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Grand Challenges Canada®
Grands Défis Canada

BOLD IDEAS WITH BIG IMPACT®

A Platform for Innovation

ANNUAL REPORT

April 2016 to March 2017

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A Message from the Chair of the Board



This year has been one of change and growth for Grand Challenges Canada. It began with the launch of our exciting new partnership with Global Affairs Canada focused on Reproductive, Maternal, Newborn and Child Health, and ended with the conclusion of our longest standing partnership, the Development Innovation Fund in Health. I would like to offer my personal thanks to Jean Lebel, President of the International Development Research Centre (IDRC), Alain Beaudet, past President of the Canadian Institutes of Health Research (CIHR), and to their teams for their contributions to our growth and success over the past seven years. I would also like to thank the team at Global Affairs Canada, led by **Elissa Golberg**, Assistant Deputy Minister – Partnerships for Development, and **Louise Holt**,

Director General – Social Development Partnerships, who have been outstanding partners in the launch of our renewed efforts in Reproductive, Maternal, Newborn and Child Health, and of course to **Minister Marie-Claude Bibeau** and **Deputy Minister Peter Boehm** for their support.

Having spent the past seven years testing, refining and validating the Grand Challenges approach through our innovation platform, we are now beginning to examine strategies to leverage this platform to drive value and impact in other related sectors. In particular, we have been working closely with the J. W. McConnell Family Foundation and with Indigenous leaders to develop the concept of an *Indigenous Grand Challenge*, to use Grand Challenges Canada's platform to help enable innovations to go to scale in Indigenous communities in Canada. We are excited and inspired by this vision and, over the next year, we will continue the work to bring it to fruition.

Fiscal Year 2016–17 also saw an increase in focus on humanitarian issues, both globally and in Canada. To address these critical issues, Grand Challenges Canada hosted a multi-stakeholder session of leaders in humanitarian innovation and launched a Delphi process to identify humanitarian Grand Challenges. This process will conclude in 2017 and Grand Challenges Canada will work to mobilize resources to launch a *Humanitarian Grand Challenge* program to address the challenges that emerge.

Throughout this year of growth and reflection, we have been exceptionally well-served by our Board of Directors. These volunteers are at the heart of Grand Challenges Canada's strong and independent governance, and play a critical role in our ongoing success. In particular, I would like to recognize **Johanne Charbonneau**, Chair of the Audit & Finance Committee and **Morris Rosenberg**, Chair of the Governance & Human Resources Committee, for their outstanding contributions over the past year. I would also like to recognize the contributions of our Investment Committee, chaired by **Gerhard Pries**, and our Scientific Advisory Board, chaired by **Abdallah Daar**. Both of these bodies play a vital role in supporting the identification and sustainable scaling up of transformative innovations.

Finally, I would like to recognize the accomplishments of our team, ably led by **Peter Singer**, **Karlee Silver** and **Jocelyn Mackie**. Growth and change can be challenging for any organization, and I commend the dedication and hard work of our entire team in making this year a success and continuing to deliver outstanding outcomes, in order to achieve our mission of saving and improving lives in low- and lower-middle-income countries and Indigenous communities through Integrated Innovation®.

Best regards,



Guylaine Saucier CM, FCPA
Chair of the Board of Directors

A Message from the Chief Executive Officer



In any period of growth and change, it can be helpful to look back and think about what we have learned—where we have come from and where we are going. This past year has cemented for me a concept that I have always intuitively understood: that Grand Challenges Canada is not simply a global health organization, although we have a deep body of global health knowledge and expertise. Nor are we only a development innovation organization, although we have learned many lessons about innovation for development over the past seven years. Rather, I have come to realize that Grand Challenges Canada is a platform for innovation that could be applied to a range of sectors or challenges.

One opportunity that is particularly important for me personally, particularly in Canada's 150th year, is reconciliation with Indigenous peoples. It has been my privilege this year to work with **Stephen Huddart** and **Nicole McDonald** at the J.W. McConnell Family Foundation, and with inspiring Indigenous leaders like **Jeff Cyr** and **Paul Lacerte**, to begin to imagine what an *Indigenous Grand Challenge* program would look like in Canada. My vision is that such a program would have the same impact in Canada as Grand Challenges Canada has had in low- and middle-income countries.

An innovation platform is only as good as the outcomes that it enables. That is why I am so pleased and proud to see the impact that our innovators are having in the world. As you can see from our **Highlights**, our innovators are beginning to have a significant impact in global health. This impact will only continue to grow to 2030. Innovation is a critical driver for the achievement of the Sustainable Development Goals and I hope that Grand Challenges Canada will continue to lead the way to accelerate progress to 2030 through innovation. As I review the work of Grand Challenges Canada and the innovators we support, I see the beneficiaries whose lives are saved and improved, and this makes it all worthwhile.

As always, I will end by recognizing the incredible contributions of the entire Grand Challenges Canada team, led by **Karlee Silver** and **Jocelyn Mackie**, and the guidance of our Board of Directors, led by **Guylaine Saucier**. I would also like to thank **Elissa Golberg** and **Louise Holt** at Global Affairs Canada for their support. I look forward to continuing to learn and grow with this dedicated and talented team.

Best regards,



Peter A. Singer OC, MD, MPH, FRSC
Chief Executive Officer

Highlights

The following section offers highlights of Grand Challenges Canada's cumulative activities, outputs and outcomes to date.

LIVES SAVED AND IMPROVED

Grand Challenges Canada puts a strong focus on measuring impact, with attention to both outcomes that have already been achieved and projected future outcomes, because the full impact of innovation will occur in the future. To this end, in 2016–17, Grand Challenges Canada worked with Results for Development (R4D) to tackle the challenge of projecting the potential future impact (that is, when innovations achieve their full impact) of innovations that we have sourced and supported to date. The following figure summarizes the projected and actual cumulative outcomes from these innovations.¹



520,000–1.6 million lives saved by 2030

through the use of innovative products and services that save lives.

11,200 lives have been saved to date.

15–42 million lives improved by 2030

through the use of innovative products and services that improve health.

1.3 million lives have been improved to date.

Recognizing that there are many ways lives can be improved, the following figure provides an overview of some of the more significant ways in which our innovators are improving the lives of the poor and most vulnerable in low- and middle-income countries.



¹ Note that the projected outcomes to 2030 are modeled using a validated methodology outlined in a white paper entitled *How We Assess the Potential Impact of the Innovations We Support*, which is available upon request. The projections cited in this report are based on models resulting from this methodology that have been reviewed by Grand Challenges Canada's Knowledge Management and Programs teams and validated by external experts. For a breakdown of Actual, Expected and Projected outcomes please see Annex 1.

KEY OUTPUTS

In addition to our strong focus on projecting and tracking outcomes, we also track a range of key cumulative outputs, as follows:



85 policies influenced
through engaging government officials, decision-makers, and other local stakeholders.



360 publications
in peer-reviewed journals produced from Grand Challenges Canada's innovations.



60 patents filed
as a result of innovations funded by Grand Challenges Canada.



Over 800 innovations
supported from low- and middle-income countries and Canada.



175% leverage rate
For every \$1 that Grand Challenges Canada has invested, \$1.75 has been leveraged from investors and partners.



Over 80 pays
where innovative products or services are being implemented.

KNOWLEDGE GENERATED

Publications are an indicator of the new knowledge that is created through our projects. The number of publications cited above will likely increase over time, as innovators continue their work following the completion of their Grand Challenges Canada-supported projects. Examples of articles that have been published in high-impact journals include:

Burke, T, Ahn, R, Nelson BD, et al. A postpartum haemorrhage package with condom uterine balloon tamponade: a prospective multi-centre case series in Kenya, Sierra Leone, Senegal, and Nepal. *BJOG*. 2016; 123:1532.

Charpak, N, Tessier, R, Ruiz, JG, et al. Twenty-year follow-up of Kangaroo Mother Care versus traditional care. *Pediatrics*. 2017; 139:e20162063.

Chibanda, D, Weiss, HA, Verhey, R. Effect of a primary care-based psychological intervention on symptoms of common mental disorders in Zimbabwe: a randomized clinical trial. *JAMA*. 2016; 316:2618.

Nakimuli-Mpungu, E, Wamala, K, Okello, J, et al. Group support psychotherapy for depression treatment in people with HIV/AIDS in northern Uganda: a single-centre randomized controlled trial. *The Lancet HIV*. 2015; 2:e190.

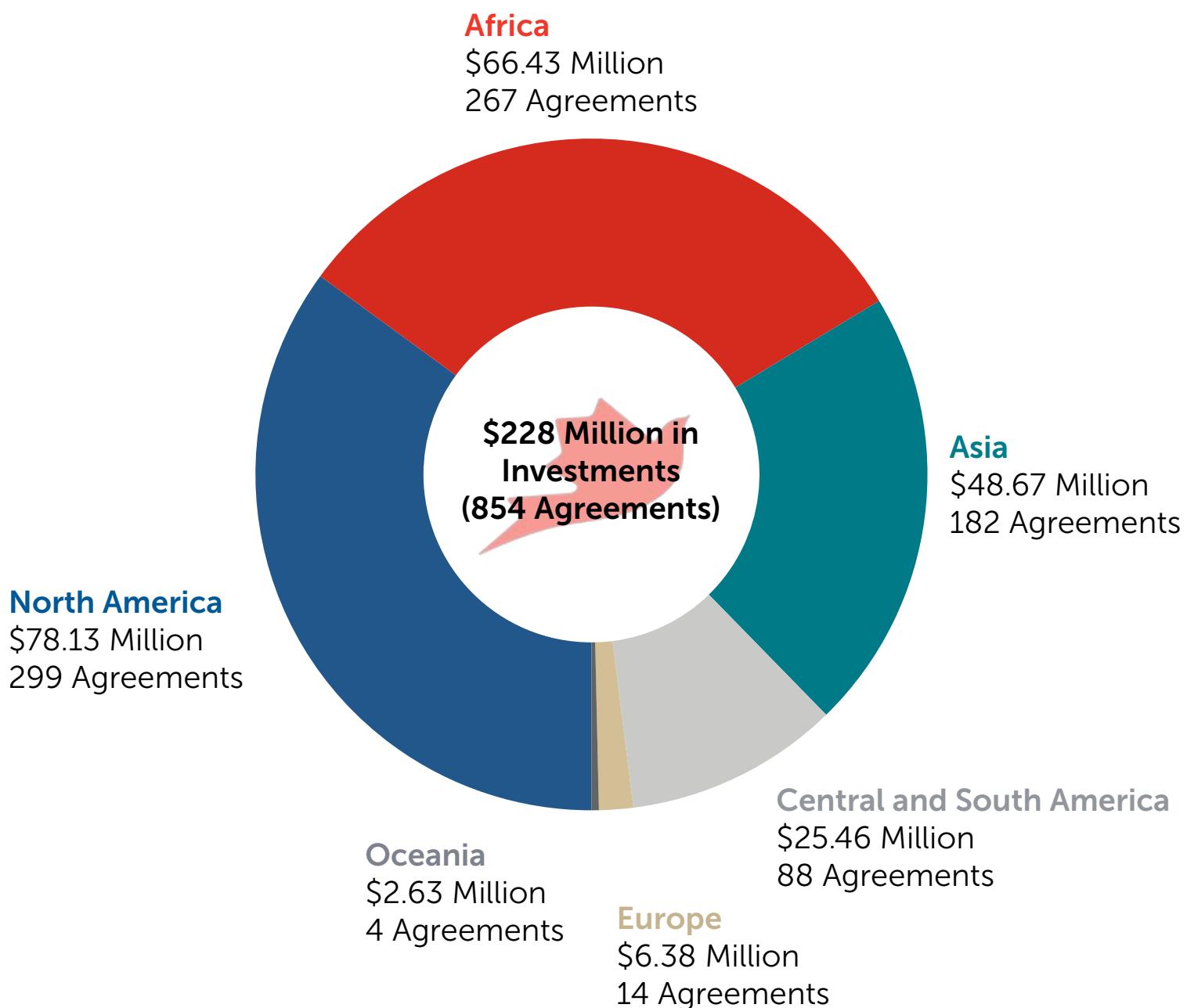
Pernica JM, Steenhoff, AP, Welch H, et al. Correlation of clinical outcomes with multiplex molecular testing of stool from children admitted to hospital with gastroenteritis in Botswana. *Journal of the Pediatric Infectious Diseases Society*. 2016; 5:312.

Rhein J, Morawski, BM, Hullsiek KH, et al. Efficacy of adjunctive sertraline for the treatment of HIV-associated cryptococcal meningitis: an open-label dose-ranging study. *The Lancet Infectious Diseases*. 2016; 16:809.

ACTIVITES AND INPUTS

Grand Challenges Canada has supported 854 agreements to date, totalling \$228 million CAD to institutions in 61 countries, as illustrated below.

Grand Challenges Canada Distribution of Innovations



Our Programs

STRATEGIC PRIORITIES AND PORTFOLIO

Grand Challenges Canada's strategic priorities are set out in the Strategic Plan to 2022 that was approved by the Board of Directors in December 2015 and revised in December 2016. Our strategic priorities are:

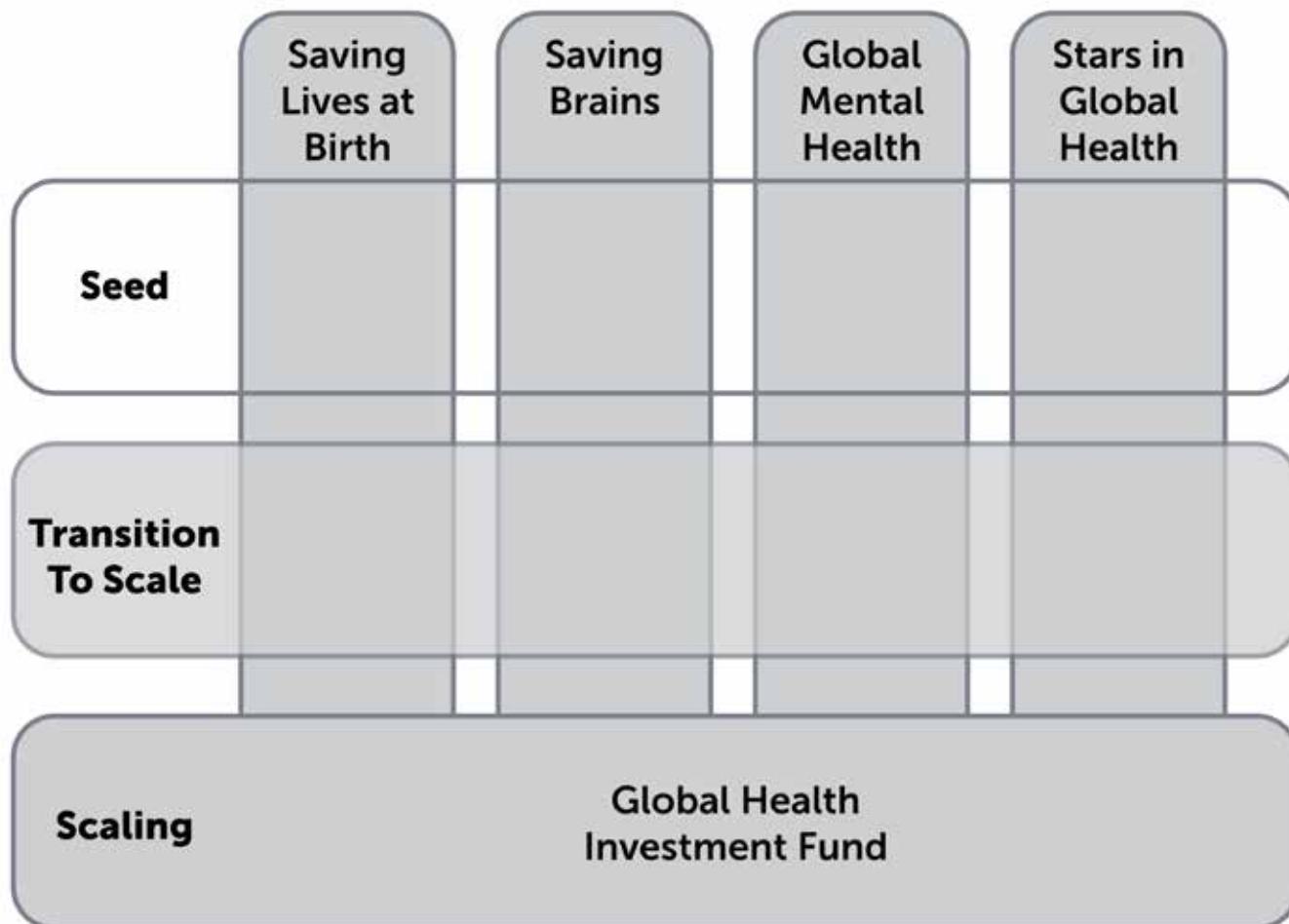
Primary:

- Reproductive, Maternal, Newborn and Child Health,
- Global Mental Health, and
- Other Grand Challenges.

