development Corporations (CFDCs), Post-Secondary Institutions (PSIs) and angel investment networks. Key stakeholder groups involved in SODP initiatives are identified in Exhibit A.1 in Appendix A.

In addition to potential recipients of contributions through the SODP, FedDev Ontario worked with interested parties such as municipal organizations; departments and agencies of the Government of Ontario; and other federal departments and agencies, including Industry Canada, Regional Development Agencies (RDAs), NRC and the Natural Sciences and Engineering Research Council.

2.4 Governance

SODP funding contributions were governed by CAs between FedDev Ontario and funding recipients. FedDev Ontario outlined four types of relationships governed by SODP CAs:

1. Direct Agency–recipient relationships where FedDev Ontario provided funding to a recipient for a specific project (e.g., through IBI, where FedDev Ontario supports a start-up enterprise to undertake a specific project);
2. Direct Agency–recipient relationships where FedDev Ontario provided funding to a recipient for a specific project(s) with one or more collaborators (e.g., through the ARC initiative, where FedDev Ontario provided funding to a PSI that in turn worked with SMEs to undertake pre-commercialization projects);
3. Indirect relationships where FedDev Ontario provided funding to an initial recipient that in turn distributed payments to ultimate recipients (e.g., through the PI–PE stream, where FedDev Ontario provides funding to an NFP, industry or sector association that in turn distributed funding to SMEs to support productivity improvements); and
4. Intergovernmental third-party agreements where FedDev Ontario requested another government department to provide services on its behalf (e.g., FedDev Ontario requested BDC to deliver investments to early-stage firms in southern Ontario and Ontario-based venture capital funds focused on Ontario-based opportunities).

In all these models, the CA outlines the recipient's contractual obligation to provide information required for performance measurement and evaluation. In cases where the recipient delivers the program on behalf of FedDev Ontario, the recipient must obtain information from beneficiaries or ultimate recipients, in order to meet this requirement. The fourth type of relationship above, which was used in the pre-SOA program with NRC–IRAP and BDC, is not part of this evaluation, as these contributions form part of program evaluations within the recipient organizations.

2.5 Expenditures

Exhibit 2.6 shows SODP expenditures over the five-year period from 2009–10 to 2013–14.

Exhibit 2.6: SODP Expenditures, 2009–10 to 2013–14

	Expenditures ($)					
	2009–10	**2010–11**	**2011–12**	**2012–13**	**2013–14**	**Total 5 years**
Salaries	544,448	2,189,168	3,220,865	3,269,129	3,429,125	**12,652,735**
Operations and maintenance	1,163,116	1,927,255	914,476	441,442	165,226	**4,611,515**
Grants and contributions	43,525,352	72,405,516	154,267,058	175,542,810	137,296,695	**583,037,431**
Transfer to the National Research Council*	27,500,000	17,000,000	—	—	—	**44,500,000**
Transfer to the Business Development Bank of Canada*	50,000,000	—	—	—	—	**50,000,000**
Program evaluation	—	—	—	—	150,000	**150,000**
TOTAL	**122,732,916**	**93,521,939**	**158,402,399**	**179,253,381**	**140,891,046****	**694,801,681****

* These transfers are *not* included in this SODP evaluation (see Section 2.1.3).
** Excludes the costs of the program evaluation, as they will be incurred by the Evaluation Directorate.

3.0 Evaluation Methodology

This section describes the methods used in the evaluation of SODP and includes the evaluation issues covered, the approach taken, the design and application of the data collection methods, and the evaluation challenges and limitations.

3.1 Evaluation Issues

The SODP evaluation was based on the TBS *Directive on the Evaluation Function*,[10] which requires assessments of all five of its core issues relating to *Relevance* and *Performance (effectiveness, efficiency and economy)* in order to address value for money. However, departments and agencies have the flexibility to determine the evaluation approach and level of evaluation effort in accordance with the program's risks and characteristics and with the quality of performance information available for each program.

The evaluation was designed to address the five issues in the TBS Directive, as well as provide program management with feedback on the design, implementation and success of the program. The five core issues, as well as the key questions addressed in the evaluation, are presented in Exhibit 3.1.

[10] http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=15681&section=text

Exhibit 3.1: Key Questions for the SODP Evaluation, by Core Issue

Issue	Evaluation Question
Relevance	
Issue #1: Continued need for program	1.1 Is there a continued need for a program similar to SODP? 1.2 Did the SODP complement, duplicate or overlap other government programs? Other private sector services?
Issue #2: Alignment with government priorities	2.1 To what extent is the SODP consistent with government priorities: a) FedDev Ontario's PAA and strategic outcome? b) Federal priorities and strategies?
Issue #3: Alignment with federal roles and responsibilities	3. To what extent is the SODP aligned with the federal government's activities, roles and responsibilities?
Performance (effectiveness, efficiency and economy)	
Issue #4: Achievement of expected outcomes	4.1 To what extent have the expected immediate, intermediate and ultimate outcomes been achieved as a result of the SODP? 4.2 Did the SODP produce unintended positive and/or negative outcomes?
Issue #5: Demonstration of efficiency and economy	5.1 To what extent was the SODP delivery model efficient in producing outputs and progressing towards expected outcomes? 5.2 Is there a more cost-effective way of achieving the expected results, taking into consideration alternative delivery mechanisms, best practices and lesson learned?

3.2 Evaluation Approach

The evaluation design that addressed the issues and questions specified above recognized and took into account the following:

- Multiple lines of evidence were needed to allow the "triangulation" of results from different perspectives and methods.
- The evaluation needed to address, to the extent possible, each of the initiatives separately. This was particularly challenging because SODP is a complex program with seven distinct SOA initiatives, as well as the pre-SOA initiatives. Other considerations include the number of projects, the size and complexity of the projects, the maturity of benefits, the delivery method, and previous research, all of which vary across initiatives.
- As the majority of SOA projects were not completed until March 31, 2014, the full impact of most initiatives or streams would not be realized until sometime after project completion. An online and phone survey of SMEs receiving SODP contributions was included in the design to collect actual and forecast project results. This survey also provided information on the value of SODP support to the SME and the SME's satisfaction with and feedback on the delivery of the initiative. The perspectives of the SMEs, most of which received their contribution from one of FedDev Ontario's delivery partners, were of particular interest to program management.
- Case studies using semi-structured interviews were included to provide more detailed information on selected projects assisted by SODP contributions, their context and their impacts.
- For measuring performance, this evaluation necessarily focused on *immediate* and *intermediate* outcomes. The measurement of the *ultimate* outcomes that are provided in the PMS (see Exhibit 2.2 above) required standardized methods that are used across FedDev Ontario programs to measure FedDev Ontario's impact on the southern Ontario economy. The measurement of the ultimate outcomes was led by FedDev Ontario's Evaluation Directorate in parallel with this evaluation, and the results have been included in this report.
- Performance efficiency and economy needed to be examined in relation to the costs of the delivery models and the achievement of outputs and results.
- Where appropriate, the evaluation design took advantage of and built on the considerable body of prior research and reports on SODP, as described in Exhibit 3.2.

In parallel with the evaluation, FedDev Ontario contracted the Centre for Special Business Projects (CSBP) at Statistics Canada to compare the performance of SMEs that received contributions from SODP (both SOA and pre-SOA) with similar SMEs that did not receive contributions. CSBP documented its methods and findings in a report, *Business Performance Measurement of FedDev Ontario Program Beneficiaries* (November 2014). The study matched assisted SMEs with unassisted SMEs over the period 2009–2013. The findings of that study have been included in this evaluation.

The selection of data collection methods took the above research into account and was based on the most efficient means of rigorously addressing the evaluation issues and questions within the timeframe for the evaluation, while minimizing the response burden on funding recipients as much as possible.

Exhibit 3.2: Previous Relevant Research

SODP	Data sources	Description	Year
Overall SODP	Interim evaluation of FedDev Ontario's programs	Determined to what extent FedDev Ontario's programs, including SODP, continue to be relevant, are on track to achieve their expected program outcomes, and demonstrate efficiency and economy	2012
	Implementation review of the SODP PMS	Assessed the quality and adequacy of ongoing performance measurement data collection, as well as examining the results achieved to date	2012
	Preliminary *internal* delivery cost comparison	Compared the direct delivery cost of People Advantage, IBI and PI, and pre-SOA Compared the cost of repayable and non-repayable contributions	2012
	Preliminary *external* delivery cost comparison	Benchmarked FedDev Ontario's costs with the costs of other RDAs and NRC–IRAP	2012
	Activity-based costing model for FedDev Ontario	Forecast costing information at an activity level, by initiative, for the SODP replacement program	2013
	Business performance measurement of FedDev Ontario program beneficiaries	Compared the performance of SMEs that received contributions from SODP (both SOA and pre-SOA) with that of similar SMEs that did not receive contributions	2014
	SODP methodology report	Described in detail the methodology used for this evaluation	2014
SOA	Inventory and forecast of performance indicators for the seven SOA initiatives	Addressed the following question: When will results be available for the SOA initiatives? Included an inventory and forecast of SOA performance indicators	2012
	Survey of ARC Pilot recipients	Involved face-to-face interviews with all 24 PSIs and with 62 SMEs (20 percent statistical sample of the 309 SMEs supported by the initiative)	2012
	Performance indicator data	Provided (by program staff) on some performance indicators at the time of the Interim Evaluation	2012
	Case studies	Completed four case studies: one for Y-STEM, one for IBI and two for PI	2012
	Economic analysis	Assessed economic impacts of project spending for FedDev Ontario's contributions for ARC, IBI and PI	2013
Pre-SOA	Survey of recipients	Involved 33 interviews with direct recipients and 12 interviews and 51 file reviews with indirect recipients (CME, YLF and OCC)	2012
	Case studies	Completed two case studies, one of which included funding under both pre-SOA and SOA	2012
	Economic analysis	Assessed economic impacts of pre-SOA project spending of FedDev Ontario's contributions	2012

3.3 Data Collection Methods: Design and Application

Given the overall approach described above in Section 3.2, and taking into account previous research, the following section describes the data collection methods used in this evaluation and their application to the evaluation issues and questions.

3.3.1 Application of Data Collection Methods to the Evaluation Issues and Questions

The following data collection methods were used in this evaluation:

- Document review
- Review of performance, administrative and financial data
- Key informant interviews

- SME survey (on-line and phone survey of recipient firms)
- Mini case studies
- Data analysis

The application of the above data collection methods to the evaluation issues and questions is shown in Exhibit 3.3.

Exhibit 3.3: Data Methods for Key Evaluation Issues and Questions

Evaluation issues and questions		Document review	Review of performance, admin. & financial data	Key informant interviews	SME survey	Mini case studies	Data analysis
Relevance							
Issue #1: Continued need for program	1.1 Is there a continued need for a program similar to SODP?	✓		✓			
	1.2 Did the SODP complement, duplicate or overlap other government programs? Other private sector services?	✓		✓			
Issue #2: Alignment with government priorities	2.1 To what extent was the SODP consistent with government priorities: a) FedDev Ontario's PAA and strategic outcome? b) Federal priorities and strategies?	✓		✓			
Issue #3: Alignment with federal roles and responsibilities	3. To what extent was the SODP aligned with the federal government's activities, roles and responsibilities?	✓		✓			
Performance (effectiveness, efficiency and economy)							
Issue #4: Achievement of expected outcomes	4.1 To what extent have the expected immediate, intermediate and ultimate outcomes been achieved as a result of the SODP?	✓	✓	✓	✓	✓	
	4.2 Did the SODP produce unintended positive or negative outcomes?			✓	✓	✓	
Issue #5: Demonstration of efficiency and economy	5.1 To what extent was the SODP delivery model efficient in producing outputs and progressing towards expected outcomes?			✓			✓
	5.2 Is there a more cost-effective way of achieving the expected results, taking into consideration alternative delivery mechanisms, best practices and lesson learned?			✓	✓		✓

3.3.2 Description of the Data Collection Methods

The data collection methods used in the evaluation are described below.

Document Review

A review of relevant documents was carried out to obtain a good understanding of SODP and its initiatives, rationale, context and history. Many of these documents had been identified in the preparation of the evaluation methodology report. The review included program descriptions and background information on the SODP initiatives; the SODP performance measurement strategy (PMS); presentations and internal studies; *Interim Evaluation of FedDev Programs*; previous evaluation related studies and surveys; case studies and analyses; strategic studies related to the need for SODP programming; the Reports on Plans and Priorities; the Departmental Performance Reports; and transition binders and briefing notes.

In addition, the documents included the most recent research undertaken by FedDev Ontario's Strategic Policy Group in relation to the continuing need for an SODP type of program.

Review of Performance, Administrative, and Financial Data

Documents containing data on the SODP initiatives, collected and reported by FedDev Ontario Programs and Finance, provided key information for the evaluation. Performance data in those documents included the management summary and supporting spreadsheets for each SODP initiative as of March 31, 2014.[11] This information was complemented by administrative and financial data on the projects undertaken, including final project reports and other financial summaries.

Key Informant Interviews

Interviews with key informants (KIs)[12] were a primary information source for the evaluation. Personal interviews, either by telephone or in person, were undertaken using structured interview guides. In total, 44 interviews were held with the following groups:

- SODP staff, covering the SOA and pre-SOA initiatives (8);
- FedDev Ontario management (6);
- Government of Ontario staff with some knowledge of SODP (2);
- SODP delivery partners (10); [13] and
- SODP (ultimate) recipients (18).[14]

The individuals interviewed were identified in consultation with FedDev Ontario's Evaluation Directorate. Semi-structured interview guides were developed for the target groups to conduct in-depth interviews to address the key evaluation questions, given above in Exhibit 3.3.

Most of the government interviews were conducted in person at FedDev Ontario offices in Kitchener. The Government of Ontario interviews, several FedDev Ontario interviews, and all the delivery-partner and recipient interviews were by phone. Interviews were conducted in respondents' official language of choice. All interview findings were entered into an electronic database according to the evaluation issue, indicator and respondent type.

[11] Appendix C provides excerpts from the September 30, 2014, presentation of SODP results as of March 31, 2014.
[12] Key informant interviews are qualitative in-depth interviews with people who are associated with program such as program officers, industry experts and professionals. The purpose of key informant interviews is to collect information from a wide range of people who have firsthand knowledge about the program.
[13] Delivery partners (or intermediaries) are NFPs and PSIs that received SODP contribution funding to deliver programs on behalf of FedDev Ontario to support third-party (e.g., SME) projects.
[14] Ultimate program recipients are SMEs and NFPs that received SODP contribution funding directly from FedDev Ontario and where the NFPs are not FedDev Ontario delivery partners.

On-line and Phone Survey of SME Recipients Firms (SME Survey)

An on-line SME survey with phone follow-ups was undertaken with SME recipients of SODP contributions to obtain information on project results, both actual and expected; economic benefits; the value of SODP support to the SME; and satisfaction and feedback in relation to the delivery of the initiative.

The SME survey was used for the SEB, ARC, IBI, PI and pre-SOA SME projects, with the exception of the PI–BCA cluster projects, as these had a degree of complexity that was best handled by a case study approach. The six TDP projects were also complex, with an average cost of $10.65 million and an average of 15 partners, and were therefore addressed through case studies. The Y-STEM and GEI initiatives were not included, as they focused on people and not specifically on economic benefits. The survey involved SMEs that received SODP support directly from FedDev Ontario, as well as through third parties. The total SODP investment provided to these SMEs was approximately $284 million.

Lists of SMEs for the SOA initiatives were obtained from programs. Not all of the SMEs had email addresses, and considerable effort was made to obtain email addresses for the primary contacts. Good coverage was obtained for all initiatives. The initial number of SME projects available for the survey was 2,703, but that was reduced to 1,992 for the reasons given below:

Number of projects:		**2,703**
Reductions		
• Multiple projects	374	
• No email available	202	
• Indirect projects where a direct project was also funded	110	
• KI and case study interviews (to reduce burden on respondent)	11	
• Request from programs (e.g., bankruptcy)	14	**711**
Survey contact list:		**1,992**

Some of the 1,992 contacts had email addresses associated with multiple projects. In those cases, the respondent was asked to select one project for completing the survey.

Note that the reduction for indirect projects where a direct project was also funded was related to situations where a respondent would have received contributions for both indirect and direct projects. This action was taken to ensure that responses would be obtained for a reasonable number of the 163 direct projects in the frame.

The SME survey response rate was 27 percent (539 of the 1,992 contacts). The survey then obtained information on 539 projects (20 percent of the original project total of 2,703).

Mini Case Studies

Mini case studies were undertaken with organizations that benefitted from SODP contributions. The purpose of each case study was to provide detailed information on the project, how SODP contributed to the project's success, and what impacts were achieved. The organizations were selected from a list provided by FedDev Ontario. Mini case studies were used to illustrate the program and were not intended to be applied to other projects.

Ten case studies were undertaken: two for TDP, two for IBI, two for PI–RD and four for PI–BCA. Each case study involved a review of information in the project file, internet searches, and interviews with the recipient organization using a semi-structured interview guide. Each case study was summarized in a three-

to six-page report. Seven case studies were completed by the consultants, and three were prepared by FedDev Ontario's Evaluation Directorate.

The evaluation used updated case studies that had been prepared by the Evaluation Directorate for the Interim Evaluation in 2012 and three success stories prepared by FedDev Ontario to illustrate how SODP contributed to projects in other initiatives and streams. These updated case studies and success stories are identified in this report.

Data Analysis

A number of data and cost analyses were undertaken in support of the evaluation, in particular for issue #5: demonstration of efficiency and economy. Several of these analyses examined the approaches used in delivering the program; these have been provided in Section 6.0.

3.4 Evaluation Challenges and Limitations

In undertaking this evaluation, the following challenges and limitations were identified.

3.4.1 Challenges

Key challenges related to the evaluation were the following:

- ***SODP complexity***—SODP includes seven distinct SOA initiatives and 12 streams, as well as the pre-SOA initiatives, and there was a need to address each separately to the extent possible. This complexity relates to the number of projects, their size and complexity, the maturity of benefits, the delivery method and previous research, all of which vary across the initiatives. The evaluation design took this complexity into account in allocating its resources across the initiatives so that findings would be relevant for each initiative.
- ***Measurement of impacts—***Many projects were completed on March 31, 2014, but only a small number of SOA projects were expected to achieve benefits in the short term (1–2 years) after project completion. Most are expected to achieve benefits in the medium term (3–5 years) or the long term (>5 years). Thus, the full realization of intermediate and ultimate outcomes for most initiatives and streams will not be realized until sometime after project completion.[15] Therefore the information from the performance reports as of March 31, 2014, does not provide a full measure of these impacts (e.g., sales and employment resulting from projects supported by the SODP contribution). This difficulty was addressed to some extent by the SME survey, in which recipients were requested to provide estimates of the key impacts of their projects. SMEs were expected to have a good idea of what results could be expected upon completion of their projects. The Statistics Canada comparison study of assisted and unassisted SMEs also provided some information on program impacts and is expected to provide additional information on long-term impacts when it is repeated in the future.

3.4.2 Limitations

Limitations of the evaluation include the following:

- ***Attribution—***Funding recipients were asked to explain the extent to which project success was attributable to the SODP funding assistance. However, it is difficult to assess the net impacts of the program without a comparison group. To address this limitation, the interviewees and SME survey respondents were requested to assess the extent to which results would have occurred without the support provided by SODP. Cases in which impacts would have occurred in the absence of funding were removed from the calculations of economic impacts of the program. The Statistics Canada study provided information on the impact on the SMEs of the project funding (SODP and leveraged funding),

[15] Report prepared by Westbay Research Inc. for the FedDev Ontario Evaluation Directorate (2012).

although the study will need to be repeated in a few years to assess how project outcomes will have contributed to long-term performance.

- ***Coverage of SODP initiatives*—**The KI interview method is limited because all findings reflect the views and opinions of individuals. Nevertheless, the number of KI interviews undertaken provided good coverage of government and of program recipients that directly received funding from FedDev Ontario. However, the number of KI interviews covering the seven initiatives was small. While the findings were informative, they were not considered generalizable to the other projects in the initiative. The information obtained from the KI interviews was supplemented with information from the mini case studies and the SME survey.
- ***Timely and accurate information*—**To be able to measure the performance of its initiatives, FedDev Ontario relies on funding recipients to provide accurate and good quality information. Where the initiatives are delivered by third parties, FedDev Ontario also depends on them to review the collected information before forwarding it to FedDev Ontario. While FedDev Ontario has quality controls in place, verification in some cases is limited by IT systems. FedDev Ontario does employ a risk-based monitoring approach that includes site visits, claims reviews and progress reports. This approach to collecting information on performance and results is cost-effective and is extensively used in similar evaluations.
- ***Response rate for the SME survey*—**The SME survey obtained a response rate of 27 percent (539 of 1,992), which is considered good for online surveys of businesses with email and phone follow-up for which a response is voluntary. The evaluation uses the results of the SME survey as a line of evidence to reflect SME opinions. However, it is unknown whether the responses of the 27 percent are fully representative of the remaining 73 percent. Since the 27 percent response rate represents only 539 projects (20 percent of the original 2,703), the results are considered conservative.
- ***Representativeness of the mini case studies*—**The mini case studies were undertaken with organizations that had benefitted from SODP contributions. The objective of the studies was to obtain detailed information on how SODP had contributed to a project's success. These mini case studies were selected from a list of projects provided by FedDev Ontario. In addition, the evaluation used updated case studies that had been prepared by FedDev Ontario for the Interim Evaluation in 2012 and three success stories prepared by FedDev Ontario to illustrate how SODP contributed to projects in the other initiatives and streams. These updated case studies and success stories are identified in this report. The case studies and success stories illustrate the program initiatives and are not intended to be applicable to other projects.
- ***Impact on the southern Ontario economy*—**Although the evaluation assessed the impact of the various initiatives relative to the size of the program, it is recognized that the SODP contributions, while substantial, are small relative to the economy in the region. Moreover, other investment programs are also active in the region. It is therefore difficult to determine the extent to which SODP has contributed to FedDev Ontario's strategic outcome: *a competitive southern Ontario economy*.

