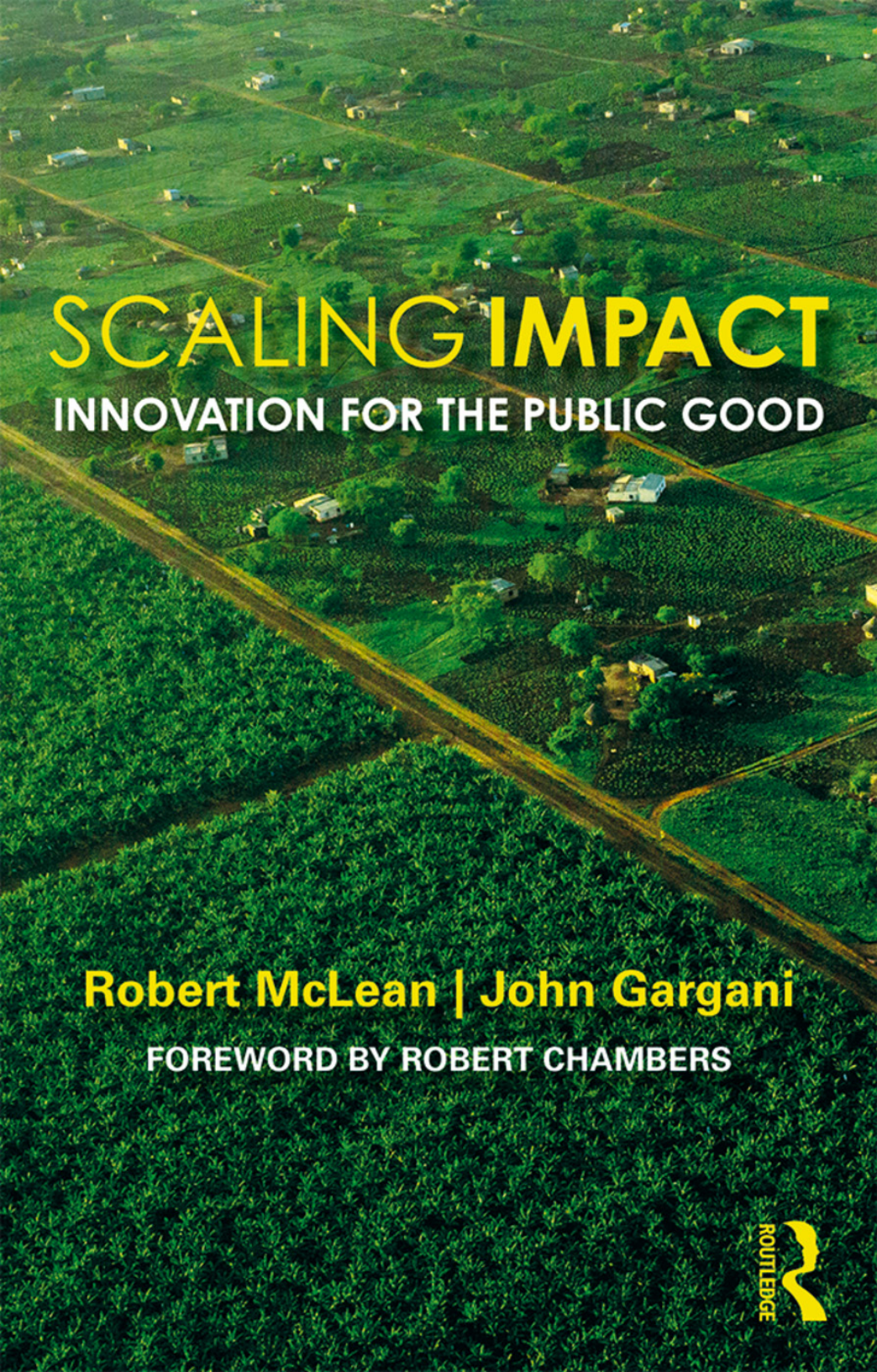
SCALING IMPACT
INNOVATION FOR THE PUBLIC GOOD
Robert McLean | John Gargani
FOREWORD BY ROBERT CHAMBERS
ROUTLEDGE

"Scaling social innovation is the great challenge of our days. *Scaling Impact: Innovation for the Public Good* contributes a new, eminently useable analytical framework thoughtfully applied to specific case examples that will help the readers in finding their way through the complex challenge of scaling for impact. McLean and Gargani's four guiding principles for scale, their focus on scaling pathways, their recognition that scaling involves tradeoffs, their concept of dynamic evaluation throughout the scaling process—these are just a few of the important takeaways from this important book. The clarity of their evidence-based analytical approach will appeal to the researcher, the clarity of their recommendations to the practitioner."

—Johannes Linn, Senior Non-Resident Fellow, The Brookings Institution and former Vice-President, The World Bank, Washington DC, USA

"This book is a thought-provoking contribution to a wide gap in the evaluation literature that demands urgent attention. The pressure is on for rapid evaluative learning to enable scalable, effective action on prevailing challenges. The authors offer a fresh approach to the concept of scaling and the integration of a flexible form of evaluation to deliver the right kind of information at the right time to amplify benefits to people and planet."

—Penny Hawkins, Principal Creative Consulting and former Head of Evaluation, UK Department for International Development, Glasgow and London, UK

"*Scaling Impact: Innovation for the Public Good* is an important contribution to our understanding of what works in development practice. McLean and Gargani first propose a set of four guiding principles for scaling social innovation, and then proceed to illustrate the relevance of these principles with the help of carefully selected and

insightful case studies. The book will be of great value to scholars and practitioners alike."

—Kunal Sen, Director, United Nations University-World Institute for Development Economics Research (UNU-WIDER), Helsinki, Finland

"This book makes a timely and important contribution to filling current knowledge gaps in how best to scale up potentially life-transforming social innovations. Drawing on experience and wisdom garnered from a diversity of settings around the world, it provides valuable insights and principles which will, undoubtedly, light the path forward for those striving to overcome the challenges of scaling, particularly in low- and middle-income settings."

—Jimmy Volmink, Dean of the Faculty of Medicine and Health Sciences, Stellenbosch University, Tygerberg, South Africa

"When resources are few, the need is urgent, and solutions are uncertain—how does one scale to create sustainable development? These are the complex questions that *Scaling Impact* addresses. In doing so, it turns to the Global South to provide an alternative worldview and asks—who decides the change, is the change for social good, and will it reach those that are too often left behind? 'Big' in ideas, the book challenges us to think beyond the conventional and linear approaches for scaling up. It studies emergent pathways, diverse development actors, and small catalysts for change, all the while ground-truthing the evidence in unpredictable contexts. By showcasing the core principles underlying the innovations in the Global South, we get a glimpse into an uncharted and exciting journey of development change!"

—Sonal Zavari, Vice-President, Community of Evaluators—South Asia and Regional Coordinator, Gender and Equity Network South Asia (GENSA), New Delhi, India

"Through a close look at real-life cases from the Global South, the authors have tackled a long-standing challenge in development—how to scale social innovation. By looking beyond traditional approaches to scaling impact, they establish important principles for scaling social innovation, address inherent tensions in the process, and present a framework that opens up options for the user, rather than suggesting a singular path to success. The approach merits serious consideration by those hoping to achieve scale in social innovation."

—Fred Carden, Principal, Using Evidence Inc., Ottawa, Canada

"It is recognized that social entrepreneurship can help expedite the achievement of several sustainable development goals; however, governments, regulators, and development partners have yet to fully learn how best they can facilitate the growth of such enterprises which pursue social impact. This book is a significant attempt to bridge this gap. It will be an immensely useful text for policymakers, funders, social entrepreneurs, and academia."

—Vaqar Ahmed, Joint Executive Director, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan

"Scaling science makes an important contribution to the growing literature on scaling. McLean and Gargani's juxtaposition of the 'science of scaling' with the 'scaling of science' is particularly welcome as are the nuances they provide for emerging concepts like scaling effects and optimal scaling and the focus the book places on engaging and amplifying the voices of clients, beneficiaries, and other stakeholders. Issues touched on in the book that I hope will continue to receive active attention include strategic management of the scaling process, the impact of context (particularly in fragile states) on scaling, the role of intermediary organizations in

supporting the scaling process, the distinctions between scaling business and scaling social impact, and the links between sustainability and scale."

—Larry Cooley, President Emeritus and Senior Advisor, Management Systems International and President, Society for International Development, Washington DC, USA

"A fascinating book that addresses critical development challenges. Based on several diverse case studies, the book presents the 'Scaling Science' paradigm, providing a set of guiding principles, pathways to scale, navigation strategies, concepts and categories, all illustrated with detailed examples. These are very useful tools for researchers, innovators, development practitioners, and all others interested in promoting the use of science, research, and social innovations for the public good through scaling social impact."

—Osvaldo Feinstein, Professor at the Master of Evaluation, Complutense University of Madrid, Spain and Buenos Aires, Argentina

"Wellcome's mission is to improve health for everyone. For many years, Wellcome has supported science and health research to generate new knowledge and innovations that will lead to improvements in health. We applaud IDRC for developing a set of guiding principles for scaling science that will help us all to have real world impact and make a real difference in people's lives."