Secondary:

- Develop and implement new models of innovation diplomacy (e.g., Israel),
- Impact investing and social finance, and
- Reverse innovation.

We source innovations through open calls for proposals and fund the best with **seed** grants. We enable the most promising of these innovations to amplify their impact by focusing on critical scale and sustainability elements with **transition-to-scale** funding. We are also the anchor investor in the Global Health Investment Fund, with a focus on **scaling**.





TRANSITION TO SCALE

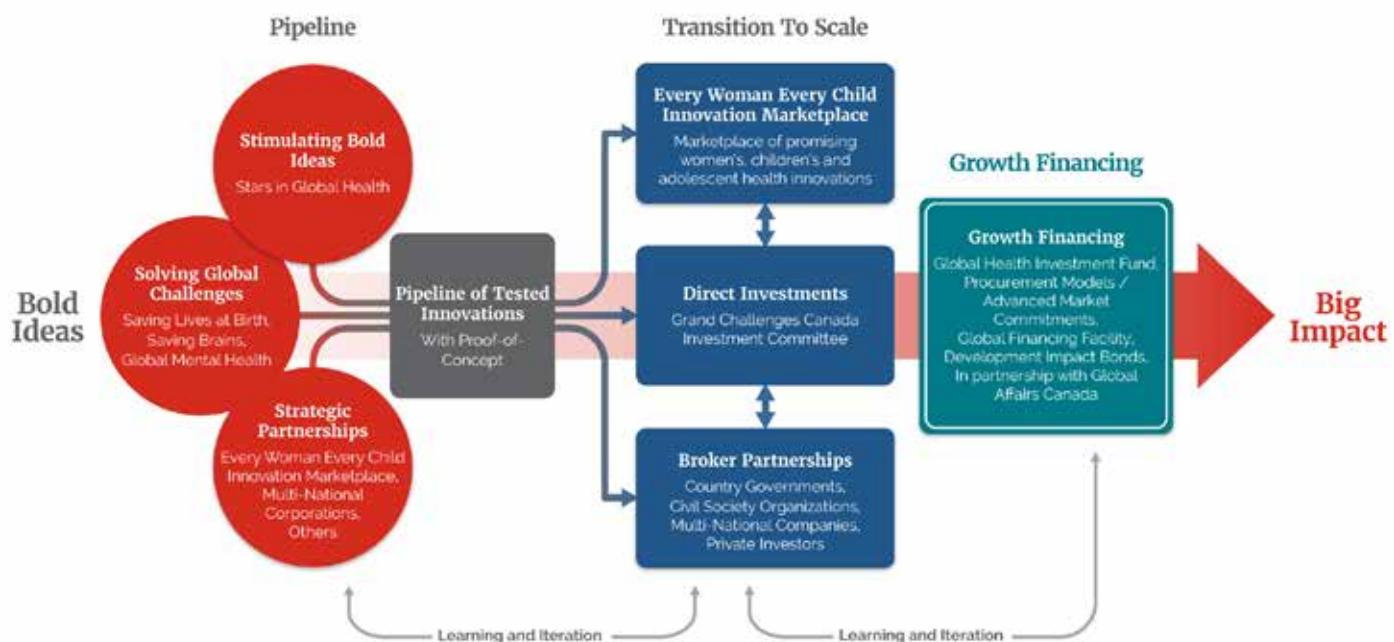


Program Overview

Innovation will be needed to reach the Sustainable Development Goals, yet relatively few seed innovations successfully and sustainably go to scale, which is sometimes called “pilotitis.” At the same time, the *Addis Ababa Action Agenda of the Third International Conference on Financing for Development* recognized that, even in an ideal world, public funding alone will be insufficient to meet the Goals, and highlighted the importance of leveraging funding from both the private sector and low- and middle-income country governments.

To address this challenge, Grand Challenges Canada launched its Transition To Scale program, to apply the concept of Integrated Innovation® to the assessment of potential transition-to-scale investments and entrain expertise that could optimize innovations for sustainable, significant health impacts at scale. To this end, Grand Challenges Canada has created a high-performing (and still improving) platform that aims to transition innovations to scale in a sustainable manner with a focus on outcomes, which is summarized below.

Grand Challenges Canada's Transition To Scale Process





Transition To Scale (continued)

Transition To Scale Criteria and Processes

To date, Grand Challenges Canada has invested \$83 million CAD in 107 Transition To Scale projects that are being implemented in 34 countries. This investment has leveraged over \$107 million CAD in additional funding. Of these 107 projects, 75 are still continuing on the path to scale after Grand Challenges Canada funding ended. The Transition To Scale investment criteria and processes add value at each stage of the investment process, as outlined below.



The majority of actual lives improved, and all of the potential lives saved and improved achieved by Grand Challenges Canada, are through the Transition To Scale portfolio. We estimate that the innovations in the Transition To Scale pipeline will save between 520,000 and 1.6 million lives and improve between 15 million and 42 million lives by 2030.

Feedback from the Scientific Advisory Board

Portfolio-specific subcommittees of our Scientific Advisory Board, comprised of international experts, review the outcomes from each of our portfolios on an annual basis. The Scientific Advisory Board offered the following observations on the Transition To Scale program:

Findings:

- Applying Integrated Innovation® to address the challenge of scale is a valuable contribution of the Transition To Scale platform.
- The Transition To Scale innovations are, for the most part, at an earlier stage of development than originally anticipated, but these earlier-stage investments are critical and an area of comparative advantage for Grand Challenges Canada.

- Clustering investments into multiple innovations from the same sector / on the same theme is helpful in that it can foster cross-learning and amplify comparative advantages of certain approaches.

Recommendations to Improve Value for Money:

- Exercise the flexibility to make multiple rounds of investments of varying sizes to enable sustainability and scale.
- Benchmark Grand Challenges Canada against other similar programs in development innovation to better illustrate the impact of the Transition To Scale program.
- Report progress against anticipated outcomes to improve the ability to tell if on track.

Transition To Scale (continued)

Meeting the Vision Needs of Millions

VisionSpring

Problem

Over 700 million people need eyeglasses but lack access to affordable options, creating further disadvantages among hardest-to-reach communities. Uncorrected vision costs the global economy \$202 billion annually.

Innovation

Supported by Grand Challenges Canada, VisionSpring empowers entrepreneurs to sell and distribute affordable eyeglasses to address the two most common types of vision impairment: presbyopia, via reading glasses, and refractive error, via prescription glasses.

Results

- Corrected the eyesight of over **1 million** people in India and Bangladesh with ready-made reading glasses, of which about one half are attributable to Grand Challenges Canada's funding, leading to potentially increased productivity, income-earning potential, and overall improved quality of life.
- Seeded a new market for reading glasses, with approximately **90 percent** of customers purchasing their first-ever pair of eyeglasses.



Potential for Transformation

VisionSpring is building an ecosystem by bringing together corporations, non-governmental organizations, and foundations to close the vision services gap.

VisionSpring has the potential to improve the lives of up to **1.6 million** people living with vision impairment by 2030.

Some of the key lessons learned from the Transition To Scale program include:

1. **The Transition To Scale program fills a pioneering gap.** Grand Challenges Canada is often the lead investor into innovations at early stages of development, with three quarters of our funding in Transition To Scale deployed at either the validation or early transition-to-scale stages. Through these investments Grand Challenges Canada catalyzes the formation of social enterprises to scale innovations that are often developed in academic or research settings.

2. **Grand Challenges Canada adds value in both private and public scaling pathways:**

Private:

- Building discipline and governance
- Facilitating organic revenues
- Enabling follow-on financing

Public:

- Supporting further government support
- Facilitating government uptake
- Enabling policy change



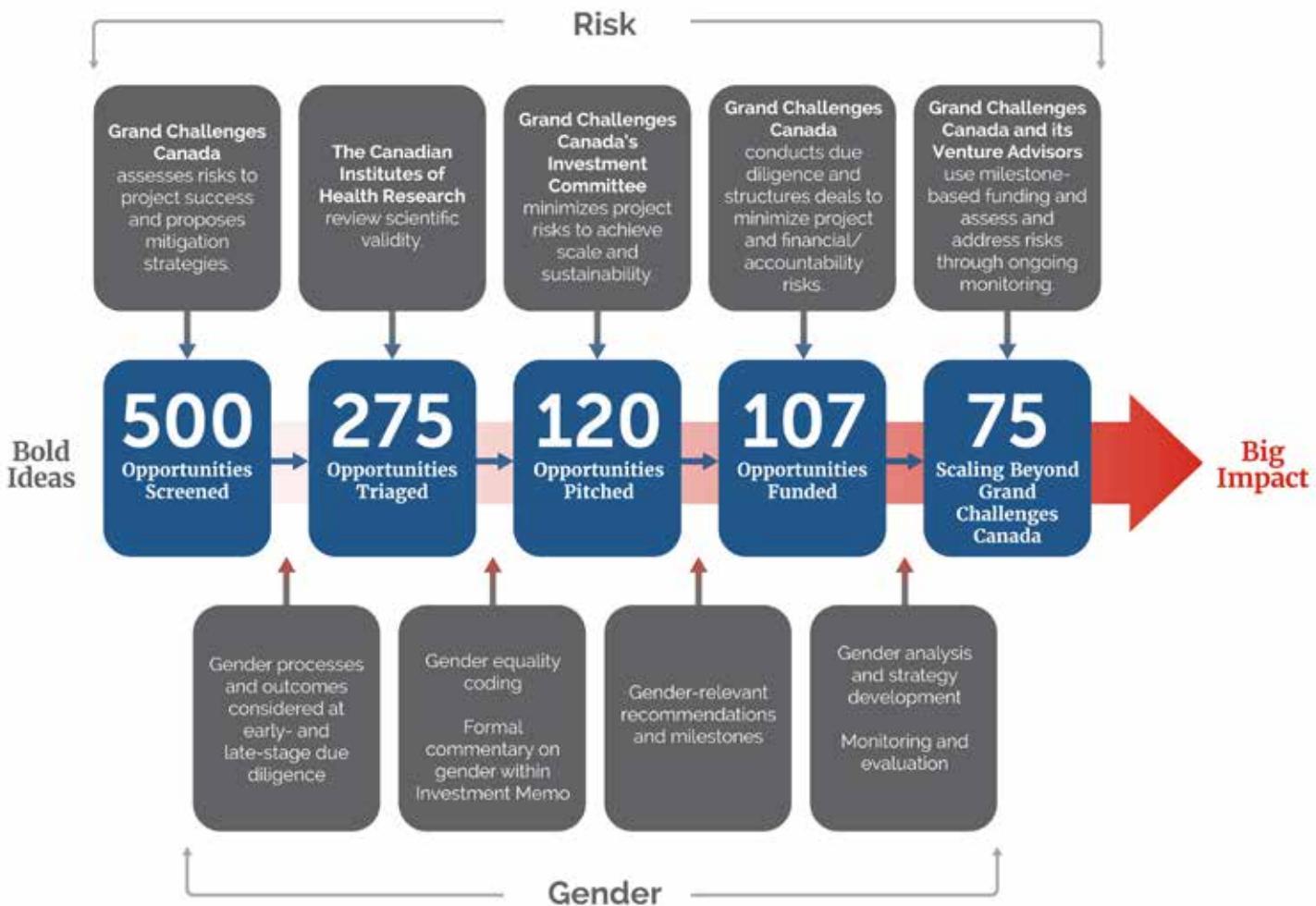
Transition To Scale (continued)

3. Restrictions on funding phases and investment ceilings limit the effectiveness of the Transition To Scale process. It is important to be able to tailor funding approaches and amounts to the realities of each individual deal.

To illustrate what occurred without restrictions: the average investment across the 107 Transition To Scale projects funded to date is approximately \$900,000, with a wide range between the smallest (approximately \$100,000) and largest (approximately \$2,500,000) investments. Eight innovations received follow-on Transition To Scale funding.

4. Non-grant financing can be an effective tool, both to enable innovators and to support future investments and the operations of the platform. Grand Challenges Canada has invested 33 percent of its Transition To Scale funding through non-grant financing.
5. It is important to assess and mitigate risk at each stage of the investment process so as to enable “smart” risk-taking, as outlined below.
6. **Gender is important.** It is formally considered throughout the investment cycle to improve not only the condition of women and girls, but also their position.

Managing Risk and Integrating Gender at Transition To Scale



A Platform for Innovation ANNUAL REPORT 2016–2017



Grand Challenges Canada®
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SAVING LIVES AT BIRTH



Currently, more than 40 percent of maternal and newborn deaths and stillbirths occur on the day of birth, and newborn mortality rates account for 44 percent of all under-five child deaths. Further, virtually all of the 303,000 maternal deaths, 2.7 million newborn deaths, and 2.6 million stillbirths that occur each year happen in low- and middle-income countries. Given this staggering challenge, a strong and focused effort to enhance maternal and newborn health will be crucial to achieving the Sustainable Development Goals.



A
PARTNERSHIP
OF

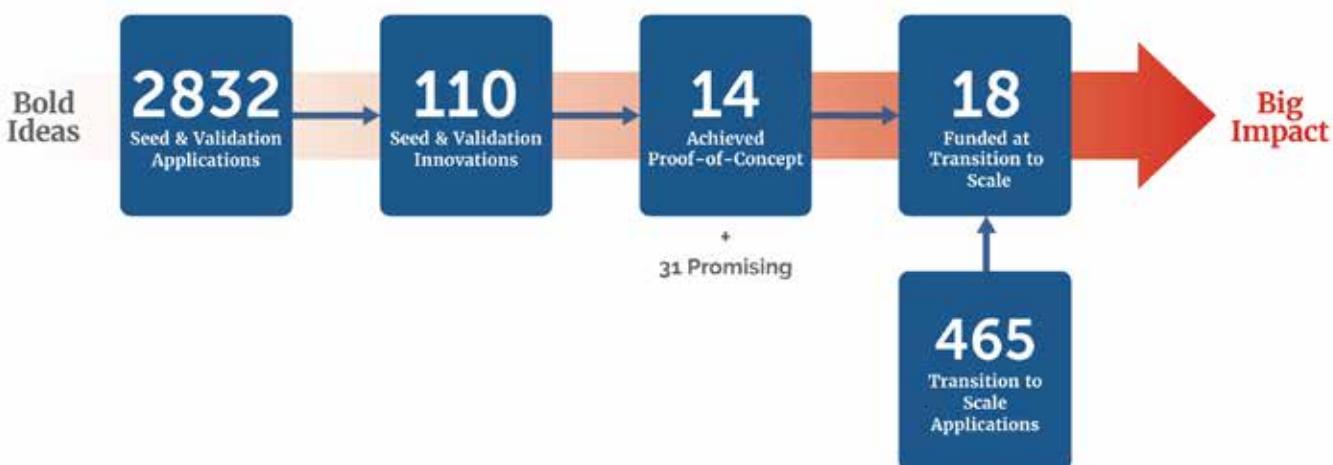


Saving Lives at Birth is a partnership of Grand Challenges Canada, the United States Agency for International Development (USAID), the Norwegian Agency for Development Cooperation (Norad), the Bill & Melinda Gates Foundation, the United Kingdom's Department for International Development (DFID) and the Korea International Cooperation Agency (KOICA).

The Saving Lives at Birth program seeks to overcome these challenges by supporting the development and transition-to-scale of groundbreaking innovations in low and middle-

income countries that accelerate substantial and sustainable progress against maternal and newborn deaths and in the prevention of stillbirths. The Saving Lives at Birth program filled a gap in maternal and newborn health innovation by creating a highly competitive platform through which to source innovations of scientific excellence.