4.0 Findings on Relevance

This section provides the evaluation findings for Relevance, which are based on the three core relevance issues described in Section 3.1:

- Issue #1: Continued need for program;
- Issue #2: Alignment with government priorities; and
- Issue #3: Alignment with federal roles and responsibilities.

4.1 Issue #1: Continued Need for Program

4.1.1 Continued Need for a Program Similar to SODP

Key Finding: There is a continuing need for a program similar to SODP to foster innovation, enhance productivity and competitiveness, and encourage the commercialization of research in southern Ontario.

The findings in this section are based on the KI interviews and on the document review, including research undertaken by FedDev Ontario's Strategic Policy Branch.

Need for SODP

In 2008, Ontario, traditionally a key driver of Canadian prosperity, was hit hard by the global recession, putting pressure on governments to rebuild the province's economic capacity and position the region to compete globally. The recession resulted in plant closures, restructuring and significant job losses, particularly in well-paying manufacturing jobs. The region lost almost 210,000 jobs, more than half of all the jobs lost in Canada, and two of the region's major automobile manufacturers (General Motors and Chrysler) were in crisis in 2009, leading to $13.7 billion in financial assistance from the provincial and federal governments[16].

FedDev Ontario was created in 2009 to help address the economic challenges that southern Ontario was facing. FedDev Ontario initially designed SODP to introduce new funding into southern Ontario quickly in response to these economic challenges. In 2010–11, following the priority of quickly delivering SODP stimulus funding, FedDev Ontario officials researched key areas of need within the region's economy, meeting with stakeholders and industry leaders to identify their challenges and to learn where FedDev Ontario could make a difference. As a result of this research, FedDev Ontario identified several regional economic challenges that it could get involved in:

- Addressing a range of skills and labour issues;
- Increasing business investment in R&D and productivity;
- Building stronger linkages between academia and business;
- Improving access to capital and venture capital;
- Diversifying export markets and increasing participation in global value chains; and
- Helping communities diversify their economies.

The design of the seven SOA initiatives took into account those challenges, as well as the federal and provincial economic development landscape and the federal Science and Technology Strategy (2007). With the objectives of fostering innovation, enhancing productivity and competitiveness, and encouraging the commercialization of research, the SOA initiatives were designed to address needs across the business

[16] http://www.oag-bvg.gc.ca/internet/English/parl_oag_201411_05_e_39963.html

continuum from the entrepreneurial start-up phase, through the traction and growth phases, to the mature phase.

Continuing Need for a Program Similar to SODP

All interview respondents, both government and funding recipients, agreed that there is an ongoing need for a program similar to SODP. While the situation in southern Ontario is not viewed as being as critical as it was in 2009, the same challenges remain. The region is still struggling, and there continues to be a need to diversify and stimulate the economy, improve productivity and encourage innovation. There is also a need for the federal government to show leadership. While recognizing that FedDev Ontario does not have a lot of funding in relation to the size of the southern Ontario economy, the Agency has been able to demonstrate federal leadership by targeting funding to address specific needs and achieve results, leveraging matching funding, and by encouraging collaborations and fostering partnerships.

> Interviewees noted that the need for assistance is significant. The number of applications is large, as stakeholders require additional resources. There is a need to be strategic in targeting areas for assistance and to evolve over time in addressing requirements. In SODP, the SOA initiatives were developed to be more focused than the earlier GI and FBI programs.

Through SODP, FedDev Ontario has established itself as a champion for southern Ontario. Program officers are experienced in assessing projects and know the economic environment of the region, so the Agency is able to play an effective role in targeting areas of need. There is also an obligation to continue to solidify collaborations and capitalize on the investments made by SODP. Federal government leadership is particularly important for attracting foreign direct investment and often requires additional incentives to be competitive with jurisdictions outside of Canada. The provincial government respondents, while not as familiar with SODP initiatives as federal government recipients, strongly support the continuation of a program like SODP.

With the SODP expiring March 31, 2014, FedDev Ontario undertook research and studies in 2012 and 2013 in support of efforts to renew its mandate for a subsequent five-year period. The following issues were investigated:

- The current and future state of the region's economy and key challenges to competitiveness;
- Continued areas of need in southern Ontario;
- Existing economic development programming support for the region's communities and businesses; and
- Areas where FedDev Ontario could make a difference with initiatives that are unique or complement others.

FedDev Ontario determined that while economic conditions in the region had improved since the global economic slowdown, longer term structural challenges persist. The 2012 and 2013 studies found that the impacts of the recession were still being felt in southern Ontario; this was corroborated by the interviews mentioned above and other studies. The service sector has been growing, but the manufacturing sector is declining in importance in both absolute and relative terms. Manufacturing was disproportionately affected by the recession, and production and employment in these industries have still not returned to pre-recession levels. A recent report by the Office of the Auditor General indicates that in 2007, approximately 1.5 percent ($21.4 billion) of the Canadian gross domestic product (GDP) was attributable to the auto industry, compared to about 1.1 percent ($19.1 billion) in 2013. In 2007, car manufacturers and parts suppliers employed 152,000 people. In 2013, the sector employed about 117,000 people.[17] The recent

[17] http://www.oag-bvg.gc.ca/internet/English/parl_oag_201411_05_e_39963.html

decline in the Canadian dollar relative to the US dollar should benefit southern Ontario manufacturers exporting in the future.

In April 2014, Ontario's unemployment rate was 7.4 percent, which was greater than the national rate of 6.9 percent. Some of the highest unemployment rates in Canadian metropolitan areas were in southern Ontario: Peterborough with 11.6 percent; Windsor, 8.4 percent; Toronto, 7.8 percent; and London, 8.0 percent.[18] Research showed that Ontario lagged other G7 countries in productivity growth from 1984 to 2011 and lost considerable ground in productivity growth compared to the United States.[19]

In April 2013, the Conference Board of Canada reported that Canada is a weak performer in business enterprise R&D (BERD),[20] which is associated with productivity and GDP growth. Canada ranked 15th of 16 peer nations and has had a poor ranking since the 1980s. Although Canadian businesses projected R&D spending of $15.6 billion in 2011, this is less than that of Canada's international peers when BERD is measured as a percentage of GDP. BERD spending in the United States, for example, is twice as high as in Canada.

Regarding start-ups and high-growth firms, a 2013 study by Deloitte, *The Future of Productivity: A Wake-up Call for Canadian Companies*, stated that "regardless of size or sector, few Canadian firms are able to sustain high levels of growth. Ironically, Canada has one of the Organisation for Economic Co-operation and Development's (OECD's) highest rates of new business entry and produces a greater proportion of young (five years or less) high-growth firms than the United States, Sweden or even start-up hotbed, Israel. But as our high-growth firms age, their performance slows and they fail to thrive. Canada's entrepreneurs may have mastered the art of creating fast-growing businesses with great potential, but they fall short when it comes to sustaining them."[21]

From its economic studies, consultations, and economic program landscape reviews, FedDev Ontario identified entrepreneurs, productivity and growth, commercialization and communities as continuing priorities in its next program. It was announced in Budget 2013 that the Agency's mandate had been renewed with a new suite of programs and with $920 million of funding over five years, starting April 1, 2014.

Budget 2013 also included several announcements that affected FedDev Ontario's environment. In particular, $19 million was provided to promote education in high-demand fields, including STEM, at the national level; and $20 million was provided for a national NRC–IRAP voucher for SMEs to work with PSIs on small assignments, similar to the ARC program that had been introduced by FedDev Ontario and had good success in southern Ontario. Further, other organizations were offering programs similar to GEI. The decision was made to no longer offer the Y-STEM and GEI initiatives and to not retain ARC as a separate initiative. ARC-like collaborations would still be included as an eligible activity and delivery model for some of the SOPI. All other SODP initiatives have been included in the new SOPI suite.

In summary, the evidence substantiates the continuing need for a program similar to SODP to foster innovation, enhance productivity and competitiveness, and encourage the commercialization of research in southern Ontario.

[18] Ontario Ministry of Training, Colleges and Universities: https://www.tcu.gov.on.ca/eng/labourmarket/currenttrends/docs/monthly/201404.pdf
[19] *Ontario's Long-Term Report on the Economy, 2014*: http://www.fin.gov.on.ca/en/economy/ltr/2014/ch5.html
[20] Business Enterprise R&D Spending, Conference Board of Canada, 2010: http://www.conferenceboard.ca/hcp/details/innovation/berd.aspx
[21] *The Future of Productivity: A Wake-up Call for Canadian Companies*, Deloitte, 2013. http://www2.deloitte.com/ca/en/pages/insights-and-issues/articles/future-of-productivity-2013.html

4.1.2 Did SODP complement, duplicate or overlap other government programs or other private sector services?

Key Findings: SODP complemented other federal and provincial government funding programs where they were available to recipients. The existence of other programs targeting some of the same areas as SOA was not considered a concern: the other programs had a different emphasis, and the demand for funding in southern Ontario far exceeded the limited funding available from SODP. For example, Ontario provincial government funding was coordinated with SODP to provide complementary funding, usually with a different emphasis (e.g., operating vs. capital).

The SOA initiatives were based on needs identified through meetings with stakeholders and industry leaders to identify their challenges, research on the federal and provincial economic development landscape, and analysis of where FedDev Ontario programming could have the greatest impact. The objective was to achieve the best results with the finite funding available, given the needs and size of the southern Ontario economy.

The SOA initiatives provided support to individuals and organizations from start-ups to multinationals. While other federal and provincial government programs targeted some of the same areas as the SOA initiatives, they had different emphases, such as recipient, reason or purpose, type of support, size of support, lifecycle and geographic area affected. Provincial government respondents stated that the province coordinated its programs with SODP and provided complementary funding, usually with a different emphasis (for example, operating vs. capital). According to studies, SMEs frequently face more difficulties accessing financing due to greater loan default risk, greater year-to-year fluctuations in sales and earnings, shorter credit histories and inadequate collateral[22] . Without sufficient protection (i.e., collateral and/or co-signing agreements), lenders are more likely to reject these businesses' requests for loans[23]

All respondents agreed that that SODP complemented other federal and provincial government funding programs where they were available to recipients. Other programs that were available to recipients were not perceived as duplication or competing with each other, as each program had different emphases and the demand for funding in southern Ontario far exceeded the limited funding available.

4.2 Issue #2: Alignment with Government Priorities

Key Finding: SODP was consistent and fully aligned with FedDev Ontario's PAA and strategic outcome and with federal government priorities and strategies.

In the Speech from the Throne (October 2013), the government stated that "creating jobs and securing economic growth is and will remain our government's top priority." This was followed by Budget 2014, in which the federal government further stated that its priorities included a focus on jobs, growth and prosperity. In 2014, the federal government stated that it was "committed to achieving these priorities and is focusing on the drivers of job creation and growth—innovation, investment, skills and communities."

FedDev Ontario's strategic outcome—to achieve a competitive southern Ontario economy—was aligned with federal government outcomes and above priorities through its program activities and sub-activities, and its programs and initiatives, as shown in Exhibit 4.1.

[22] Seens, Daniel L. 2013. *"Small Business Access to Financing: Request and Approval Rates, Interest Rates and Collateral Requirements (2000–10)."* Research Report, Ottawa: Industry Canada.
[23] http://www.ic.gc.ca/eic/site/061.nsf/eng/02935.html#point2p1

Exhibit 4.1 shows the alignment between SODP and FedDev Ontario's PAA, illustrating how SODP initiatives contributed to the program sub-activities and in turn, to the program activities. SODP was designed to support Technology Innovation and Business Development and was the sole supporter among FedDev Ontario programs of these two program activities. Other FedDev Ontario programs supported Community Economic Development activities. The exhibit also shows how the SODP was aligned through the PAA with Government of Canada outcomes.[24]

Exhibit 4.1: Alignment of SODP Initiatives with FedDev Ontario's Program Alignment Architecture and Government of Canada Outcomes

SODP initiative	FedDev Ontario PAA (program activity and program sub-activity)	Government of Canada outcome
	Technological Innovation	
Y-STEM (SOA) GEI and SEB (SOA) ARC and TDP (SOA)	• Science, technology, engineering and mathematics (STEM) awareness • Skills development • Technology development and commercialization	An innovative and knowledge-based economy
	Business Development	
IBI (SOA) PI (SOA) and initial SODP projects (pre-SOA)	• Business investment • Business productivity and innovation	Strong economic growth
	Community Economic Development	
Other FedDev Ontario programs		Strong economic growth; a diverse society that promotes linguistic duality and social inclusion

All federal government respondents considered SODP to be consistent and fully aligned with government priorities. FedDev Ontario and SODP, as its core program, were created and are consistent with the Speech from the Throne (2013), Budgets 2009 to 2014 and Canada's Science and Technology Strategy (2007).

4.3 Issue #3: Alignment with Federal Roles and Responsibilities

Key Finding: SODP was fully aligned with federal roles and responsibilities.

As an RDA and a representative of the federal government in southern Ontario, FedDev Ontario was aligned with federal government priorities through its SOA initiatives. These initiatives were designed to create a southern Ontario advantage by focusing on economic growth and job creation; fostering innovation, productivity and competitiveness, regional diversification, infrastructure improvements, and commercialization of research; and positioning southern Ontario as a strong force on the global stage.

All federal government respondents stated that SODP was fully aligned with federal roles and responsibilities and that the SOA initiatives were a formal and explicit match with government policy. During the evaluation period, the economy was the major focus of the federal government.

[24] http://www.tbs-sct.gc.ca/ppg-cpr/frame-cadre-eng.aspx

5.0 Findings on Performance Issue #4: Achievement of Expected Outcomes

This section provides the evaluation findings for performance issue #4: achievement of expected outcomes. The findings provide the answers to two key questions in Exhibit 3.1:

- *4.1 To what extent have the expected immediate, intermediate and ultimate outcomes been achieved as a result of the SODP?*
- *4.2 Did the SODP produce unintended positive and/or negative outcomes?*

5.1 Achievement of the Immediate, Intermediate and Ultimate Outcomes

Key Findings: Evidence showed that SODP achieved the outcomes expected by the end of the program on March 31, 2014. The initiatives met or exceeded almost all their performance targets. It is expected that projects, many of which were completed by March 31, 2014, will take different lengths of time to achieve their full impacts (e.g., sales and employment).

The SOA initiatives received program expenditures of $419.7 million, and a further $1.1 billion was leveraged from clients. This co-investment approach resulted in $2.65 of client funding being raised for each dollar of program funding expended and total SOA project expenditures of over $1.5 billion. The initiatives were successful in terms of innovations developed and commercialized and related sales. They were also successful in creating jobs and full-time employment. In the SME survey, 94 percent of the respondents rated their project as "good" to "excellent" in meeting its objectives. The three People Advantage initiatives were successful in reaching over two million children and youth, funding internships leading to employment, and helping entrepreneurs with their start-ups.

The pre-SOA initiatives involved expenditures of $177.4 million. A subsequent survey rated pre-SOA projects as "successful" to "very successful" in achieving impacts.

Partnerships were key to expanding FedDev Ontario's impact. The program was able to leverage its impact as a champion or convener, using its contribution funding as an incentive. The program was able to leverage private sector involvement through NFPs and PSIs by requiring private sector partnerships as a condition of contribution funding. This contributed to long-lasting involvement and benefits.

From responses to the SME survey, for the four-year period following project completion three key outcomes were forecast: (1) total SME sales resulting directly from projects supported by SODP would be an estimated $1.85 billion minimum; (2) SME export sales would be a minimum of $0.81 billion; and finally (3) 3,833 full-time equivalent (FTE) positions would be created.

In terms of ultimate outcomes, the findings of a Statistics Canada study indicated that SODP has generally impacted the assisted SMEs positively in post-funding employment and survivability compared to firms that were not assisted. It is recommended that the study be repeated in a few years to assess how project outcomes will have contributed to the long-term performance of SMEs.

For the SMEs included in the survey, the total estimated SODP initiative investment was $284 million. The estimated return ratio of SODP contributions to sales generated in the first four years after completion was a minimum of 1:5.

This section addresses the following question: *To what extent have the immediate, intermediate and ultimate outcomes been achieved as a result of SODP?*

Program outputs and outcomes result from the completion of SODP (SOA and pre-SOA) projects, when the initiative and program objectives are met. The linkage between the program activities, outputs and outcomes for each initiative is shown in the SODP logic model in Appendix B.

A summary of the achievement of immediate and intermediate outcomes is given below. Appendix C provides detailed SODP performance results. The assessment of these outcomes is based on comprehensive performance information collected by FedDev Ontario on the implementation of each SOA initiative, KI interviews, file reviews, prior research and the SME survey. Case studies and success stories

have been used to illustrate how the initiatives contributed to project successes. Activities and outputs are included in the discussion, as they are directly linked to achieving the outcomes.

The objectives of the various initiatives differed, as did their immediate and intermediate outcome measures, as described above in Section 2.2. Further, some of the projects were designed to have an immediate impact (e.g., IBI and PI-PE), while for others (e.g., TDP and PI-BCA); the full benefits will take a number of years to materialize. It is important to recognize that the outputs and outcomes of the investments reported below (e.g. sales, employment), are based on early results for most projects and they would be expected to increase for a number of years following the investments. Eventually, all initiative projects will contribute to the ultimate (macroeconomic) outcomes.

The summary of the achievement of immediate and intermediate outcomes is followed by a discussion of achieving the ultimate outcomes, which involves the combined contributions of all the pre-SOA and SOA initiatives.

5.1.1 All Initiatives

SODP was found to be successful in achieving the outcomes that were expected by the end of the program on March 31, 2014. The initiatives met or exceeded almost all of their performance targets. It was expected that projects would take different amounts of time after project completion to achieve their full impacts.

A summary of the findings for the SOA and pre-SOA initiatives is given below:

- ***SOA initiatives—***Close to 2,400 businesses received funding contributions directly from FedDev Ontario or indirectly through delivery partners, and more than 4,100 partners and collaborators were engaged in the projects. The SOA initiatives involved program funding expenditures of $419.7 million and a further $1.1 billion leveraged from clients. This co-investment approach resulted in $2.65 of client funding being raised for each dollar of program funding expended; total SOA project expenditures exceeded $1.5 billion.

  The number of innovations developed was just over 2,300. Excluding SEB, for which information was not available, more than 800 of 1,900 innovations had been commercialized as of March 31, 2014, with sales estimated to be $186 million. In addition, just over 60,000 person–months of employment had been created or maintained by the IBI, TDP and PI initiatives, creating an estimated 1,300 jobs of which over 80 percent were full time. The NFP deliverers of the Y-STEM initiative held close to 30,000 outreach sessions and reached an estimated 2.1 million children and youths. GEI funded over 1,200 internships, with 71 percent leading to employment. SEB supported 425 start-ups and as of March 31, 2014, almost all were still in business.
- ***Pre-SOA initiatives—***Just after FedDev Ontario began operation in 2009, SODP projects were successfully launched to quickly address the economic challenges at that time. FedDev Ontario approved 87 projects through the GI and FBI initiatives with $148.1 million in contributions and formed partnerships with CME, OCC and YLF to deliver 810 projects involving $29.3 million in contributions. A subsequent survey scored pre-SOA projects from “successful” to “very successful” in achieving impacts.

All FedDev Ontario interview respondents agreed that overall SODP had been successful in achieving expected outcomes. The program met or exceeded targets for most indicators. Partnerships were key in expanding FedDev Ontario’s impact. Through the SODP, FedDev Ontario was able to leverage its impact as a champion or convener, using its contribution funding as an incentive. For example, FedDev Ontario was able to leverage private sector involvement through NFPs and PSIs by requiring private sector partnerships as a condition of contribution funding. Further, FedDev Ontario forged long-lasting relationships and built platforms with the objective of achieving continued involvement and benefits. In determining whether immediate or longer term benefits are better, key informants noted that initiatives with cluster projects like TDP and PI–BCA may be better suited to achieving benefits in the longer term. Despite the pre-SOA program being launched quickly with a limited amount of funding available, more than 90 percent of the

applicants that received support are still in business. The pre-SOA experience also led to the successful design of the SOA initiatives.

In interviews with recipients, all delivery partners stated that their projects would not have gone ahead or the project outcomes been realized without SODP contributions. Recipients through third-party delivery stated that their projects would not have proceeded or would have proceeded more slowly without the SODP contributions. This was corroborated by the SME survey, in which 86 percent of the SMEs stated that if they had not received funding, their project would not have been carried out or would have been carried out with changes to size or scope. Close to 9 percent stated that the project would have been carried out with no changes to size and scope, and the remaining 5 percent provided a "don't know" response. Of those that would have proceeded or would have proceeded with changes to size or scope, more than half stated that the project would have been delayed. In addition, almost half stated that the funding assistance was helpful in obtaining funding from other sources.