—Chonnettia Jones, Director of Insight and Analysis, Wellcome Trust, London, UK

"In a world where 'more and faster' seems to be the mantra of funders and investors alike, this important book challenges our often naive notion of scale, and reminds us that 'each social innovation in its context requires its own

learning and adaptation' and that there is no quick blueprint for scale. While this is not a new revelation to some (remember *NGOs and The Replication Trap 1989?*) and may be disappointing to others who are under pressure to mindlessly put ever increasing numbers in dashboards, the authors offer a useful middle ground to help practitioners and policymakers embed the art and science of scale in institutional strategies and practice that is both open to learning, surprise, and fresh thinking, and yet is anchored and guided by the principles, evidence, and lessons of what works in different contexts—and where, in some cases, 'less, slower, and better' may actually be understood and embraced as the right metric for scale. Good luck to us all in implementing this much needed and thoughtful approach to scale!"

—Nancy MacPherson, Independent Adviser and former Managing Director, The Rockefeller Foundation, New York, USA

"This book is a welcome respite for down-to-earth reading, providing fresh thinking on scaling for impact. Most interesting aspects are the authors' perceptions on research for development and positive impacts for people and the environment—aspects often ignored by academia. The four principles of scaling impact provide solid and fresh approaches for thinking anew. The digest of about 200 cases world-wide and the detailed analyses of five cases represent a wealth of information for researchers and evaluators to ponder on. It is refreshing in its approach to guide how things should be done as in the case of designing, managing, and achieving scaling up—more is not necessarily better; some readers may get a feeling of unreality and may consider it a rebuff to the inquiring mind— because it is so different from standard texts. The wide array of examples brought out from Bhutan's road signs to Ebola in Congo to sexual violence in India bring some home truths and

fresh thinking on scaling and approaches. A must read for researchers and evaluators."

—Ranjith Mahindapala, President,
National Academy of Sciences of Sri Lanka,
Colombo, Sri Lanka

"Regardless of whether a person is called a researcher, scientist, innovator, student, or none of the above, the insightful and eye-opening experience obtained when reading *Scaling Impact* will undoubtedly affect one's perception of how we have been scaling science globally. The authors, through their writing and evaluation of Southern case studies, have challenged the traditional paradigm where innovations and organisations are scaled for commercial success rather than the impact itself being scaled for public benefit. The origins of science are rooted in a need for people to benefit but as the authors have rightly stated, those who bear impact risks are those people who should be benefitting. The importance of scaling impact through justifying, achieving optimal scale, coordinating, and dynamically evaluating are addressed in details that will inspire the reader to think differently about the process of innovation, the benefits of which will be reaped by the people who are being targeted."

—Zahra Oliphant, Chief Research Officer,
Ministry of Science and Technology,
Government of Jamaica, Kingston,
Jamaica

"*Scaling Impact* is not just a useful book but very interesting too. What works to successfully scale up programs from small pilots to large scales? Study after study has shown that there is a 'gap' in impact between pilot programs and scaled-up programs. McLean and Gargani use real-world examples to show what and HOW impact may be scaled up to benefit our lives. Usefully they also come up with value-filled principles that we can all use for decision making, implementation, and learning while planning

for scaling programs. I'd recommend it for people interested in program implementation and in evidence."

—Jyotsna Puri, Head, Independent Evaluation Unit, Green Climate Fund, Incheon, South Korea

"An eye opener! Particularly for those who have been struggling as researchers, evaluators, and practitioners with the challenge of scaling up innovations. The findings of this study focus on four guiding principles of Justification, Optimality, Coordination, and Dynamic Evaluation which are significant in the process of scaling impact. However, as practitioners we need to be aware of the interactions, overlaps, and coordinated efforts in real life situations which are subject to change over time. Using this framework with a sense of adaptability and stakeholder participation opens the way to *Scaling Impact: Innovation for the Public Good*. A shift of thinking and doing that will be essential in the context of the Sustainable Development Goals (SDGs)."

—Mallika Samaranayake, Chairperson, Institute for Participatory Interaction in Development and Founding Member & Past President, Community of Evaluators – South Asia, Colombo, Sri Lanka

"The popularity of the term 'scaling' is not matched by conceptual clarity on what it actually means, which harbors a major risk for superficial use, disillusionment, and doing more harm than good. Rob and John refocus it from 'pushing out as much of a technology as possible' to its core: Innovation for the Public Good. They remind us that scaling does not happen under controlled project conditions but that it is a process that happens in society at its own pace and in, sometimes, unexpected ways."

—Lennart Woltering, Expert on Scaling of Innovations for Agriculture, International Maize and Wheat Improvement Center (CIMMYT), Mexico City, Mexico

SCALING IMPACT

Scaling Impact introduces a new and practical approach to scaling the positive impacts of research and innovation. Inspired by leading scientific and entrepreneurial innovators from across Africa, Asia, the Caribbean, Latin America, and the Middle East, this book presents a synthesis of unrivalled diversity and grounded ingenuity. The result is a different perspective on how to achieve impact that matters, and an important challenge to the predominant more-is-better paradigm of scaling.

For organisations and individuals working to change the world for the better, scaling impact is a common goal and a well-founded aim. The world is changing rapidly, and seemingly intractable problems like environmental degradation or accelerating inequality press us to do better for each other and our environment as a global community. Challenges like these appear to demand a significant scale of action, and here the authors argue that a more creative and critical approach to scaling is both possible and essential.

To encourage uptake and co-development, the authors present actionable principles that can help organisations and innovators design, manage, and evaluate scaling strategies. *Scaling Impact* is essential reading for development and innovation practitioners and professionals, but also for researchers, students, evaluators, and policymakers with a desire to spark meaningful change.

Robert McLean is Senior Programme Specialist in Policy and Evaluation at Canada's International Development Research Centre. He led the *Scaling Science* exploration, which underpins this book.

John Gargani is Founder and President of Gargani + Company, Inc. based in Berkeley, California. He is Past-President of the American Evaluation Association.

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Robert McLean and John Gargani

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ABOUT THE COVER

Scaling impact is a journey of challenging decisions. Many will imply trade-offs with profound consequences for people and our planet. Rarely are there brightly painted lines showing right from wrong. Economy and human nutrition are not always aligned with the best interests of our environment; traditional ways of life will not always benefit from new technology. We hope the ideas presented in this book help innovators navigate these trade-offs with care. Big, fast, and flawed or small, slow, and beautiful—both have their place.

We thank Robin Hammond, founder of Witness Change and acclaimed photographer, for his inspiration and support for our work.

> One Hour north of Maputo, 1200 hectares of bananas are being grown for export. Single handedly, Dries Gouws, Bananalandia's founder, has turned Mozambique from an importer of the fruit to an

exporter. The company employs 2500 locals and has built a school, a clinic, roads, and 35 km of power lines to his farm and worker's villages. The company has plans to expand to 5000 ha over the next ten years.

Robin Hammond, WitnessChange.org

Aerial view of Bananalandia. 23 November 2013. Namaacha District, Maputo Province, Mozambique.

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ABOUT THE AUTHORS

Robert McLean is senior programme specialist with the Policy and Evaluation Division of Canada's International Development Research Centre (IDRC). He led IDRC's *Scaling Science* exploration, from which this book results. He is concurrently a research fellow in the Integrated Knowledge Translation Research Network based at the Ottawa Hospital Research Institute/University of Ottawa, where he leads research looking at the role funders play in turning innovation into action.

Rob's broad interests lie in understanding how human creativity might help to create a better world. He has worked across the public, private, and NGO sectors. His professional (and personal) life have given him opportunities in Africa, South Asia, South America, Europe, and some of the most isolated regions of Canada. He has published about these experiences and his work in venues ranging from *Nature* to the *Stanford Social Innovation Review*. Rob is growing increasingly undisciplined.

Rob is a PhD candidate in the Department of Medicine and Health Sciences at Stellenbosch University, South Africa. He holds an MSc from the University of Manchester, England, and two undergraduate degrees following studies at Carleton University, Canada and the University of KwaZulu-Natal, South Africa.

John Gargani is the president of Gargani + Company, Inc., a consulting company in Berkeley, California that has helped organisations achieve their social missions and measure their social impacts for over 20 years. John served as the 2016 president of the American Evaluation Association, the largest professional association for evaluators in the world.

John works with organisations of every type—non-profits, foundations, corporations, social enterprises, and government agencies—to design innovative solutions to social and environmental problems, and to evaluate their effectiveness and efficiency in rigorous ways.

John teaches courses on social entrepreneurship, programme design, and evaluation at Claremont Graduate University, and directs a research group developing new evaluation methods for impact investing, social enterprises, and pay-for-success funding mechanisms.

John holds a PhD in Education from the University of California at Berkeley, where he studied measurement and evaluation; an MBA from the Wharton School of the University of Pennsylvania; and an MS in Statistics from New York University's Stern School of Business.