The Saving Lives at Birth program has invested \$84.3 million CAD to support 106 innovations in 21 countries, leveraging an additional \$70 million. This pipeline of innovations is illustrated in the following diagram.



Saving Lives at Birth (continued)

Many of the innovations supported are early in their development. Fourteen of the 18 innovations transitioning to scale from this program that we have modeled to date have the potential to save between **48,900–159,000** women and newborns by 2030. Given the early stage of the innovations, continuous support from the Saving Lives at Birth program has been important to drive progress along the path to impact. An example of a successful innovation is highlighted below:

Inhaled Oxytocin

Monash University, Australia

Problem

Oxytocin, the gold standard for protection against postpartum hemorrhage, is currently only available as an intravenous or intramuscular injection, requiring a skilled provider and a robust cold-chain.

Innovation

Supported by the Saving Lives at Birth partnership, a heat-stable, inhaled dry powder oxytocin formulation is set to increase this lifesaving drug's availability and accessibility.

Results

Clinical trials among the target population have been initiated. The expected filing for drug registration is 2019.



Potential for Transformation

If successful, this heat-stable formulation will broaden access to a quality oxytocin product into settings that lack consistent cold-chain infrastructure and allow safe administration by all levels of healthcare workers.

Should distribution begin in 2020, it is estimated that inhaled oxytocin will save 27,000 lives by 2030.

Feedback from the Scientific Advisory Board

The Scientific Advisory Board offered the following observations on the Saving Lives at Birth program:

Findings:

- *An important accomplishment of the Saving Lives at Birth program is that it has helped to focus attention and build a pipeline of innovations to address the critical period for maternal and newborn survival that had previously been neglected.*
- *There is a rich and exciting pipeline of innovations in this program that are just beginning to transition-to-scale. The pipeline has huge potential for impact.*

Recommendations to Improve Value for Money:

- *Ensure a strong focus on transitioning innovations to scale, so the full value of the rich innovation pipeline is realized.*

Saving Lives at Birth (continued)

One of the key lessons learned was that an investment through the Saving Lives at Birth program, along with the reputation of the program's partners, can provide enhanced visibility and improve an innovator's ability to raise additional funds and find partners at scale.

"My first encounter with the AIR (Augmented Infant Resuscitator) team was at the 2014 DevelopmentXChange. It was one of three innovations that caught my eye. Seeing a strong business case for the AIR device, conversations with the team quickly led to a mutual interest in collaboration."

Venture Manager, Philips

A second lesson learned was that multinational corporations can be valuable partners to help promising, early-stage innovations to realize sustainable impact at scale.

For example, in 2016, Laerdal Global Health licensed the NIFTY Cup. Developed by Seattle Children's Hospital and PATH, the NIFTY Cup is designed for babies who otherwise find it hard to breastfeed.

The selection of the NIFTY Cup as a Round 5 innovation was a factor in Laerdal's decision to license the Cup. We are also learning that partnership with a multinational corporation does not solve all the challenges associated with scaling innovations and the involvement of many sectors is still required for successful transition to scale.

In summary, the Saving Lives at Birth program has created an exciting package of innovations with the strong potential for sustained impact. Although a few social innovations in this program are already scaling and demonstrating impact, many innovations are technological in nature and will not realize their full impact for 10 to 15 years. As such, the true outcomes of this program will not be realized until the promising innovations have had the opportunity to go to scale. Going forward, it will be critical to ensure that the necessary funding is in place to ensure that the most promising innovations transition to scale and, once they do so, that there are purchasers – likely governments in low- and middle-income countries – to enable them to be deployed widely to maximize their benefits.



The NIFTY Feeding Cup by Laerdal. © Laerdal Global Health



SAVING BRAINS



A partnership of:



BILL & MELINDA GATES foundation



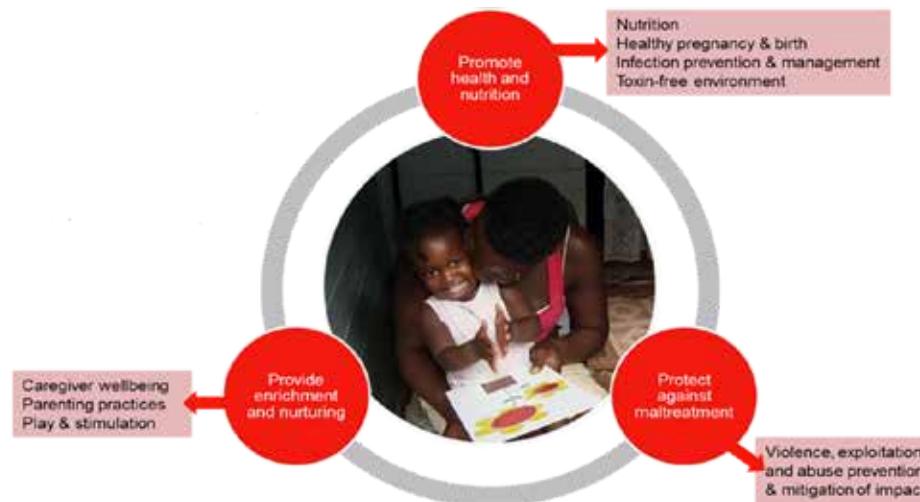
One in three children (200 million globally) fail to reach their full physical, cognitive, psychological and/or socioemotional potential due to poverty, poor health and nutrition, insufficient care and stimulation, and other risk factors affecting early childhood development.

Saving Brains seeks bold ideas to promote health and nutrition, provide enrichment and nurturing and protect against maltreatment – the three components of healthy development that every child needs to thrive. Of great importance to

Saving Brains is how to effectively integrate these needs and deliver them to the highest number of children in a sustainable manner.

Saving Brains is a partnership of Grand Challenges Canada, Aga Khan Foundation Canada, the Bernard van Leer Foundation, the Bill & Melinda Gates Foundation, The ELMA Foundation, Grand Challenges Ethiopia, the Maria Cecilia Souto Vidigal Foundation, the Palix Foundation, UBS Optimus Foundation and World Vision Canada.

Areas of Focus for the Saving Brains Program



Saving Brains (continued)

Through the Development Innovation Fund in Health, Grand Challenges Canada provided \$16.8 million CAD to 13 projects funded through the focus phase of the Saving Brains program, which sought to better define the long-term impact of known early life interventions and the return on investment in potential interventions with respect to human capital.

Grand Challenges Canada also provided \$18 million CAD to 35 proof-of-concept and 7 Transition To Scale projects funded through the solutions phase of the Saving Brains program, which seeks innovative products, services, policies and implementation models to nurture and protect early brain development. These projects were implemented in 26 countries and leveraged an additional \$11.6 million in funding.

Through these projects:

- **31,765 children** have experienced improved development
- **37,273 children** are receiving innovations designed to improve child development
- **35,867 caregivers** are delivering innovations designed to improve early childhood development.

Saving Brains leadership has raised attention globally by taking a bold, holistic approach to early childhood development that:

- Created a new, global partnership
- Has made strong and influential contributions to the global movement from “survival” alone to “survive and thrive”, and aligns with the new *Every Woman Every Child’s Global Strategy for Women’s, Children’s and Adolescents’ Health: Survive. Thrive. Transform.*



Canada is the largest donor to early childhood development programs. For every dollar committed by donors reporting to the OECD, seven cents were from Saving Brains.

The portfolio has provided important evidence on the factors that influence and help to stimulate child development. In addition, the Saving Brains funding has produced a growing pipeline of potentially scalable models. The results of the Saving Brains program have been instrumental in shaping the understanding of early childhood development by:

1. **Defining the Problem:** A Saving Brains study determined through the direct measurement of cognitive and/or social emotional development that one third of children in low- and middle-income countries fail to reach developmental milestones, and that the number one risk for child stunting in these countries is poor growth before birth.²
2. **Understanding the Impact:** A Saving Brains study determined that poor child growth costs low- and middle-income countries \$177 billion US in lost wages and 69 million years of educational attainment for children born each year. Each dollar invested in eliminating poor child growth would yield a three dollar direct economic return.³
3. **Offering a Path Forward:** Saving Brains follow-up studies of early life interventions in low- and middle-income countries helped to define the impact on human capital formation, including:
 - A study in Indonesia identified maternal micronutrients, early life nurturing, happy moms and educated parents as essential

² McCoy DC, Peet ED, Ezzati M, Danaei G, Black MM, Sudfeld CR, et al. Early Childhood Developmental Status in Low- and Middle-Income Countries: National, Regional, and Global Prevalence Estimates Using Predictive Modeling. PLoS Med 2016; 13(6): e1002034.

³ Fink G, Peet ED, Danaei G, Andrews K, McCoy DC, Sudfeld CR, et al. Schooling and wage income losses due to early-childhood growth faltering in developing countries: national, regional, and global estimates. Am J Clin Nutr 2016; 104:104–12.

Saving Brains (continued)

- ingredients for smarter and more productive children.⁴
- Babies exclusively breastfed to six months of age are half as likely to have later conduct disorders.⁵
 - Enriched play and parenting to two years of age leads to brighter four-year-olds. A coaching intervention for parenting in Pakistan was effectively combined with delivery of health services through community workers, resulting in children with higher IQ, better pre-academic skills and executive functioning, and more prosocial behaviour. These gains in brain development did not translate into higher school enrollment.⁶
 - Kangaroo Mother Care for preterm babies has significant, long-lasting social and behavioral protective effects – including improvements in brain size, wages, and family cohesion – 20 years after the intervention.⁷

Overall, the Saving Brains portfolio offers a number of lessons learned about:

1. What works:

- Those showing signs of cognitive and growth delays may have the most to gain. For example, Saving Brains-supported early childhood development interventions for children with malnutrition in Bangladesh and developmental delays in Peru led to greater improvements in development (approximately one standard deviation) than best-practice interventions.⁸

- Interventions that create more nurturing and positive caregiving at home. Strengthening the relationship between caregiver and child can support healthy development throughout a child's life. For example, the impact at 20 years from Kangaroo Mother Care was created by the changing parental nurturing and their aspirations for their child.⁹

2. Innovative approaches to delivery and implementation are critical to delivering interventions with impact

- An analysis comparing the Saving Brains portfolio and published literature shows that Saving Brains solutions are testing new implementation and delivery strategies.
- Many of these innovations are feasible and effective at changing outcomes for children, even at proof-of-concept stages in low-resource settings.
- The motivation, training and supervision of service providers who support caregivers are critical.
- Future analysis that links impact data to implementation metrics will help to understand the minimal delivery requirements to achieve positive gains for children.

3. The deliberate focus on measurement has been valuable to understand the impact of innovations and is a beacon for the field of child development.

- Saving Brains established a set of core outcome metrics that all Saving Brains projects needed to measure. This has

⁴ Prado EL, Sebayang SK, Apriatni M, Adawiyah SR, Hidayati N, Islamiyah A, et al. Maternal multiple micronutrient supplementation and other biomedical and socio-environmental influences on children's cognition at age 9–12 years in Indonesia: follow-up of the SUMMIT randomised trial. *The Lancet Global Health* 2017; 5(2):e217-e228.

⁵ Rochat TJ, Houle B, Stein A, Coovadia H, Coutsoudis A, Desmond C, et al. Exclusive Breastfeeding and Cognition, Executive Function, and Behavioural Disorders in Primary School-Aged Children in Rural South Africa: A Cohort Analysis. *PLoS Med* 2016; 13(6): e1002044.

⁶ Yousafzai AK, Obradovic J, Rasheed MA, Rizvi A, Portilla XA, Tirado-Strayer N, et al. Effects of responsive stimulation and nutrition interventions on children's development and growth at age 4 years in a disadvantaged population in Pakistan: a longitudinal follow-up of a cluster-randomised factorial effectiveness trial. *The Lancet Global Health* 2016; 4(8): e548-e558.

⁷ Charpak N, Tessier R, Ruiz JG, Hernandez JT, Uriza F, Villegas J, et al. Twenty-year Follow-up of Kangaroo Mother Care Versus Traditional Care. *Pediatrics* 2016; e20162063.

⁸ Forthcoming.

⁹ Charpak, Twenty-year Follow-up of Kangaroo Mother Care.

Saving Brains (continued)

provided a common language and comparable data sets across the Saving Brains portfolio.

- Child development metrics are most valuable when complemented with rigorous assessment of a child's context, including home environment, maternal well-being and parent-child interaction.
- Over-reliance on screening tools, lack of locally-validated tools and poor comparability of data are still limitations to the field that Saving Brains can continue to challenge. For example, Saving Brains seeded the development of a population-level early childhood development assessment for 0–3 years that would allow tracking of the Sustainable Development Goal indicator 4.2.1: *Proportion of children under 5 years who are developmentally on track*. This study is currently being validated by the World Health Organization and Harvard University in 14 countries.

Feedback from the Scientific Advisory Board

The Scientific Advisory Board offered the following observations on the Saving Brains program:

Findings:

- *Grand Challenges Canada has lots to be proud of with Saving Brains. The Government of Canada should spread the word to other bilateral donors to leverage Canada's leadership in any way they can.*
- *This program couldn't be building a better or more distinctive brand for Canada. It is entrepreneurial and is building on a strong base.*
- *A very big part of the impact comes from the fact that Saving Brains has brought new voices into this discussion and new researchers from low- and middle-income countries.*

Recommendations to Improve Value for Money:

- *Continue to support learning communities that are focused on (a) scaling and (b) evidence-rich ideas (e.g., Kangaroo Mother Care), which could include other efforts around the world to scale beyond those funded by Grand Challenges Canada.*
- *Engage specific countries in the learning community to help build understanding and demand for early childhood development innovations.*

Kangaroo Mother Care

Kangaroo Foundation

Problem

Although Kangaroo Mother Care saves lives and improves developmental outcomes (especially for preterm babies) scaling of quality Kangaroo Mother Care has been limited in the areas that need it most.

Innovation

Supported by Grand Challenges Canada, Kangaroo Foundation developed a train-the-trainer model to scale Kangaroo Mother Care from Centers of Excellence to surrounding hospitals.

Results to Date

One Center of Excellence in each of Mali and Cameroon were successfully trained on Kangaroo Mother Care delivery; they then trained nine regional Centers. So far, **2,365** low-birth-weight and premature infants have received comprehensive and quality Kangaroo Mother Care and **163** newborn lives have been saved.

Potential for Transformation

This project could help achieve global Kangaroo Mother Care coverage targets. In Cameroon, a Development Impact Bond is stimulating national scaling of quality Kangaroo Mother Care.

The approach has the potential to reach **105,000** newborns and save **11,600** lives by 2030.





GLOBAL MENTAL HEALTH

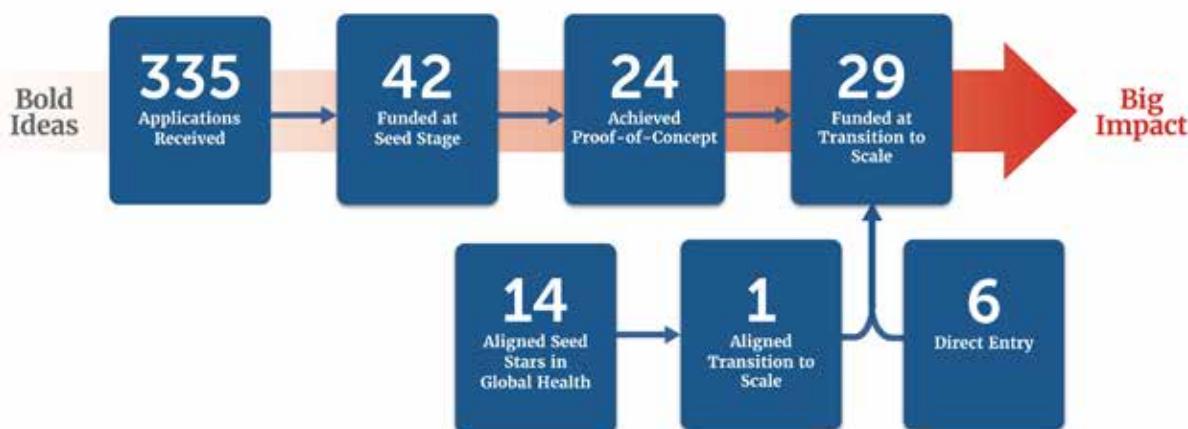


Mental disorders contribute to 14 percent of the global burden of disease. Seventy-five percent of this burden occurs in low- and middle-income countries, where scarce resources and a shortage of trained professionals mean individuals living with mental disorders have limited access to evidence-based treatments. Even in contexts where treatment is available, widespread stigmatization faced by those living with mental illness means that they are often unwilling or unable to access this care.