5.1.1.1 Achievement of Project Objectives

When SMEs were asked to what extent their project had met its objectives, 94 percent of the 529 respondents stated that it had been "good" to "excellent", with 34 percent selecting "excellent" and 39 percent "very good".

SMEs also identified each of their project's objectives and whether each had been or will be achieved. The responses are given in Exhibits 5.1a and 5.1b. The exhibits show that a high percentage of SMEs have been successful in either achieving their project objectives or expecting to achieve their project objectives in the future.

Exhibit 5.1a: Achievement of Project Objectives (Products, Services, Processes and Practices)

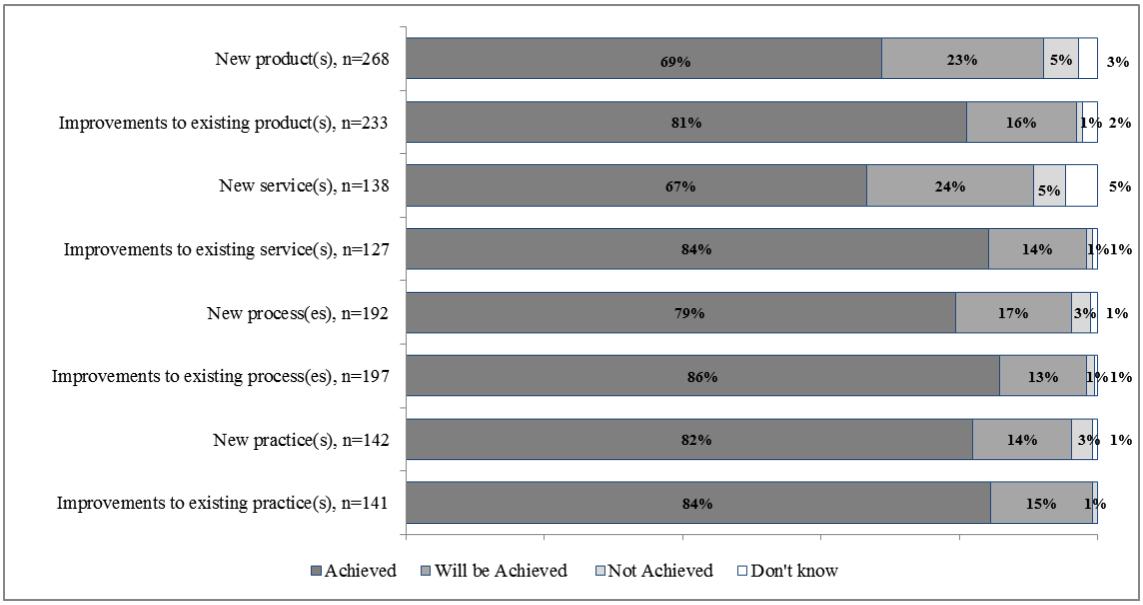
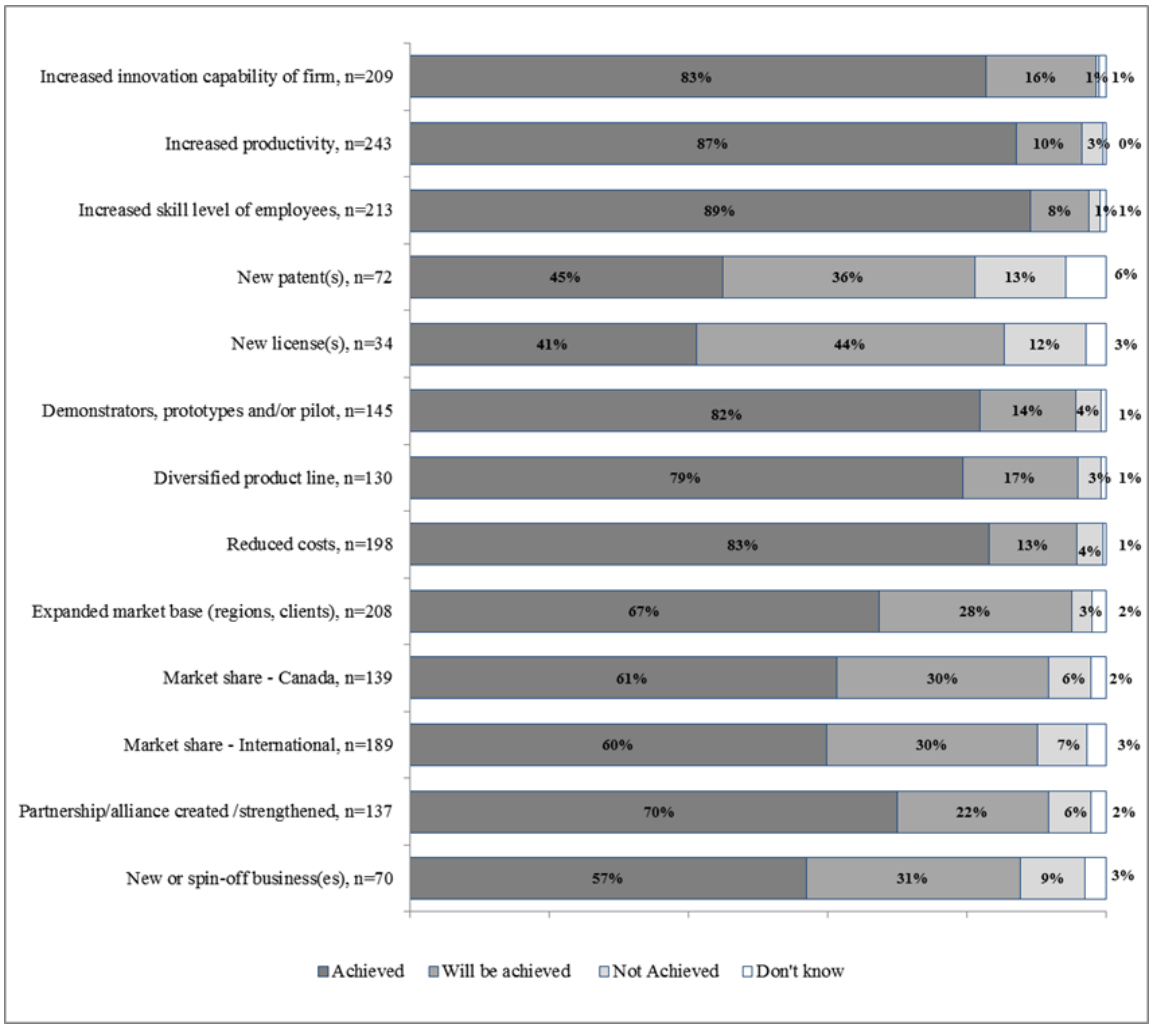


Exhibit 5.1b: Achievement of Other Project Objectives



5.1.1.2 Estimates of Sales, Employment and Jobs

The SME survey also asked SMEs to provide estimates of sales, employment and jobs resulting directly from projects supported by an SODP initiative. Estimates were requested for sales, export sales, and employment created and maintained: full-time equivalents (FTEs), part-time jobs and contract jobs. The estimates were requested for three periods: total up to project completion; total for first two years after project completion; and total for first four years after project completion. While the totals up to project completion are based on actual data, estimates for two and four years after project completion contain actual and forecast data, depending on when the project was completed. The survey only presents a partial picture of SODP impacts, as it focuses on SMEs included in the survey and does not include sales and jobs generated by TDP and PI cluster projects.

To assess the incremental impact, the SME survey asked what would have happened if the SODP funding had not been provided. According to the 539 responses, 9 percent of the SMEs stated that their projects would have been carried out with no changes to size and scope. The estimates of sales, employment and jobs for the 9 percent were removed from the analysis, leaving 493 responses. The results for the 493 respondents are given in Exhibit 5.2.

Exhibit 5.2: SME Survey Results for 493 Respondents

SME survey results(resulting directly from supported projects)	Up to project completion	Expected in the first 2 years after project completion	Expected in the first 4 years after project completion	Total up to project completion *and* for first 4 years after project completion
Total estimated sales ($ millions)	515.0	738.3	1,331.1	1,846.1
Total estimated export sales ($ millions)	275.1	356.7	539.1	814.2
Total estimated FTEs created*	1,598	1,304	2,235	3,833
Total estimated FTEs maintained	1,841	2,003	2,217	4,058
Total estimated full-time jobs created**	1,029	1,110	1,786	2,815
Total estimated part-time jobs created	204	256	356	560
Total estimated contract jobs created	196	192	193	389

Source: SME survey.

* Full-time equivalents (FTEs) in Person years - e.g., 1 person working full-time for 6 months is equivalent to 0.5 FTEs

** Full-time: position without a fixed end date, involving 35-40 hours per week; Part-time: position involving less than full-time without a set end date; and, Contract: a full-time or part-time position with a fixed end date.

As shown in Exhibit 5.2, for the 493 SMEs that responded, total sales up to project completion and including the first four years after the project completion were estimated to be $1.85 billion, while export sales were estimated to be $0.81 billion over the same period. The number of FTEs created in that period is estimated to be 3,833; and FTEs maintained is 4,058. This indicates that the SMEs were able to retain employment as a result of their supported projects during the period up to project completion and for four years afterwards. Over the same period, the number of part-time jobs created is estimated to be 560 and the number of contract jobs created is estimated to be 389.

The results in Exhibit 5.2 are only for 493 respondents to the survey, reflecting 27 percent of the total SMEs that received the survey and only 20 percent of the SME projects funded. These are therefore minimum estimates; the actual results may be higher.

5.1.2 Individual SOA and Pre-SOA Initiative Findings

The individual initiative findings have been organized by FedDev Ontario's PAA during SODP, in particular for the two program activities and five sub-activities that are relevant for SODP.[25] The sections that discuss each of the initiatives are listed in the third column of Exhibit 5.3.

Exhibit 5.3: Program Activities and Sub-Activities, SODP Initiatives, and Applicable Sections

PAA (program activity and program sub-activity)	SODP SOA and pre-SOA initiatives	Applicable section
Technological Innovation		
• Science, Technology, Engineering and Mathematics (STEM) Awareness	Y-STEM	5.1.2.1
• Skills Development	GEI and SEB	5.1.2.2
• Technology Development and Commercialization	ARC and TDP	5.1.2.3

[25] The two program activities were described earlier in Section 2.1.2, and the objectives of the sub-activities are included in the discussion in this section.

Business Development		
• Business Investment	IBI	5.1.2.4
• Business Productivity and Innovation	PI and pre-SOA	5.1.2.5

5.1.2.1 STEM Awareness: Youth STEM

STEM Awareness, a PAA sub-activity, encouraged youth to pursue education and careers in science, technology, engineering and mathematics (STEM) and improved their understanding of the business of science. Research had shown that only 37 percent of the Canadian teens enrolled in high school science were interested in taking a science course at the postsecondary level.[26] At the same time, employers in STEM-related industries were reporting current or anticipated skill shortages. The development of a more innovative and productive economy depends on graduates in STEM disciplines. When young people are encouraged early in their education, they can be inspired to pursue STEM education and careers.

Y-STEM

The Y-STEM initiative was supported by non-repayable contributions to NFPs delivering the program. Following the launch of Y-STEM in November 2010 FedDev Ontario received applications from 44 NFPs, of which 15 were approved to deliver the Y-STEM initiative. Total Y-STEM expenditures were $13.3 million.

The contributions assisted the 15 NFPs in developing and expanding the delivery of programming to engage youth, educators and volunteers in STEM outreach programs with the objective of encouraging youth to consider STEM careers. Y-STEM targeted youth in southern Ontario and included Aboriginal and Francophone youth as well as youth living in distressed areas. Some NFPs targeted large numbers of youth across southern Ontario (e.g., Let's Talk Science, Earth Rangers Foundation and Perimeter Institute), while other NFPs focused on small, more intensive deliveries (e.g., SHAD and the Canadian Association for Girls in Science).

The initiative was a success and it exceeded its targets. It is estimated that FedDev Ontario's Y-STEM contributions resulted in STEM programming reaching an additional 2.1 million youth, considerably more than the initiative target of 1.5 million youth. Kindergarten to Grade 12 enrolment in southern Ontario was estimated to be 1.9 million in 2012–13; the program reached a large number of youth in southern Ontario, some multiple times. While it was expected that Y-STEM would contribute to an increased number of youth making a decision to pursue a postsecondary STEM education or a STEM career in the future, Y-STEM's effectiveness in encouraging youth was hard to measure.

To provide some insight on the initiative, a case study of one of the NFPs delivering the initiative was prepared.[27] A summary is provided below.

Case Study (Let's Talk Science)—FedDev Ontario funding was used by Let's Talk Science to increase participation of children and youth, educators and volunteers in its STEM outreach programs across southern Ontario. This was achieved by increasing the accessibility of the STEM program (i.e., more outreach sites) and providing new educators and volunteers with the training and tools to engage children and youth. Outreach sites were located at various universities and colleges and were managed locally by student coordinators, who provided volunteers with the support and tools to implement Let's Talk Science programs in the communities. In addition, Let's Talk Science developed a group question and answer and design challenge competition for grade 6, 7 and 8 students to acquire science knowledge. It also developed CurioCity, an interactive, web-based meeting place where teens can connect with postsecondary students and science professionals to explore and discover STEM behind everyday life.

FedDev Ontario's $2.0 million in funding assisted Let's Talk Science in developing an additional 6,500 postsecondary volunteers and 800 professional volunteers, offering close to 6,000 sessions, and reaching an additional 487,000

[26] 2010 Angus Reid survey.

[27] The case study was prepared in 2012 for the Interim Evaluation and was updated with final results.

youth across southern Ontario. The project provided 148 person–months of employment, and created 5.5 new FTE jobs.

5.1.2.2 Skills Development: GEI and SEB

Skills Development, a PAA sub-activity, was designed to expose STEM students to research opportunities and careers in the private sector; provide skills training to graduates and graduate students in business skills or financing related to commercializing innovations or to successful business start-ups in STEM fields; and to address future skills shortages in management in STEM fields, including engineering, architecture, science and information systems. It included the two SOA initiatives: GEI and SEB, discussed below.

Graduate Enterprise Internship

The GEI initiative had the following objectives: developing business and management skills in STEM graduate students; providing career networking opportunities; building the next generation of potential managers; and enabling SMEs to benefit from the technical knowledge of STEM graduate students and recent graduates. Research had shown that Canadian STEM graduate students and recent graduates were not being exposed to skills they needed to succeed in business and to lead innovation.[28] In addition, Canadian businesses and other organizations were underutilizing the skills, talent and knowledge of STEM graduates.

The FedDev Ontario non-repayable contributions assisted PSIs and NFPs in arranging internships with structured mentoring opportunities for graduate students and recent graduates of STEM programs with SMEs in southern Ontario. After the launch of GEI in September 2010, FedDev Ontario received 19 applications from PSIs and NFPs for delivery, of which 9 PSIs and 1 NFP were approved. Total expenditures for GEI were $15.9 million, and an additional $12.3 million was leveraged.

Due to the lead time required to establish partner relationships and then place interns with SMEs, initial uptake was slower than for some of the other SOA initiatives, but uptake eventually increased. Despite a slower start and not meeting all initiative targets, the GEI was considered a success.

The total number of participants with internships was 1,230, somewhat lower than the 1,480 targeted. However, the internships led to higher than expected levels of employment, with 71 percent of the students or graduates obtaining employment, compared to the targeted 50 percent. The number of SMEs involved was 931, which was lower than the 1,200 targeted. Some SMEs took multiple interns.

To illustrate the GEI initiative, a success story prepared by FedDev Ontario is given below.

Success Story (Mitacs)—FedDev Ontario assisted Mitacs (Mathematics of Information Technology and Complex Systems) in placing interns in SMEs across southern Ontario to receive business mentoring while enhancing the innovation and R&D capacities of the SMEs. Mitacs, based in Toronto, is a national NFP that designs and delivers research and training programs. It works with 60 universities, thousands of companies, and both federal and provincial governments to build partnerships that support innovation in Canada. During the GEI project, Mitacs placed 256 interns with 187 SMEs, which resulted in 204 jobs for the interns. The contribution funding provided was $4.23 million.

Scientists and Engineers in Business

The SEB initiative had two main objectives. The first was to improve the business and management skills of STEM entrepreneurs. The second was to improve access to financing and business support services needed to successfully launch and manage SMEs in southern Ontario. STEM graduates are generally not equipped

[28] *The Federal Government's Role in Promoting a "Knowledge Culture"*, The Impact Group, 2006. http://www.impactg.com/pdf/KnowledgeCultureReport.pdf

with the business skills and financing needed to commercialize innovations or start successful STEM businesses. For starting a business, management talent has a more important role than does STEM knowledge.[29]

The FedDev Ontario non-repayable contributions assisted PSIs and NFP in the following ways:

- For the NFPs, the SEB contributions assisted them in providing business and management skills training, seed financing and business advisory support to promising STEM entrepreneurs. After the SEB initiative experienced some challenges in its infancy, the initial guidelines for NFPs were revised in October 2011 to better meet the needs of the STEM graduates and potential entrepreneurs. Seed financing was increased from $20,000 to up to $30,000, and the business skills, management and entrepreneurship training component was decreased from $15,000 to a maximum of $5,000.
- For the PSIs, the SEB contributions provided up to $30,000 for commercialization fellowships to assist graduate students and recent graduates in the commercialization of their innovations and in the start-up of high-technology firms. The funds were required to be matched by other sources, such as endowments.

After launching SEB in October 2010, FedDev Ontario received 14 applications from PSIs and NFPs for the delivery of the initiative, of which 5 PSIs and 7 NFPs were approved. Total SEB expenditures were $15.2 million, and an additional $16.1 million was leveraged.

SEB was considered a success. A total of 425 entrepreneurs were supported through the initiative, exceeding the target of 320. The number of PSI commercialization fellowships was 98, compared to the target of 80; and the number of start-ups accessing financing through the NFPs was 327, compared to the target of 240. The survival rate of the start-ups continuing in business or having made a successful exit as of March 31, 2014, was 98 percent, far exceeding the target of 15 percent. Respondents in the SME survey, undertaken in late 2014, indicated that the survival rate at that time was 92.5 percent, although the actual percentage may be lower, as not all SEB participants were reached or responded to the survey.

The SEB initiative is illustrated by the following success story, prepared by FedDev Ontario.

Success Story (University of Waterloo)—FedDev Ontario funding assisted the University of Waterloo through a contribution of $630,000 from the SEB initiative. The university's Commercialization Office (WATCO) provided commercialization fellowships to recent STEM graduates to help them create viable businesses in the Waterloo region. The purpose of the project was to help develop highly promising new technologies by providing companies, founded by recent graduates, with commercialization fellowships.

A total of 17 fellowships were awarded, including one to the founder of the successful start-up, Thalmic Labs. The fellowship accelerated the development of the company's Myo gesture control armband, leading to $14.5 million in venture capital investment in June 2013. The company has since grown to 34 employees and has started delivering products. The company has also received a number of awards.

5.1.2.3 Technology Development and Commercialization: ARC and TDP

Technology Development and Commercialization, a PAA sub-activity, was designed to develop stronger linkages between SMEs and PSIs and to support their partnerships. SMEs would be able to enhance their competitiveness and productivity by taking advantage of the research capabilities of the 35 PSIs in southern Ontario. The sub-activity had two SOA Knowledge Advantage initiatives: Applied Research and Commercialization (ARC) and the Technology Development Program (TDP).

[29] Institute of Competitiveness and Prosperity - Strengthening Management for Prosperity. Management Matters Working Paper 12, March 2009. http://www.competeprosper.ca/uploads/WP12.pdf

Applied Research and Commercialization

The objective of the ARC initiative was to support innovation in SMEs by encouraging greater collaboration and partnerships with PSIs, linking applied R&D expertise with pre-commercialization needs. According to the Science and Technology Strategy (2007), business provided 54 percent of R&D in Canada, well below the OECD average of 68 percent. SMEs often lack the R&D capacity, working capital, and critical mass that would allow production to be taken off-line for product and process development. [30]

When ARC was launched in April 2010 as a two-year pilot, roughly six months ahead of the other SOA initiatives, FedDev Ontario received 41 applications from PSIs for the delivery of the initiative. Of those applicants, 24 received approval, receiving contributions of $14.5 million. With the success of the initiative, ARC was extended in December 2011 through 23 of the original PSIs. Total expenditures for the ARC Pilot and ARC Extension were $27.6 million, leveraging an additional $28.9 million.

The ARC initiative supported partnerships between PSIs and SMEs in southern Ontario to improve innovation and productivity and to address pre-commercialization needs to help move innovative products and practices to market. The ARC guidelines were as follows:

- ***ARC Pilot*—**For an SME project in the ARC Pilot phase, a PSI received 100 percent of its eligible costs up to 66.7 percent of the total project costs, with an upper limit of $50,000. The SME was required to contribute 33.3 percent of the project cost.
- ***ARC Extension*—**For an SME project in the ARC Extension, a PSI was eligible to receive 100 percent of its eligible costs up to 50 percent of the total project costs, with an upper limit of $100,000. The SME was required to contribute the remaining 50 percent of project costs.