Contributors to this book

The authors acknowledge the important contributions to this work from three colleagues and friends. Andréanne

Martel conducted the primary research underpinning the case study on gender-based violence in India (Chapter 8) as a component of an IDRC Research Award she held in connection with the *Scaling Science* exploration. At the same time, she contributed to the management of the project and the selection of case studies. Andrew Buchel contributed to the research behind the case studies, and facilitated an international meeting of development agencies, innovators, and researchers in Atlanta, Georgia. Robert Chambers penned the Foreword, which opens this book. Robert was a source of motivation, consultation, and inspiration for the entire project. All errors are the responsibility of the authors—not Andréanne, Andrew, or Robert.

Andréanne Martel is a collaborative research programme officer at the Canadian Council for International Co-operation (CCIC) in Ottawa. Since January 2017, Andréanne has been in charge of managing the Next Generation: Collaboration for Development programme, a joint initiative between CCIC and the Canadian Association for the Study of International Development (CASID) aiming to foster better collaboration between practitioners and academics in the Canadian international development sector. Prior to joining CCIC, she held a research award position in the Policy and Evaluation Division at the International Development Research Centre. Previously, Andréanne was the coordinator of a research centre on international development at the University of Québec in Montréal (UQAM), where she was in charge of an international network related to natural resources (REINVENTERRA), which brings together researchers from academic institutions and actors from civil society organisations from three regions (West Africa, South-East Asia, and Latin America). Andréanne holds a Master's degree in Political Science from UQAM.

Andrew Buchel is an economist, social sciences researcher, and evaluator who has nearly 15 years of professional experience. He has directly undertaken a variety of research work and managed numerous research teams. He is a trained econometrician, who is proficient with a range of quantitative and qualitative analytical techniques. Andrew has consulted with government and non-governmental representatives and facilitated discussions with clients of government programming both in Canada and abroad. He currently works in the private sector, as the senior director of Business Process Management for an international services firm. In addition, he owns and operates a research and evaluation consultancy. Andrew is a member of the Canadian Evaluation Society and is a credentialed evaluator. He holds a Ph.D. in Economics from the University of Manitoba.

Robert Chambers is a research associate of the Institute of Development Studies, at the University of Sussex, UK, which has been his base since 1969 with periods in other countries. His educational background is in natural sciences, history, and public administration. His main administrative and research experience in development has been in East Africa and South Asia. Among other work, he has been a field administrator and trainer of administrators in Kenya and East Africa; a field researcher in Kenya, India, and Sri Lanka; an evaluation officer with UNHCR; and a project specialist with the Ford Foundation in India.

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First, we thank the Policy and Evaluation team at the International Development Research Centre for their guidance and leadership through the course of this endeavour. In particular, inputs from our friends Tricia Wind, Amy Etherington, Lisa Woodward, Maggie Gorman-Velez, Mélanie Bougie, Hayley Price-Kelly, Hingman Leung, Avi Caplan, and Colleen Duggan. We also owe a debt of appreciation for leadership, patience, and an ability to see a bigger picture to IDRC's former Vice-President of Corporate Strategy and Communications, Joanne Charette.

From start to finish, this work was guided by a committed group of aptly named "Critical Friends". Their guidance was paramount to our understanding of the range of R4D this book stretches. We begin with the

indefatigable Chair of the *Scaling Science* Critical Friends, Lisa Burley. Lisa led us, supported us, and continuously pushed our thinking and practice for the better. The members of the Critical Friends are the reason this work is grounded and we thank them each for their different inputs to this project. They are Greg Hallen, Leah Mwai, Alvaro Paz, Carolina Robino, Peter Taylor, and Mathew Wallace. To all of our colleagues at the Centre that we spoke with about this work, we are sincerely grateful. IDRC's former Vice-President of Programmes and Partnerships Stephen McGurk, followed by Vice-President Federico Burone, both played important visioning roles. Finally, we are particularly thankful to colleagues in Montevideo, Nairobi, and New Delhi who took time to meet with us, and provide invaluable perspective.

The research on which this project is based benefitted from the input of brilliant friends and colleagues. Andréanne Martel was a key designer and implementer of the project that underpins this book. Without her leadership and determination none of this work would have been completed. Andrew Buchel contributed to this work with skill and efficiency. Andrew managed much of the work rounding out the case studies presented in this book with an optimistic yet critical eye. We are indebted to the researchers and the scaling partners we engaged for each of the cases presented in this book, as well as the IDRC Project Officers responsible for each of these stories. Finally, for their varied inputs to this project we acknowledge the important contributions of several key contributors from the IDRC Policy and Evaluation team over the course of this effort: Joanna Kocsis, Hanna Button, Kaitlyn Finner, Farida Hassan, Emma Fieldhouse, and Sandra Nduwimfura.

The publication of this book benefitted from the patience, understanding, and leadership of IDRC's Publisher, Nola Haddadian. We are thankful to Routledge, and in particular our lead editor Helena Hurd, for partnering with us and believing in the importance of bringing our stories, learning, and experience to print.

FOREWORD

Robert Chambers

How to enable good innovations to go to scale is one of the great perennial challenges and frontiers in development practice.

It is true that we know much about what not to do. We know, for instance, that pouring resources into specially favoured entities reduces the chances that their approach can spread. We have considerable experience of the ubiquitous problems of minimising loss of quality when administered programmes, whether governmental or NGO, are taken to scale. We know that too tight control, whether through ego and ownership, funding conditions or 'patented' commercial interests, can limit the pace and range of dissemination and adoption. But with too little control to assure quality, there are often problems of degeneration when social innovations escape their originators and spread virally, as has happened with some participatory methodologies.

At the same time, there is the experience of many centuries of straightforward and self-spreading dissemination. For

instance, through the market. In recent decades particularly, it has been through the diffusion of physical and practical innovations like those in agricultural practices and participatory methodologies where those who adopt and use strive for quality because they need it for their own benefit or that of their work.

What are less well understood or theorised are social innovations, the focus of this book.

If social innovation is taken to embrace all initiatives and enterprises that are designed to have a good social impact, the term embraces a wide range of phenomena. It includes initiatives of innovators, impact investors, funders, NGOs, social enterprises, and governments. The analysis and categories in the book are based on a review of over 200 cases, and, in more detail, of the five main case studies in this book. In these, a funding agency, the International Development Research Centre (IDRC), has collaborated with partners in initiating and nurturing complex social innovations and then is seeking to seed and spread these elsewhere. To understanding such processes, in diverse innovations and context, *Scaling Impact* contributes both empirically and theoretically. Empirically, it draws on research, reflection, and induction of cases. Theoretically, its concepts and categories provide fresh spectacles for seeing and making sense of widely contrasting phenomena, revealing new insights, and drawing practical conclusions. Encompassing all this, the emerging paradigm underpinning this book, *Scaling Science*, has an intended and ambitious double meaning: both taking to scale scientific research results which support social innovation and at the same time proposing principles and contours for a science of going to scale with social innovations.

The analytical categories derived, proposed, and used are striking and illuminating. The most salient are identified here to provide context for later comment. Three very

visible types of scaling of innovation designed for commercial success in the market are identified. Each has been dominant in its period and all three now coexist. They are: *industrial* in the nineteenth century—Fordist in its classical form with the mass manufacture of physical objects; *pharmaceutical* in the twentieth with patents and trade secrets; and *lean* in the twenty-first typified by Silicon Valley and rapid change and nimble innovation. For their part, social innovations cross cut all three, but are also distinct. They are also less visible or recognised. They may or may not use the market but when they do, they are defined by being designed to serve the public good.

For social innovations that aim to serve the public good, this book proposes four guiding principles for scaling. These four principles are derived from the practice of those who have aimed for good change—for people and the environment—across the Majority world. *Justification* is based on what is termed judicious scaling, which starts with values and the question why scale? and who decides? And then balances the promise of effectiveness and impact risk. The issues here are ethical. *Optimality* leads to optimising rather than maximising scale and takes account of trade-offs. The issues here are judgmental. *Coordination* entails a multi-level, collective perspective with participation of actors from many standpoints, and most importantly those likely to be affected by an innovation. The issues here are relational and, in a wide sense, political. Finally, *Dynamic Evaluation* rejects a linear view of change and entails continuous assessment, and asks not just does it work, but why does it work and under what conditions. The focus on the dynamism of scaling then takes the standard realist evaluation a step forward. With *Dynamic Evaluation*, innovators are positioned to question and re-question how the process of scaling can augment impacts in new contexts, and also over time. *Dynamic Evaluation* applies

to all social processes, most notably with challenges that are wicked, messy, and complex. The issues here are paradigmatic. And these four principles—*Justification*, *Optimality*, *Coordination*, *and Dynamic Evaluation*—and their applications interweave and overlap. They make it clear that going to scale with any social innovation will always require fresh thinking based on empirical evidence.