To this end, Grand Challenges Canada's mental health program focuses on funding innovations that can improve treatments and expand access to care across a range of priority areas, such as community-based care, developing treatments for use by non-specialists, improving children's access to care, and improving the supply of medication. The goal is to flip the gap: currently only 10 percent of people with mental health conditions have access to treatment and care; we want to reverse this so that 90 percent have access to high-quality, evidence-based treatment and care instead.



Through 2016–17, Grand Challenges Canada invested \$42 million CAD in 85 projects in 31 countries, as illustrated below.



Global Mental Health (continued)

These projects have enabled **159,000** individuals to access and use treatment, with **20,000** individuals who have symptomatic improvement. By 2030, this impact will increase to between **1.1 million** to **3.2 million** individuals who will access and use treatment, with **297,000–844,000** who will have symptomatic improvement. In addition, the projects supported by the portfolio have influenced **17** policies, including changes to essential medicines lists and health worker training curricula. Through this program, Grand Challenges Canada has invested in **18** projects in emergency settings that target highly vulnerable populations.

Investment in the Mental Health Innovation Network (\$3.6 million CAD) and annual community meetings has increased the capacity of innovators to evaluate impact, communicate results and leverage resources for mental health.

Canada is recognized globally as a leader in global mental health innovation:

"Canada's contributions at the international level also set an example for other countries to contribute to global mental health."

- Patricio Marquez, Lead Health Specialist, Health, Nutrition and Population Global Practice, The World Bank

One of the key learnings from this program is that the public sector remains the primary path to scale and sustainability for mental health solutions. The program found that governments want and are willing to invest in evidence-based mental health innovations, for example:

- Makueni County, Kenya invested \$650,000 into scaling mental health through their primary care system by the Africa Mental Health Foundation.
- Ministry of Labour, Invalids and Social Affairs (MOLISA), Vietnam, committed \$1 million for a randomized controlled trial of a family mental health intervention led by Simon Fraser University.

Another important lesson is the power of technology to help reach more people at a reduced cost. On average, projects using technology screened twice the number of people as those using paper-based methods only. Training through a technological platform was also demonstrated to yield equally good results as training through specialists. Finally, the use of audio-visual training and supervision tools can help expand the human resource base by empowering persons with low levels of formal education to provide mental health services.

A third lesson was that task-shifting remains critical for overcoming the human resource shortage in mental health but requires appropriate supervision, incentives and motivation. Projects that trained specialists and either non-specialists or lay health workers seem more likely to exceed treatment targets than projects that trained a single cadre. Incentives, however, must be tailored to suit the cadre of worker: for example, primary school teachers are more likely to embrace additional training as an opportunity for career advancement than secondary school teachers. Incorporating peer mental health users in service delivery can help overcome challenges with workforce motivation and retention.

Beneficiary Experience

Champion mother volunteer, FaNS for Kids, Pakistan

"...through my training, which was so simple and interesting, I came to know a lot about developmental disorders and simple solutions to the problems my child faced in his everyday life... Sharing our problems in our network meetings, I saw I was not alone and this lessened my pain and increased my resolve."

An example of a successful innovation that was validated and is transitioning-to-scale through this program is the Friendship Bench, described on the following page.

Global Mental Health (continued)

The Friendship Bench

University of Zimbabwe

Problem

In Zimbabwe, the prevalence of common mental disorders (such as depression and anxiety) is above **25 percent**, yet there are only **10** psychiatrists and **15** psychologists in the country.

Innovation

Supported by Grand Challenges Canada, the Friendship Bench is a brief cognitive behavioural therapy intervention delivered by community “grandmothers” on simple wooden seats located on the grounds of health clinics.

Progress to Date

- Beneficiaries treated via the Friendship Bench are **3 times** less likely to experience symptoms of depression, **4 times** less likely to experience symptoms of anxiety, and **5 times** less likely to have suicidal ideation than those who received treatment as usual.
- **27,500** people to date have been treated at **72** clinics in Zimbabwe since September 2016.



Potential for Transformation

The Friendship Bench model shows that mental health can be part of Universal Health Coverage and sustained with minimal additional investment.

Expanding the Friendship Bench model to additional cities in Zimbabwe offers the potential to reach **309,000** persons by 2030, of whom **139,000** would experience improvements in mental health symptoms and functioning.

Feedback from the Scientific Advisory Board

The Scientific Advisory Board offered the following observations on the Global Mental Health program:

Findings:

- *The impact of this program goes far beyond the number of individual lives improved to date. The transformational potential of scaling up these innovations is the most exciting and promising aspect of this program.*
- *The program has made a critical contribution to knowledge generation and exchange in global mental health, especially in low- and middle-income countries. This contribution should be widely emphasized.*
- *The program has played a critical role in building leadership capacity in global mental health,*

especially by engaging social entrepreneurs and supporting low- and middle-income country innovators.

- *Lack of future support for this program would result in lost opportunities for scaling promising innovations, and for invigorating the field through strategic partnerships with other funders and peer organizations.*

Recommendations to Improve Value for Money:

- *Work with grantees (individuals and institutions) to document where they started, what they have achieved and key future opportunities, in order to enhance their longer-term sustainability.*

STARS IN GLOBAL HEALTH



Health and well-being for all is essential to sustainable development, as highlighted in the 2030 Agenda for Sustainable Development. Innovation, in turn, is crucial for the achievement of the Sustainable Development Goals. Promising innovations are often limited in their ability to achieve scale and sustainability, which greatly diminishes their ability to help achieve the Sustainable Development Goals.

Grand Challenges Canada launched the Stars in Global Health program with the objective to solve complex global health challenges by supporting bold ideas with the potential for big impact. Investing small amounts of funding (approximately \$100,000 each) into a large number of diverse projects is a robust de-risking strategy. Data gained during the Stars in Global Health funding stage drives evidence-based decisions on which to transition-to-scale.

Through 2016–17, Grand Challenges Canada supported 471 innovations that were implemented in 81 low- and middle-income countries by institutions in 61 countries with \$52.1 million CAD over seven rounds of funding. This funding leveraged an additional \$68.5 million CAD. Sixty percent of the projects funded through the program are led by innovators in low- and middle-income countries, with the remaining 40 percent led by Canadian innovators who are working with partners in low- and middle-income countries.

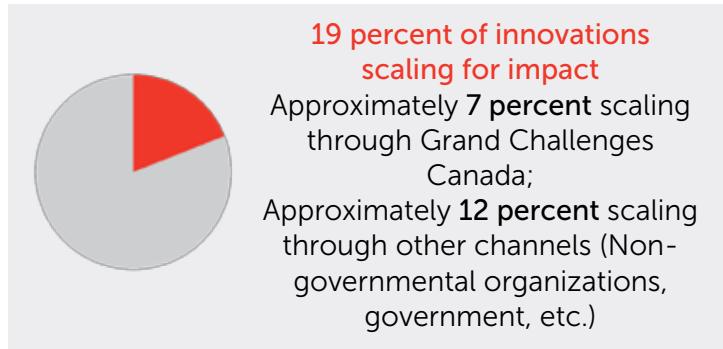
Overall, the proportion of Stars in Global Health innovations that attract funding to go to scale is moderately higher than in comparable venture

capital models. 19 percent of Stars in Global Health innovations have attracted transition-to-scale investment, which exceeds the 10 percent expected in a venture capital model. Seven percent of these received Transition To Scale funding from Grand Challenges Canada and 12 percent received subsequent funding or uptake by other parties, including non-governmental organizations and local governments.

Expected Success Rate - Venture Capital Model



Actual Success Rate - Grand Challenges Canada



Despite the fact that the outcomes of innovation are expected in the future, (that is, not in the first 12–18 months of development that take place during Stars in Global Health funding), the Stars in Global Health program has generated significant early results, as illustrated on the following page.

Stars in Global Health (continued)

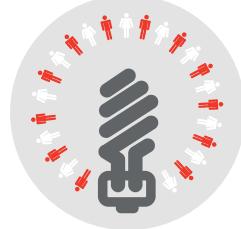
Outcomes and Outputs of the Stars in Global Health program



1,175 lives saved
through the use of
innovative products
and services



81,197 lives improved
through the use of
innovative products
and services



2,206,908 beneficiaries
exposed to
innovative products
and services



47 policies influenced
through engaging
government officials and
decision makers



202 publications
in peer-reviewed
journals



8,931 jobs created
and/or livelihoods
strengthened

Over the course of the seven rounds of the Stars in Global Health program, a number of additional lessons learned emerged:

- The approach of sourcing widely and scaling selectively is resulting in high potential impact innovations being transitioned to scale.
- The scientific excellence of the bold idea going into seed funding is necessary but not sufficient to predict likelihood of attracting transition-to-scale funding.
- The global reach of the Stars in Global Health program provides strong diplomatic and brand value for Canada.
- The program set out to support bold ideas and ended up enabling innovators and generating new knowledge as well.

The Stars in Global Health program has been described as having a 'catalytic impact' for innovation in low- and middle-income countries. The broad engagement afforded by this program also provides an important base for, and ongoing institutional alignment with, Grand Challenges platforms in low- and middle-income countries – in particular, Grand Challenges Africa. These platforms have benefited greatly from the existing pipeline of innovations and the transfer of knowledge and best practices.

Successful innovations are still emerging from the Stars in Global Health program; please see the examples on the following page.

Stars in Global Health (continued)

| Institution | Description |
|--|--|
| University Health Network (Toronto, Canada) | A solar-powered oxygenator uses solar energy to concentrate oxygen, to treat hypoxic children in settings without electricity. A Randomized Controlled Trial demonstrated non-inferiority of solar-powered oxygen delivery, compared to the conventional method. |
| Universidad Peruana Cayetano Heredia (Lima, Peru) | A low-cost ultrasound for pneumonia detection uses an algorithm to analyze data from a conventional ultrasound to produce easy-to-interpret results. The algorithm can detect pneumonia with a sensitivity of 91 percent and specificity of 100 percent, and the system can be adapted to smartphones for point-of-care diagnosis. |
| Université d'Amoney-Calavi (Abomey-Calavi, Benin) | An innovative approach using coconut fibers for rearing nematodes to control malaria vector populations. Treatment of 210,000 m ² of mosquito breeding sites in pilot areas in Benin achieved a 96.8 percent reduction of adult malaria mosquito populations. |
| University of Saskatchewan (Saskatoon, Canada) | Iron-fortified lentils were designed to combat iron deficiency. In Bangladesh, the iron-fortified lentils were shown to improve bioavailability and were acceptable to consumers. |

One of the more powerful aspects of the Stars model has been its ability to energize young innovators, especially women innovators like Audra Renyi who was recognized this year through a Governor General's Innovation Award.

Audra Renyi, Innovator: Executive Director, World Wide Hearing Foundation

Growing up in a family with hearing loss, Audra Renyi's lifelong mission has been to help children hear. In 2011, Audra launched World Wide Hearing Foundation, along with Founding Chairman Claudio Bussandri, which is focused on helping the **one billion people** affected by hearing loss – **80 percent** of whom live in developing countries, **180 million** of whom are children and most of whom have no access to hearing aids, due to their high cost and the lack of trained personnel to fit them.

Audra's innovative solution radically reduces the cost of providing hearing aids by training local people to test for hearing loss and provide affordable hearing aids. Audra is on track to screen **100,000 children** in developing countries, providing access to life-changing hearing aids and hearing care.

Under Audra's leadership, World Wide Hearing is now expanding to take on hearing loss in Canada's north, where **30–60 percent** of school-age Inuit children suffer from hearing loss, compared to just **2.6 percent** of the Canadian population, as a whole. Thanks to World Wide Hearing, Inuit children will gain access to life-changing hearing aids and hearing care, enabling them to succeed in school, find good jobs, and participate in their communities.



Audra Renyi conducting a hearing screening in Guatemala © Claudio Bussandri, World Wide Hearing

Stars in Global Health (continued)

Feedback from the Scientific Advisory Board

The Scientific Advisory Board offered the following observations on the Stars in Global Health program:

Findings:

- *The Stars in Global Health program has catalyzed innovators, particularly young innovators, in low- and middle-income countries in a way that is both unique and transformative.*
- *This open platform for innovation is important in that it encourages and enables out-of-the-box thinking.*
- *In some ways, the Stars in Global Health program is the coolest part of Grand Challenges Canada, with over 500 innovations and concepts that wouldn't otherwise have seen the light of day.*
- *Integrated Innovation is a unique niche and comparative advantage for Grand Challenges Canada.*

Recommendations to Improve Value for Money

- *Stay focused on the top innovators and innovations, to ensure that they go to scale [through the Transition To Scale platform].*
- *Continue to and, indeed, expand efforts to work with other organizations (e.g., Grand Challenges Africa) to enable proven innovations sourced and supported through the Stars in Global Health platform to transition-to-scale.*

GLOBAL HEALTH INVESTMENT FUND

The Global Health Investment Fund is a \$108 million impact investment fund. Through a pioneering group of investors – including a \$10 million CAD anchor investment from Grand Challenges Canada (funded by the Government of Canada) – the Global Health Investment Fund is helping to advance promising interventions to fight public health challenges in low- and middle-income countries, such as malaria, tuberculosis, HIV/AIDS, and maternal and infant mortality. The fund was created to overcome a critical market failure: the lack of availability of investment capital to take promising global health innovations to scale in low- and middle-income countries.

The target investments for this fund are innovations that may struggle to meet traditional risk/return standards for purely commercial investment, but that offer potentially transformative global health outcomes. To date, the fund has made investments in seven companies, as follows:

- **Genedrive** – Allows earlier and faster diagnosis of tuberculosis
- **EuBiologics** – Increases the supply of much-needed cholera vaccines
- **Moxidectin** – Accelerates the elimination of river blindness
- **BD** – Enables the early diagnosis of gestational diabetes and preeclampsia, triaging pregnant women for high levels of care
- **Atomo Diagnostics** – Improves error rates on tests for HIV, malaria and dengue
- **Access Bio** – Secures the supply of high-quality, rapid diagnostic tests
- **PATH (Tribendimidine Consortium)** – Increases the supply for mass drug administration campaigns and cures additional hookworm cases.

Global Health Investment Fund (continued)

An oral cholera vaccine suitable for low-resource settings

EuBiologics

EuBiologics is a privately-held Korean biopharmaceutical company that recently became the second World Health Organization-prequalified manufacturer of an oral cholera vaccine suitable for use in resource-limited settings.

In the wake of Hurricane Matthew, which hit Haiti in October 2016, there was a significant increase in the number of reported cases of cholera. In an effort to limit the spread of the disease, the Haitian Ministry of Health, the World Health Organization, UNICEF and other organizations mobilized to procure and distribute the cholera vaccine.

EuBiologics, a Global Health Investment Fund investee, was able to provide 1 million doses of its oral cholera vaccine to help address this crisis. They expect to send a further 1.5 million doses in the near future, as part of an island-wide vaccination campaign.

EuBiologics successfully listed on the KOSDAQ exchange in January 2017. Both the tangible impact of the company's cholera vaccine and its Initial Public Offering are important milestones for the Global Health Investment Fund.

EVERY WOMAN EVERY CHILD INNOVATION MARKETPLACE

Another innovative platform to support the commercialization of innovations that was developed and hosted by Grand Challenges Canada, with funding through the Government of Canada's Development Innovation Fund in Health, is the **Every Woman Every Child Innovation Marketplace**. The Innovation Marketplace is a strategic alliance of development innovation organizations that was launched by the United Nations Secretary-General in September 2015, as part of the World Health Organization's *Global Strategy for Women's, Children's and Adolescents' Health*. The goal of the Innovation Marketplace is to transition-to-scale 20 women's, children's and adolescents' health investments by 2020 and, by 2030, to see at least 10 of these innovations widely available and having significant impact.