All in all, the 24 PSIs collaborated with 574 SMEs (305 in the ARC Pilot and 269 in the ARC Extension), which considerably exceeded the target of 440. Interest in the initiative was high, as indicated by the fact that PSIs received 530 applications for the 269 projects that were funded under the ARC Extension.

The number of products, services, processes or practices developed was 875, far exceeding the target of 293. The number of products, services, processes or practices that were intended to enhance productivity was 574, again far exceeding the target of 147. As of March 31, 2014, 142 products, services, processes or practices were commercialized (target was 22). Of the 155 SMEs that received support to enhance productivity, 50 reported an improvement, (compared to the target of 22) resulting in sales of $2.6 million.

A survey of the ARC Pilot was carried out in the spring of 2012 to assess the collaborations formed between the SMEs and PSIs and to gain an understanding of the benefits and impacts achieved. The survey involved face-to-face interviews with all 24 PSIs and 62 SMEs, representing a 20 percent statistical sample of the 309 SMEs supported in the pilot. The overall conclusion from the survey was that the ARC initiative was "wildly successful", meeting a critical need for PSI collaboration with SMEs; enabling PSIs to reach out to, work with, and be relevant to the community; and resulting in a noticeable expansion in applied research capacity. The survey method and results obtained are documented in *The Applied Research and Commercialization Initiative: Survey of PSI and SMEs Experiences* (June 2012) by FedDev Ontario's Evaluation Directorate.

In the SME survey, 91 percent of the 116 SMEs that responded rated their project's success in achieving its objectives as being "excellent", "very good" or "good". In addition, just over 60 percent stated that the project would not have been carried out without the ARC funding contribution, and a further 30 percent stated that the project would have been carried out but with changes to size and scope.

[30] *Mobilizing Science and Technology to Canada's Advantage*. Science and Technology Strategy (2007) https://www.ic.gc.ca/eic/site/icgc.nsf/vwapj/SandTstrategy.pdf/$file/SandTstrategy.pdf

FedDev Ontario interviewees considered the ARC initiative a "shining example" of outcomes achieved beyond expectations. The initiative resulted in increased productivity and new products or services being created and commercialized. It was viewed as a much needed intervention, as it sensitized PSIs to working with business and encouraged companies to invest in R&D.

The ARC initiative is illustrated by the following success story, prepared by FedDev Ontario.

Success Story (Algonquin College)—The Algonquin College of Applied Arts and Technology in Ottawa received $750,000 in the ARC Pilot and a further $750,000 in the ARC Extension. Algonquin was able to enter into collaborations with 32 SMEs. One example was a project between Algonquin and Palomino Inc., a Toronto-based software and web solutions provider and creator of the WebPal Application Suite. WebPal enables medium-sized organizations to take their business processes online and interact with clients on a whole new level. Palomino has worked with a broad range of businesses and organizations over the years, from large academic institutions to grassroots small businesses. Hundreds of businesses are subscribed to the WebPal platform, and thousands log into WebPal every day.

This project resulted in the development of software to connect mobile vital sign monitoring devices with cloud-based electronic medical record software and with detailed simulation data, which allowed the company to greatly accelerate the time to market for their new system. Palomino is contemplating turning the product into a separate health care division of the company and aggressively targeting the Canadian long-term care market. Palomino has also endorsed the college's bid for long-term Natural Sciences and Engineering Research Council funding for a wellness, health and social innovation project and expects to carry out additional projects like this with the college in the future. The amount of funding support provided for this project was $50,000.

Technology Development Program

The TDP initiative had the following objectives: bridging the gap between R&D and the commercialization of market-driven "game-changing" technologies; increasing collaborations involving private sector, academic and innovation organizations; and leveraging private sector investment in game-changing technologies. In terms of context, Canada ranked 16th in the OECD for creating high-quality patents per million population[31] and 14th of 17 advanced economies for innovation.[32]

TDP recipient organizations are lead organizations that must be working with at least one private-sector collaborator, and the project must have at least 50 percent financing from nongovernmental sources. Projects need to contribute to the development of a globally competitive market-ready technology that has the potential to develop opportunities for businesses or an industry sector.

TDP provided 50 percent funding of direct eligible costs up to $20 million to established NFPs or PSIs in southern Ontario, with the remaining 50 percent to be provided by the private sector. After the launch of TDP in September 2010, FedDev Ontario received 19 applications from PSIs and NFPs, of which 6 received approval. Total funding expenditures were $56.9 million, with an additional $83.4 million leveraged from other sources.

FedDev Ontario interviewees noted that the six TDP projects were focused on the long term and were funded as game changers to diversify and provide comparative advantage in the southern Ontario economy. These projects were very large and involved many players and agreements, taking some time for FedDev Ontario to assess and approve. The focus was on technology development, not commercialization. It is expected that the TDP projects will do well in the future, as time is required for these types of cluster

[31] *Mobilizing Science and Technology to Canada's Advantage*. Science and Technology Strategy (2007) https://www.ic.gc.ca/eic/site/icgc.nsf/vwapj/SandTstrategy.pdf/$file/SandTstrategy.pdf

[32] Conference Board of Canada, 2010. http://www.conferenceboard.ca/hcp/details/innovation.aspx

projects to build innovation and achieve benefits. To date, these clusters have had varying degrees of success, with some projects already providing benefits.

Projects are expected to result in the creation of innovative products, substantial numbers of permanent jobs, and sales three to five years after project completion. As of March 31, 2014, the six TDP projects have formed 109 partnerships, exceeding the target of 98. They had developed 118 new products, services, processes or practices, more than the 49 targeted. Of these, 24 had been commercialized with estimated sales of $8.0 million.

The six TDP project lead organizations, together with a description of the projects, are given in Exhibit 5.4.

Exhibit 5.4: Descriptions of TDP Projects

Project lead	Project description
York University	Research partners will create the Connected Wellness Platform, a cloud-based software system that will enable patients, their families, friends and professional care teams to collaboratively manage their health and wellness through the use of innovative applications
GreenCentre Canada	GreenCentre commercializes new solvent technology to process or sanitize previously unrecyclable materials, such as styrofoam, contaminated plastic, oil sands tailings, and offshore drilling cuttings
University of Waterloo	The Southern Ontario Water Consortium will build a watershed-level R&D platform to accelerate the commercialization of new "game-changing" technologies
Sunnybrook Research Institute (SRI)	SRI will collaborate with 19 organizations to accelerate the commercialization of four image-guided therapy systems to establish a world-class image-guided therapy sector in southern Ontario
Ontario Brain Institute (OBI)	OBI will accelerate the development of Ontario's neuroscience sector and contribute to the development of southern Ontario's growing neurotechnology cluster, NeuroTech Ontario, to commercialize brain-related technologies
Communitech	The project will enable the commercialization of several new in-demand global data services, forge connections with new industry partners, and raise the profile of Canada as a leader in global data services

To illustrate how the initiative assisted one of the TDP clusters, a case study was prepared as part of this evaluation. A summary is given below.

Case Study (Ontario Brain Institute)—In 2011, the Ontario Brain Institute (OBI) began the NeuroTech Ontario initiative with assistance from FedDev Ontario. Acting as the research manager of the project, OBI catalyzed partnerships between universities and private sector companies to accelerate the commercialization of neurotechnologies and contribute to the development of Ontario's growing neurotechnology cluster (called NeuroTech Ontario).

Founded in 2010, the OBI is a provincially funded, not-for-profit research centre. Its mission is to maximize the impact of neuroscience and establish Ontario as a world leader in brain discovery, commercialization and care. FedDev Ontario's non-repayable contribution of $5.1 million through the TDP initiative was instrumental in getting the $13 million initiative off the ground. The remaining $7.9 million was provided by the private sector. According to OBI, the SODP funding got industry to come to the table to take part in the NeuroTech Ontario initiative and also attracted private sector investment. OBI brought together several organizations to partner in the initiative: 12 research institutions and universities across southern Ontario and 12 industry organizations (9 Ontario SMEs and 3 international companies). OBI had originally planned 14 projects; however, it was unable to launch 2 of the larger projects for reasons beyond its control; as a result only about half of OBI's originally approved FedDev Ontario contribution of $11 million was disbursed.

The 2.5-year initial phase of the NeuroTech Ontario initiative ended in March 2014, with 12 projects successfully completed. Those projects created innovative neurotechnology devices, developed software to improve cognitive abilities, and enhanced imaging technologies to advance and improve neurological disease diagnosis, intervention and

treatment. At least 9 of the 12 projects are continuing via follow-on funding contributed by the original industry partners, new secured venture capital funding, and/or commercialization plans. OBI will continue its role supported by a renewed contribution of $100 million over five years, announced by the Government of Ontario in 2013.

In the three years since its inception, despite being unable to launch 2 of its planned 14 projects, OBI (NeuroTech Ontario) has helped Ontario's neuroscience sector expand, enhanced the competitiveness of local brain technology companies, and brought innovative brain technologies to market in Canada and abroad. OBI continues to grow the NeuroTech Ontario cluster via partnerships and financing from the public and private sector.

5.1.2.4 Business Investment: IBI

Business Investment, a PAA sub-activity, provided non-repayable contributions or seed financing to start-up businesses to accelerate the commercialization of new products, systems, processes and practices and to leverage private sector investment. Ontario's venture capital activity had dropped from a peak of $3.5 billion in 2000 to $424 million in 2010. Angel and venture capital investment funds have untapped potential to increase access to capital. A weak R&D and commercialization record and a lack of investment capital for companies had been identified as major impediments to getting innovative products to markets.[33] Ontario's venture capital activity had dropped from a peak of $3.5 billion in 2000 to $424 million in 2010. Angel and venture capital investment funds have untapped potential to increase access to capital.

Investing in Business Innovation

The IBI initiative had the objectives of accelerating the commercialization of new products, systems, processes and practices; increasing, stimulating and leveraging private sector investment; and encouraging the growth of angel investment funds. The initiative had two main streams of support:

- Repayable contributions for SME start-ups with fewer than 50 employees, to accelerate commercialization (the IBI repayable contribution was one-third of eligible costs up to $1.0 million, and the remaining two-thirds was from other sources, such as angel and venture capital funds); and
- Non-repayable contributions to NFP angel investor networks (up to $100,000) and NFP organizations representing angel investors (up to $2.0 million) in southern Ontario.

Following the launch of IBI in October 2010, FedDev Ontario received 203 applications, of which 106 were approved, for total contributions of $60 million. The approved applicants consisted of 86 SMEs, with approved repayable contributions of $56.8 million; and 18 angel networks and 2 NFPs representing angel networks, with non-repayable contributions of $1.4 million and $1.8 million, respectively. The initiative has expended $56.4 million and has leveraged an additional $190.1 million from other sources.

The initiative was very successful in achieving results and exceeded all its targets. Total investments in SMEs of $246.9 million considerably exceeded the target of $147 million. The 86 SMEs that were supported developed 633 innovations, far exceeding the target of 50. Of these innovations, 364 had been commercialized as of March 31, 2014, with resulting sales of $79.3 million. The projects have resulted in over 1,200 person–years of employment created or maintained and over 550 jobs, consisting of 76 percent full-time, 8 percent part-time and 17 percent contract. As of March 31, 2014, there had been a 95 percent survival rate, and repayments were on track.

The angel investor stream resulted in 772 new partnerships with angel investors and investment organizations in southern Ontario, exceeding the target of 600. These new partnerships have brought in additional funds, including some from the United States and the United Kingdom. The amount of new investment attracted was estimated to be $95.9 million, which exceeded the target of $67.9 million.

[33] *Mobilizing Science and Technology to Canada's Advantage*. Science and Technology Strategy (2007) https://www.ic.gc.ca/eic/site/icgc.nsf/vwapj/SandTstrategy.pdf/$file/SandTstrategy.pdf

In the SME survey, 95 percent of the 39 recipients of IBI funding that responded rated their project's success in achieving its objectives as "excellent", "very good" or "good". In addition, 35 percent stated that the project would not have been carried out without the IBI funding contribution, and a further 63 percent stated that the project would have been carried out but with changes to size and scope.

Interviews indicated that IBI was very popular and was well regarded by both government and recipients. IBI provides tremendous leverage for the dollars spent on the program, and FedDev Ontario benefits from reduced risk because the angel investors qualify the investments. To participate in IBI projects, angel investors must belong to a registered angel group. After the SME financings and towards the end of SODP, when IBI opportunities were reduced, some investors chose not to renew their membership, which created a financial planning challenge for the angel organizations. Further, several SMEs noted that they had been advised by the Canada Revenue Agency that the IBI repayable contributions would reduce their Scientific, Research and Experimental Development (SR&ED) tax credits, resulting in a negative financial impact.

To illustrate how IBI assisted a SME, a case study is summarized below.

Case Study (Wave Accounting)—Wave Accounting Inc. (Wave) is a Toronto-based company that provides a suite of online small business software products under the brand name Wave. This includes Wave Accounting, an online accounting software application for small businesses. Wave Accounting is 100 percent free, which provides a significant competitive advantage over the other international market leaders. Wave obtains revenue from payment transaction processing; paid advertisements for products and services targeting small businesses that use Wave's products; payroll; and other sources, such as priority support.

The $755,000 repayable financial contribution or loan provided by FedDev Ontario in 2011 under its IBI initiative was instrumental in attracting an additional $1.51 million in angel and venture capital that together provided key early-stage financial assistance. This funding was used for a development project to accelerate the commercialization of the company's online accounting and financial management tools for the growing small business market. Wave's management commented that "by helping Wave Accounting at this early stage, FedDev Ontario put us in a position to build a truly global enterprise, with impactful innovation and significant future growth here in the Toronto area."

The new and improved products have resulted in increased market penetration, user and sales growth, and employment. The number of users has increased from close to zero in 2011 to 1.5 million in August 2013, and employment is now at 61 jobs in late 2014, an increase of 40 from when the project started in 2011. Further, sales revenue has increased rapidly since 2011 and is expected to continue to grow rapidly, given the large and expanding customer base. In addition, Wave has been successful in obtaining subsequent rounds of financing from investors, which have provided additional resources for the company to continue its growth.

5.1.2.5 Business Productivity and Innovation: PI and Pre-SOA

Business Productivity and Innovation, another PAA sub-activity, provided repayable and non-repayable contributions to for-profit and not-for-profit corporations to improve the productivity of individual businesses, industry sectors, sub-regional economies and economic clusters and thus to improve the competitiveness of the southern Ontario economy. A number of studies had indicated that Ontario's productivity lagged that of its US counterparts. As a result, southern Ontario needed to increase productivity to remain competitive in the global economy.

PI was the SOA initiative that addressed this need. It made strategic investments with an emphasis on three priority areas: productivity enhancements, regional diversification and economic clusters. PI had expenditures of $234.4 million.

The SODP (pre-SOA) initiatives (GI and FBI), including three delivery partnerships, funded 87 projects directly and a further 810 indirectly, starting in early 2010, with expenditures of $177.4 million.

Prosperity Initiative

The PI objectives were enhancing productivity, diversifying the regional economy, and building competitiveness in southern Ontario. PI had three funding streams, which attracted a variety of projects:

- Productivity Enhancement (PI–PE);
- Regional Diversification (PI–RD); and
- Building a Competitive Advantage (PI–BCA).

The PI–PE stream assisted over 800 smaller projects, which were delivered, with one exception, through the use of delivery partners and generally focused on specific requirements that would deliver results in the near term. The PI–RD and PI–BCA streams assisted a smaller number of larger projects delivered directly by FedDev Ontario. These projects were estimated to have larger impacts but would take longer to achieve results.

PI was the largest of the SOA initiatives. Following its launch in November 2010, the program received 418 applications, of which 57 were approved, with total expenditures of $234.4 million. PI leveraged an additional $783.1 million from other sources, for a total of $1.02 billion. This initiative supported 1,298 businesses. Of those, 904 SMEs were estimated to have received a total investment of $605.9 million from the three PI streams and other sources.

Partial results as of March 31, 2014, showed that for PI–RD and PI–BCA projects the number of innovations developed was 258, generating an additional $96 million in sales.[34] The number of new technologies adopted or adapted was just over 1,200, and the number of products, services, processes and practices that were commercialized was 271. The number of jobs created was estimated to be 553, consisting of 504 full-time, 27 part-time and 22 contract positions. For the three PI streams, 38,800 person–months of employment were generated. Targets had not been established for PI.

According to the FedDev Ontario interviews, this initiative was successful in creating jobs, commercializing products and expanding companies. For PI–PE, delivery partners were cited as being an effective and efficient approach to delivering the initiative to a large number of SMEs. For PI–RD, Dr. Oetker was mentioned as being successful in creating a substantial number of jobs. For PI–BCA, 11 clusters were established, similar to those in the TDP projects but focused more on the commercialization of innovations. The clusters were also to have SME involvement. Clusters cited included the McMaster Automotive Resource Centre (MARC) in Hamilton; the Advanced Manufacturing Park in London; and the Southern Ontario Smart Computing Innovation Platform (SOSCIP)

in Toronto and London.

a) Productivity Enhancement

The PI–PE funding stream addressed a lack of investment in machinery, equipment and software in Ontario businesses, relative to investments by similar companies in the United States. In 2009, the productivity gap between Canada and the United States was 23 percent and growing.[35] This underinvestment in capital equipment was estimated to have lowered Ontario's productivity by $800 per capita.[36] PI–PE supported the creation of new opportunities for economic diversification, market development and expansion; the attraction of businesses to diversify regional or community economies; and business expansion to support diversification.

[34] Reporting includes 3 of 6 PI–PE projects, 11 of 21 PI–RD projects, and 23 of 32 PI–BCA projects.
[35] Centre for Study of Living Standards, 2009. http://www.csls.ca/reports/10-03-03_can-us.pdf
[36] Task Force on Competitiveness, Productivity and Economic Progress
Sixth annual report , November 2007 - http://www.competeprosper.ca/uploads/ICP_AR6_final.pdf

Following the launch of PI–PE in November 2010, FedDev Ontario received 80 applications for PI–PE funding, of which 6 were approved, with total expenditures of $32.4 million. The PI–PE stream leveraged an additional $107.6 million. The recipients included four NFPs and one PSI. The four NFPs were delivery partners, three of which were the same organizations (CME, OCC and YLF) that helped FedDev Ontario deliver the pre-SOA initiatives. The number of projects delivered to SMEs under SOA by CME, OCC and YLF were 408, 191 and 179, respectively. The new NFP delivery partner was MEDEC, which delivered 30 projects to SMEs.

In the SME survey that included both PI–PE and pre-SOA recipients, 96 percent of the 290 delivery-partner recipients that responded rated their project's success in achieving its objectives as "excellent", "very good" or "good". In addition, 39 percent stated that the project would not have been carried out without the PI–PE funding contribution, and a further 45 percent stated that the project would have been carried out but with changes to size and scope. The remaining 16 percent consisted of 10 percent that would have carried out the project with no change in size or scope and 6 percent that provided a "don't know" response.

FedDev Ontario interviewees stated that the use of delivery partners was a major part of the SOA delivery strategy. It was considered to be a trusted delivery system and an excellent approach that had been very successful in reaching and supporting SMEs. Moreover, the delivery partners had the knowledge and ability to reach SMEs across southern Ontario and the capacity, including governance and administration, to support delivery. Administration costs were 5 percent of the contribution amount. This amount was considered too low to cover the effort involved.

To illustrate how the PI–PE stream assisted SMEs through delivery partners, a case study was prepared of one of the delivery partners for the Interim Evaluation. The description was updated for this evaluation and is summarized below.

Case Study (CME–SMART)—FedDev Ontario partnered with the CME,[37] one of four NFP delivery partners of SODP. The CME's SMART and SMART Prosperity Now programs helped SME manufacturers address productivity challenges; improve global competitiveness; and increase export sales, jobs and growth. SMEs assisted were located in all regions across southern Ontario, providing excellent coverage and opportunities for businesses in all communities.

In total, FedDev Ontario provided $38.85 million to the CME for southern Ontario manufacturers. An additional $131 million was leveraged from project partners. The CME–SMART program started in 2008 with funding from the Ontario provincial government. In 2009, FedDev Ontario made a $15.75 million contribution (Phase I) from the SODP pre-SOA program, which provided funding for 349 SMEs to facilitate lean implementation[38], energy conservation and management, quality improvements and IT process improvements. Then, under SOA PI–PE, CME received a $4.25 million contribution in 2010 (Phase II) for the same purpose, which helped a further 87 SMEs. Finally, in 2012, CME received an additional $18.9 million (Phase III) to deliver a new productivity enhancement program called SMART Prosperity Now, which helped 321 SMEs. This most recent funding went to southern Ontario manufacturers that were exporting, planning to export, or selling to an export supply chain. The funding supported productivity assessments and a variety of projects to improve productivity, such as integrating innovative technologies in products and processes, including alternative energy and clean technology.

The SMART program productivity assessment projects could receive up to 50 percent of eligible costs to a maximum non-repayable contribution of $50,000, while SMART Prosperity Now productivity enhancement projects could receive funding of up to 33.3 percent of eligible costs to a maximum non-repayable contribution of $75,000. CME received 5 percent of the funding to offset CME's administrative costs, but it found the percentage too low for the work entailed.

[37] Canadian Manufacturers & Exporters (CME) is Canada's largest industry and trade association representing businesses in manufacturing. Its members account for approximately 82% of Canada's manufacturing production and 90% of Canadian goods and services exports. In addition, more than 85% of CME members are SMEs.