The wide range of relevance of the four principles is illustrated by the extent to which they have been applied to the presentation and analysis of the five very different, idiosyncratic, and unique main case studies featured in this book. These are spread over three continents and at the time of writing 10 countries—Argentina, Brazil, Costa Rica, El Salvador, Guatemala, Honduras, India, Paraguay, Peru, and Tanzania—plus a network stretching across the entire Majority world. The social innovations are strikingly different from each other—reducing infections from Chagas disease, fortifying sunflower oil, building a network of Southern think tanks, obtaining justice for women, and promoting healthy eating habits. It follows from this diversity that the strategies appropriate for their scaling have also had to be diverse. For Chagas disease in Central America, the strategy was the use of ecohealth interventions at the village and household level; for Vitamin A fortified sunflower oil in Tanzania, it was linking new products to the market in socially beneficial ways; for access to justice for women in India, it was training justice staff, preparing standard operating procedures, and spreading this to other organisations; for salt-reduction in Latin America, it was the coordination of an international effort promoting new policy; and, for the Southern Voice, it was building a shared vision and voice across a global network of policy research institutions.

Sustainability is an important dimension illustrated by these cases. Key variables to be optimised here are quality,

autonomy, speed, and scale. Where, as with adding Vitamin A supplements to sunflower oil, it may be that the market can come to be relied on with light controls, scale, speed, and sustainability may be relatively low cost and largely autonomous. At the other pole, as with a global network of Southern think tanks, sustainability, scale, and quality can depend on continuous and substantial resources and effort. In all cases, there may be trade-offs. There can be situations on which higher spread with some loss of quality may be morally justified because of the benefits of scale: more, faster, and less good may be preferable to less, slower, and better. This choice, as elsewhere, is between unknowns and incommensurables, and is a matter for the continuous application of the principles of dynamic adaptation, moral judgment, and optimisation with trade-offs. The choices are not easy. But whether and to what extent continued support and controls are required, along with the associated sustainability, have to be key considerations in choosing, designing, launching, and adapting any social innovation.

The *pathways to scale* with quality have been case and context specific. This reinforces the important conclusion that there is no blueprint. There is not any sort of template, but rather the four principles that apply across these and other social innovations. Above all, each social innovation in its context requires its own learning and adaptation, continuously applying the principle of *Dynamic Evaluation* to identify and navigate its own pathways. For this, as the case studies illustrate, the principles are interwoven and mutually supporting. They require revisits as projects and programmes of social innovation evolve. Values and ethical questions may themselves need reassessing in the light of learning, adaptation, and spread to new contexts.

Lessons can surely also be drawn from other experiences. But, ultimately, the combination of social objectives and the complexity, diversity, and unpredictability of each

environment demands that every social entrepreneur must be a continuous and rapid learner, in touch and up to date with realities, and creative, versatile, and nimble in response. As in much development work, it comes back to the individual actors. Behind these case studies are the champions who made the social innovations work, pointing to the challenge of how committed champions can themselves be multiplied or scaled up.

The theory, categories, and values summarised in this book, and their practical implications, will provoke and guide those who take them to heart. They break new ground and propose new language and concepts. For innovators and those who support them, they raise an important agenda.

Scaling Impact is a milestone on our journey, indicating where we are and giving us a compass for future directions. Those whose analysis and actions are informed and guided by this book should be able to contribute from their experience to the further evolution and illumination of practical concepts and categories.

PART I

Scaling Science—an emerging paradigm

1

INTRODUCTION

In early 2014, the Ebola virus began its devastation of West Africa, moving through countries, communities, and families with grim efficiency. Over the next two years, 60 percent of those infected with the virus died—over 11,000 people. One of the hardest-hit countries was Sierra Leone, which had just 136 doctors for more than 6 million inhabitants.

A brutal killer, Ebola renders its victims delirious and unable to cope on their own. Almost immediately, it fell to family and friends to act as caregivers. Ebola killed them, too. In the worst-hit areas, the virus eliminated entire families. Those who fell ill started running off to die alone rather than risk infecting loved ones. Eventually, social gatherings were banned, schools were closed, and households were separated. Society and the economy ground to a halt.

The crisis was unprecedented. Since Ebola was first detected in 1976, each of the subsequent 27 outbreaks was stopped in less than three months—until 2014. In 2018, another outbreak of Ebola in the Democratic Republic of Congo was again rapidly brought under control. Why did

the West Africa outbreak of 2014 last for two years and kill more than all other outbreaks combined?

A complete answer has yet to emerge, but two factors played a critical role. First, we lacked know-how. There were no pre-existing, evidence-based solutions to combat an outbreak of this magnitude. Second, the context was pernicious. A variety of circumstances, including unprepared health systems at the community, national, and international levels and social disintegration, compounded the problem and destabilised even the most holistic solutions.

In these types of circumstances, the way we usually scale solutions is ineffective. The traditional approach to delivering interventions at scale starts with the assumption that we have reliable solutions and favourable contexts. When this is the case, as it sometimes is, we are urged to scale 'what works' by efficiently allocating resources to organisations with evidence-based solutions. But as the Ebola crisis in West Africa demonstrates, this is not always the case. 'What works' is not always known, let alone ready for deployment and easily transferable to new settings. Instead, many of our most pressing problems are the ones we have been unable to solve, perhaps for years, decades, or longer. Most are not crises on par with an Ebola pandemic, but fixtures of the status quo. Issues that in the development sphere are often called *wicked problems*. So, how do we scale when we don't know what works?

Toward a new paradigm

In the absence of reliable solutions, or when new or changing contexts reduce the reliability of existing solutions, scaling depends on research and innovation.

For our purposes, research and innovation are broadly defined and often intertwined. Both occur along the entire

path to scale, starting with ideas that hold promise and culminating in impacts that matter. In this way, scaling comes from innovators and researchers who are connected to systems of diverse actors. Scaling depends on a dynamic body of evidence that develops before, during, and after scaling. Scaling solutions driven by research and innovation is justified by assessments of risk made by those put at risk, including those being served. Scaling implies that trade-offs and values are carefully considered. In essence, when scaling rests on research and innovation, it entails much more than resource allocation.

In this light, there is a need for a broader way of thinking about scaling that takes this uncertainty into account and can be applied to a broader range of contexts in which researchers, innovators, impact investors, funders, NGOs, social enterprises, and governments are currently acting.

We are witnessing such an approach emerging across the Global South. One of the organisations that is involved in combating the Ebola virus in West Africa is the International Development Research Centre (IDRC), a Canadian institution that supports innovations developed by natural and social science researchers in the Global South. Along with partners from West Africa and beyond, IDRC supported efforts to combat Ebola—from long-standing support to public health innovation in West Africa to rapid response mechanisms, including the trial and scale-up of a new vaccine.

The science behind clinical trials and large-scale vaccination is well understood. With some variation, it is the approach to scaling championed by organisations such as the Campbell Collaboration, What Works Clearinghouse, and 3ie. This approach has merit, yet it was not appropriate for a situation like the Ebola outbreak in West Africa.

Without turning their back on clinical trials and other accepted approaches to scaling, IDRC and its partners worked to end the Ebola crisis differently. Their effort is

one example of an emerging paradigm of scaling that we call *Scaling Science*. We have come to understand it through an expansive review of IDRC's work undertaken with the objective of using evidence and experience to develop a more systematic approach to scaling. The purpose of this book is to organise what we have learned into a set of principles, and, in doing so, contribute to our collective understanding of how to scale research and innovation in appropriate ways.

The term *Scaling Science* purposefully embraces two meanings. The first refers to the objective of *scaling scientific research results* to achieve impacts that matter. We define research broadly. In our review, it is a likely component and critical driver of innovation. It is how solutions to stubborn problems are generated. From this perspective, researchers are innovators, and innovators can be researchers.

The second meaning refers to the development of a systematic, principle-based *science of scaling* that this book will argue can increase the likelihood that innovations will benefit society. The aim is to contribute to building a culture of critical thinking on the topic. All approaches to scaling should be questioned, tested, refined, and used thoughtfully. We have learned time and time again from innovators in the Global South that it is the careful combination of imagination and critical thinking that leads to meaningful change.

Traditional scaling paradigms

Most of what we understand today about scaling up social change has been borrowed from 19th-century industrial expansion, 20th-century pharmaceutical regulation, and 21st-century technology start-ups. We refer to these as the industrial, pharmaceutical, and lean scaling paradigms. While there is much that we can learn from

these paradigms, they are insufficient for contemporary social innovation. They reflect a mindset in which organisations, rather than impacts, are scaled up. Scaling is an imperative, bigger is better, and the purpose of scaling is commercial success.

The industrial scaling paradigm is premised on the need to produce and distribute many standardised physical objects at the lowest cost. The key is operational scale, and it is achieved by exploiting the efficiencies of large-scale manufacturing and distribution. Its purpose is to increase market share and, if possible, secure monopolistic pricing power. Replication, franchising, and train-the-trainer models, which are common in the non-profit sector, are modern extensions of the industrial paradigm.