The challenge that the Every Woman Every Child Innovation Marketplace seeks to address is that, while there are an increasing number of innovative healthcare concepts at the early pilot stage, a bottleneck exists at the "critical testing" and "transition-to-scale" stages. The Innovation Marketplace seeks to create a more efficient pathway from seed to scale – one that connects innovators to funding agencies, resolves the problem of inefficiencies among funders and taps into private capital, in order to remove the prevailing barriers between idea and impact, as illustrated below. To do so, it links a supply of innovations from development innovation organizations to demand from company and governments. It catalyzes investment in high quality innovations through curation and brokering.¹⁰



¹⁰ 'Curation' is comparative analysis of innovations from partner organizations; 'brokering' is the process of matching promising innovations to the right investor.

Every Woman Every Child Innovation Marketplace (continued)

As of October 2016, there were 105 innovations in the Every Woman Every Child Innovation Marketplace. Hosted at Grand Challenges Canada, the Innovation Marketplace has completed the curation of this initial set of innovations and is currently sourcing additional innovations from the anchor partners, other Grand Challenges network partners and others. A Private Sector Engagement Strategy has been developed that will be implemented in 2017 and funding has been secured to support the operations of the Innovation Marketplace over the next five years.

KANGAROO MOTHER CARE DEVELOPMENT INNOVATION BOND

As part of the Government of Canada's Development Innovation Fund in Health and through Saving Brains, Grand Challenges Canada funded the transition-to-scale of Kangaroo Mother Care in Cameroon. (See box in **Saving Brains** section). In parallel, Grand Challenges Canada was exploring the role of pay-on-results financing to catalyze scale and sustainability of innovations with a public-sector scaling path. With the expertise of the MaRS Centre for Impact Investing, we conducted a systematic analysis of the Saving Brains and Global Mental Health portfolios and, based on a set of criteria (strength of evidence, measurability of outcomes, innovator capacity, etc.), identified the Kangaroo Mother Care scale-up as the only one suitable for a pay-on-results approach.

Grand Challenges Canada is currently working with the MaRS Centre for Impact Investing and Social Finance UK to design a Kangaroo Mother Care **Development Impact Bond** – an outcomes-based financial instrument – to fund the rollout of Kangaroo Mother Care on a larger scale in Cameroon. In a Development Impact Bond, private investors pay in advance for an intervention to achieve agreed results, such as improved health outcomes for low-birth-weight infants using Kangaroo Mother Care. Outcomes funders (donors and/or governments) commit to making payments to investors only if the interventions succeed. Investors' financial returns are directly linked to independently verified outcomes.

The proposed Kangaroo Mother Care Development Impact Bond would align with existing interventions designed to strengthen the healthcare system in Cameroon. Grand Challenges Canada is working

closely with the Ministry to ensure alignment with government health priorities. For example, it would aim to build on the Performance-Based Financing Program run by Cameroon's Ministry of Public Health, with support from the World Bank.

Grand Challenges Canada plans to launch a Development Impact Bond in cooperation with partners in the summer of 2017, with outcomes payments of \$5 million CAD. Outcomes funds have been committed to date from the Global Financing Facility via the Government of Cameroon, Grand Challenges Canada and another Canadian organization. These outcomes-funding commitments are being used to leverage private investment to pay for the upfront costs of the intervention. We are currently in final stages of negotiation for a single \$5 million investor.



Photo credit: Kangaroo Foundation

Lessons Learned

There are two areas of learning to highlight this year:

1. The work on **measuring and projecting impact** that Grand Challenges Canada has undertaken as part of the International Development Innovation Alliance (IDIA),
2. The use of **non-grant financing** to support innovators at Transition To Scale.

MEASURING AND PROJECTING IMPACT

A key limitation in measuring the impact of innovation is that this impact will occur in the future. To address this challenge, Grand Challenges Canada develops impact models to estimate the potential outcomes of the innovations it invests in – almost like budget forecasting and expense measurement in finance. Actual results from the innovations are reported to Grand Challenges Canada, and the impact models are then validated against these results. A group of funders called the **International Development Innovation Alliance (IDIA)** are building a consensus around the best framework to measure the impact of development innovation. Opinion is converging around the idea that impact on beneficiaries (lives saved and improved) is the most important outcome measure.

At the heart of the problem of how to measure the outcomes of innovation is a paradox: how to measure outcomes that will occur in the future. Traditionally, innovation funders have attempted to measure impact by looking at inputs (such as whether processes are on schedule) or early outputs (such as papers published or patents obtained). Unfortunately, these measures do not provide much visibility on the actual impact of the innovation – particularly lives saved and lives improved. Changes in inputs or outputs do not necessarily assure that the desired outcomes will be achieved, and may provide little insight on the nature or magnitude of those eventual outcomes. Outcomes, thus, are critical in the evaluation of the success of the innovation.

Measuring impact is an essential part of Grand Challenges Canada's mission. As such, Grand

Challenges Canada has invested significantly in how to measure actual and projected future outcomes. Decision-makers can use the methods that Grand Challenges Canada has developed to help them:

- Get answers to questions about how much impact an innovation might have – answers that can be useful for (i) deciding whether or not to fund it (and/or others); (ii) tracking its progress; (iii) evaluating what has already been accomplished and will be soon; and (iv) sharing results with wider audiences.
- Identify key drivers of an innovation's impact, and the “leverage points” where timely intervention in post-deal execution can enhance the chances for success and/or the impact.
- Compare innovations with each other and discern which outperform the rest.
- Identify which innovations yield the most impact per dollar invested.
- Adapt our approach for other applications, not just for innovations responding to challenges or in international development.
- Evaluate how much impact an entire program of innovation investments is having (for instance, our portfolio at Grand Challenges Canada). This is perhaps the most significant feature for public policy.

An in-depth discussion of our modeling methodology can be found in a document entitled *How We Assess the Potential Impact of the Innovations We Support*, which is available upon request from Grand Challenges Canada.

NON-GRANT FINANCING

For Grand Challenges Canada, **financing innovation** means using the full range of existing and proven financial tools, including Conditionally Repayable Contributions (CRCs), to maximize the development impact of investments in innovation. One set of tools in this regard are grants or non-repayable contributions. There is also a range of additional proven financial tools that have been used for decades to support innovation across a range of sectors, including repayable grants, debt with or without interest, convertible debt, equity and others. Over the past seven years, Grand Challenges Canada learned that innovation platforms need to have leeway to innovate in how they finance, in order to maximize the impact and sustainability of different innovations in different contexts, but must also monitor effectiveness and be guided by the resulting evidence.

In contrast to the proven financial tools that can finance innovation, Grand Challenges Canada also explored **financial innovations** by developing and testing new approaches and tools, to more efficiently and/or effectively finance development and maximize development impacts. Examples of financial innovations include the use of Development Impact Bonds or the leveraging of a government's balance sheet to provide a first-loss provision to encourage additional investment in a promising area.¹¹

Grand Challenges Canada has been working on both of these elements over the past five years, in conjunction with the Government of Canada through the **Social Finance Task Force**, made up of Global Affairs Canada, Finance Canada, Employment and Social Development Canada (ESDC), Canada's International Development Research Centre (IDRC), the Canadian Institutes of Health Research (CIHR) and Grand Challenges Canada. This taskforce has worked together to share knowledge and best practices around the use social finance, particularly, in development innovation.

The primary lesson learned from this work for Grand Challenges Canada has been that, while financial innovations are newer and can be perceived as being higher risk (requiring more testing and refinement) the use of appropriate financial tools, such as loans, and equity investments (which are part of Conditionally Repayable Contributions) is standard practice in many sectors and has a long track record of leveraging-in private capital and catalyzing partnerships to support innovation more sustainably.

LEARNING FROM FAILURES

Failure is an inherent risk in the innovation process. At Grand Challenges Canada, we embrace the risk of failure but work hard to ensure that failures occur as early in the innovation process (where they are comparatively inexpensive) as possible, and that we learn from them and publicly share those learnings.

One example of a fast failure was a Stars in Global Health project to develop a low-cost way to quantify thyroid-stimulating hormone. Despite being relatively easy to diagnose and treat, it is estimated that about 42 million people in India continue to suffer from thyroid diseases that are untreated, due to a lack of proper diagnostics. The object of the project was to develop a low-cost, semi-quantitative, triaging diagnostic platform for the detection of thyroid-stimulating hormone. Although the team was able to successfully demonstrate that it is possible to perform colourimetric analysis of the output from the fabric-based thyroid-stimulating hormone detection solution, it was not possible to convert this into a triaging tool, due to the poor sensitivity of the fabric-based immunoassay platform.

Another example of a fast failure was a Stars in Global Health project to develop antibacterial copper coatings for reducing healthcare-associated

¹¹ Other financial innovations include credit guarantees, the stacking of lower-cost capital, and alternative or structured exits.

Learning from Failures (*continued*)

infections. According to the World Health Organization, healthcare-associated infections are a major global issue for patient safety, affecting hundreds of millions of people worldwide. The objective of the project was to employ the biocidal properties of copper and its alloys to develop antibacterial surfaces. Using technology developed at the University of Toronto, a well-adhered thin layer of copper-based coatings was put on frequently touched surfaces at two intensive-care units in Canada and in Peru, and were compared to surfaces in another intensive-care unit over many months.

Visual examination of the coated surfaces in Canada showed all coatings were in good condition one year after installation, with no signs of visible wear or corrosion. In contrast, the coated surfaces that were installed in hospitals in Lima, Peru, did not perform as well. It was observed that, after 14 months, the coatings had started to blister and peel from the substrates, and the plate at the sample reception window had entirely lost its coating. The coating microstructure analysis results indicated that a layer of aluminum oxide had formed between the coating and substrate. The team concluded that service conditions and substrate material selection should

be considered for future applications, to ensure sufficient service life of the coated parts, as results showed formation of several different colonies of copper-resistant bacteria on the coatings.

A third example – a project that advanced further along the path to scale before ultimately failing – was the work of Makerere University to develop a point-of-care diagnostic for the Ebola virus, using antibodies raised against parts of the Ebola virus that are conserved across the different strains that have caused outbreaks. If successful, the diagnostic would have provided an easy-to-use and cost effective test for diagnosing individuals infected with Ebola. The project team identified a number of promising antibodies. When tested against Ebola samples taken from the 2014 West African outbreak, however, none of the antibodies demonstrated the necessary characteristics to enable a successful diagnostic test. As a result, Grand Challenges Canada terminated its support of the project. The project team has committed to making their research data openly available, per Grand Challenges Canada's Data Access Policy, and are seeking to publish their negative findings and make their research reagents available to other researchers.

THE GRAND CHALLENGES NETWORK

In 2016–17, the network of global Grand Challenges initiatives continued to be active, hosting both an annual Grand Challenges meeting in London, England, and a session focused on Learning and Evaluation in Toronto, Canada.

The network continues to work together to:

1. Develop and share public goods in areas such as metrics and evaluation
2. Share data and learnings between organizations
3. Share strategy and tactics
4. Build an Innovation Marketplace (discussed earlier in this report).



Network promoting global health innovation through a Grand Challenges approach

Corporate Profile

Grand Challenges Canada is a federally incorporated, not-for-profit organization. We are primarily funded by the Government of Canada and are focused on enabling results and managing the risks associated with funding innovation. We work closely with our partners, the Canadian Institutes of Health Research (CIHR) and Global Affairs Canada.

GOVERNANCE

Grand Challenges Canada is governed by an independent Board of Directors, chaired by **Guylaine Saucier**. For a complete list of members of the Board of Directors, please see [Annex 2](#). The Board's responsibilities are:

- To oversee the development of and approve the strategic framework and the multi-year business plan
- To approve major policy changes and changes to the strategic framework
- To approve new program or organizational partnerships
- To review and approve the framework for each program's Requests For Proposals
- To review and approve the organization's annual budget
- To monitor corporate performance.

In 2016–17, the Board of Directors met four times, with occasional supplementary teleconferences.

There are three sub-committees of the Board of Directors:

- **Audit & Finance Committee**, chaired by Johanne Charbonneau
- **Governance & Human Resources Committee**, chaired by Morris Rosenberg
- **Investment Committee**, chaired by Gerhard Pries.

In addition, Grand Challenges Canada's Scientific Advisory Board provides advice and mentorship to management to enable the success of Grand Challenges Canada, with special attention to ensuring scientific integrity of its programs. The Scientific Advisory Board also reviews and provides

specific advice on annual reports, portfolio reviews (in sub-committees) and the performance measurement system, as well as acting as ambassadors and champions of Grand Challenges Canada. For a complete list of members of the Scientific Advisory Board, please see [Annex 3](#).

In 2016, the Board revised the [Strategic Plan to 2022](#), which is included as [Annex 4](#).

ACCOUNTABILITY

We continue to focus on two primary areas of accountability: **Results** and **Risk Management**.

Results

Our reporting on results is based on a structured Results-based Management and Accountability Framework. A summary of our outcomes and outputs for the year, as captured in this framework, can be found in the [Highlights](#) section of this report. As noted earlier in this report, in 2016–17, the Development Innovation Fund in Health concluded. The remainder of this section will highlight some of the key outcomes from this seven-year program.

The Theory of Change that was developed for the Development Innovation Fund in Health was as follows (emphasis added):

IF the best minds in the developing world and in Canada are focused together on innovation to develop solutions to significant global Grand Challenges,

THEN, over a ten- to fifteen-year timeframe, practical solutions to these Grand Challenges in terms of new knowledge, products and services will be found

Accountability (continued)

AND, since these solutions will include relevant scientific, social and business innovations needed to bring the solution to scale, they can be widely and effectively implemented where they are needed the most.

AS A RESULT, the health outcomes of many in the developing world will be significantly improved.

Without duplicating the analysis in the Summative Evaluation (which was discussed in the 2015–16 Annual Report and can be found on Grand Challenges Canada's website), it is interesting to highlight key learnings from each of the four elements of the Theory of Change:

- **Focus the best minds:** One of the more powerful aspects of Grand Challenges Canada's model has been the ability to drive significant interest and engagement in innovators across Canada, and throughout the developing world. As noted earlier in this report, Grand Challenges Canada has supported over 800 innovations, roughly two-thirds of which are led by innovators in low- and middle-income countries and one-third by Canadian innovators.
- **New knowledge, products and services found:** The Theory of Change recognized that there would be a significant challenge in terms of the timeline to impact in that technological innovations can take 10 to 15 years to successfully go to scale. Despite this challenge, the Summative Evaluation of the Development Innovation Fund in Health found that Grand Challenges Canada has had significant real-world impact in only five years. Grand Challenges Canada's internal analysis, supported by comments from our Scientific Advisory Board, suggests that this success is due, at least in part, to our focus on Integrated Innovation.

- **Solutions are widely and effectively implemented:** In its first two years of implementing the Development Innovation Fund in Health, Grand Challenges Canada identified a critical gap in enabling validated solutions to effectively and sustainably go to scale. To address this gap, Grand Challenges Canada developed a robust Transition To Scale program, with a unique Investment Committee process and a focus on post-deal execution. An important element of this program has been the use of non-grant investments to support social enterprises and other private-sector implementers.
- **Health outcomes will be significantly improved:** Over the course of implementing the Development Innovation Fund in Health, one of the significant learnings for Grand Challenges Canada was about the importance of measuring and tracking the actual outcomes of investments in innovation and projecting the potential impact of innovations at scale by 2030. Grand Challenges Canada recognized that, since the outcomes of innovation will occur in the future, it is not enough to simply measure current outcomes; it is also critical to develop impact models to estimate potential future outcomes.

As outlined earlier in this report, Grand Challenges Canada worked closely with global development consultancy, Results for Development Institute (R4D), and with the IDIA Working Group to develop and test a robust methodology for modeling and projecting future outcomes. This methodology will be an important legacy of Grand Challenges Canada's work in implementing the Development Innovation Fund in Health.

Accountability (continued)

Risk Management

A second element of Grand Challenges Canada's approach to accountability is risk management. Grand Challenges Canada has robust control systems in place to identify and mitigate the risks associated with innovation in general and, in particular, our programs and operations. The control systems that we use in our risk management processes include project and institutional due diligence before signing funding agreements; regular reporting; monitoring project progress through milestones; tranche funding and the use of holdbacks; project visits and other meetings with project leads; stringent commitments (and clear

explanation of those commitments) to proper use of funds; and random and risk-based spot-check audits.