[38] An approach to management that focuses on cutting out waste whilst ensuring quality. This approach can be applied to all aspects of a business – from design, through production to distribution.

CME's estimated that the projects supported by FedDev Ontario funding created 5,550 jobs and retained 11,100.

b) Regional Diversification

The PI–RD funding stream focused on southern Ontario regions with high concentrations of manufacturing industries in structural decline and low concentrations of high-growth industries that could expose local economies to significant job losses if plants were to close. PI–RD supported the creation of new opportunities for economic diversification, market development and expansion; the attraction of businesses to diversify regional or community economies; and business expansion to support diversification.

Following the launch of PI–RD in November 2010, FedDev Ontario received 181 applications for PI–RD funding, of which 19 were approved, with total expenditures of $74.7 million; $176.7 million was leveraged from other sources. The recipients were 15 SMEs and 4 NFPs.

- ***Dr. Oetker Canada Ltd.—***Located in London, Ontario, this project involved the design, construction and operation of a highly automated, state-of-the-art frozen pizza manufacturing and storage facility to service Canada and the US market. FedDev Ontario contributed $9.8 million to the total project cost of $113.5 million. This project had created 74 permanent full-time jobs and 101 seasonal or contract full-time jobs as of March 31, 2014 and was extended to March 31, 2015.
- ***BioAmber Sarnia Inc.—***Located in Sarnia, Ontario, this project involved the building of a bio-based succinic acid manufacturing plant. FedDev Ontario contributed $10.2 million to the total project cost of $111.0 million. This project was also extended to March 31, 2015, and is expected to create 60 permanent full-time jobs.
- Western Ontario Community Futures Development Corporation Association and Eastern Ontario Community Futures Development Corporations Network (now known as Community Futures Ontario East)—Located in Tottenham and Peterborough, respectively, these associations received $20 million each from FedDev Ontario. They work with 37 CFDCs in southwestern and eastern Ontario to identify opportunities to provide larger capital loans of up to $500,000 (the limit for a CFDC is $150,000). Like CFDC funds, these two funds are self-sustaining.

The following case study was prepared for this evaluation to illustrate how the PI–RD stream assisted SMEs.

***Case Study (Flying Colours)*—**Flying Colours Corp (FCC) is an aviation service provider specializing in all aspects of aircraft customization, including executive conversions, interior completions, refurbishment and modification, upgrades and installation. Established in 1989, the company is family owned and operated. With its base of operations at Peterborough Airport and a subsidiary in St. Louis, Missouri, FCC is already a strong competitor in the field of corporate aviation in markets all over the world. FCC is well positioned to grow by accommodating increased traffic in Peterborough and rising demand for customized business jets internationally.

In 2013, FCC received a repayable contribution of up to $900,000 from FedDev Ontario for a total project value of $2.77 million to expand its facilities and acquire new technologies to service a growing number of business opportunities arising from the expansion of Peterborough Airport. The FedDev Ontario funding came from the SODP PI–RD stream.[39] Other funding was provided by the provincial government, as well as by FCC itself. This project created 38 highly skilled FTE jobs and increased FCC's reach in Canadian and international markets. This business expansion also allowed FCC to obtain Authorized Service Facility status with Bombardier Aerospace.

c) Building a Competitive Advantage

[39] FedDev Ontario's Prosperity Initiative – Regional Diversification stream is described in Appendix B.

The PI–BCA funding stream emphasized the development or expansion of geographic concentrations of interconnected companies and institutions in a particular field, known as clusters. Clusters could provide a competitive advantage that would allow southern Ontario to compete with new emerging economies that have innate advantages, such as low labour costs. In 2010, Canada ranked 13th out of 26 countries in the Global Manufacturing Competitiveness Index. Southern Ontario has a relative strength in technology-intensive clusters in Canada, but it is only an average player in comparison to the United States[40]. PI–BCA supported activities to enhance the competitiveness of industry and sector clusters. These activities included the adaptation and adoption of new technologies, processes and skills development in an industry or sector; technology demonstration or piloting; business opportunity development and expansion; and facility improvement or expansion.

Following the launch of PI–BCA in November 2010, FedDev Ontario received 257 applications, of which 32 were approved, with total expenditures of $127.3 million. The PI–BCA stream leveraged an additional $498.7 million. The recipients were 13 SMEs and 19 NFPs or PSIs.

The following are illustrations of two cluster projects that were carried out in conjunction with private sector partners.

- ***Advanced Manufacturing Park—***Located in London, Ontario, this research park was created by Western University in partnership with the world-renowned Fraunhofer Institute of Germany, the City of London and Fanshawe College. The project established North America's premier facility for the development, validation and industrial-scale testing of lightweight composite and advanced materials, products and related applications. FedDev Ontario provided a $13.7 million investment in the total project cost of $37 million. The facility is currently running close to capacity.
- ***McMaster Automotive Resource Centre***—Located in Hamilton, Ontario, MARC is a $26.4 million state-of-the-art automotive research facility to which FedDev Ontario contributed $11.5 million. MARC assists with the transformation of research, development and commercialization related to green automotive technologies, with a focus on hybrid and electric car technologies.

The following case study illustrates how the PI–BCA stream assisted in establishing a cluster involving seven southern Ontario PSIs and a major industrial partner.

Case Study (Smart Computing)—The Southern Ontario Smart Computing Innovation Platform (SOSCIP) was established on April 1, 2012, as a new kind of collaborative research partnership to bring together university researchers and private-sector companies to use the latest advanced computing technologies. The objective of SOSCIP was to undertake collaborative research to solve important problems facing society and to build a competitive advantage for southern Ontario.

FedDev Ontario's PI–BCA initiative was instrumental in establishing SOSCIP by providing a non-repayable contribution of $20 million to the University of Toronto to form a collaborative research and innovation platform with six other Ontario universities and a lead industry partner, IBM Canada Ltd. The consortium would also foster partnerships with SMEs that could benefit from commercially promising research. Financial contributions of over $190 million were also provided by other organizations, including the Government of Ontario and in kind by IBM.

SOSCIP researchers at the partner universities, IBM and SMEs collaborate on projects in the areas of water, energy, cities and health to create jobs, solve industrial problems, develop new business opportunities, contribute highly skilled personnel to the workforce, and bring "made in Canada" products and services to market quickly and more efficiently. The platform is expected to boost Canadian competitiveness in the global economy by developing specialized skills in data management and analysis, software engineering and production in southern Ontario. It is expected that communities in southern Ontario will benefit from diversification and the creation of new economic opportunities.

After the initial phase of building the platform, SOSCIP is well positioned to embark on its next phase: an aggressive

[40] Institute for Competitiveness and Prosperity - A View of Ontario: Ontario Clusters of Innovation (2002), Pg. 7.

plan for growing the consortium and optimizing its collaborative research program. Promising projects are underway, and more will come. Although SOSCIP research projects have been active for only two years or so, inventions and innovations are starting to spur technology transfer. Economic benefits include revenue, cost avoidance, business and societal value, jobs, intellectual property, and higher valuations of companies and assets. There are already indications of commercial impact, and the introduction of new technologies, services and products is expected soon. While it is too early to measure the full benefits of the collaborative research and innovation being undertaken, forecasts from the Principal Investigators and SMEs regarding SOSCIP-sponsored research projects indicate that potential revenue generation will exceed $66 million over the next five years.

Cluster projects were successful in realizing their objectives by the end of SODP in March 2014. Most efforts were devoted to establishing the cluster, including putting in place the necessary infrastructure. At this point, many clusters have just entered the operating phase and are still in the process of ramping up and establishing partnerships with industry to use their facilities or expertise. While some results have been achieved, it will be some time before the potential of the clusters will be fully realized, with businesses benefitting from using the facilities.

One of the requirements for receiving funding was providing a sustainability plan for after the completion of the project. While committed to their sustainability plan, many of the clusters stated that they needed additional funding to fully exploit their infrastructure, including recapitalization of equipment in future years. Partnerships with industry are one source of funding—contract revenue is obtained for the use of the facilities. Other sources include provincial government programs. Many of the clusters have applied for additional government funding. Some clusters have found that SMEs would like to use the facilities but do not have the resources to pay for them.

The following case study, prepared for the Interim Evaluation, describes how the PI–BCA stream helped an SME to expand its facilities to exploit business opportunities.

Case Study (Ivaco)—PI–BCA funding of $10 million was used as part of an $80 million project to expand the Ivaco steel plant in L'Orignal, Ontario, a francophone community approximately 100 km from Montréal and Ottawa and 90 km from the US border. The project was intended to increase Ivaco's annual billet capacity to 625,000 tonnes, from 400,000. The ability to produce additional billets reduced operating costs and allowed the company to manufacture grades of steel not currently produced. Ivaco is the largest employer in L'Orignal and the surrounding area, and the project provided a more stable and sustainable economy in eastern Ontario by retaining the company's existing employees (over 400) and creating an additional 51 full-time skilled jobs, as well as indirect jobs during project implementation and after completion.

Pre-SOA Projects

The initial SODP was designed to introduce new funding into the region during a time of need, with the goal of supporting projects quickly. The initial program supported economic and community development, innovation and economic diversification by making contributions to communities, businesses and non-profit organizations in southern Ontario. Given the need to act quickly, coupled with limited capacity within FedDev Ontario, partnerships were formed with third parties to help deliver the program on FedDev Ontario's behalf.[41]

There were two initiatives that were launched quickly in 2009 to achieve the desired impact. The General Intake (GI) was launched in October 2009 and had few restrictions on project eligibility. The Food and Beverage Initiative (FBI) had a narrow focus and followed in November 2009. Both intakes closed in late December 2009. FedDev Ontario interviewees indicated that GI and FBI provided funding for about 90

41 As mentioned earlier, funds were also transferred to NRC–IRAP and BDC.

projects out of just over 2,000 applications. The 90 projects included CME, OCC and YLF delivery-partner projects. These in turn funded a further 810 projects, as shown in Exhibit 2.1Because of the positive experience with CME, OCC and YLF, FedDev Ontario partnered with them again in the delivery of PI–PE.

A sample survey was undertaken in the spring 2012 to evaluate the impacts of pre-SOA program funding, as only limited information was available on the performance of pre-SOA projects.[42] The survey method and results are documented in *Southern Ontario Development Project: Survey of Funding Recipients' Experiences* (June 2012), by FedDev Ontario's Evaluation Directorate. The survey found that the private sector and indirect recipients were "very successful" and the NFPs were "successful", although not to the same extent as the other two groups. The survey is described in detail in *Interim Evaluation of FedDev Programs*.

The CME case study given above for PI–PE also includes the CME pre-SOA project, and an illustration of how the pre-SOA initiatives assisted SMEs is provided below.

Case Study (LiquiForce Services Inc.)—Through PI, FedDev Ontario made a repayable contribution of $1.35 million to LiquiForce towards a project with a budget estimated at $1.8 million (actual costs were $2.5 million). The purpose of the project was to create an innovative process that would allow the company to rehabilitate lateral sewer pipes without digging.[43] At that time, companies could perform trenchless rehabilitation of the main sewer pipes (below the street) but had to dig a hole in the homeowners' lawn and possibly their basement to do the lateral pipe rehabilitation. This project would allow LiquiForce to bid for lateral pipe re-lining at a lower cost to municipalities, which is expected to result in expansion of its existing business. In addition, the innovation also presents an opportunity for expansion through franchising and licensing agreements. Sixteen FTE jobs were created as a result of the project, including some at the main office and others in the field. Moreover, the creation of this lower cost rehabilitation process also ensured that existing jobs were not at risk.

5.1.7 Ultimate Outcomes

The ultimate outcomes for SODP and their performance indicators, discussed in Section 2.2, are shown in Exhibit 5.5. These ultimate outcomes result from the combined outcomes of the initiatives as a whole contributing to FedDev Ontario's strategic outcome: a competitive southern Ontario economy.

Exhibit 5.5: SODP Ultimate Outcomes and Performance Indicators

SODP ultimate outcome	Performance indicator
Increased innovation capacity in southern Ontario	• Change in business expenditures on R&D from baseline • Change in number of employees in southern Ontario considered "highly qualified personnel" from baseline • Change in business investment in machinery and equipment from baseline
Stronger southern Ontario communities	• Change in number of southern Ontario businesses by size (SME, MNE) from baseline • Change in employment levels by sector from baseline
More competitive southern Ontario businesses	• Change in inflation-adjusted gross revenue of southern Ontario businesses by sector from baseline • Change in export revenue of southern Ontario businesses from baseline

42 See *Implementation Review of the Southern Ontario Development Program (SODP)* (2012) and *Inventory and Forecast of Southern Ontario Advantage (SOA) Performance Indicators* (2012), by Westbay Research Inc.

43 LiquiForce Services is located in Kingsville, Ontario (near Windsor), and has another office in Romulus, Michigan.

To measure these impacts, FedDev Ontario's Evaluation Directorate, with the assistance of the Strategic Policy Branch, undertook a study in 2014 comparing firms receiving funding assistance with a sample of similar firms that did not receive assistance. Prior to that, economic modelling was used to examine the impact on the Ontario economy of the pre-SOA and some SOA projects. In addition, a partial cost–benefit analysis of the sales estimates from the SME survey provides some information related to the performance indicators listed in Exhibit 5.5.

Comparison Study

In July 2014, FedDev Ontario contracted the Centre for Special Business Projects (CSBP) at Statistics Canada to compare the performance of SMEs that received contributions from SODP (both SOA and pre-SOA) with that of similar SMEs not receiving contributions. CSBP documented its methods and findings in a report, *Business Performance Measurement of FedDev Ontario Program Beneficiaries* (December 2014).

The CSBP study matched assisted SMEs with unassisted SMEs over the period 2009–2013. The resulting database was used to create tabulations of 11 selected indicators, which took into account SODP's PMS. The first four indicators were financial, and the remaining seven were nonfinancial. The study demonstrated that the approach was feasible; it also provided findings for the period 2009–2013. The study found that the indicators with statistically significant differences between the assisted and the unassisted firms related to post-funding employment. This included employment growth, changes in the average number of employees, and R&D employment growth. Survival rates were found to be higher for assisted firms over three years, although only one year was found to be statistically significant.

As most of the projects were not completed until March 31, 2014, the study did not capture the full impact of the project funding (SODP and leveraged funding) on the SMEs. The study will need to be repeated in a few years to assess how project outcomes will have contributed to SMEs' long-term performance.

Economic Modelling

Economic modelling was used on two occasions: in 2012 as a pilot for pre-SOA projects and in 2013 for some of the SOA initiatives (ARC, IBI and PI).

- ***Pre-SOA projects***—A pilot application of economic modelling was carried out in 2012 using Statistics Canada's provincial input–output model. The modelling examined the impacts on the Ontario economy of the pre-SOA projects.[44] The impacts were based on total project costs of $327.7 million, which included $88.4 million in FedDev Ontario contributions for pre-SOA projects that were essentially completed. The short-term employment impact of these projects was estimated to be 7,034 jobs: 2,947 direct, 892 indirect (increase in industry's use of goods and services has a cascading effect of further production increases elsewhere in the economy) and 3,195 induced (from the increased sales within the region from household spending of the incremental income earned in the supported sectors). The short-term contribution to GDP, taking into account direct, indirect and induced impacts, was estimated to be $504.3 million. The net present value (NPV) of the short- and long-term increase in GDP contribution at a 2.5 percent discount rate over 30 years provided a benefit-to-cost ratio of 2.51.
- ***SOA projects***—A subsequent economic modelling study of the project expenditure data for ARC, IBI and PI was carried out in the spring of 2013 using Statistics Canada's provincial input–output model.[45] The impacts were based on total project costs of $1,067.0 million for ARC, IBI and PI projects that were completed or close to completed, including $253.8 million in FedDev Ontario funding of the approved contributions of $359.8 million for the three initiatives. The short-term employment impact of these projects was estimated to be 12,491 jobs: 6,091 direct, 2,513 indirect and 3,887 induced. The short-

[44] Federal Economic Development Impact Report, Centre for Spatial Economics (July 2012).
[45] Federal Economic Development Agency for Southern Ontario Impact Report, Centre for Spatial Economics (July 2013).

term contribution to GDP, taking into account direct, indirect and induced impacts was estimated to be $1,117.7 million. The NPV of the short- and long-term increase in GDP contributions at 2.5 and 4.0 percent discount rates over 30 years provided benefit-to-cost ratios of 1.96 and 1.88, respectively.

Comparing the direct job figures from the model with the SME survey results above is difficult, given the differences in projects included and methods used. However, the model, the pre-SOA surveys and the SME survey showed substantial increases in direct employment resulting from the SODP projects. While the impacts of $504.3 million for the pre-SOA projects and $1,117.7 million for the ARC, IBI and PI SOA projects are substantial, they are small relative to the size of the Ontario economy.

SME Survey: Partial Cost–Benefit Analysis

The SME survey asked respondents to estimate total sales that would result directly from the SODP-funded project in the first four years after project completion. As discussed in Section 5.1 above, 493 SMEs responded. These respondents estimated that expected sales would amount to $1.3 billion.

The total SODP investments in these 493 SMEs were approximately $284 million.[46] Therefore, the minimum estimated ratio of return on SODP contributions in the first four years after project completion is 1:5.[47] In other words, for every dollar that FedDev Ontario contributed to these SMEs, $5.00 will be generated in sales.

5.2 Unintended Positive and Negative Outcomes

Key Findings: Most interview respondents found it difficult to think of any unintended positive or negative outcomes. Their comments largely related to positive outcomes and emphasized that the program or project had been more successful than expected. The survey found that SMEs' projects have contributed to social outcomes in addition to the outcomes that were the focus of the initiatives. The survey also found that almost half of the SMEs face barriers when trying to exploit their project achievements. Of these, the availability of internal and external funding is a major concern, followed by lack of key staff, changes in the market, establishing a distribution network, and needing to complete related components.

5.2.1 Interview Respondents

While most interview respondents had difficulty thinking of any unintended positive or negative outcomes, the comments provided largely related to positive outcomes.

Interviews with FedDev Ontario Staff

The FedDev Ontario interview respondents mentioned several unintended positive outcomes:

- The program helped establish relationships and increased FedDev Ontario's credibility. The funding provided the recipients with the means to get involved, and they are now able to benefit from the relationships established, which have continued beyond the projects. Moreover, partnerships were bigger than originally expected. Partnerships required organizations to work together and build synergies between similar or competing organizations. An example of this is the establishment of the Southern Ontario Water Consortium, a TDP project resulting from 17 individual applications related to water.
- The ARC initiative was much more effective than anticipated and identified a need that was larger than expected. In addition, some SEB and IBI projects were more successful than expected.

[46] SMEs in the following SODP initiatives: SEB, ARC, IBI, PI, and pre-SOA.
[47] $284 million/$1.3 billion.

- The IBI initiative helped to organize and solidify the angel ecosystem in Ontario and other areas of Canada.

FedDev Ontario interview respondents also mentioned a few unintended negative outcomes:

- Pre-SOA had a "no gating" policy. About 2,000 applications were received, but only 90 were approved. This involved a considerable amount of work to assess the proposals and disappointed a lot of people.
- In Y-STEM, some of the recipient organizations were dependent on the FedDev Ontario contribution for survivability. This meant that some of the funding went to support operations, not delivery.
- FedDev Ontario needs to increase its visibility in southern Ontario.

Interviews with Delivery Partners

SODP helped delivery partners establish a reputation and build awareness of their capabilities, leading to further applied research projects, more funding support, and additional domestic and international relationships. A common view among delivery partners was that the involvement exceeded what was expected. One recipient "expected to be happy, but didn't expect to be euphoric."

Interviews with Ultimate Recipients

Some ultimate recipients (those whose funding was delivered through third parties) commented on unintended positive outcomes of their projects:

- A few respondents mentioned that because of new opportunities, new markets, market growth or spin-off companies their projects had been more successful than expected.
- A respondent learned how to manage the complex relations between academia, the private sector and FedDev Ontario.
- Another respondent stated that the experience improved academics' understanding of private sector interests and how to navigate commercialization.
- One respondent said that the program improved communication with others in the same field, resulting in a more rational approach and better collaboration.

Some interviewees mentioned unintended negative outcomes:

- A few respondents were concerned that the IBI repayable contribution would affect an SME's ability to receive SR&ED tax credits, which would have an impact on cash flow.

5.2.2 Social Impacts

Respondents in the SME survey were asked if their projects had social impacts in addition to the impacts discussed above in Section 5.1. The SMEs that indicated that their projects had a "high" or "some" social impact have been combined, and their percentages are shown below:

- Security, 45 percent;
- Quality of life, 45 percent;
- Environment, 37 percent;
- Human health, 36 percent;
- Community development, 32 percent; and
- Safety, 29 percent.

The above percentages indicate that SME projects are contributing to social outcomes, in addition to those that were the focus of the initiatives.

5.2.3 Barriers to Exploiting Project Achievements

When asked whether their firms faced barriers in exploiting their project achievements, 46 percent of SMEs responding to the survey answered "yes." The proportions affected by barriers with a "significant", "substantial" or "high" impact are shown below:

- Availability of external funding, 66 percent;
- Availability of internal funding, 64 percent;
- Lack of key staff, 48 percent;
- Must complete other related components (in addition to the project), 42 percent;
- Changes in market (user requirements, competition); 41 percent;
- Establishing a distribution network, 41 percent;
- Manufacturing capability (producing at industrial scale), 29 percent;
- Change in company strategy, 28 percent;
- Changes in users, 18 percent; and
- Other, 23 percent.