The pharmaceutical scaling paradigm is based on the need to capture the sole rights to an approved innovation. The keys are authority to scale, in which the government grants an innovator permission to scale up a drug based on phased clinical trials, and exclusivity of scale, in which the innovator is empowered through patents and trade secrets to deny others the right to scale up the innovation. The subsequent challenges of operational scale—the manufacture and distribution of a pill, for example—can be trivial in comparison. Around the world, this paradigm structures the development of market-based solutions that promote health and combat disease, as well as evidence-based programmes of all types implemented by for-profit and non-profit organisations.

The need to grow fast in a competitive market is the basis for the lean scaling paradigm. The keys are rapid learning, quickly iterating product designs to understand what markets value, and resource scale, securing timely funds in order to exploit what has been learned and grow market share. The lean development process—build a minimum viable product, bring it to market, learn rapidly

from customer behaviour, modify the product or pivot, and repeat—drives many of today's leading tech start-ups. Unlike pharmaceutical companies, these innovators do not require authorisation to scale, only the support of customers and investors, and they often find exclusivity difficult to enforce. As with pharmaceuticals, the problems of operational scale are usually negligible, especially if the innovators are selling intangible goods, such as software as a service. This is the paradigm that social entrepreneurs and impact investors are often encouraged to follow.

These three paradigms were formulated as strategies for achieving commercial success, not social impact. They do provide some useful guidance for social innovators who want to scale up impacts in certain areas, such as education, health, civil society, and public policy. A developer of low-cost irrigation systems for sunflower farmers, for example, may benefit from adopting elements of the industrial paradigm in order to expand production. Advocates for changing an environmental protection policy will likely benefit from the staged collection of evidence as one does with the pharmaceutical paradigm. And a non-profit e-health software provider may benefit from basing its development process on the adaptive and nimble elements of the lean paradigm.

The existing paradigms are not wrong when applied to social impact; they are incomplete. A more comprehensive approach will focus on an alternative or additional objective—the public good. With the *Scaling Science* paradigm, we set out to describe a framework that does just that. Our hope is that it will encourage innovators to consider scaling from a broader perspective, with tools that are inspired by the vast and eclectic problem-solving experience of the Global South.

Scaling impact

Scaling operations, revenue, market share, financing, and other aspects of an organisation's work are familiar concepts. Scaling in these contexts is synonymous with growth, and more is better. They are legitimate organisational purposes. But, when it comes to development efforts, the deeper interest is in scaling social impact. Social impact is not synonymous with growth, and more is not always better.

> ***Scaling impact is a coordinated effort to achieve a collection of impacts at optimal scale that occurs if it is both morally justified and warranted by the dynamic evaluation of evidence.***

Embedded in this concept of scaling lie four principles: *Justification*, *Optimal Scale*, *Coordination*, and *Dynamic Evaluation*. When these principles are not explicitly addressed, the public good may be overshadowed by other purposes—in particular, private gains or growth. *Scaling Science* is built on these four guiding principles, which are intended to help social innovators and researchers navigate the path from ideas to impacts. In the remainder of this book, we describe the *Scaling Science* approach. We discuss the conditions under which it has emerged, some ideas for putting it into thinking and action, and provide several current examples of scaling from the Global South.[1]

NAVIGATING THIS BOOK

The guiding principles for scaling—*Justification*, *Optimal Scale*, *Coordination*, and *Dynamic Evaluation*—comprise the central narrative of this book. These principles are inspired by our review of Southern innovation. They are four domains one may consider before, during, and after scaling. They provide a basis for transforming ideas into practical design, management, and evaluation strategies. We will argue that doing so increases the likelihood that innovation will result in impacts that matter. The four guiding principles are discussed in Part II.

Before turning to the guiding principles, the remainder of Part I introduces key terminology. None of this material is intended as definitive or conclusive—it is offered for positioning the ideas that follow.

Part III provides five examples of *scaling impact* from the Global South. From sexual violence to food security to balancing the global development playing field—each case illustrates how local innovators are working to create good change with innovation. We present these case studies to illustrate how scaling was designed, managed, and, in some cases, achieved in diverse contexts. They are worthy of emulation, but they have not been selected as 'winners'; they represent how Southern innovators are *scaling impact* and the ingenuity of those efforts.

Part IV describes a typology of *pathways to scale* uncovered through our review. Those involved in research and innovation may find practical value for their own efforts in this section.

Part V raises a call to innovators, researchers, and practitioners to join the debate and contribute to the co-development of the ideas presented.

COMING TO TERMS (OR CLARIFYING SOME NONSTANDARD TERMINOLOGY)

From research and innovation to impacts that matter

The topics of innovation, impact, and scaling bring disparate worlds together. Research, international development, impact investing, philanthropy, social entrepreneurship, and government have become more connected than ever as larger, more collaborative efforts to improve the world are undertaken.[2] In spite of this, a number of vital technical terms are defined differently across these spheres, and, in some cases, the same terms and concepts are used to mean different things. Debates about which terms to use and what they should mean have, in some cases, become contentious.

In this book, we do not suggest that some terms are better that others, or that some terms *should* always mean a particular thing. To the contrary, we acknowledge the diversity of our professional language and endeavour to learn from it.

Throughout this book, terms are used as labels for emerging ideas that may help readers consider how to scale more effectively. For example, later the term *Justification* is introduced. If it feels wrong for your professional setting, do not use it. Readers may relabel it, or any of the ideas, with terms that they, their colleagues, and their audiences find more useful. It is the idea that matters.

In addition, the language used going forward in this book is intentionally broad. This occurs for two reasons.

First, any position presented in this book does not depend on narrow definitions of these terms. So if readers wish to substitute a narrower definition of science for ours, for example, we believe they will find that it fits within the emerging paradigm of *Scaling Science*. Second, narrow terms may exclude some readers. A definition of science that snuggly fits the physicist working at her lab bench may not fit the anthropologist or philanthropist promoting gender equity. A broad definition is used to encourage inclusion.

Some broadly defined terms used frequently in this book include:

Science as the study of the social and natural world based on observation, analysis, synthesis, and evidence valuation.

Research as a scientific process of knowledge generation.

Innovation as a process of invention or improvement that is often, but not exclusively, driven by research and has the potential to affect a transformation for people, places, and things. When it does achieve this result, 'innovation' becomes an outcome.

Development as a process of good change in which all stakeholders may judge what is good.

Research for development (**R4D**) as research that is conducted to facilitate development.

Impact as one or more consequences, intended or unintended, of an action or actions. Innovators strive to create impacts that are meaningful to people, but

not all impacts are, and people may find different meanings in them. Some impacts may be considered detrimental.

Getting to R4D

Research for development (R4D) is the central focus of this book because it is the field we studied when reviewing IDRC projects. R4D is sometimes confused with research and development (R&D). We refer to the latter simply as research. We can think of research, innovation, and R4D as overlapping concepts. Research and innovation may be pursued with the intention of producing impacts of any kind. R4D is intended to achieve impacts that promote development—a process of good change in which all stakeholders may judge what is good. While this is its intention, R4D may have unintended impacts that are viewed by some as desirable or not. Similarly, research and innovation may have unintended impacts. All of this falls within the larger pursuit of science as illustrated in Figure 1.1.

From this starting line, the remainder of the discussion flows.

To sum up: the central focus of this book is scaling as it relates to R4D. To avoid jargon, and to use the language we hear most often from those this book aims to engage, we use the terms research and innovation, researcher and innovator, loosely to refer to R4D specifically. We are not staking a claim on what any of these terms ought to mean. The aim is to be inviting of many perspectives.

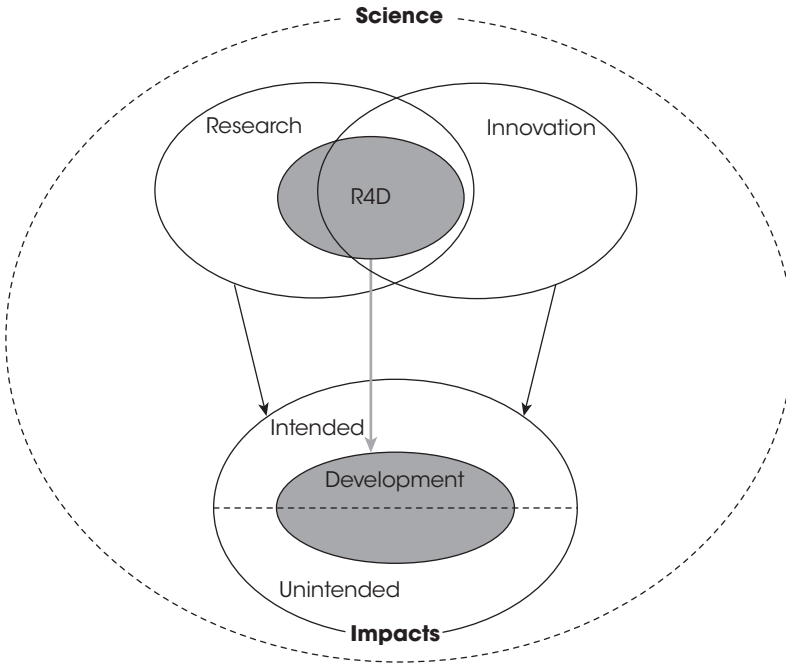


FIGURE 1.1 R4D as a part of science

Innovation is both invention and improvement

For the purposes of this work, innovation may happen through the discovery of something new or the fine-tuning of something which already exists. In its simplest terms, innovation is not only invention, it is also adaptation and improvement. To illustrate, let's return to the Ebola example mentioned in the introduction. A novel vaccine was an innovation that was urgently needed. However, the design of a programme to disseminate the vaccine required specific elements suitable to the rapid pace of the outbreak, the public health systems, transmission tendencies of the virus, and the social structure of affected West African communities. Innovation involved both an efficacious vaccine (the innovation

of a new product) and an effective vaccination strategy (the context-tailoring of a pre-existing programme).