In Fiscal Year 2016–2017, five new risk occurrences were reported to, and discussed with, the Audit & Finance Committee. All five risk occurrences have been resolved without any known negative consequences to the organization to date. There is one risk event from Fiscal Year 2015–2016 that is still in the process of resolution. Based on guidance from the Audit & Finance Committee and the Board of Directors, internal processes have been adjusted to mitigate risk occurrences, where possible.

OPERATIONS

In maturing as an organization, Grand Challenges Canada has continued to refine and streamline operations, to ensure that they enable us to deliver on our strategic priorities. Our three core areas of operations are:

1. Human Resources
2. Communications
3. Administration.

Human Resources

This was a year of transition with several departures. Most notably, Mr. Andrew Taylor, former Vice President of Investments, has moved on to exciting new opportunities. Mr. Taylor was dedicated to Grand Challenges Canada since before its inception and was instrumental in its success to date. Late in the year, we welcomed new team members to our Finance team and recruited for a Reproductive, Maternal, Newborn and Child Health Program Officer and a Director of the Innovation Marketplace. We are delighted to welcome Dr. Tina Assi and Dr. Teesta Soman in these roles, respectively.

An up-to-date organization chart can be found in Annex 5, reflecting a new and more streamlined approach to Programs and Investments. In Fiscal Year 2016–2017, Grand Challenges Canada had 29 full-time-equivalent staff.

Communications

In Fiscal Year 2016–2017, Grand Challenges Canada was featured in over 450 original media stories and issued 16 press releases. Among the highlights was the fact that Grand Challenges Canada issued EurekAlert's most popular news release of 2016: "*Canadian innovation for killing mosquito eggs could help Zika fight.*" Some additional highlights of our media coverage are captured in the collage on the following page.

Administration

Grand Challenges Canada aims to maintain operating expenses (General Administration and Program Support) at about 12 percent of total expenditures. In 2016–2017, absolute expenditures on Operations were at a similar level as the previous fiscal year; however, because of a decrease in annual funding in Fiscal Year 2016–2017, operating expenses were 21.3 percent of total expenditures. That number will return to around 12 percent in subsequent years, as program expenditures ramp back up to deliver the Reproductive, Maternal, Newborn and Child Health and other Grand Challenge programs.

A Platform for Innovation ANNUAL REPORT 2016–2017



Grand Challenges Canada®
Grands Défis Canada

Operations (continued)

CBCnews | Health
Kangaroo care for preemies shows profound power of touch

It makes sense how mother or father's touch has profound effects lasting into adulthood, pediatrician says

CBC News Posted: Dec 12, 2016 10:28 AM ET | Last Updated: Dec 12, 2016 10:28 AM ET

The New York Times
HEALTH
Cover Lets Household Drills Be Used in Surgery

By S. McNEIL, Jr. AUG. 2, 2016

THOMSON REUTERS FOUNDATION NEWS

A third of children in poor nations fail to meet mental development milestones: research

by Lin Taylor | @lindataylor | Thomson Reuters Foundation
Tuesday, 1 June 2016 10:00 GMT

FINANCIAL TIMES
Maternal and Child Health
The innovators: devices and services to improve maternal and child health

From Cameroon's kangaroo mother care to affordable health insurance in Nigeria

NOVEMBER 16, 2016 by Andrew Jack

THE GLOBE AND MAIL*

SCIENCE
How solar-powered oxygen concentrators save lives at Ugandan hospitals

WENCY LEUNG
The Globe and Mail
Published Thursday, Jun. 30, 2016 11:59AM EDT
Last updated Friday, Jul. 01, 2016 4:58PM EDT

Sci Dev Net
Bringing science and development together through news and analysis

Bench talk boosts mental health in Zimbabwe

FAST COMPANY

04.22.16 | WORLD CHANGING IDEAS

Cheap Technology—And a Bit of Good Will—Are Bringing Hearing Aids To The World's Poor

World Wide Hearing is using cheap tech, market incentives, and crash-course training to help restore hearing in impoverished communities.

the guardian

home > world > africa middle east cities development europe US america all
Guardian sustainable business Business and the sustainable development goals

Childcare companies using profits to subsidise fees in low-income areas

Nursery providers in Nairobi are helping to train childminders, while in Bogotá and São Paulo they are using wealthier communities to subsidise fees

Global NEWS

HEALTH December 14, 2016 2:25 pm Updated: December 14, 2016 2:34 pm

Anti-Zika apparel: Clothing has built-in mosquito repellent for women, expectant moms

By Carmen Chai Senior National Online Journalist, Health

BBC Sign in News Sport Weather Shop Earth Travel More

All-Green Technology

Battling the Zika virus, one old tyre at a time

From Canada, the ovillanta is a clever – mosquito trap made from the pests' fav

NEWS Video Shows Canada World Politics Entertainment Sci-Tech Health Autos Business

Researchers investigate the factors that boost kids' brains

FOX NEWS Health

Mothers' nutrition pivotal for healthy child growth, study finds

GENDER, ENVIRONMENT AND GOVERNANCE

In 2016–17, all potential Transition To Scale innovations were assessed for environmental risk and their contribution to gender equality as part of Grand Challenges Canada's due diligence process. Grand Challenges Canada is also continuing to implement the Strategic Environmental Assessment, which outlines how considerations around environmental risks are integrated into Grand Challenges Canada's programming.

Gender Equality

In 2016–17, Grand Challenges Canada's Gender Equality Strategy was completed and approved by Global Affairs Canada. The Gender Equality Strategy builds on Grand Challenges Canada's lessons learned over the last two years, with a goal of shifting how gender and its intersections are considered across Grand Challenges Canada's investments.

To facilitate the implementation of the strategy, training sessions were held with Grand Challenges Canada's team and gender consultants, and tools were created and used by both team members and innovators. Further training sessions will be held in 2017–18 to build internal capacity and ensure Grand Challenges Canada team members are properly equipped to support innovators with the incorporation of gender equality considerations into their organizations and business plans. Additional tools geared towards building innovator capacity are also being developed, which Grand Challenges Canada intends to provide to the broad community to enhance knowledge transfer and shared learning. A gender analysis brief has been prepared and posted on Grand Challenges Canada's website for innovators' reference. The brief outlines the importance of using a gender lens to design, analyze and implement a project, and includes considerations integral to implementing activities to move both projects and organizations to a heightened status of gender awareness and gender sensitivity.

Gender considerations have also been integrated into the evaluation criteria of requests for proposals, due diligence and post-deal execution, ensuring alignment with Grand Challenges Canada's values. For example, a gender equality coding system was developed and implemented for all new Transition To Scale projects being reviewed for potential funding. A first-round audit was conducted by an external gender specialist to assess the scoring conducted by the Grand Challenges Canada team. Implementing this coding system will be a focus for the coming fiscal year. The textbox below illustrates how Grand Challenges Canada has integrated gender sensitivity into our operational and financial analysis using the example of LegWorks, a company in our Transition To Scale portfolio.

Gender Equality: Legworks

As a funding milestone, LegWorks was required to conduct a gender analysis and develop a gender strategy. Gender analysis revealed a lack of female patients being fitted with prosthetics. Through conversations with local prosthetists and non-governmental organizations in low- and middle-income implementation countries, LegWorks found that non-governmental organizations were more likely to fit female patients, which allowed them to be more intentional about distribution partners when marketing their products in low- and middle-income countries, in order to reach more female patients. LegWorks also noted a difference in builds, average weights and gaits for women, compared to men (as well as smaller individuals, in general). This led to the development of its Stance Flexion knee, which caters to these differences. LegWorks' activities around gender equality provide an encouraging example of how a portfolio company can leverage its gender analysis and strategy to seek out improved health outcomes for both men and women, and help identify ways in which product breadth can be expanded to open up new opportunities for sustainability.

Gender, Environment, and Governance (continued)

Environmental Sustainability

An environmental sustainability coding system (similar to that used at Global Affairs Canada) has been implemented to assess environmental risk prior to selecting deals for funding. The Environmental Management Handbook and screening tools were updated by our environmental consultant and provide guidance in the following areas:

- The initial environmental screening and coding that is done by Grand Challenges Canada team members
- Strategies to monitor innovators' progress towards ensuring Grand Challenges Canada-funded innovations align to Grand Challenges Canada's policy on environmental sustainability and risk.

Environmental sustainability coding and justification are now built into the investment memos for Transition To Scale investments as part of the package of information the Investment Committee uses to review prospective Transition To Scale deals. Coding and justifications are also developed and shared for seed innovations. The tracking system for environmental coding for individual projects has been built into the new grants management system.

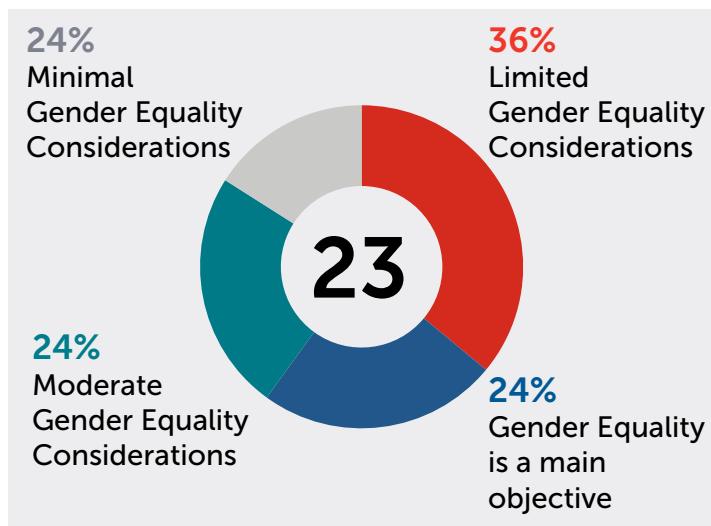
As an example, a summary of gender equality and environmental risk scores for 23 new Maternal, Newborn, and Child Health innovations that were approved for Transition To Scale funding in March 2017 can be found to the right.

Governance

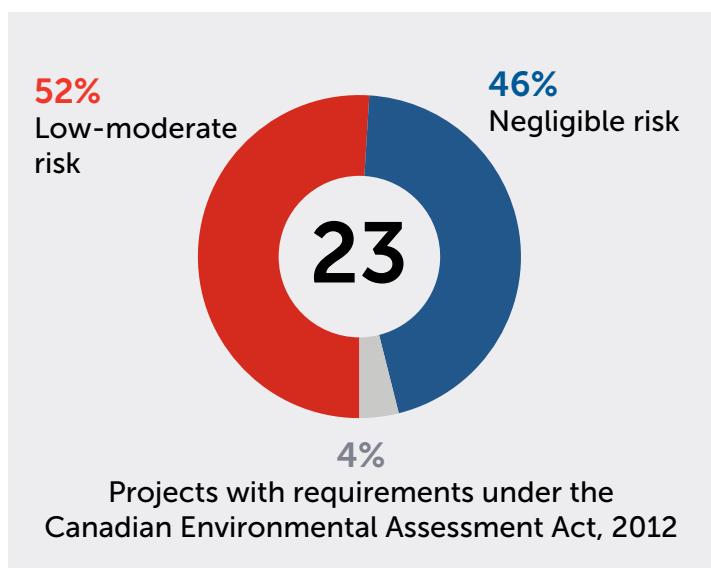
Grand Challenges Canada is working with an advisor with expertise in governance to develop a governance strategy. Work to date has included consultations with Grand Challenges Canada team members and review of background policy and program documents, to assess how Grand Challenges Canada has been addressing governance in its past programming and what can be done to ensure better alignment of Grand Challenges Canada's approach to governance as a

cross-cutting theme with Global Affairs Canada's requirements. The new Governance Strategy will include implementing guidelines/guidance documents and tools for Grand Challenges Canada team members, innovators and partners to enable them to conceptually and practically understand the integration of governance as a cross-cutting theme in development initiatives, and how to apply, monitor and assess the integration of this theme.

Gender Equality Score



Environmental Risk Score



Financial Summary

Grand Challenges Canada reports annually on two elements of our finances:

1. **Leverage and Repayables** – summarizes the total funding that we have leveraged as an organization and our current portfolio of projects funded by non-grants or repayables.
2. **Audited Financial Statements** – For Fiscal Year 2016–17, with Fiscal Year 2015–16 as a comparator.

LEVERAGE AND REPAYABLES

To date, Grand Challenges Canada has leveraged a total of \$328,285,124 CAD from funding sources other than the Government of Canada. This leverage is in the form of:

- **Program leverage:** Funding provided by other funders in the programs Grand Challenges Canada supports. Examples include funding from our partners in the Saving Lives at Birth Program.
Total as of March 2017: \$197,800,402 CAD
- **Project leverage:** Funding that projects are able to leverage as a result of the funding provided by Grand Challenges Canada. These funders include individual angel investors, venture capital impact investors, private foundations, local governments, corporate entities (including multi-national corporations) and non-governmental organizations.
Total as of March 2017: \$193,886,082 CAD
- **Operations leverage:** Primarily, this is funding provided to Grand Challenges Canada from the Rotman Family Foundation.
Total as of March 2017: \$9,360,394 CAD

As noted last year, a portion of the leveraged funding set out above flows through Grand Challenges Canada.

In addition, Grand Challenges Canada has a portfolio of \$29,153,832 CAD in **non-grant investments** (repayables) to support innovations as they transition-to-scale. This means that these investments have the potential to be returned to Grand Challenges Canada.

AUDITED FINANCIAL STATEMENTS

The financial statements for Grand Challenges Canada for Fiscal Year 2016–2017 follow, with comparative figures for Fiscal Year 2015–2016.

INDEPENDENT AUDITORS' REPORT

To the Board of Directors of
Grand Challenges Canada

We have audited the accompanying financial statements of **Grand Challenges Canada**, which comprise the statement of financial position as at March 31, 2017, and the statements of operations and changes in net assets and cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information.

Management's responsibility for the financial statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian accounting standards for not-for-profit organizations, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

A Platform for Innovation
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Audited Financial Statements (continued)

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of **Grand Challenges Canada** as at March 31, 2017, and the results of its operations and its cash flows for the year then ended in accordance with Canadian accounting standards for not-for-profit organizations.