As indicated above, for more than half of the SMEs experiencing barriers in exploiting their project achievements, the availability of internal and external funding is a major concern, followed by a lack of key staff, needing to complete related components, changes in market, establishing a distribution network, and so on. For the "other" category, only a few explanations were given: regulatory and adoption barriers; the need for a demonstration customer; and the cash flow problems resulting from IBI repayable contributions reducing eligibility for SR&ED tax credits.

6.0 Findings on Performance Issue #5: Demonstration of Efficiency and Economy

This section provides the evaluation findings for performance issue #5: demonstration of efficiency and economy. The findings have been structured to answer the two key questions in Exhibit 3.1. They also take into account TBS guidance on issue #5[48] and the three performance components: effectiveness, economy and efficiency. The two key evaluation questions are as follows:

- *5.1 To what extent was the SODP delivery model efficient in producing outputs and progressing towards expected outcomes?*
- *5.2 Is there a more cost-effective way of achieving the expected results, taking into consideration alternative delivery mechanisms, best practices and lesson learned?*

6.1 Efficiency and Economy of the SODP Delivery Model in Producing Outputs and Outcomes

Key Findings: The SODP delivery model was found to have been efficient and economical in producing outputs and progressing towards expected outcomes.

- SODP was considered to have the right amount of risk and reward in selecting projects and in meeting or exceeding the program or initiative performance targets.
- Partnerships and leverage, including third-party delivery, were instrumental in expanding FedDev Ontario's impact.
- The balance between in-house and third-party delivery has been instrumental in achieving efficiency and effectiveness. However, an increase in the percentage paid to delivery partners is warranted, and an improved database of third-party funding recipients would be beneficial.
- A combination of repayable and non-repayable contributions was appropriate and effective and provided flexibility in targeting different organizations.
- FedDev Ontario's costs to deliver G&C programs were considerably lower than those of four other RDAs delivering similar G&C programs. However, this high-level comparison was undertaken at the RDA level and not at the program level, so programming and contextual factors might explain some of the cost differences.
- Since its inception in 2009, FedDev Ontario has matured in building capacity and tools, although there still remains a need to refine some processes and integrate additional tools.
- Because of the spending lifecycle of projects, some flexibility in authorities is required so that the funding profile, which was flat-lined in SODP, matches project funding needs.
- Recipients generally had a high level of satisfaction with FedDev Ontario and with its delivery partners. Some concerns were expressed about the application, assessment and approval, and reporting processes. However, there was recognition that program staff were very helpful and that a certain amount of due diligence is required in dealing with public money.
- Impediments were identified that prevented some SODP-supported projects from achieving their full potential after completion, which raises the question of whether some additional longer term assistance should be considered as part of the initial contribution.

This section addresses the following evaluation question: *To what extent was the SODP delivery model efficient in producing outputs and progressing towards expected outcomes?*

[48] *Assessing Program Resource Utilization When Evaluating Federal Programs*: http://www.tbs-sct.gc.ca/cee/pubs/ci5-qf5/ci5-qf5tb-eng.asp

6.1.1 Program Planning

The objectives, target groups and activities of SODP and its initiatives became more defined and targeted as FedDev Ontario matured after its creation in August 2009. As described in Section 2.0, FedDev Ontario had the initial objective of supporting projects quickly to stimulate the southern Ontario economy. To that end it launched the GI initiative in October 2009, followed by the more focused FBI initiative in November 2009.

Once the priority of quickly delivering the SODP stimulus funding was addressed, FedDev Ontario developed a more focused program aligned with its mandate to promote the development of a strong and diversified southern Ontario economy. With input from stakeholders and industry on the regional economic challenges they faced, FedDev Ontario developed the seven Southern Ontario Advantage (SOA) initiatives with 12 funding streams to address these challenges. After the SOA initiatives were introduced, program management adjusted some funding parameters in two of the initiatives, SEB (NFP stream) and ARC, to better address market needs. The funding parameters for the other initiatives were not changed. A few FedDev Ontario interviewees noted that in retrospect the large number of SOA initiatives and streams was challenging and that a smaller number would have been more manageable.

6.1.2 Demand for SODP Funding

As indicated by the number of applications, the demand for pre-SOA funding was substantial. FedDev Ontario received 2,007 applications, but only 90 (4.5 percent) received approval. These pre-SOA initiatives were launched in late 2009, just after FedDev Ontario was created. At that time, FedDev Ontario was also involved in building its organization and capacity.

With the majority of SOA initiatives starting in late 2010, the proportion of applicants approved was 27 percent across the seven initiatives. However, the proportion for PI, the largest initiative, was 14 percent. The number of applicants and approved agreements are provided in Exhibit 2.3. The agreements in some of the initiatives were with delivery partners, and they also had more applicants than funding opportunities for their programs. One of the larger delivery partners commented that they were unable to address the "pent-up demand", as their program was fully allocated in a few weeks and they had a waiting list. The PSIs delivering ARC received 530 applications for the 269 projects that were funded under the ARC Extension, and IBI received 203 applications, of which 106 were funded. Some initiatives received more interest and some less, resulting in the reallocation of funding to higher interest programs from the original notional budgets.

It can be concluded that demand for the SOA initiative funding was higher than available funding and that program staff had a range of qualified applicants from which to select.

6.1.3 Use of Leverage

SODP had leverage built in as a requirement in all its initiatives (see Exhibit A.1 in Appendix A): that is, recipients were expected to provide a certain percentage of the project costs either in cash or in kind. The leverage requirement varied to some extent across the initiatives. This co-investment approach allowed FedDev Ontario to increase its impact through attracting other sources of funding. For the SOA initiative, this co-investment approach (described in Section 5.1.1) resulted in $2.65 of client funding being raised for each dollar of program funding expended.

In some cases, leverage was instrumental in attracting a greater client contribution than the initiative required. In the ARC initiative, the amount of leverage increased from the ARC Pilot to the ARC Extension. In the ARC Pilot, SODP funded 100 percent of directly eligible project costs for PSIs and up to 66.6 percent ($50,000) for SME applicants, with the SME contributing the remaining 33.3 percent. For the ARC Extension, the parameters were changed: SODP funded up to 50 percent ($100,000) of eligible project costs, with the SME contributing the other 50 percent.

6.1.4 Use of Authorized Funding

At its inception, SODP had difficulty spending the amount authorized, as shown in Exhibit 6.1. The funding was initially allocated evenly over FedDev Ontario's five years mandate, not accounting for the need to build capacity and attract and approve program participants. In the first two years this resulted in transferring part of the funding allocation to BDC and NRC–IRAP to support their programs.

In the last two years, with capacity in place, FedDev Ontario was successful in spending almost the entire amount authorized (Exhibit 6.1).

Exhibit 6.1: Total SODP Contributions by Fiscal Year—Total Authorities and Actual Spending

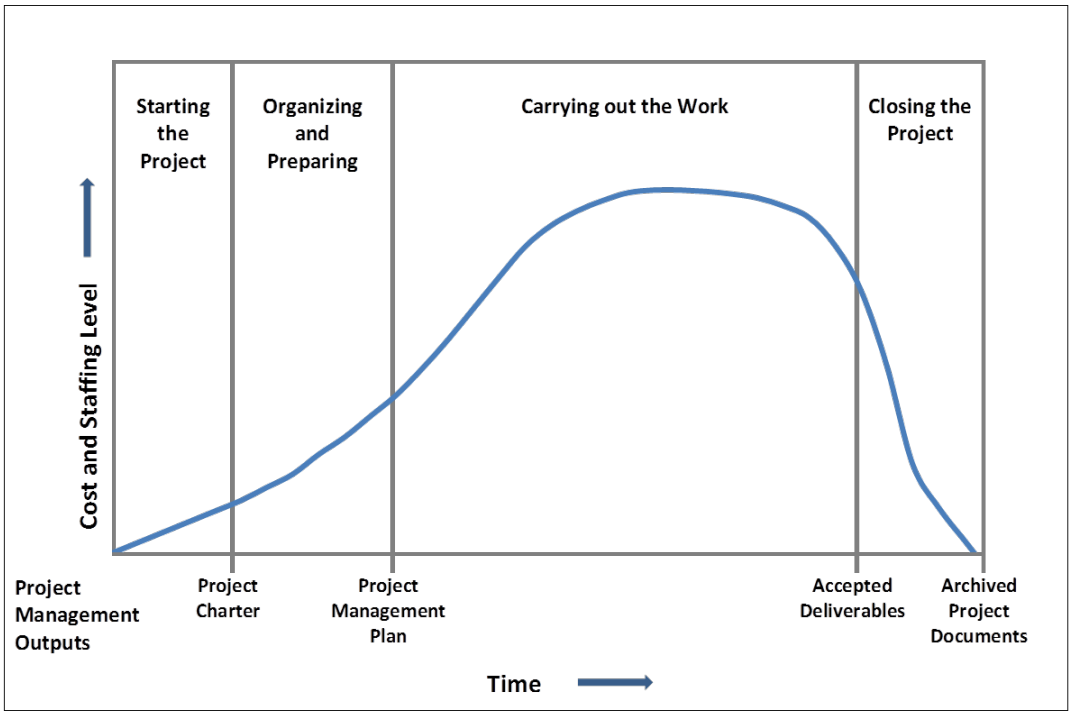
	Contributions ($ million)		
Fiscal year*	**Total authorities**	**Actual spending**	**Variance**
2010–11	159.2	72.2	(87.0)
2011–12	183.6	156.7	(26.9)
2012–13	181.3	181.3	0
2013–14	144.2	137.3	(6.9)

Source: FedDev Ontario Departmental Performance Reports.

* 2009–10 spending captured by Industry Canada, as FedDev Ontario was not created until August 2009.

Exhibit 6.2 shows the typical cost profile of a project over its lifecycle. Expenditures are shown to ramp up from zero during planning and start-up, continue growing through procurement and execution to peak expenditure, and then decline dramatically during project close out.

Exhibit 6.2: Illustration of a Typical Project Lifecycle



The challenge for FedDev Ontario program management is to approve a group of projects, each with the above profile but varying in cost and timeframe. When these projects are aggregated the flat-funding profile is maximized without exceeding the annual amount provided.

From the evaluation interviews it was estimated that for larger, more complex projects managed directly by FedDev Ontario it takes about 60 working days to obtain an application and then an additional 200 working days for FedDev Ontario to process the application to approval, with IBI being shorter and TDP being longer. Projects funded through delivery partners are much smaller and take considerably less time to launch. However, delivery partners must first submit a proposal to FedDev Ontario for approval before receiving the go-ahead to deliver their programs. Once approved, project expenditures are made after work is undertaken and claims are received.

Project expenditures do not start until after the project is announced and specific work is completed, and then time is taken to ramp up expenditures. This natural process has implications for the total amount that can be spent in a given fiscal year. Thus, it can be expected that expenditures considerably lag at the start of a program.

From the above, the following observations are made:

1. Fed Dev Ontario's five-year mandate and flat-line annual budget established equal year-over-year spending expectations that are not necessarily reflective of the lifecycle of the types of multi-year projects funded by the Agency. Second, project proponents take time to understand new programming and its benefits, adding extra time to develop project applications. Third, after applications are received, it takes time for assessment, due diligence and the signing of contribution agreements that clearly outline terms and conditions of federal funding. And, finally, many of FedDev Ontario's projects are multi-year in nature and historical trends have shown that a majority of costs for these types of projects are typically incurred after the first year. Therefore, it is difficult for FedDev Ontario to fully expend the funding in the first two years of a five-year mandate when funding is distributed evenly

across the five years. In addition, this flat-line funding profile could also create cash flow issues if projects that were approved in the first two years submitted maximum expenditures at the same time in years three to five.

2. With a fixed end date for the program, all projects must finish by that time. In some cases, this may have implications for approved projects that may need to be adjusted or rushed to match the cash flow available.

The matching of aggregate project expenditures to program funding will be an ongoing concern of FedDev Ontario program managers as they seek to maximize the use of the flat-lined and time-limited funding without exceeding the annual amount provided. Allowing funding re-profiling would lead to improved cost-effectiveness. An ongoing program (A-base funding) would allow projects to be continuously approved and would avoid the expenditure peaking that occurs within a five-year program.

6.1.5 External Comparison of Delivery Costs

A "high-level" comparison was made of FedDev Ontario's costs for delivering its programs with the costs of other RDAs delivering similar programs. The source of information for the comparison was the 2013–14 *Public Accounts of Canada*,[49] a report that is produced annually and contains actual expenditures of federal government departments and agencies. In particular, the report contains G&Cs and operating expenditures.[50] This information is provided in Exhibit 6.3, together with the cost of delivering a "G&C program dollar" for each RDA, as well as the delivery cost of other RDAs as a percentage of FedDev Ontario's cost. However, the comparison was undertaken at the RDA level, which would have included all programs being delivered by the agencies; it is not just a comparison of SODP and similar programs of the other RDAs. Further, there may be other factors that might help explain some of the cost differences. For example, both Atlantic Canada Opportunities Agency and Western Economic Diversification deliver in multiple provinces in their jurisdictions. Other factors could include the type or complexity of programs delivered, whether programs have been in existence for some time, availability of delivery partners for smaller projects, and other non-G&C workload. The extent to which the above factors affect delivery costs would need to be ascertained.

Exhibit 6.3: Comparison of Program Delivery Costs for FedDev Ontario and Other Regional Development Agencies (Based on 2013–14 Public Accounts Information)

	(1)	(2)	(1) ÷ (2)	
Regional development agency (RDA)	**Grants and contributions (G&Cs)* ($ million)**	**Operating expenses ($ million)**	**Cost of delivering a G&C program dollar ($)**	**Other RDAs' delivery costs as a percentage of FedDev Ontario's (%)**
FedDev Ontario – Federal Economic Development Agency for Southern Ontario	204.2	32.0	0.157	N.A.
ACOA – Atlantic Canada Opportunities Agency	236.7	77.4	0.327	209
CED – Canada Economic Development for Quebec Regions	260.9	43.4	0.166	106
WED – Western Economic Diversification	143.0	45.3	0.317	202
CanNor – Canadian Northern Economic	36.5	14.3	0.391	250

[49] http://www.tpsgc-pwgsc.gc.ca/recgen/cpc-pac/index-eng.html

[50] Includes contributions to employee benefit plans.

Development Agency

* The actual total value of G&Cs for other RDAs is somewhat larger than shown, as some other RDAs access part of their repayments for reinvestment.

Exhibit 6.3 provides the cost of delivering a G&C program dollar for each of these organizations. The comparison shows that FedDev Ontario's delivery cost of $0.157 is lower than those of the other RDAs. The other RDAs' delivery costs as a percentage of FedDev Ontario's delivery costs range from a low of 106 percent for Canada Economic Development for Quebec Regions to a high of 250 percent for the Canadian Northern Economic Development Agency. The same analysis using data from 2012–13 found that FedDev Ontario had the lowest cost of delivering G&C programs, with the next closest being Canada Economic Development for Quebec Regions with a relative cost of 126 percent of FedDev Ontario's cost.

In summary, this high-level comparison indicates that FedDev Ontario's delivery costs for G&C programs were considerably lower than those of four other RDAs, without accounting for the differences in programming and contextual factors.

6.1.6 Third-party Delivery

FedDev Ontario made effective use of delivery partners for smaller projects. With a trusted delivery system, those partners have the reach and knowledge of the target organizations and individuals as well as the capacity to select and manage the projects with minimal monitoring from FedDev Ontario. This delivery approach was used for Y-STEM, GEI, SEB, ARC, PI–PE and part of pre-SOA. Third-party delivery is described in Section 5.0.

For FedDev Ontario to manage larger numbers of smaller projects in-house would require direct interaction with beneficiaries to obtain project applications, to evaluate and approve the submissions, to negotiate and execute contribution agreements, and to manage the projects while they are underway.[51] For some initiatives this would demand a local presence. Considerable effort would be involved, and in some cases FedDev Ontario's reach and knowledge of the target organizations and individuals might not be sufficient to successfully deliver a program or initiative. For larger projects where increased due diligence is required in assessing the application and monitoring the project, in-house management is required.

During SODP, concerns were raised by delivery partners that 5 percent of the total contribution amount was insufficient for the administrative work entailed. In one case the rate had been increased for PSIs in the ARC Extension to 12.5 percent: 5 percent for administration, 5 percent for outreach, and 2.5 percent for targeted outreach in geographic areas that had low or no uptake. The general view of FedDev Ontario interview respondents was that 5 percent was too low and that 10 percent would be more reasonable for future programs, as it would allow for improved reporting and more promotion. When the percentage is being set, the parameters of the initiative being delivered and the delivery partners' expectations should be taken into account.

While third-party delivery has been considered very successful, it has the drawbacks of not providing visibility on projects being considered for funding and not having direct involvement in the selection and announcement of funded projects. The ultimate recipients of the funding delivered by third parties were often not aware that the source of the funding was FedDev Ontario. They associated the funding with the delivery partner and its program.

Some issues were also identified in preparing for the SME survey:

[51] For example, CME delivered 757 smaller SODP pre-SOA and SOA projects, with a total contribution of $38.9 million, of which 5 percent (or $1.9 million) was retained by CME for administration and the remaining $37.0 million was provided to SMEs.

- FedDev Ontario has not had a comprehensive database or databases of the recipients that were funded through the delivery partners. Considerable effort was required to build and clean the databases for the survey. For example, in the case of SEB, information for the survey was available for only 5 of 12 delivery partners, or 287 of 425 recipients.
- In building the database for the SME survey, it was found that a number of SMEs had benefitted from multiple projects over the course of SODP. According to matching email addresses, 220 SMEs had two projects, 60 had three, 10 had four, and 1 had five. In addition, not all recipients had email addresses and there may be cases where more than one email address has been used by an SME, which means that the number of multiples would likely be higher than indicated by the numbers shown.

An improved database would provide increased visibility on projects being funded and would allow the identification of SMEs receiving funding for multiple projects, as well as provide contact information for research purposes.

6.1.7 Partnerships

Partnerships were key to expanding FedDev Ontario's impact. The program was able to leverage its impact as a champion or convener, using its contribution funding as an incentive. The program was able to leverage private sector involvement through NFPs and PSIs by requiring private sector partnerships as a condition of providing contribution funding. Further, the program was able to forge long-lasting relationships and build platforms or clusters with the objective of achieving long-lasting involvement and benefits.

6.1.8 Repayable and Non-Repayable Contributions

SODP used a combination of repayable and non-repayable contributions in delivering the program. Both methods were found to work effectively. A combination of the two approaches was best, as it reached a broader number of organizations and provided flexibility.

- ***Repayable contributions***—FedDev Ontario only makes repayable contributions to business, unless the contribution is provided through a delivery partner and the amount is limited to $100,000. TBS allows smaller non-repayable contributions to a business of up to $100,000,[52] recognizing the volume and cost of delivery. In SODP, the minimum applicant contribution was 50 percent. Repayable contributions require considerable administration, as they involve monitoring for many years. This provides a natural check on whether the project is achieving desired results. It was noted that to justify the administrative costs, the loans need to be a reasonable amount, with $250,000–$500,000 mentioned as the minimum amount repayable. Usually, the repayable contributions include a grace period, after which there is a period of repayment. To date, FedDev Ontario has had good experience with repayable contributions. Payback can be adjusted if the business has a problem with repayment. FedDev Ontario does not offer conditionally repayable contributions, where the amount a company repays depends on sales. The Interim Evaluation assessed the cost of repayable contributions and found that even with the additional overhead, the overall cost to government is substantially lower than that of non-repayable contributions, because the contribution is repaid, suggesting that repayable contributions should be used where appropriate and feasible.

  FedDev Ontario has an accounts receivable system in place to collect payments on repayable contributions. Program officers look after repayable contributions from application to end of repayment. Corporate Services Branch provides reports on the status of the repayments (up to date, in arrears, etc.). If there is a problem, the program officer will contact the firm to obtain recent financials and is involved in any decision to reschedule payments. If the problem is not resolved, it is sent to the Receivable and Recoveries Directorate.

[52] TBS *Directive on Transfer Payments* (Appendix E), www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=14208

- ***Non-repayable contributions*—**Contributions to NFPs and PSIs are non-repayable. They are easier to administer and have lower operating costs. This approach is used for delivery partners that have a large geographic reach and fund small SME projects and for large, long-term projects established through the NFP platform. This approach allows for greater flexibility for the amount of contributions by partners. For cluster projects led by an NFP, it is important that partners provide some tangible investment to increase ownership and accountability. Some non-repayable contributions have had issues with intellectual property ownership, governance and administration.

  Sometimes large companies that are considering locating in Ontario are looking for non-repayable contributions. These firms do not want repayable contributions because they can get non-repayable contributions from other jurisdictions. A low interest rate for repayable contributions is not an incentive, either, because these companies can usually borrow at a low rate themselves. Moreover, if repayable, the contribution can affect their tax situation. FedDev Ontario does not have the tools to attract larger businesses requiring a non-repayable contribution.

  The Province of Ontario has an approach for projects in which companies receive non-repayable grants based on achieving performance milestones. This approach was used for Sysco and Open Text. It was suggested that FedDev Ontario consider a similar approach.