Scaling is supplementary to 'knowledge translation'

Those coming to this book from a background in research—particularly the health sciences—will be aware of the well-developed theories and practical models for moving research generated knowledge into application. There are many terms used to describe this process—knowledge mobilisation, transfer, exchange, translation, to name only a few.[3] It is our view that scaling can supplement knowledge translation by pushing researchers to consider the benefits of knowledge and innovation beyond the uptake and application by immediate users. Scaling is concerned with optimising social and environmental impact, and, consequently, scaling requires knowledge creators (researchers and innovators) to think well beyond immediate knowledge users. Scaling encourages consideration of downstream applications, barriers, and opportunities for innovations to contribute to broad social transformation.

SCALING IMPACT

Across the development discourse, there are a number of ways that the process of scaling is described. These are often helpful terms for sharpening thinking and planning actions. They are also helpful for communicating to others how scaling will happen. Using the metaphor of growing fruit, we illustrate some common conceptions of scaling in Figures 1.2 to 1.5. Then we contrast them to *Scaling Science*.

A farmer has one tree that produces a few apples. What can a farmer do to produce more? Scale up and out.

Scaling up increases throughput. The farmer might nurture her tree, helping it grow larger and produce more fruit (see Figure 1.2). A health education programme might train more nurses. A policy research organisation might advocate for a greater catchment of a population to be covered by a new policy intervention.

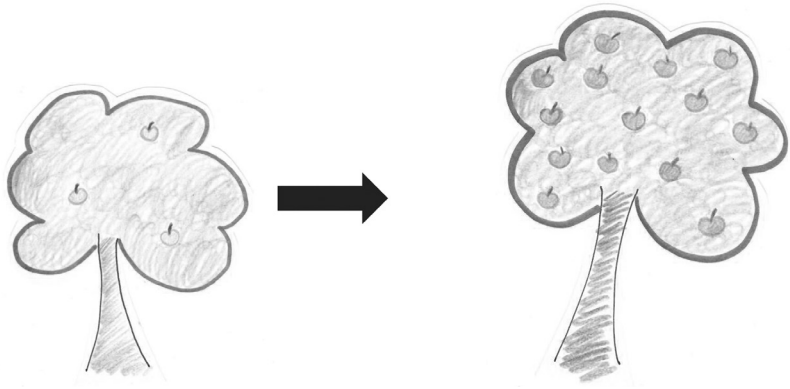


FIGURE 1.2 Scaling up: one tree ➡ big tree, more fruit

Scaling out expands sites or opportunities. Our famer would plant more trees with similar yield that collectively

produce more fruit (see Figure 1.3). The health education programme might open more training sites. The policy research organisation might promote the same policy at different levels of government, from local to national.

FIGURE 1.3 Scaling out: one tree ➡ many trees, more fruit

Perhaps farmland is limited. What might the farmer do if she wants to increase the quality of her offering? Scale deep.

Scaling deep affects quality and character. The farmer might let the fruit mature on the tree longer, allowing it to grow larger and taste sweeter (see Figure 1.4). The health education programme might train its teachers, giving new skills, increasing their effectiveness. The policy research organisation might use social media campaigns to increase the likelihood that their policies are established

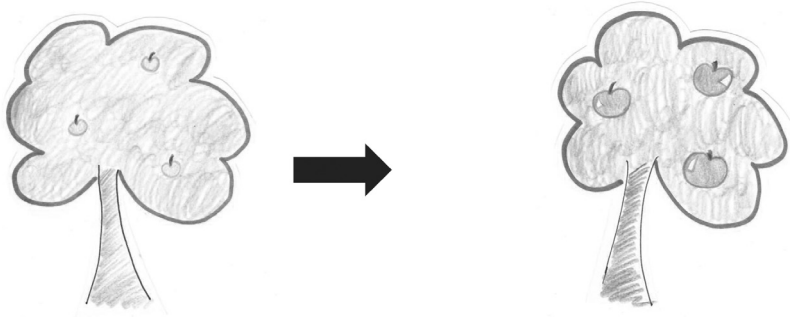


FIGURE 1.4 Scaling deep: one tree ➡ same size tree, enhanced fruit

and effectively implemented. A farmer, educator, or policy researcher can, of course, pursue more than one approach at once (see Figure 1.5).

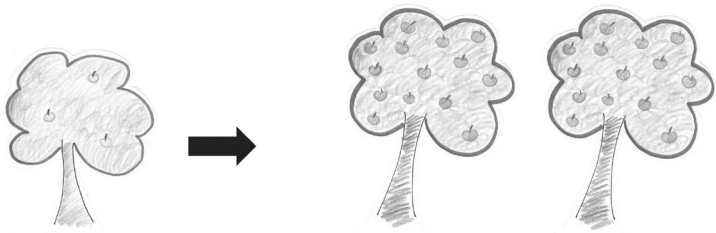


FIGURE 1.5 Scaling up and out: one tree ➡ several big trees, more fruit

In this book, the term scaling is used without modifiers like "up", "out", or "deep". We do not need to distinguish between these approaches. They describe how organisations or individuals change how they operate (in our fictional example: nurturing a tree, planting more trees, or varying maturation) in ways that change outputs (more fruit, bigger fruit, or better fruit). *Scaling Science*, on the other hand, focuses on impacts. Any configuration of scaling up, out, deep, or otherwise is acceptable if it improves impacts in meaningful ways.

What is desirable is to avoid the scenario illustrated in Figure 1.6. We want to avoid scaling up, out, deep, and so on, the innovation without a commensurate increase in the potential social benefit—or impact—of our actions.

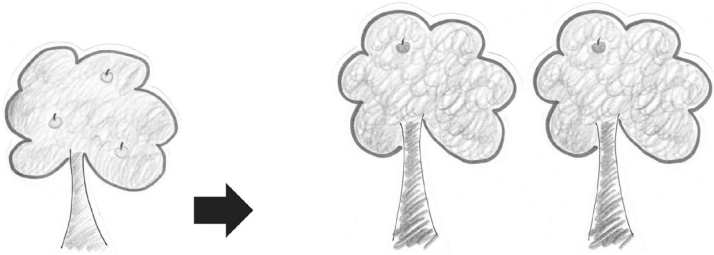


FIGURE 1.6 Scaling; NOT *scaling impact*

Scaling impact implies putting people and the environment first. From here forward, the term '*scaling*' is used in this text as short-hand for '*scaling impact*'.

To be direct:

> ***This book rests on the premise that it is desirable to optimally scale the impacts of innovation. Not the innovation, not the innovation programme, not the sales or production of the product developed, not the coverage of the policy created, not the size of the programme, and so on. These factors may or may not correlate to good change that people endorse. What matters when scaling is the positive impact the innovation creates for people and the environment.***

So let us imagine that our metaphorical farmer wants to scale the impact of fruit farming, not necessarily her fruit farm. How might the farmer plan the path ahead?

> **Scaling the magnitude of impact** helps the farmer realise larger impacts over greater geographies in ways that people value more. If the farmer's crops currently contribute only a little to the nutritional health of children, the farmer would want them to make a larger contribution for more children in more communities in ways that they and their parents endorse. This is the most common way innovators think about scaling. The farmer might do this by scaling up, out, or deep. Or, they might stop growing apples altogether (scale down) and begin to educate parents and children about nutritious food if they are determined to increase the magnitude of the same impacts.
>
> **Scaling the variety of impact** helps the farmer increase the number and type of impacts the fruit can have.

Alongside the nutritional health of children, the farmer might strive to improve working conditions for orchard labourers, she might offer an educational subsidy to workers and their families, or focus their efforts on community health. They may be able to accomplish this by scaling up, out, or deep, but other approaches, venturing further and in different ways into the system, may be a better fit.

Scaling the sustainability of impact helps the farmer increase the duration and reliability of impacts. The farmer may increase the magnitude of impact by scaling up production rates, but what happens when the farmer falls ill, or an extreme drought ruins production for a season? To scale impact for sustainability, our imaginary farmer might invest in succession planning for farm management, labour or a leadership training, and a development plan, at the same time she might invest in water management technology. These may be essential strategies for those wanting to scale impact over space and time.