Toronto, Canada
June 14, 2017

Ernst & Young LLP

Chartered Professional Accountants
Licensed Public Accountants



A member firm of Ernst & Young Global Limited

Audited Financial Statements (continued)

STATEMENT OF FINANCIAL POSITION

As at March 31

| | 2017 | 2016 |
|---|-------------------|------------|
| | \$ | \$ |
| ASSETS | | |
| Current assets | | |
| Cash | 12,644,312 | 16,637,328 |
| Accounts receivable | 179,988 | 609,552 |
| Contributions receivable | 2,397,431 | 2,806,469 |
| Prepaid expenses and deposits | 24,510 | 81,248 |
| Due from University Health Network [note 3] | 617,820 | — |
| Total current assets | 15,864,061 | 20,134,597 |
| Capital assets, net [note 4] | 404,873 | 318,316 |
| | 16,268,934 | 20,452,913 |
| LIABILITIES AND NET ASSETS | | |
| Current liabilities | | |
| Accounts payable and accrued liabilities | 8,619,013 | 13,371,127 |
| Due to University Health Network [note 3] | — | 127,742 |
| Deferred contributions [note 5] | 7,649,921 | 6,954,044 |
| Total current liabilities | 16,268,934 | 20,452,913 |
| Net assets | — | — |
| | 16,268,934 | 20,452,913 |

See accompanying notes

On behalf of the Board:



Director



Director



Audited Financial Statements (continued)

**STATEMENT OF OPERATIONS AND
 CHANGES IN NET ASSETS**

Year ended March 31

| | 2017 \$ | 2016 \$ |
|---|-------------------|-------------------|
| REVENUE | | |
| Grant [notes 5 and 6] | 30,531,841 | 46,275,311 |
| Interest [notes 5 and 6] | 85,199 | 67,380 |
| | 30,617,040 | 46,342,691 |
| EXPENSES | | |
| General administration | | |
| Personnel | 1,183,825 | 1,160,740 |
| Materials and supplies | 68,895 | 69,710 |
| Equipment and infrastructure | 154,174 | 101,787 |
| Business development | 329,204 | 250,462 |
| | 1,736,098 | 1,582,699 |
| Program support | | |
| Personnel | 3,259,661 | 2,842,433 |
| Materials and supplies | 82,521 | 81,993 |
| Equipment and infrastructure | 465,717 | 303,167 |
| Business development | 966,390 | 1,074,038 |
| | 4,774,289 | 4,301,631 |
| Programs | | |
| Issued grants | 17,231,169 | 28,251,670 |
| Non-grant projects [note 7] | 4,287,122 | 6,869,768 |
| Research support activities | 2,588,362 | 5,336,923 |
| | 24,106,653 | 40,458,361 |
| | 30,617,040 | 46,342,691 |
| Excess of revenue over expenses for the year | — | — |
| Net assets, beginning of year | — | — |
| Net assets, end of year | — | — |

See accompanying notes



Audited Financial Statements (continued)

STATEMENT OF CASH FLOWS

Year ended March 31

| | 2017 \$ | 2016 \$ |
|--|--------------------|-------------------|
| OPERATING ACTIVITIES | | |
| Excess of revenue over expenses for the year | — | — |
| Add non-cash item | | |
| Amortization of capital assets | 88,512 | 36,566 |
| Changes in non-cash operating working capital balances | | |
| Decrease (increase) in accounts receivable | 429,564 | (301,287) |
| Decrease (Increase) in contributions receivable | 409,038 | (2,806,469) |
| Increase in due from University Health Network | (617,820) | — |
| Decrease (increase) in prepaid expenses and deposits | 56,738 | (26,428) |
| (Decrease) increase in accounts payable and accrued liabilities | (4,752,114) | 7,789,204 |
| (Decrease) increase due to University Health Network | (127,742) | 15,211 |
| Increase in deferred contributions | 695,877 | 4,415,440 |
| Cash provided by (used in) operating activities | (3,817,947) | 9,122,237 |
| INVESTING ACTIVITIES | | |
| Additions to capital assets | (175,069) | (167,258) |
| Cash used in investing activities | (175,069) | (167,258) |
| Net increase (decrease) in cash during the year | (3,993,016) | 8,954,979 |
| Cash, beginning of year | 16,637,328 | 7,682,349 |
| Cash, end of year | 12,644,312 | 16,637,328 |

See accompanying notes

Audited Financial Statements (continued)

NOTES TO FINANCIAL STATEMENTS

March 31, 2017

1. PURPOSE OF THE ORGANIZATION

Grand Challenges Canada (the “Organization”) is dedicated to supporting Bold Ideas with Big Impact® in global health. The Organization is funded primarily by the Government of Canada and it funds innovators in low- and middle-income countries and Canada. The bold ideas that are supported integrate science and technology, social and business innovation – called Integrated Innovation®. The Organization focuses on bringing successful innovation to scale, catalyzing sustainability and impact. The Organization has a determined focus on results, and saving and improving lives.

The Organization works closely with Canada’s International Development Research Centre (“IDRC”), the Canadian Institutes of Health Research (“CIHR”) and Global Affairs Canada (“GAC”), formerly the Department of Foreign Affairs, Trade and Development Canada, to catalyze scale, sustainability and impact. The Organization also works with other Global Health foundations and organizations. The Organization is hosted at the Sandra Rotman Centre.

The Organization was incorporated as Grand Challenges Canada on March 19, 2008 under the *Canada Corporations Act* as a corporation without share capital. The Organization continued its incorporation under the *Canada Not-for-profit Corporations Act* on January 29, 2014. The Organization is a not-for-profit organization within the meaning of the *Income Tax Act* (Canada).

On March 10, 2017, Grand Challenges Canada Foundation (the “Foundation”) was incorporated as a corporation without share capital under the *Canada Not-for-profit Corporations Act* and is a not-for-profit organization within the meaning of the *Income Tax Act* (Canada). The Organization has the ability to elect the majority of the Foundation’s directors. The purpose of the Foundation is to receive donations that will be used to relieve poverty and promote health and support the activities of the Organization. There have been no financial transactions in the Foundation during the year.

Audited Financial Statements (continued)

NOTES TO FINANCIAL STATEMENTS

March 31, 2017

2. SIGNIFICANT ACCOUNTING POLICIES

These financial statements are prepared in accordance with Part III of the *CPA Canada Handbook – Accounting*, which sets out generally accepted accounting principles for not-for-profit organizations in Canada and includes the significant accounting policies summarized below.

Revenue recognition

The Organization follows the deferral method of accounting for contributions, which include grants. Contributions are recognized in the accounts when received or receivable if the amount to be received can be reasonably estimated and collection is reasonably assured. Restricted contributions are deferred when initially recorded in the accounts and recognized as revenue in the year in which the related expenses are recognized.

Grant payments

All contractual grant payments are subject to the provision of funds by donor partners. They are recorded as an expense when approved and when grantees meet all terms and conditions of the agreements. Refunds on previously disbursed grant agreements are credited against the current year expenses when the project is active or to other income when the project is closed.

Allocation of expenses

Personnel costs are allocated between general administration and program support based on the time spent by personnel.

Capital assets

Capital assets are recorded at cost and amortized over their estimated useful lives on a straight-line basis. The estimated useful life of each asset class is as follows:

| | |
|-------------------|---------|
| Tangible | |
| Computer hardware | 3 years |

Audited Financial Statements (continued)

NOTES TO FINANCIAL STATEMENTS

March 31, 2017

2. SIGNIFICANT ACCOUNTING POLICIES (continued)

| Intangible | |
|-------------------|---------|
| Software | 5 years |
| Website | 3 years |

Financial instruments

Financial instruments, including accounts, contributions and loans receivable and accounts payable and accrued liabilities, are initially recorded at fair value and subsequently measured at amortized cost, net of any provision for impairment.

3. DUE FROM/TO UNIVERSITY HEALTH NETWORK

The Organization has entered into an agreement with the University Health Network for the following: [a] occupation of offices and work space at the University Health Network's premises; and [b] personnel, human resources, and other administrative services and resources provided by the University Health Network. The settlement of accounts between the University Health Network and the Organization is done on a regular and timely fashion. Amounts are non-interest bearing.

4. CAPITAL ASSETS

| | 2017 | | |
|-------------------|------------|-----------------------------------|-------------------------|
| | Cost \$ | Accumulated amortization \$ | Net book value \$ |
| Tangible | | | |
| Computer hardware | 27,938 | 4,656 | 23,282 |
| Intangible | | | |
| Software | 500,495 | 177,705 | 322,790 |
| Website | 155,086 | 96,285 | 58,801 |
| | 683,519 | 278,646 | 404,873 |



Audited Financial Statements (continued)

NOTES TO FINANCIAL STATEMENTS

March 31, 2017

4. CAPITAL ASSETS (continued)

| | 2016 | | |
|-----------------------------|-------------|-----------------------------------|-------------------------|
| | Cost \$ | Accumulated amortization \$ | Net book value \$ |
| Tangible | | | |
| Leasehold improvements | 36,197 | 36,197 | — |
| Intangible | | | |
| Software | 106,591 | 106,591 | — |
| Work in progress – software | 257,948 | — | 257,948 |
| Website | 99,218 | 83,544 | 15,674 |
| Work in progress – website | 44,694 | — | 44,694 |
| | 544,648 | 226,332 | 318,316 |

5. DEFERRED CONTRIBUTIONS

Deferred contributions represent unspent resources externally restricted for expenses in future years. Changes in the deferred contributions balance are as follows:

| | 2017 | 2016 |
|---|------------------|--------------|
| | \$ | \$ |
| Balance, beginning of year | 6,954,044 | 2,538,604 |
| Amounts received during the year | 28,830,287 | 47,884,282 |
| Contributions receivable | 2,397,431 | 2,806,469 |
| Interest earned on funds received in advance | 85,199 | 67,380 |
| Amounts recognized as revenue during the year | | |
| Grant revenue | (30,531,841) | (46,275,311) |
| Interest | (85,199) | (67,380) |
| Balance, end of year | 7,649,921 | 6,954,044 |

Audited Financial Statements (continued)

NOTES TO FINANCIAL STATEMENTS

March 31, 2017

6. GRANT REVENUE

Grant and interest earned on funds received in advance that is recognized as revenue in the year is from the following sources:

| <i>[note 5]</i> | 2017 \$ | 2016 \$ |
|---|------------|------------|
| Development Innovation Fund | 11,827,227 | 39,712,267 |
| Advancing Global Health Innovations | 7,284,550 | — |
| Maternal, Newborn and Child Heath | 6,847,797 | — |
| Department for International Development – UK | 3,335,537 | 2,815,680 |
| Global Affairs Canada | 540,458 | 3,538,784 |
| Bill and Melinda Gates Foundation | 287,156 | 4,105 |
| ELMA Foundation | 240,667 | — |
| Union de Banques Suisses Optimus Foundation | 206,292 | 271,855 |
| J.W. McConnell Family Foundation | 40,000 | — |
| U.S. Agency for International Development | 7,356 | — |
| | 30,617,040 | 46,342,691 |

In the 2008 federal budget, the Government of Canada announced the creation of the Development Innovation Fund ("DIF"). The Government of Canada initially committed \$225 million over five years to the DIF.

The terms of the DIF were reviewed by the organization working with the IDRC and the CIHR. As a result of this review, a second amended grant agreement with the IDRC for \$220,141,134 was signed on January 28, 2014 covering the period from January 10, 2010 to March 31, 2017.

In fiscal year 2016-2017, GAC entered into a contribution agreement with the Organization for a maximum of \$7,699,353 for the Advancing Global Health Innovations ("AGHI"). The agreement is effective from September 6, 2016 to March 31, 2019.

In fiscal year 2015-2016, GAC entered into a contribution agreement with the Organization for a maximum of \$158,730,672 for the Maternal, Newborn and Child Heath ("MNCH") Innovation Platform. The agreement is effective from March 3, 2016 to March 3, 2025.

Audited Financial Statements (continued)

NOTES TO FINANCIAL STATEMENTS

March 31, 2017

6. GRANT REVENUE (continued)

In fiscal year 2013-2014, the Department for International Development – UK ("DFID") entered into a contribution agreement with the Organization with a maximum of £2,000,000 for the Saving Lives at Birth portfolio. The agreement was effective from April 1, 2013 to March 31, 2017. Three amendments were signed for an additional amount of £5,100,000 and to extend the effective end date to November 30, 2019.

In fiscal year 2013-2014, GAC entered into a contribution agreement with the Organization for a maximum of \$9,975,000 for the Scaling Health Initiative. The agreement was effective from October 2, 2013 to October 2, 2015. The Organization received a no-cost extension to extend the effective end date to October 2, 2018.

In fiscal year 2015-2016, the Bill and Melinda Gates Foundation ("BMGF") entered into a contribution agreement with the Organization for a maximum of US\$2,506,978 for the Innovation Marketplace Initiative. The agreement is effective from November 30, 2015 to November 30, 2020.

In fiscal year 2016-2017, The ELMA Foundation ("ELMA") entered into a contribution agreement with the Organization for a maximum of \$2,440,000 for the Saving Brains Initiative. The agreement is effective from April 1, 2016 to March 31, 2021.

In fiscal year 2014-2015, the Union de Banques Suisses Optimus Foundation ("UBSOF") entered into a contribution agreement with the Organization for a maximum of CHF 1,750,000 for the Saving Brains portfolio. The agreement is effective from February 10, 2015 to February 10, 2018. An amendment was signed to increase the funding commitment to CHF 1,850,000 and to extend the effective end date to February 10, 2020.

In fiscal year 2016-2017, the J.W. McConnell Family Foundation ("McConnell") entered into a contribution agreement with the Organization for a maximum amount of \$40,000 for the Indigenous Grand Challenges initiative. The agreement is effective from January 16, 2017 to April 14, 2017.

Audited Financial Statements (continued)

NOTES TO FINANCIAL STATEMENTS

March 31, 2017

6. GRANT REVENUE (continued)

In fiscal year 2016-2017, the U.S. Agency for International Development ("USAID") entered into a contribution agreement with the Organization for a maximum of US\$500,000 for the Every Woman Every Child Innovation Marketplace Initiative. The agreement is effect from October 1, 2016 to September 30, 2021.

7. NON-GRANT PROJECTS

In addition to issuing grants, the Organization provides funding for projects in the form of loans receivable. Loans are advanced to borrowers in tranches, subject to the satisfaction of certain terms and conditions, including milestone events. Loans are repayable at maturity or over a repayment period, and may bear interest.

For interest-bearing loans, interest is only payable to an interest beneficiary, and not to the Organization.

Certain loan agreements include a provision that permits the Organization to convert the outstanding principal amount of the loan into authorized equities of the borrower, at the Organization's sole discretion. The Organization has not yet exercised any of these conversion rights.

Due to the start-up nature of the projects being funded and long duration of repayment terms, it is difficult to place a fair valuation on the Organization's loans and potential equity instruments. As a result, and in consultation with its auditors, the Organization has expensed these investments notwithstanding the fact that some revenue is expected to be returned to the Organization eventually.

In addition to these non-grant projects, in 2013 the Organization made an investment contribution to the Global Health Investment Fund, a partially guaranteed fund designed to catalyze investment activity that can deliver new technologies to address urgent global health challenges and improve livelihoods around the world. Since there is no certainty about the timing of the return on invested capital, no value was attributed to the investment when made in 2013 and the contribution was expensed.

Audited Financial Statements (continued)

NOTES TO FINANCIAL STATEMENTS

March 31, 2017

8. FUNDING COMMITMENTS

The Organization is committed to making payments, subject to funding being provided by the Government of Canada and other donor partners and to compliance by recipients with the terms and conditions of funding agreements.

Funding agreements are payable to various organizations in the fiscal years ending March 31 as follows:

| | \$ |
|------|------------------|
| 2018 | 5,204,000 |
| 2019 | <u>4,449,000</u> |
| | <u>9,653,000</u> |

9. LEASE COMMITMENTS

The future minimum annual lease payment for operating leases is as follows:

| | \$ |
|------|----------------|
| 2017 | <u>267,000</u> |

Management Discussion and Analysis

In reflecting on Fiscal Year 2016-17, Management is pleased with the start of the implementation of the Reproductive, Maternal, Newborn and Child Health Contribution Agreement with Global Affairs Canada, and with the wind-down of the Development Innovation Fund in Health, delivered in partnership with the International Development Research Centre (IDRC) and Canadian Institutes of Health Research (CIHR).

The process of winding down one major funding agreement and ramping up another led to a significant year-over-year decline in grant revenue, from \$46,275,311 in 2016 to \$30,531,841 CAD. This grant revenue is expected to increase in the year after next to our historical steady state level of approximately \$50 million per year, as the Reproductive, Maternal, Newborn and Child Health Contribution Agreement is rolled out.

In looking at our expenses, Grand Challenges Canada saw a slight increase in General Administration and Program Support costs. These increases were mostly driven by added expenses related to knowledge management and knowledge translation, as we worked to analyze, synthesize and share the cumulative results and lessons learned that emerged from seven years of the Development Innovation Fund in Health. There were also one-time costs associated with finalizing the implementation of our new grant management system, a new website and an office move.

Although the Government of Canada is and will be for the foreseeable future our largest funder by far, it is encouraging to note that Grand Challenges Canada had revenue from eight funding sources, up from five in Fiscal Year 2015-16. Management is focused on continuing to expand and diversify Grand Challenges Canada's funding sources.

In 2016–17, Grand Challenges Canada began the process of creating and incorporating a charitable

foundation. The primary purpose of this Foundation will be to provide a vehicle for Grand Challenges Canada to receive donations of charitable funds to support its activities.

As 2016–17 was the final year of the Development Innovation Fund in Health, Management asked the Scientific Advisory Board to reflect on Grand Challenges Canada's impact and achievements over the past seven years. Highlights of this conversation are captured below:

Assessment of the Scientific Advisory Board: Overall Impact

The Scientific Advisory Board's Executive Committee offered the following observations on Grand Challenges Canada's performance as a whole:

- Grand Challenges Canada is a **lynchpin** that enables so many other organizations, institutions and innovators to maximize their impact.
- Grand Challenges Canada is a **catalyst** that engages and bridges between the public, private and not-for-profit sectors in ways that would not otherwise be possible.
- Grand Challenges Canada is a **pathbreaker** that demonstrates the potential impact of transformative innovations that attract further investment and leads to incredible long-term impact.
- Grand Challenges Canada has accomplished what others can't because it has been **flexible and strategic**, and has used these attributes to tackle critical barriers for global health.
- The reported outcomes (in terms of actual and potential lives saved and improved) are a valid – albeit understated – articulation of Grand Challenges Canada's impact to date, given the **catalytic role** of its funding and the resulting **cascading impact** that cannot all be captured in the performance measurement approach.