6.1.9 Performance Measurement

FedDev Ontario implemented a performance measurement system based on the SODP PMS (2012). In-depth data was collected on 20 outputs and outcomes and 38 performance indicators derived primarily from progress reports submitted by funding recipients. When the program was delivered through delivery partners, the partners collected this information from funding recipients and forwarded it to FedDev Ontario. The number of performance indicators applicable to each SOA initiative or stream depended on the initiative's or stream's objectives. Ongoing performance reports were provided for each SOA initiative, updating FedDev Ontario management on the progress of the program. However, performance information on pre-SOA initiatives was limited.

6.1.10 Level of Satisfaction

In both the interviews and the SME survey, most funding recipients indicated that they were "satisfied" or "very satisfied" with FedDev Ontario and its delivery partners. In the SME survey, 84 percent of the 479 recipients that answered the satisfaction question were either "satisfied" or "very satisfied" with their interactions with FedDev Ontario or its delivery partners, and 8 percent were either "dissatisfied" or "very dissatisfied". When the delivery-partner recipients were asked about their level of satisfaction with FedDev Ontario, 81 percent indicated that they were "satisfied" or "very satisfied", and 6 percent were either "dissatisfied" or "very dissatisfied".

Comments regarding FedDev Ontario staff and the initiatives were almost universally positive. Recipients appreciated the staff assistance provided, which was seen as being helpful, professional, supportive and responsive.

6.1.11 Administrative Processes

While the level of satisfaction was high and the delivery process was effective in selecting appropriate projects, funding recipients expressed some concerns about the administrative processes:

- ***Application process***—Respondents suggested simplifying the application process as much as possible and providing faster turnaround.
- ***Assessment and approval process***—Assessing and approving applications took too long and should be expedited if possible to respond to business pressures faced by funding recipients. According to respondents, it took approximately 60 working days to complete the application and a further 200 working days to reach approval (IBI took less time and TDP took more). PI projects involved a two-step process intended to streamline the process, but in fact the process turned into a double project

approval. The first step was treated as almost a project approval and took three to four months, and the second step involved almost the same content and took nearly the same amount of time. The length of time between approval and the announcement was also mentioned as a concern by some recipients. The time it took to launch a project had implications for implementation, particularly if the available time for implementation was short and there was a competitive advantage to be gained through the project.

- ***Reporting process*—**The administrative burden placed on small organizations, in particular, and the fact that the requirements changed over time were concerns. While these were concerns for the majority of recipients who commented on the reporting process, some recipients noted that the administration required was not unreasonable and that a certain amount of due diligence is required when public money is being dispensed.

6.1.12 Future Potential of Supported Projects

The evaluation found possible impediments to achieving the full potential of supported projects after project completion.

- ***SMEs*—**About half of SME respondents identified barriers to exploiting their project achievements. Availability of internal and external funding is a major concern, followed by lack of key staff, changes in market, establishing a distribution network, and needing to complete related components. Unless the SME can address these barriers, the long-term success of the project may be affected.
- ***Clusters*—**One of the requirements for receiving funding for a cluster project in the TDP and PI–BCA initiatives was that the proponents provide a sustainability plan for after-project completion. While committed to the sustainability plan, most of the clusters interviewed stated that they required additional funding to fully exploit their infrastructure, including recapitalization of equipment in future years. At the time of this evaluation, many clusters have just entered the operating phase and are still in the process of ramping up and establishing partnerships with industry to use their facilities and expertise. Some results have been achieved, but will be some time before the potential of the clusters is fully realized through the results achieved by the businesses using the facilities.

  Partnerships with industry provide contract revenue for using the facilities. Other sources of funding include the provincial government. Many of the clusters have applied for additional government funding. Some clusters have found that SMEs would like to use the facilities but do not have the resources to pay. Unless the clusters are able to find further funding, they may not be able to achieve their full potential.

These impediments raise the question of whether some additional longer-term assistance should be provided subsequent to or as part of the initial contribution. The need for future rounds of support for the projects and the likelihood of making that support available should be considered. However, this may not be possible within the scope of a five-year program.

6.1.13 Partial Cost–Benefit Analysis of SODP

The allocative efficiency of SODP was analyzed by conducting a partial cost–benefit analysis of the economic impacts of the program.[53] The approach consisted of determining the sales attributed to SME projects supported by SODP and then comparing those numbers against the SODP investments.

The estimated sales expected in the first four years after project completion (discussed in Section 5.1) were $1.3 billion, according to SME survey respondents. As described in Section 5.1.7, the total SODP

[53] Allocative efficiency assesses "whether the resources consumed in the achievement of outcomes was reasonable": www.tbs-sct.gc.ca/cee/pubs/ci5-qf5/ci5-qf5tb-eng.asp

investments in the initiatives in the SME survey were approximately $284 million.[54] The estimated minimum return ratio on SODP contributions to sales generated in the first four years after completion would be 1:5.

6.2 Cost-effectiveness in Achieving Expected Results

Key Findings: The evaluation did not identify any major changes that need to be made to the program initiatives and their method of delivery. Some respondents commented on improving various aspects of the program. The most-mentioned areas were the need to simplify the application, reporting and claims processes and to speed up approvals. Internal interviewees suggested increasing the percentage of contributions that delivery partners receive, improving the processes, and integrating new tools.

This section addresses the following evaluation question: *Is there a more cost-effective way of achieving the expected results, taking into consideration alternative delivery mechanisms, best practices and lessons learned?*

Responses from the external interviews and SME survey did not suggest that major changes should be made to the program initiatives or to their method of delivery. Comments were more focused on improving various aspects of the program. The most-mentioned areas were the need to simplify the application, reporting and claims processes and to speed up approvals. These comments pertained to both FedDev Ontario and its delivery partners. In addition, the need for more funding and follow-on funding for commercialization and export support was frequently mentioned. Multiple respondents commented on the need for increased visibility for the program, distribution of ARC funds and increased support for training.

FedDev Ontario interviewees suggested that more third-party delivery be done where it makes sense. Third-party delivery is much more cost-effective for smaller projects, and the delivery partners have the required delivery capability and reach. The proportion of the contribution retained by the delivery partners should be increased to 10 percent from 5 percent to reflect the delivery and administration costs involved. There is also a need to refine some processes and to integrate tools, such as the CANVAS model to help with project proposal assessment, setting service standards for different types of projects, speeding up the processing of applications, and improving project reporting.[55] Other tools mentioned were a client portal and a system to track interaction with clients.

[54] SMEs in the following SODP initiatives: SEB, ARC, IBI, PI, and pre-SOA.

[55] CANVAS is a best practice in assessing funding applications, from online completion of the application form, through assessment, approval and legal. It focuses on value and risk.

7.0 Conclusions and Recommendations

This evaluation was undertaken to determine the extent to which SODP continues to be relevant, is on track to achieve its expected program outcomes, and has demonstrated efficiency and economy.

7.1 Conclusions

The following conclusions are based on the evidence collected in this evaluation.

7.1.1 Program Relevance

There is a continuing need for a program similar to SODP to foster innovation, enhance productivity and competitiveness, and encourage the commercialization of research in southern Ontario. SODP complemented other federal and provincial government funding programs where they were available to recipients.

The need for funding in southern Ontario is substantial. Other programs that were available to recipients were not perceived as redundant, as they had a different emphasis and the demand for funding far exceeded the limited funding available from SODP.

SODP was consistent and fully aligned with government priorities, including FedDev Ontario's PAA and strategic outcome and federal government priorities and strategies, such as the Speech from the Throne (2013), the Budgets for the 2009 to 2014 period, and Canada's Science and Technology Strategy (2007).

7.1.2 Performance: Achievement of Program Outcomes

SODP achieved its expected outcomes by the time the program ended on March 31, 2014. The program initiatives met or exceeded almost all of their performance targets. It is expected that projects will take some time following completion to achieve their full impacts.

FedDev Ontario was successful in delivering the SODP initiatives to support individuals and organizations by addressing needs across the business continuum within its mandate. The evaluation determined that SODP delivery models used for the initiatives were efficient and economical in producing outputs and progressing towards expected outcomes. No significant challenges were experienced in delivery, although some adjustments were made along the way.

The SOA initiatives leveraged $2.65 of client funding for each dollar of program funding expended, resulting in total SOA project expenditures of over $1.5 billion based on FedDev Ontario expenditures of $419.7 million. The initiatives resulted in innovations being developed and commercialized and in sales, jobs and full-time employment. When asked In the SME survey to what extent their project had met its objectives, 94 percent of SMEs selected "good" to "excellent". The three People Advantage initiatives (Y-STEM, SEB and GEI) reached more than two million children and youth, funded internships leading to employment, and helped entrepreneurs with their start-ups. The pre-SOA initiatives involved expenditures of $177.4 million. Pre-SOA projects were "very successful" or "successful" in achieving impacts.

In their survey, SMEs estimated three key outcomes for the first four years following project completion: a minimum of $1.85 billion in total sales resulting directly from SODP-supported projects; a minimum of $0.81 billion in export sales; and a minimum of 3,833 FTE positions created.

While a high percentage of SMEs were successful in meeting their project objectives, almost half of the firms that responded in the SME survey faced barriers in exploiting their project achievements. The main barrier was the availability of internal and external funding, followed by a lack of key staff, changes in market, establishing a distribution network, and needing to complete related components.

Cluster projects initiated by TDP and PI–BCA take a long time after completion to reach their full potential, and many will require additional funding to achieve this potential. These large and complex projects were successful in realizing their initial objectives (establishing the clusters and creating the necessary

infrastructure) by the end of SODP in March 2014. At this point, many clusters have just entered the operating phase and, while committed to sustaining the cluster, are still in the process of ramping up and establishing partnerships with industry to use their facilities and expertise. Additional funding will be needed by clusters to fully exploit their infrastructure, including recapitalization of equipment in future years. Further, some clusters have found that SMEs would like to use the facilities but lack the financial resources to pay for services rendered.

The findings of a Statistics Canada study indicated that SODP-assisted SMEs had better ultimate outcomes (post-funding employment and survivability) than firms that were not assisted. However, as most of the projects were only completed on March 31, 2014, the study will need to be repeated in a few years to reassess how project outcomes have contributed to long-term performance. Given the estimated total investment of $284 million in the SMEs included in the survey, it is estimated that the minimum ratio of return on SODP contributions to sales generated in the first four years after completion is 1:5 (see Section 5.1.7 for details).

7.1.3 Performance: Efficiency and Economy

The SODP delivery model, which involved delivery mechanisms tailored to each initiative, was efficient and economical in producing outputs and progressing towards expected outcomes. Partnerships and leverage, including third-party delivery, were instrumental in expanding FedDev Ontario's impact. The program was able to leverage its impact as a champion or convener, using its contribution funding as an incentive. The balance between in-house and third-party delivery was instrumental in achieving efficiency and effectiveness. Because of the spending lifecycle of projects, some flexibility in authorities is required if the current flat-lined funding profile is to match project funding needs.

SODP was considered to have the right amount of risk and reward in selecting projects. The combination of repayable and non-repayable contributions in delivering the program was found to be effective, providing flexibility in targeting different organizations.

In a high-level comparison, FedDev Ontario delivery costs for its G&C programs were found to be considerably lower than the costs of four other RDAs delivering similar G&C programs. However, this comparison was undertaken at the RDA level and not at the program level, so programming and contextual factors may explain some of the cost differences.

Overall, funding recipients had a generally high level of satisfaction with FedDev Ontario and with its delivery partners. There were concerns about the amount of time taken in the application, assessment and approval processes, the lack of clarity in the reporting requirements, and the amount of administration required. However, there was recognition that program staff were very helpful and that a certain amount of due diligence is required in dealing with public money.

Third-party delivery involves trusted partners and was found to be both efficient and effective. However, delivery partners expressed concern that the 5 percent of the contribution amount provided for program administration was insufficient. Interview respondents indicated that 10 percent would be more reasonable for future programs, particularly if it resulted in improved reporting, greater promotion to ultimate recipients, increased outreach, and targeted outreach in geographic areas requiring additional support. Ultimate recipients of the funding delivered by third parties were often not aware that the source of the funding was FedDev Ontario.

7.2 Recommendations

On the basis of the evaluation, the following recommendations are made for consideration by FedDev Ontario management.

1. Administrative processes

a) Recipient concerns about the administrative processes, including simplifying and speeding up the application, assessment and approval processes and streamlining the reporting process, should be addressed to the extent possible, while meeting the minimum needs of program administration.
b) Implementing initiative service standards and ICT solutions to improve performance should be considered. Service standards will assist program management in advising applicants of the time required for project approval.

2. Third-party delivery

a) Consideration should be given to increasing the 5 percent administration fee provided for third-party delivery, particularly if it results in better performance, such as improved reporting; greater promotion to ultimate recipients; increased outreach; and targeted outreach in geographic areas requiring additional support. The specific percentage of increase should take into account the parameters of the initiative being delivered and the expectations related to delivery.
b) FedDev Ontario should request that delivery partners increase the prominence of FedDev Ontario as the source of funding in their program communications with ultimate recipients.
c) FedDev Ontario should establish a database of third-party funding recipients to facilitate the management of the Agency's third-party delivery projects. The database would identify SMEs receiving contributions for multiple projects and provide contact information for research purposes.

3. Ongoing support

a) FedDev Ontario management should undertake research and analysis into mechanisms that would provide longer term support to recipients. Mechanisms may be needed to assist clusters to realize their full potential and become self-sustaining beyond FedDev Ontario's current fixed five-year funding cycle. Additional support could also be used to assist potential SME users wishing to use the facilities but lacking the financial resources to do so. Due to the timeframes involved, the five-year life of FedDev OntarioOntario programs may be an impediment to implementing this recommendation.
b) To aid in future cluster planning, a review of cluster projects should be undertaken after approximately three years of operation to assess their ongoing sustainability, evaluate their success, identify barriers to achieving anticipated results, and document lessons learned.
c) Consideration should be given to addressing barriers identified by SMEs in the survey that limit their ability to fully exploit their project achievements. This could involve additional assistance, financial or other, to help them address key barriers. If the barriers are known prior to the initial funding support, they should be identified as part of the funding application and taken into account in the funding approval decision.

4. Program Funding

a) As part of third mandate renewal, FedDev Ontario management should ensure the five-year funding envelope aligns with project funding needs on an annual basis. This would address the difficulty of implementing projects that collectively have funding requirements matching the flat-lined five-year program funding, particularly in the first two years when projects are being assessed, approved and getting underway.
b) As part of third mandate renewal, FedDev Ontario management should consider requesting continuous program funding. Continuous funding would better meet stakeholder requirements, improve internal efficiency, and facilitate strategic investment planning.

5. Ultimate outcomes

a) The Statistics Canada study, *Business Performance Measurement of FedDev Ontario Program Beneficiaries*, should be repeated in the future to assess how project outcomes will have contributed to the long-term performance of supported SMEs. The timing of the study would be based on at least three years' experience after project completion and the availability of data for the analysis in Statistics

Canada databases. To the extent possible, future research should look at each initiative separately or in a group of similar initiatives in comparing assisted and unassisted firms.

b) In addition, other methods of assessing ultimate outcomes should be considered, to provide additional lines of evidence to complement the Statistics Canada modelling.

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Appendix A: Description of SODP Initiatives

This appendix provides a short description of the seven SOA initiatives and the pre-SOA initiatives. Exhibit A.1 provides a description of each initiative: eligible applicant(s), beneficiaries, funding type, and funding available to an applicant.

A.1 Y-STEM: Youth STEM (Science, Technology, Engineering and Mathematics)

The Youth STEM (Y-STEM) initiative had two objectives:

- Encouraging youth to pursue education and careers in STEM; and
- Improving youth's understanding of the business of science.

Y-STEM was designed to nurture a love for science, innovation and entrepreneurship among children as young as kindergarten age and to build the next generation of innovators, entrepreneurs and problem solvers. Y-STEM provided support to NFPs for developing and expanding the delivery of programming to youth.

A.2 GEI: Graduate Enterprise Internship

The GEI initiative had the following objectives:

- Developing business and management skills in STEM graduate students;
- Providing career networking opportunities;
- Building the next generation of potential managers; and
- Enabling SMEs to benefit from the technical knowledge of STEM graduate students and recent graduates.

GEI was designed to build a pool of highly skilled workers in southern Ontario by providing business and management experience to graduate students and recent graduates of STEM programs. GEI provided support to NFP and PSIs in southern Ontario to arrange internships with structured mentoring opportunities in the region's SMEs.

A.3 SEB: Scientists and Engineers in Business

The SEB initiative had two objectives:

- Improving business and management skills of STEM entrepreneurs; and
- Improving access to financing and business support services needed to successfully launch and manage SMEs in southern Ontario.

SEB was designed to provide funding to NFPs and PSIs to help graduates and graduate students in STEM fields improve their business, management and entrepreneurship skills. SEB also provided seed financing to help them commercialize their ideas.

A.4 ARC: Applied Research and Commercialization

The objective of the ARC initiative was to support innovation in SMEs by encouraging greater collaboration and partnerships with PSIs. These partnerships would link PSIs with applied R&D expertise and SMEs with pre-commercialization needs. The SMEs would improve their innovation skills and productivity and learn how to move innovative products and practices to market.

ARC was launched in April 2010 as a two-year pilot initiative, roughly six months ahead of the other SOA initiatives. Because of high demand from PSIs and the success of the pilot, ARC was extended in December 2011 and its budget increased by $15.8 million to a total of $30.3 million.

A.5 TDP: Technology Development Program

The TDP initiative had three objectives:

- Bridging the gap between R&D and the commercialization of market-driven, game-changing technologies;
- Increasing collaborations between private sector, academic and innovation organizations; and
- Leveraging private sector investment in game-changing technologies.

TDP was intended to strengthen and diversify southern Ontario's economy by providing financial support to bring emerging technologies to market more quickly. The program addresses the funding gap between business-driven R&D and commercialization by encouraging the private sector, NFPs and PSIs to collaborate on innovative breakthrough technologies, typically 1–7 years from market. Southern Ontario is home to some of the country's best PSIs and a number of globally competitive SMEs. Having these organizations work together is extremely beneficial for promoting southern Ontario's economy in a global market. Through TDP, the Agency supports highly complex projects that involve various partners. These projects are anticipated to have a great impact in southern Ontario, as well as internationally.

TDP recipient organizations are lead organizations that must be working with at least one private-sector collaborator, and the project must have a minimum of 50 percent financing from nongovernmental sources. Projects need to contribute to the development of a globally competitive, market-ready technology that has the potential to develop opportunities for businesses or an industry sector.

A.6 IBI: Investing in Business Innovation

The IBI initiative has three objectives:

- Accelerating the commercialization of new products, processes and practices;
- Increasing, stimulating and leveraging private sector investment; and
- Encouraging the growth of angel investment funds.

IBI provided funding to

- Help SEM start-ups with fewer than 50 employees commercialize new products, processes or practices (selected by the investor community, these SMEs had to offer the potential for high growth and a net long-term economic benefit for southern Ontario);
- Leverage angel or venture capital investment in southern Ontario; and
- Support investment-attraction activities of NFP angel investor networks and NFP organizations representing angel investors in southern Ontario, including the development of online directories to encourage the growth of angel investment funds.

A.7 PI: Prosperity Initiative

The PI initiative had the following objectives:

- Enhancing productivity;
- Diversifying the regional economy; and
- Building competitiveness in southern Ontario.

PI had three funding streams:

- ***Productivity Enhancement—***PI–PE addressed underinvestment in machinery, equipment and software by Ontario companies relative to investments by their counterparts in the United States. PI–PE supported the creation of new opportunities for economic diversification; market development and

expansion; business attraction to diversify regional or community economies; and business expansion supporting greater diversification.

- ***Regional Diversification—***PI–RD focused on southern Ontario regions where there are high concentrations of manufacturing industries in structural decline and low concentrations of high-growth industries. This situation could expose local economies to significant job losses if some plants were to close.

  PI–RD supported the creation of new opportunities for economic diversification; market development and expansion; business attraction to diversify regional or community economies; and business expansion supporting greater diversification.

- ***Building a Competitive Advantage (BCA)—***PI–BCA emphasized the development or expansion of geographic concentrations of interconnected companies and institutions in a particular field, known as "clusters." Clusters can provide a competitive advantage that would allow southern Ontario to compete with new emerging economies that have innate advantages, such as low labour costs. BCA supported activities to enhance the competitiveness of an industry or sector cluster. These activities could include the adaptation and adoption of new technologies, processes and skills development in an industry or sector; technology demonstration or piloting; business opportunity development and expansion; and facilities improvement expansion.

A.8 Pre-SOA Initiatives

The initial SODP was designed to introduce new funding into the region during a time of need, with the goal of supporting projects quickly. The initial program supported economic and community development, innovation and economic diversification, with contributions to communities, businesses and non-profit organizations within southern Ontario. Given the need to act quickly coupled with limited capacity within FedDev Ontario, partnerships were formed with third parties to help deliver the program on FedDev Ontario's behalf.

The first intake of SODP (general intake) was launched in October 2009, followed by the Food & Beverage Initiative (FBI) intake in November 2009, with both closing in late December 2009. In addition, to help deliver the program, FedDev Ontario established delivery partnerships with the following:

- Canadian Manufacturers & Exporters (CME) SMART Program;
- Ontario Chamber of Commerce (OCC) Export Market Access Program; and
- Yves Landry Foundation's (YLF) Achieving Innovation and Manufacturing Excellence (AIME) program.