Scaling the equity of impact helps the farmer distribute impacts more fairly or justly and address social inequalities. The farmer might promote equity by developing a progressive pricing scheme for the fruit, ensuring gender equality measures on the orchard, or transforming the orchard into a community-owned cooperative. Each of these changes might imply doing more for certain underserved members of a population, and less for those with less need. As a result, the farmer might generate greater impact from the same investments. It is difficult to imagine that scaling up, out, or deep would lead to these results. Instead, scaling while paying attention to the granularity of impacts is required.

Clearly, the story of our farmer is only a metaphor. But the message it brings forward is deeply important. The contemporary logic of scaling is all too often guided by a mindset that focuses on growth, expansion, and intensity. It is carried over from effective models of the private sector—from *Fordism* to *Lean*. These methods are useful for innovation in many circumstances. At times, good change may well align with private gain: the responsible production and distribution of nutritious foods makes this case well. At other times, good change is completely unrelated to private gain. Cases presented in this book about justice for survivors of violence, disease reduction, or levelling the global development playing field each tell this alternative story well.

The benefit of *scaling impact* is that it focuses innovators on what matters most. The weakness is that there are few existing models of scaling that one can turn to. The solution is for innovators to do what they do best—innovate. In an attempt to contribute, this book presents a number of strategies distilled from the experience of those who have aimed for good change in their work. The hope is that it helps to build a more systematic means of *scaling impact* for the public good.

PART II

Four guiding principles for scaling impact for the public good

2

ON GUIDING PRINCIPLES

This chapter introduces the concept of guiding principles, and how this approach offers unique value for innovators aiming to scale impact for the public good.

Guiding principles support creativity, originality, and structured risk-taking.

Guiding principles link individual actions to common objectives.

The research for this book incorporates interviews and discussions with colleagues working in development around the world. They include innovators, scientists, managers, and funders, some of whom hold positions that combined more than one role. From them, we learned about a number of frameworks that they use to help scale their efforts. They have found them helpful, and their experiences inform many of the ideas we present.

At the same time as our review of R4D supported by IDRC progressed, we realised that conventional frameworks did not accurately capture the ways in which Southern innovators have successfully scaled impact. We needed a different way of understanding and communicating what we were learning. We chose guiding principles. This brief chapter explains why.

The Uruguayan writer, Eduardo Galeano, offers a helpful metaphor for the collective power of common principles, in his 2012 *Children of the Days:*

> ***The technology of shared flight:*** *The first goose who takes off opens the way for the next, who clears the path for the third, and the strength of the third raises the fourth, who then helps the fifth, and the impulse of the fifth pulls along the sixth, who offers wind to the seventh . . .*
>
> *When the lead goose tires he goes to the back of the line and leaves his spot to another, who moves to the apex of the V the geese form in the air. Each takes a turn, forward and back, and none of them believes he is a supergoose because he flies first or that flying last makes him a loser.*

How to govern the complexity of scaling?

Frameworks offer a window on the world. A good framework helps us observe and understand a problem. A practical framework offers a systematic way to formulate a response. At their best, frameworks simplify what is complex in ways that are actionable.

But they have a downside—they are bounded. Frameworks in general, and those that are highly structured in particular, offer limited opportunity for adaptation and flexibility. Although they may serve as

windows on the world, what we see looking out the front will not necessarily help us to understand what is happening around back. The view presented is only a part of the picture; it may even be misleading.

Scaling impact is a complex process. It entails changing interrelated systems, in which multiple actors, norms, and cultures exert influence on impacts. It is critical for innovators to simplify this complexity. A highly structured framework might even help them identify, understand, undertake, and evaluate scaling. Yet, the bounded nature of frameworks also makes them risky to apply in the dynamic settings where innovation takes place. These are settings that are not passively changed by innovations, but can, and usually do, respond and react. At times, in ways that change the nature or effect of an innovation, and require counter-action by the innovator to continue to steer a course toward desirable impact. The settings where wicked problems stubbornly take hold. The settings where scaling matters.

Widely applied frameworks for scaling innovations are, for the most part, open to this criticism. Many describe a linear process of scaling up or out that tends to overlook the complexity of dynamic settings. Most emphasise the interests of the innovator, owner of the innovation, or the organisation scaling it, concealing the people affected. Most plot 'logical' flows of expected results from few to many. Rarely do they provide guidance on when to stop, slow, or forgo scaling, blinding innovators to the many trade-offs in need of balance.

The Social Innovation Spiral shown in Figure 2.1, proposed by Murray, Caulier-Grice, and Mulgan (2010), is one example of a popular scaling framework. The framework describes a sequence of sensible stages that (in this version) are: exploring opportunities and challenges;

generating ideas; developing and testing; making the case; delivering and implementing; growing, scaling, and spreading; and changing systems. It is difficult to imagine how an innovation can change systems without successfully completing the prior stages. The framework is logical. It defines the intermediate objectives innovators must achieve, it divides the work of scaling into manageable chunks, and it simplifies complexity.

But there is much it does not address. How do innovators know when they have generated enough ideas? When are they ready to deliver or implement their innovation? Can they pursue stages simultaneously, or must they be sequential? How should they handle dynamic contexts that respond in ways that hinder impacts? Is the framework appropriate in a crisis? Under what conditions should innovators not scale? Who decides?

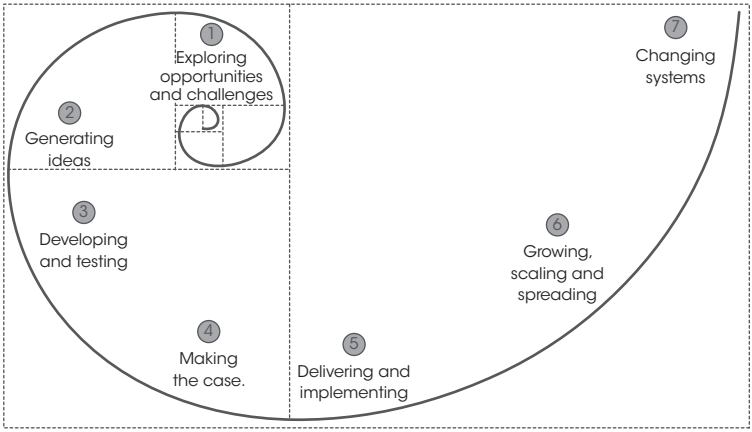


FIGURE 2.1 Murray, Caulier-Grice, and Mulgan's social innovation spiral

Source: NESTA 2014.

By raising these questions, we are not suggesting that innovators abandon frameworks like this. If they find one valuable, it should be used. Frameworks for scaling innovation are not wrong. They have constraints. Our objective is to strengthen them, not replace them, with four guiding principles for *scaling impact*.

Guiding principles: collective creativity

Guiding principles encourage creativity, originality, and structured risk-taking. Unlike conventional management approaches of direct often hierarchical control, guiding principles accept that decisions are made in context and that a degree of discretion is therefore required (Boncheck 2016).

What makes principles particularly useful for the purpose of *scaling impact* is how they can connect people to communities. Guiding principles operate at a macro level. When effective, they ensure that many small decisions made by people and organisations contribute to a broader objective, even if they face very different individual situations. Guiding principles are an alternative to providing direct oversight of decisions or explicit rules.

Guiding principles are comprised of vision and values. They identify a common vision of success that can be embraced by those making decisions. Guiding principles also establish the values that innovators should prioritise as they take action to realise their vision. Ultimately, it is values that will determine whether an innovation is judged a success or failure.

An illustration of guiding principles can be found on the mountain roads of Bhutan. Road signs in North America remind drivers of the rules they must follow.

Every few miles signs are posted that specify how fast drivers may travel under various conditions. They, along with countless other signs, are an effort to control/direct how people act.

In Bhutan, the signs remind drivers of the consequences of their actions without specifying how they should act. Memorable slogans, such as "Faster will see disaster", "Be Mr. late, not late Mr.", and "Safety on the road is Safe Tea at home", announce principles, not rules. They are rooted in a shared vision of safety and a widely held value that one's wellbeing and that of others is most important. Both the North American and Bhutanese authorities hope to save lives with their road signs, but drivers in Bhutan are more likely to realise the intent. And they are given greater latitude to decide how to accomplish that objective in their circumstances.

FIGURE 2.2 Guiding principle approach vs. direct management approach for managing speed on the road

Guiding principles for innovation

In Silicon Valley, California, some of the most prominent companies use guiding principles to promote creativity and risk taking. Google, for example, has *9 Principles of Innovation* and Wikipedia has its *Five Pillars*. While Google and Wikipedia have specific rules of conduct and incorporate traditional management directives in their work, both use guiding principles to do what rules and directives cannot—help people take effective action in dynamic settings.

Take, for example, the widely applied *Wiki* model of crowd-sourcing content. Many volunteers from around the world contribute a small part of Wikipedia's total content, which is subsequently edited by other volunteers. These efforts never stop. The organisation is not merely facilitating an ongoing collaborative writing process, it is constructing a social system. Principles, such as "Wikipedia is written from a neutral point of view" and "Wikipedia's editors should treat each other with respect and civility" help people to work together constructively, but they are not an ingredient-by-ingredient recipe for how to work together. Furthermore, the guiding principles do not and cannot override other critical conditions or standards in the environment in which Wikipedia operates, say, the rules of good grammar. But existing rules and standards alone are insufficient for success when positive change is the goal. Wikipedia believes this so strongly that its fifth pillar is "Wikipedia has no firm rules".