Management Discussion and Analysis (continued)

Finally, management would like to express our gratitude for the incredible work of Grand Challenges Canada's team members this year. It was a year of change, with the conclusion of one major funding agreement and the launch of another, the relocation of our offices and significant

renewal of team members and management. As an organization, we are fortunate to have a team of individuals who are resilient and resourceful, and who went above and beyond this year to ensure that we continue to deliver the highest level of impact.

Annex 1: Lives Saved and Improved

The tables below show the impact of Grand Challenges Canada's investments across its innovation portfolio, in terms of Actual (A),¹² Expected (E)¹³ and Potential (P)¹⁴ lives saved and improved.

February 2017 totals for actual and expected lives saved and improved for the Transition To Scale portfolio represent sums across 91 projects.¹⁵ The total potential impact is derived from impact models developed for 60 of the 91 Transition To Scale innovations. Development of impact models for the full Transition To Scale portfolio is ongoing.

Summary of Ultimate Outcomes, February 2017

| | LIVES SAVED | | |
|---------------------|-------------|----------|-----------------------|
| | Actual | Expected | Potential |
| Transition To Scale | 9,812 | 25,083 | 520,000 - 1.6 million |
| Proof of Concept | 1,454 | 1,454 | - |
| Total | 11,266 | 26,537 | 520,000 - 1.6 million |

| | LIVES IMPROVED | | |
|---------------------|----------------|-----------|-------------------------|
| | Actual | Expected | Potential |
| Transition To Scale | 1,240,169 | 1,705,863 | 15 million - 42 million |
| Proof of Concept | 86,549 | 86,549 | - |
| Total | 1,326,718 | 1,792,412 | 15 million - 42 million |

¹² Actuals are the lives saved and improved to date, derived from innovator reports and validated by Grand Challenges Canada Programs team members.

¹³ Expected numbers are the lives that we expect will be saved and improved by the end of the funding period for the project. These numbers are based on estimates provided by innovators at the time of funding, validated and revised as warranted by Grand Challenges Canada.

¹⁴ Potentials are the estimates of lives saved and improved from Grand Challenges Canada-funded Transition To Scale projects to 2030, derived from impact modelling.

¹⁵ Some projects have multiple agreements with Grand Challenges Canada. This number does not include new Advancing Global Health Innovation or Maternal, Newborn and Child Health deals that were signed or in negotiation as of February 2017.

Annex 2: Board of Directors

| GRAND CHALLENGES CANADA Members of the Board of Directors | |
|---|--|
| Name | Affiliations |
| Alain Beaudet | <ul style="list-style-type: none"> Past President, Canadian Institutes of Health Research |
| Cédric Bisson | <ul style="list-style-type: none"> Partner, Teralys Capital |
| Daniel Carucci | <ul style="list-style-type: none"> President, Global Health Consulting Inc. Former Vice President for Global Health, United Nations Foundation Former Director, Grand Challenges in Global Health Initiative, Foundation for the National Institutes of Health Former Director, Malaria Program, Naval Medical Research Center |
| Johanne Charbonneau | <ul style="list-style-type: none"> Former Vice President and Chief Financial Officer, Canadian Broadcasting Corporation |
| Mohamed Hassan | <ul style="list-style-type: none"> Co-Chair of IAP, the global network of science academies Chairman, Council of the United Nations University Past President, African Academy of Sciences Past Executive Director, Academy of Sciences for the Developing World (TWAS) |
| Mwelecele Malecela | <ul style="list-style-type: none"> Director General, National Institute for Medical Research, Tanzania |
| Gerhard Pries | <ul style="list-style-type: none"> Management Partner and Chief Executive Officer, Sarona Asset Management |
| Morris Rosenberg | <ul style="list-style-type: none"> President and Chief Executive Officer, The Pierre Elliott Trudeau Foundation Former Deputy Minister, Department of Foreign Affairs, Trade and Development (now Global Affairs Canada) |
| Guylaine Saucier | <ul style="list-style-type: none"> Chair of the Board of Directors, Grand Challenges Canada Former Chair of the Board of Directors, Canadian Broadcasting Corporation Former Director, Bank of Canada Former Chair, Canadian Institute of Chartered Accountants |
| Peter A. Singer | <ul style="list-style-type: none"> Chief Executive Officer, Grand Challenges Canada |

Annex 2: Board of Directors (continued)

| GRAND CHALLENGES CANADA Members of the Investment Committee | |
|--|---|
| Name | Affiliations |
| Cédric Bisson | <ul style="list-style-type: none">Partner, Teralys Capital |
| Paul Dufour | <ul style="list-style-type: none">Fellow of the Institute for Science, Society and Policy at the University of OttawaPrincipal, PaulyWorks |
| Evelyn Gitau | <ul style="list-style-type: none">Programme Officer, Grand Challenges Africa |
| Charles Larson | <ul style="list-style-type: none">Investigator, BC Children's HospitalClinical Professor, Department of Pediatrics, University of British ColumbiaDirector, Centre for International Child Health |
| Gerhard Pries | <ul style="list-style-type: none">Chair of the Investment Committee, Grand Challenges CanadaManagement Partner and Chief Executive Officer, Sarona Asset Management |

Annex 3: Scientific Advisory Board

| GRAND CHALLENGES CANADA Members of the Scientific Advisory Board | |
|---|--|
| Name | Affiliations |
| Abdallah Daar Canada / Tanzania / Oman | <ul style="list-style-type: none"> Chair, Grand Challenges Canada Scientific Advisory Board Professor of Clinical Public Health and Global Health, Dalla Lana School of Public Health Professor of Surgery, University of Toronto Member of the United Nations Secretary-General's Scientific Advisory Board |
| Jane Aubin Canada | <ul style="list-style-type: none"> Chief Scientific Officer/Vice President of Research, Knowledge Translation and Ethics, Canadian Institutes of Health Research |
| Taye Balcha Ethiopia | <ul style="list-style-type: none"> Director General, Armauer Hansen Research Institute |
| Gary Cohen United States | <ul style="list-style-type: none"> Executive Vice President and President Global Health and Development, BD (Becton, Dickinson and Company) |
| Pamela Collins United States | <ul style="list-style-type: none"> Director, Office for Research on Disparities and Global Mental Health and the Office of Rural Mental Health Research, U.S. National Institute of Mental Health |
| Mary de Silva United Kingdom | <ul style="list-style-type: none"> Head of Population, Environment and Health, Wellcome Trust |
| Sylvia Deganus Ghana | <ul style="list-style-type: none"> Gynecologist, Tema General Hospital |
| Evelyn Gitau Kenya | <ul style="list-style-type: none"> Programme Officer, Grand Challenges Africa |
| Stanley Kutcher Canada | <ul style="list-style-type: none"> Professor of Psychiatry, Sunlife Financial Chair in Adolescent Mental Health Director, World Health Organization Collaborating Center at Dalhousie University |
| Joy Lawn United Kingdom | <ul style="list-style-type: none"> Director, Maternal, Reproductive and Child Health Centre, London School of Hygiene & Tropical Medicine |
| Joan Lombardi United States | <ul style="list-style-type: none"> Senior Advisor to the Bernard van Leer Foundation on global child development strategies and to the Buffett Early Childhood Fund on National Initiatives |
| Crick Lund South Africa | <ul style="list-style-type: none"> Director, Alan J. Flisher Centre for Public Mental Health, Department of Psychiatry and Mental Health, University of Cape Town |
| John W. McArthur United States | <ul style="list-style-type: none"> Senior Fellow, Global Economy and Development Program, Brookings Institution |
| Anita McGahan Canada | <ul style="list-style-type: none"> Vice Chair, Grand Challenges Canada Scientific Advisory Board Professor of Strategic Management, Rotman School of Management, University of Toronto |

Annex 3: Scientific Advisory Board (continued)

| Name | Affiliations |
|--------------------------------|--|
| Shekhar Saxena Switzerland | <ul style="list-style-type: none">• Director of the Department of Mental Health and Substance Abuse, World Health Organization (WHO) |
| Jack Shonkoff United States | <ul style="list-style-type: none">• Julius B. Richmond FAMRI Professor of Child Health and Development, Harvard School of Public Health and the Harvard Graduate School of Education• Professor of Pediatrics, Harvard Medical School and Boston Children's Hospital• Director, Center on the Developing Child, Harvard University |
| Yongyuth Yuthavong Thailand | <ul style="list-style-type: none">• Former Minister of Science and Technology, Thailand |
| Stanley Zlotkin Canada | <ul style="list-style-type: none">• Vice Chair, Grand Challenges Canada Scientific Advisory Board• Chief, Global Child Health and Senior Scientist, Research Institute, The Hospital for Sick Children; Professor, Departments of Paediatrics, Nutritional Sciences and Public Health, University of Toronto |



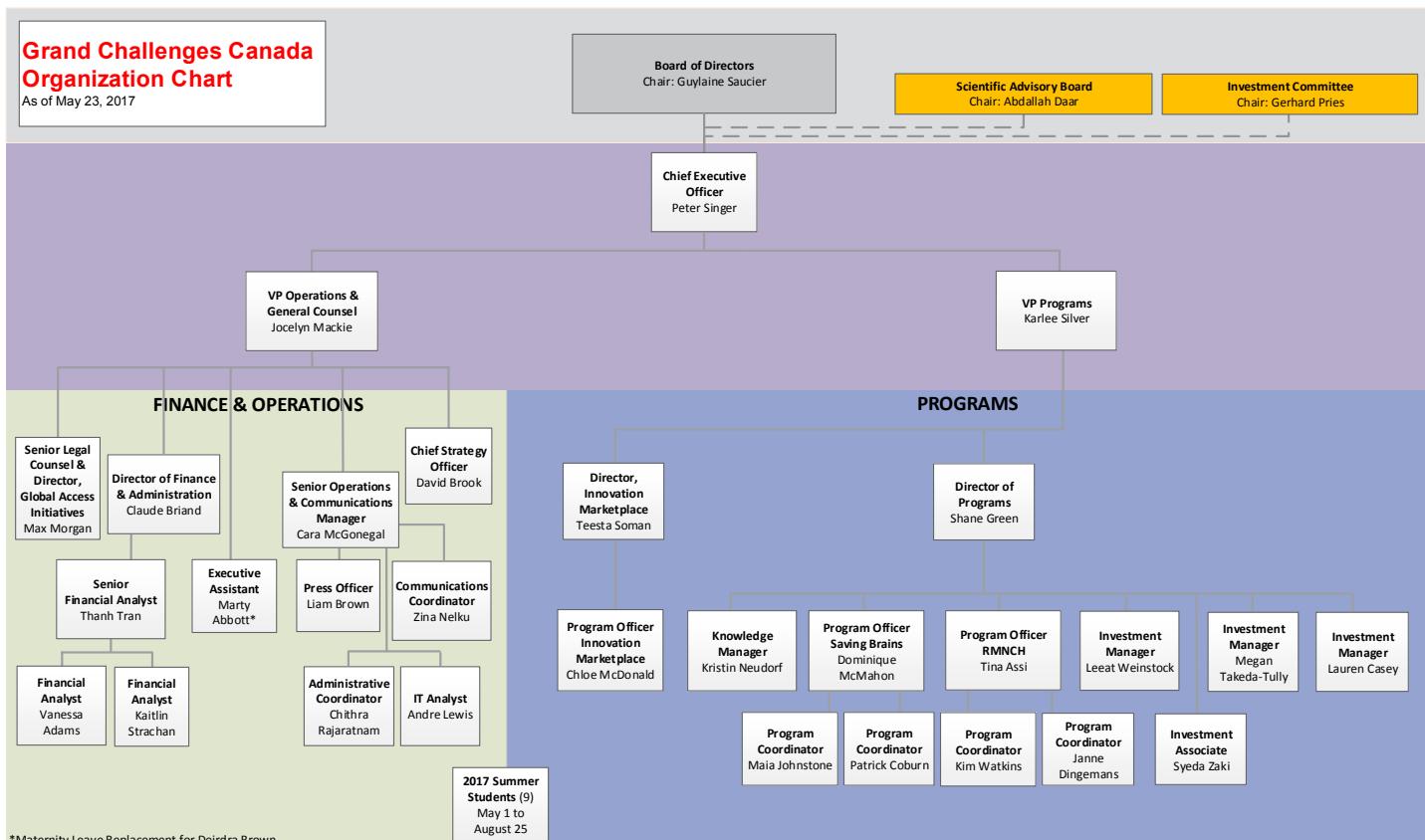
Annex 4: Summary of Strategic Plan to 2022

| GRAND CHALLENGES CANADA Summary of Strategic Plan to 2022 | | |
|--|--|--|
| VISION | Bold Ideas with Big Impact® | |
| MISSION | Saving and improving lives in low- and lower-middle-income countries and Indigenous communities through Integrated Innovation®. | |
| STRATEGIC PRIORITIES | <p>Primary: Maternal, Newborn and Child Health (MNCH), Global Mental Health, other Grand Challenges.</p> <p>Secondary: Develop and implement new models of innovation diplomacy (e.g., Israel), impact investing and social finance, and reverse innovation.</p> | |
| TYPE OF INVESTMENT | Proof-of-concept | Transition-to-scale |
| PROGRAMS | <p>1. Targeted Challenges</p> <ul style="list-style-type: none"> a. Saving Lives at Birth b. Saving Brains c. Global Mental Health <p>2. Innovator-Defined</p> <ul style="list-style-type: none"> a. Reproductive, Maternal, Newborn, and Child Health Stars in Global Health | <p>1. Transition To Scale</p> <ul style="list-style-type: none"> a. Reproductive, Maternal, Newborn, and Child Health b. Mental Health <p>2. Global Health Investment Fund</p> |
| AMOUNTS AND FORMS OF INVESTMENT | <p>1. Targeted Challenges</p> <ul style="list-style-type: none"> a. Grant, \$250,000 <p>2. Innovator-Defined</p> <ul style="list-style-type: none"> a. Grant, \$100,000 | <p>1. Transition To Scale</p> <ul style="list-style-type: none"> a. Grant and Investment, \$1–2 million <p>2. Global Health Investment Fund</p> <ul style="list-style-type: none"> a. Investment, \$2–10 million |
| HUMAN RESOURCES | Vice President Programs and Programs Team | Vice President Programs and Programs and Investment Teams |
| | VP Operations, Finance, Communications, Stakeholder Relations, Legal, IT, Human Resources, Events | |
| FUNDING SOURCES | <p>1. Existing Sources</p> <ul style="list-style-type: none"> • Global Affairs Canada Reproductive, Maternal, Newborn and Child Health, \$159 million (2015–2025) • Advancing Global Health Innovation, \$7.7 million (2016–2019) <p>2. Prospective Sources</p> <ul style="list-style-type: none"> • Mental Health (Global Affairs Canada, USAID) • Humanitarian Grand Challenges (USAID, Global Affairs Canada and other partners) • Indigenous Grand Challenges (Indigenous and Northern Affairs Canada, other federal departments and other funders) • Water (High Level Panel on Water) • Philanthropy/Grand Challenges Canada Foundation | |

Annex 4: Summary of Strategic Plan to 2022 (continued)

| | |
|---------------------------|---|
| IMPACT MEASUREMENT | <ol style="list-style-type: none">1. Outcomes (Lives saved and improved)<ul style="list-style-type: none">• Actuals, estimated, projected (Grand Challenges Canada Impact Dashboard)2. Performance Measurement Frameworks (Outcomes, Outputs and Activities)<ul style="list-style-type: none">• Global Affairs Canada Reproductive, Maternal, Newborn and Child Health Performance Measurement Framework3. Theories of Change and Metrics<ul style="list-style-type: none">• For each Targeted Challenge4. Qualitative Measures<ul style="list-style-type: none">• Success stories |
|---------------------------|---|

Annex 5: Organization Chart



*Maternity Leave Replacement for Deirdra Brown