Exhibit A.1: Description of the Southern Ontario Development Program—Pre-SOA and SOA Initiatives

SODP initiative		Objective	Eligible applicant(s)	Beneficiaries	Funding type	Funding per applicant
PRE-SOA						
GI FBI CME, OCC, YLF	General intake Food and Beverage Industry Delivery partners	• Stimulate local economies and enhance the growth and competitiveness of local businesses and communities o Improved competitiveness and productivity o Increased innovation and commercialization o Enhanced economic development and diversification of communities o Increased community mobilization and attractiveness	SMEs, NFPs and PSIs	Businesses and communities	Repayable and non-repayable	• Up to $20 million for profit and NFP For profit: • Up to 50% of direct eligible costs • Up to 75% of direct eligible non-capital costs NFP: • Up to 90% of direct eligible costs
SOA						
People Advantage						
Y-STEM	Youth STEM (Science, Technology, Engineering and Mathematics	• Encourage youth to pursue education and careers in STEM • Improve youth's understanding of the business of science	NFPs	Youth from kindergarten to grade 12	Non-repayable	• Up to $2 million • Up to 100% of direct eligible costs
GEI	Graduate Enterprise Internship	• Develop business and management skills in STEM graduate students and recent graduates to complement their technical skills • Provide career networking opportunities • Build the next generation of potential managers • Enable SMEs to benefit from the technical knowledge of STEM graduate students and recent graduates	NFPs PSIs	SMEs, recent STEM graduates with at minimum advanced level diplomas and students at graduate level or above	Non-repayable	• Up to $5 million • Up to 100% of direct eligible costs • Up to $10,000 undergrad or college-level grads • Up to $15,000 grad-level students or grads • Up to 50% of student salaries and benefits
SEB	Scientists and Engineers in Business	• Develop improved business and management skills of STEM entrepreneurs • Improve access to financing and business support services needed to successfully launch and manage start-up SMEs in southern Ontario	NFP Science and Engineers in Business			
			NFPs CFDCs	Recent STEM graduates or graduate student entrepreneurs	Non-repayable	• Up to $5 million (max. $35,000 per entrepreneur) • Up to 50% of direct eligible costs
			PSI Commercialization Fellowships			
			PSIs	Recent STEM graduates, graduate student entrepreneurs and post-doc entrepreneurs	Non-repayable	• Up to $5 million (max. $30,000 per fellowship) • Up to 50% of the cost of fellowships
Knowledge Advantage						
ARC	Applied Research and Commercialization	• Support innovation in SMEs by encouraging greater collaboration and partnerships with PSIs • Accelerate innovation; improve productivity and competitiveness of SMEs	PSIs	SMEs	Non-repayable	• Up to $750,000 *Pilot:* 100% of direct eligible project costs (PSIs) consisting of up to 66.6% of total project costs up to $50,000; SME must contribute 33.3% *Extension*: Same as pilot except up to 50% of total project costs up to $100,000; SME must contribute 50%

(Continues)

Exhibit A.1 (Concluded)

SODP initiative		Objective	Eligible applicant(s)	Beneficiaries	Funding type	Funding per applicant
TDP	Technology Development Program	• Bridge the gap between R&D and commercialization of market-driven game-changing technologies • Increase collaborations involving private sector, academic and innovation organizations • Leverage private sector investment in game-changing technologies	NFPs PSIs	Private sector	Normally non-repayable	• Up to $20 million • Up to 50% of direct eligible costs; must be matched by private sector
Entrepreneurial Advantage						
IBI	Investing in Business Innovation	• Accelerate the commercialization of new products, processes and practices • Increase, stimulate and leverage private sector investment • Encourage growth of angel investment funds	Start-up SMEs			
			Start-up businesses (fewer than 50 employees)	Start-up businesses	Repayable	• Start-up businesses up to $1 million • 1/3 of eligible costs, leveraging 2/3 angel or venture capital funds
			NFP angel investor networks			
			NFP angel investor networks located in southern Ontario	NFP angel investor networks	Non-repayable	• NFP angel investor networks: up to $50,000 (one time) • Up to 100% of direct eligible project costs
			NFPs representing angel investors			
			NFP organizations representing angel investors	NFP organizations representing angel investor networks, angel investors	Non-repayable	• NFP organizations representing angel investor networks: up to $2 million • Up to 100% of direct eligible project costs
Prosperity Advantage						
PI	Prosperity Initiative	• Enhance productivity, diversify the regional economy, and build competitiveness in southern Ontario. Has three distinct components:				
		o PE (Productivity Enhancement): address companies' underinvestment in machinery, equipment and software in Ontario relative to that of their counterparts in the United States	NFPs representing a sector or industry	SMEs and industry sectors	Non-repayable	• Up to $20 million • Up to 90% of direct eligible costs
		o RD (Regional Diversification): focus on regions with high concentrations of manufacturing industries in structural decline and low concentrations of high-growth industries, which could expose local economies to significant job losses if plants were to close	SMEs, regional or community-based NFPs	Communities, industries and SMEs	Non-repayable and repayable	• Up to $20 million for profit and NFP *For profit:* • Up to 50% of direct eligible capital costs • Up to 75% of direct eligible non-capital costs *NFP:* • Up to 90% of direct eligible costs
		o BCA (Building a Competitive Advantage) : emphasize the development or expansion of geographic concentrations of interconnected companies and institutions in a particular field, known as clusters, which can provide a competitive advantage	NFPs, PSIs, SMEs or an existing or newly created economic cluster	SMEs, industries and regions	Non-repayable and repayable	

Appendix B: SOA Logic Model and Performance Indicators

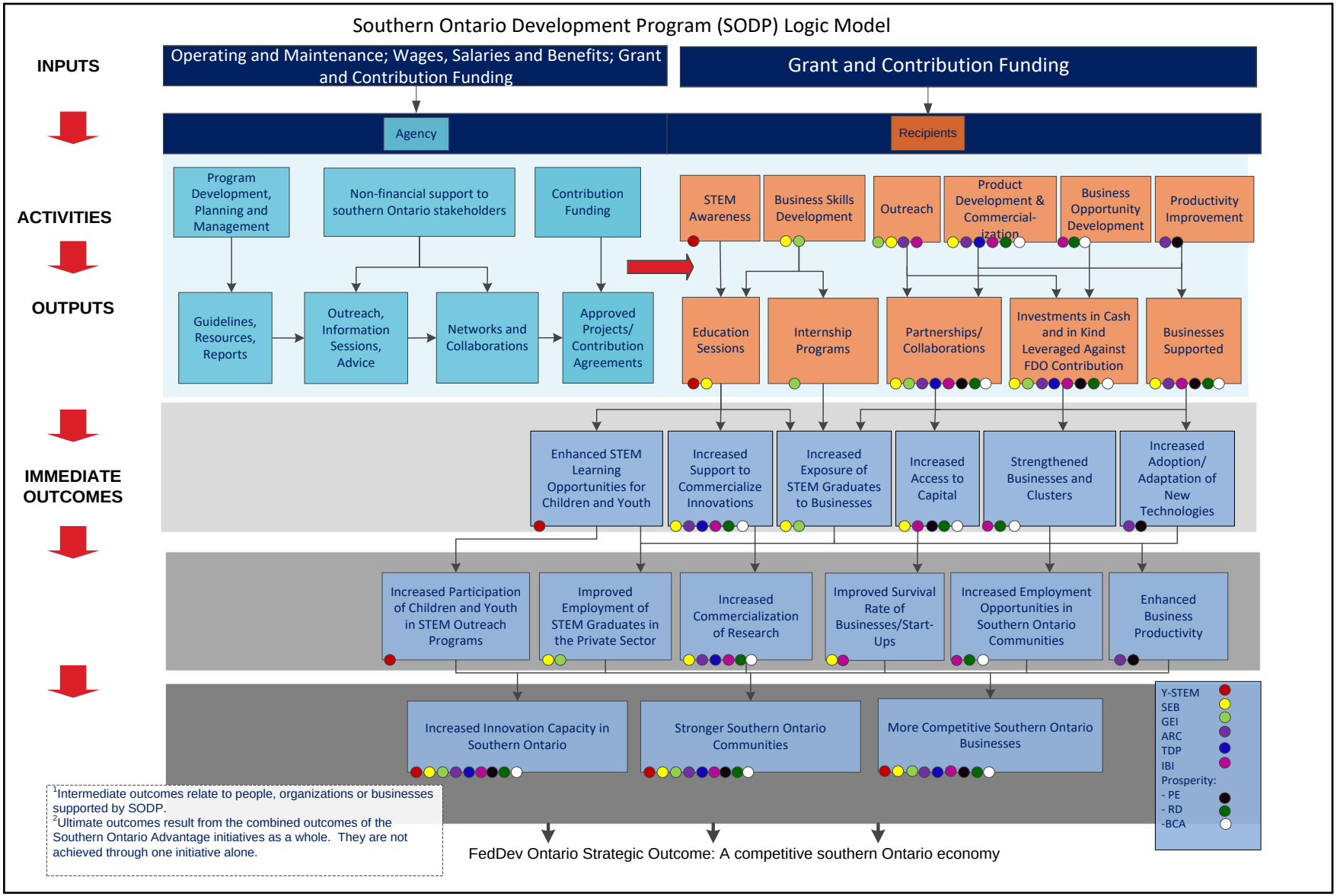
The logic model developed for SODP SOA is given in Exhibit B.1. The logic model shows the activities that were undertaken in the program; the outputs resulting from those activities; and the immediate, intermediate, and ultimate outcomes each of the initiatives was intended to achieve. The logic model for the pre-SOA initiatives was not as well developed. However, the outcomes were similar to those of the Prosperity Initiative and have been shown in Exhibit 2.5.

Individual logic models for each of the SOA initiatives were also prepared to show how each initiative fits within the larger program. Additional details may be found by referring to FedDev Ontario's SODP Performance Management Strategy (PMS).[56]

In total, there were 20 outputs and outcomes and 38 performance indicators for SODP. The number of performance indicators applicable to each SOA initiative or stream varied, depending on the purpose of the initiative or stream. The performance indicators for outputs and outcomes for each of the SOA initiatives or streams are provided in Exhibit B.2.

[56] *Southern Ontario Development Program: Performance Measurement Strategy*, FedDev Ontario, June 2012.

Exhibit B.1: SODP SOA Logic Model



Source: FedDev Ontario: SODP Performance Measurement Strategy, Performance Results, as of March 31, 2014.

Exhibit B.2: Relevancy of SODP SOA Performance Indicators for Each SOA Initiative or Stream

Program outputs and outcomes	Performance indicators	Y-STEM	GEI	SEB–NFP	SEB–PSI	ARC	TDP	IBI–Angel	IBI–SME	PI–PE	PI–RD	PI–BCA
Outputs												
1. Education sessions	**Number of educational outreach sessions for children and youth**	**X**										
	Number of business skills education sessions for STEM entrepreneurs			**X**	**X**							
2 Internship programs	**Number and $ value of Graduate Enterprise Initiative (GEI) contribution agreements**		**X**									
3 Partnerships or collaborations	**Number of partnerships or collaborations formed as a result of FedDev Ontario support**		**X**	**X***	**X***	**X**	**X**	**X****		**X****	**X****	**X****
4 Investments in cash and in kind leveraged against FedDev Ontario contribution	**Total value of investments in businesses, communities and organizations leveraged by source (including not-for-profit organizations and other levels of government) (ARC, TDP, GEI, SEB, IBI, PI)**		**X**	**X*****	**X*****	**X**	**X**	**X**	**X**	**X**	**X**	**X**
5 Businesses supported	**Number of businesses supported by initiatives (direct recipients, third-party [ultimate] recipients, collaborating businesses in SOA projects, etc.)**			**X**	**X**	**X**			**X**	**X**	**X**	**X**
Immediate outcomes												
6 Enhanced STEM learning opportunities for children and youth	Number of STEM learning activities created, enhanced or expanded (e.g., after-school programs, camps, competitions)	X										
7 Increased support to commercialize innovations	Number of SMEs and start-ups receiving pre-commercialization support (ARC, SEB, IBI, PI–RD, PI–BCA). Note: SEB and IBI indicator will include both funding and business advisory support and mentoring			X	X	X			X		X	X
	Number of new products, services, processes or practices developed (ARC, TDP, SEB, IBI, PI–RD, PI–BCA)			X	X	X	X		X		X	X
	% of leveraged $ directed to R&D (ARC, TDP, IBI, PI–RD, PI–BCA)					X	X		X		X	X
8 Increased exposure of STEM graduates to business	Total number of participants in GEI		X									
	% of GEI participants who complete internships		X									
	Number of entrepreneurs participating in SEB who receive business skills development			X	X							
9 Increased access to capital	Number of entrepreneurs accessing commercialization fellowships and total value of fellowships received (SEB PSI stream)				X							

Exhibit B.2: Relevancy of SODP SOA Performance Indicators for Each SOA Initiative or Stream

Program outputs and outcomes	Performance indicators	Y-STEM	GEI	SEB–NFP	SEB–PSI	ARC	TDP	IBI–Angel	IBI–SME	PI–PE	PI–RD	PI–BCA
	Number of entrepreneurs accessing start-up financing and total value of financing (SEB NFP stream)			X								
	Total value of new investments attracted to angel networks (IBI)							X				
	Number of SMEs accessing support through IBI and PI and total value of support by source (angel or venture capital, FedDev Ontario, other) (IBI, PI)								X	X	X	X
10 Strengthened businesses and clusters	Number and geographic location of businesses created, expanded or maintained (IBI, PI–RD, PI–BCA)								X		X	X
	Number and geographic location of economic clusters created or expanded (PI–BCA)											X
11 Increased adoption or adaptation of new technologies	Number of new productivity-enhancing processes, skills, technologies resulting from projects (ARC, PI–PE)					X				X		
Intermediate outcomes												
12 Increased participation of children and youth in STEM outreach programs	Number of children and youth participating in STEM outreach programs supported by the Agency (Y-STEM)	X										
	Number of children and youth participating in STEM outreach programs supported by the Agency prior to Agency funding (baseline) (Y-STEM)	X										
13 Improved employment of STEM graduates in the private sector	% of GEI interns that have full-time, part-time and contract positions in STEM fields in the private sector following their internship (GEI)		X									
	Number of start-up businesses established following participation in SEB			X	X							
14 Increased commercialization of research	Total value of sales resulting from innovations developed (TDP, IBI, PI–RD, PI–BCA)						X		X		X	X
	Number of processes, practices products, or services commercialized (ARC, TDP, SEB, IBI, PI–RD, PI–BCA)			X	X	X	X		X		X	X
15 Improved survival rate of businesses/start-ups	% of businesses that continue to be in operation or have had a successful exit (e.g., purchase by another business) (SEB, IBI)			X	X				X			
16 Increased employment opportunities in southern Ontario communities	Number of person months of employment created or maintained (IBI, PI–RD, PI–BCA)								X		X	X
	% of jobs created that are full-time, part-time or contract (IBI, PI–RD, PI–								X		X	X

Exhibit B.2: Relevancy of SODP SOA Performance Indicators for Each SOA Initiative or Stream

Program outputs and outcomes	Performance indicators	Y-STEM	GEI	SEB–NFP	SEB–PSI	ARC	TDP	IBI–Angel	IBI–SME	PI–PE	PI–RD	PI–BCA
	BCA)											
	Total sales resulting from FedDev Ontario support (IBI, PI- RD, PI–BCA)								X		X	X
17 Enhanced business productivity	Total sales per FTE (ARC, PI)					X				X		
Ultimate outcomes												
18 Increased innovation capacity in southern Ontario	Change in business expenditures on R&D from baseline	X	X	X	X	X	X	X	X	X	X	X
	Change in number of employees in southern Ontario considered "highly qualified personnel" from baseline	X	X	X	X	X	X	X	X	X	X	X
	Change in business investment in machinery and equipment from baseline	X	X	X	X	X	X	X	X	X	X	X
19 Stronger southern Ontario communities	Change in number of southern Ontario businesses by size (SME, MNE) from baseline	X	X	X	X	X	X	X	X	X	X	X
	Change in employment levels by sector from baseline	X	X	X	X	X	X	X	X	X	X	X
20 More competitive southern Ontario businesses	Change in inflation-adjusted gross revenue of southern Ontario businesses by sector from baseline	X	X	X	X	X	X	X	X	X	X	X
	Change in export revenue of southern Ontario businesses from baseline	X	X	X	X	X	X	X	X	X	X	X

* Number of partnerships and collaborations formed with start-up businesses (NFP stream); number of partnerships and collaborations formed with donors (PSI stream); number of fellows attracted to PSI (PSI stream).

** "New" partnerships or collaborations.

*** Total value of investments in start-up businesses leveraged by source (NFP stream); total value of endowments for commercialization fellowships (PSI stream).

Appendix C: SODP Performance Results

The performance results as of March 31, 2014 (Exhibits C.1, C.2 and C.3) were reproduced from a September 30, 2014, presentation prepared for SODP by FedDev Ontario Program Services.

Exhibit C.1: SODP SOA Initiative Outputs (as of March 31, 2014)

SOA initiative	Approved contributions ($ millions)	Leveraged funding ($ millions)	Number of partners or collaborators	Number of businesses supported	People or STEM learning outputs
Y-STEM	13.7	*	*	*	29,250 outreach sessions
GEI	17.7	12.3	931	*	10 internship programs
SEB	15.5	16.1	425	425	Various**
ARC	30.3	28.9	579	575	*
TDP	63.9	83.4	109	*	*
IBI	60.0	190.1	772	86	*
PI	269.5	783.1	1,288	1,298	*
Total	**470.6**	**1,113.9**	**4,104**	**2,384**	*

Source: FedDev Ontario: SODP Performance Measurement Strategy – Performance Results (as of March 31, 2014).

* Not relevant or not a specific program output.

** Included workshops, lectures, online training modules, boot camps and one-on-one mentoring.

Exhibit C.2: Results for SODP SOA Immediate Outcomes (as of March 31, 2014)

	Outcome						
	Increased support to commercialize innovations			**Increased access to capital**	**Strengthened businesses & clusters (IBI, PI–RD, PI–BCA)**	**Increased adoption or adaption of new technologies**	**People or STEM learning outcomes (*n*)**
	Indicator						
	Businesses receiving pre-commercialization support (*n*)	**Innovations developed (*n*)**	**Proportion of leveraged funds directed to R&D (%)**	**Businesses supported (*n*) / total value of support ($ million)**	**Businesses/clusters created, expanded or maintained (*n*)**	**Productivity-enhancing innovations as a result of project (*n*)**	
Y-STEM	*	*	*	*	*	*	• 569 learning activities
GEI	*	*	*	*	*	*	• 1,230 internships
SEB	425	425	*	• 425 start-ups and commercialization fellowships / accessing $23.9 million	*	*	• 425 entrepreneurs receiving businesses skill education
ARC	575	875	96.5	*	*	574	*
TDP	*	118	81	*	*	*	*
IBI	86	633	100	• 86 businesses / accessing $246.9 million	• 86 businesses	*	*
PI	149	258	*	• 904 businesses / accessing $605.9 million	• 493 businesses / 31 cluster (BCA) projects	1,204	*
Total	**1.235**	**2,309**	**92.5**	• **1,415 businesses / accessing $882.5 million**	• **579 businesses / 31 cluster projects**	**1,778**	

Source: FedDev Ontario: SODP Performance Measurement Strategy – Performance Results (as of March 31, 2014).
* Not relevant or not a specific program outcome.

Exhibit C.3: Results for SODP SOA Intermediate Outcomes (as of March 31, 2014)

	Outcome					
	Increased commercialization of research		**Improved survival rate of businesses and start-ups**	**Increased employment opportunities in southern Ontario**	**Enhanced business productivity**	**People or STEM learning outcomes**
	Indicator					
	Innovations commercialized (*n*)	**Sales resulting from innovations commercialized ($ million)**	**Businesses still in operation or successful exit after participation in initiative (%)**	**Person–months of employment created and maintained (*n*); Jobs created** (*n*) (full-time, part-time, contract)****	**Businesses/clusters created, expanded or maintained (*n*)**	
Y-STEM	*	*	*	*	*	• 2.1 million children/youth • 71% of internships have led to employment
GEI	*	*	*	*	*	
SEB	Not available	Not available	• 98 (418 of 425 projects)	*	*	• Of 425 start-ups, 418 are successful and 7 have ceased operation
ARC	142	2.6*	*	*	• 50 of 155 supported businesses reported improvement	*
TDP	24	8.0	*	• 6,620 person–months	*	*
IBI	364	79.3	• 95 (based on 56 projects)	• 14,567 person–months • 765 jobs (76% FT, 8% PT, 17% contract)	*	*
PI	271	96.0	*	• 38,805 person–months • 553 jobs (91% FT, 5% PT, 4% contract)	Not Available	*
Total	**801**	**185.9**	*	• **59,992 person–months** • **1,318 jobs (82% FT, 7% PT, 11% contract)**	**Not Available**	*

Source: FedDev Ontario: SODP Performance Measurement Strategy – Performance Results (as of March 31, 2014).

* Not relevant or not a specific program outcome.

** ARC Extension only.

*** Closed projects only.