In scientific research, guiding principles are also common. Researchers are able to tackle singular problems in systematic ways by employing the principles of science as instantiated within their field. A researcher investigating the physical properties of a new synthetic material is informed by a shared vision of knowledge generation and values regarding accountability to peers and the uniformity of samples.

On the other hand, a researcher using participatory methods to understand the impact of a new health policy on families is informed by a different vision, improving health and wellbeing for all, and different values, accountability to the local community, and diversity in samples. Each set of principles reflects others at a higher order, such as accuracy and replicability. Each permits different actions across the two contexts and within them.

However, guiding principles are not a declaration that anything goes. If participatory researchers stray too far from principles of participation, peers will rein them in with peer review (at funding, publishing, and even ethics stages in the research process). Guiding principles do not relax the standards of quality under which researchers and innovators must work. They let those with the greatest knowledge and those most directly impacted co-create in their setting.

Guiding principles for scaling

We have aimed to make the results of our review of Southern innovation immediately approachable, practical, and actionable by presenting the many lessons as guiding principles, not a report of research findings or a more traditional step-wise scaling framework.

It has been the privilege of Canada's IDRC to work with Southern innovators for nearly half a century. We did not create the lessons derived from that experience; we have benefitted from them. In what follows, we describe a number of these lessons as they relate to scaling, summarise them as four guiding principles, and make some suggestions for how they might be put into action. The guiding principles we present in the following chapters represent four domains that innovators may consider before, during,

and after scaling. The principles remain a work in progress, and the starting place is a single sentence:

> ***Scaling impact is a coordinated effort to achieve a collection of impacts at optimal scale that occurs if it is both morally justified and warranted by the dynamic evaluation of evidence.***

3

GUIDING PRINCIPLE 1

Justification

Justification **encourages that scaling is governed for, and by, those who will be impacted by scaling.**

- ➔ Scaling is a choice that must be justified.
- ➔ The choice is made by the balance of evidence alongside values.
- ➔ The choice to scale is shared.

Key concepts

Scaling imperative The more-is-better mindset that innovations must be scaled in order to achieve impacts that are transformative, sustainable, or profitable. Typically, *bigger is better* logic.

Impact risk The risk borne by the people affected by an innovation that it fails to create impacts they judge

desirable alongside the risk that it creates impacts they judge undesirable.

Technical justification Basing the decision to scale an innovation on evidence that suggests it *can* create specific impacts.

Moral justification Basing the decision to scale an innovation on the balance of values *and* evidence that suggest it *should* create specific impacts.

Introduction

In the late 1970s, Muhammad Yunus began making small loans to the rural poor in Bangladesh. He was motivated by a belief that access to credit could transform their lives and those of their children. By 1982, he had provided almost 30,000 small loans through existing financial institutions, and a year later formed Grameen Bank to provide loans directly. Over the next 20 years, the bank made loans to over 3 million people, mostly women, and today it has over 8 million borrowers. Its success inspired a global microfinance industry, and in 2006 a Nobel Peace Prize was divided between Grameen and Yunus.

The Grameen Bank is often presented as a scaling success story in which an innovation created transformative impacts at scale through a combination of organisational, sectoral, and personal growth. Is it?

There was tremendous enthusiasm for microlending for more than two decades. It was hailed as a practical strategy to reduce poverty, promote gender equality, jumpstart regional economies, improve public health, and increase quality of life. But the faith that advocates and the public placed in microlending outpaced the evidence of its effectiveness. Perhaps more importantly, it obscured its potential for negative side effects.

In the 2000s, a number of rigorous evaluations were completed. Although results were mixed—especially by region

and type of microfinance instrument under study—these studies challenged the sweeping belief that microlending was producing the transformative impacts advocates claimed.[4] At the same time, other researchers and journalists documented a range of negative consequences. Predatory lending practices on the part of some banks left poor borrowers financially worse off, and a rash of suicides by borrowers across Andhra Pradesh were tied specifically to microlending.[5] The sector faced a backlash. In its wake, organisations contracted, the sector restructured, and regulations were established.

This is not to say that microlending has no merit. Rather, that it was scaled before banks and policymakers adequately understood how and under what conditions it has merit, it does good, and it can do harm. Lacking that understanding, scaling an innovation imposes unwarranted risk on those it is intended to benefit, as well as others who are affected in unanticipated ways.

Risk is an unavoidable feature of innovation.[6] When an innovation is introduced, one cannot fully anticipate the mix of benefits and harm it will create. Its promise stems from its novelty, as do its risks. Yunus, upon making his first loans in the 1970s, likely did not imagine that others would one day use microlending to disguise predatory loans. The concept of microlending was simply too new. Yet, had it been anticipated, could harm have been avoided? Could greater impact have been achieved?

To guard against risk, there are some common practices rooted in science and innovation, such as peer review, ethics boards, prototyping, pilot testing, and programme evaluation. They help innovators imagine what may happen and demonstrate what did. But no matter how diligent an innovator is, they will always be like Yunus to some extent, stepping into the unknown. There will always be some level of *impact risk*—the possibility that an innovation fails to achieve desirable impacts, alongside the possibility that it produces impacts that are not.

Impact risk is amplified by scaling. As an innovator strives to increase the magnitude, variety, equity, and sustainability of an innovation's impact, they become increasingly uncertain. Not only are there questions about the mix of benefits and harm an innovation may produce at a given level of scale, it is a new challenge to understand how scaling will affect the mix.

Given the challenge of impact risk, how might innovators proceed? Under what conditions is the impact risk warranted as innovations are scaled? And how can the risk be appropriately weighed by innovators, funders, governments, and businesses that do not bear it, but may directly benefit from scaling?

There is a sense that questions such as these are not being asked enough, yet are an essential part of justifying scaling. For example, Bradach (2003) suggests that programme directors ask "Is replication reasonable and responsible?" He challenges them to justify their decision to scale—or not—with their answer, and to base their answer on evidence of effectiveness. Likewise, Aarons et al. (2017) look to evidence for *Justification*. They describe how innovators can borrow strength from impact evidence gathered in different settings, and then use it before they scale.

In both of these examples, *Justification* rests on demonstrating that impacts *can* be scaled. This can be considered a *technical justification*. It requires a sufficient body of evidence that innovators may use to judge whether scaling will produce desired impacts and avoid those that are not desirable. Technical justification of this type is a central feature in how public goods are provided, and is increasingly being applied within development.[7]

The process of technical justification may vary depending on the nature of the innovation, the sector in which it falls, the context in which it is being scaled, and the partners on whom scaling depends. In general, innovators establish technical criteria that must be met in order to justify scaling.

They might include a minimum average effect size or a minimum number of studies demonstrating effectiveness in relevant settings or geographies. Then innovators review the body of existing evidence, weigh its collective credibility, and compare their conclusions to the criteria. Scaling is justified when the empirical evidence meets or exceeds the criteria.

Technical justification poses challenges, especially for innovations for which the body of pre-existing evidence may be thin. Importantly, the approach depends on a governing body or strong professional norm that prevents scaling in the absence of sufficient evidence. Nonetheless, technical justification is essential. Without it our approach to development does not embrace science, can be tremendously risky, and will fail to progress.

However, our review of Southern innovation has demonstrated that *technical justification* is insufficient for truly judicious scaling. Put simply, evidence that you *can* do something is not justification that you *should*. Many Southern innovators have adopted a more holistic approach. It can be considered a *moral justification*. It connects the rigor of technical justification with people's values. Like technical justification, it takes settings, geographies, and urgency into account because equal evidence of impact does not imply equal justification to act under all circumstances.

Justification promotes three postulates—scaling is a choice that must be justified, justification is informed by values alongside evidence, and the choice to scale is shared by the innovators and the people impacted. The following sub-sections further unpack this concept and provide practical suggestions on how it can be advanced while *scaling impact*.

Scaling is a choice that must be justified

Researchers and innovators can face substantial pressure to achieve impact. Often, greater impact for more people across

larger geographic areas in less time and at a lower cost. The pressure can stem from many legitimate sources, including an innovator's desire to help others, the urgency of a crisis, the requirements of funders, and the incentive of some type of reward. These pressures have coalesced into a generalised norm that stipulates scaling *should* happen. We will call this the *scaling imperative*. It is a more-is-better mindset, a belief that all innovations should be scaled as much and as quickly as possible because big problems require big solutions (and justify big rewards). Experience shows that one should be wary of the scaling imperative because, as in the example of microlending, it may push innovators to scale a potentially good innovation too quickly, too soon, or too far.[8]

To do better, it can be beneficial to think about scaling as a choice. As with all choices, the decision to scale must be justified. Fortunately, there is a countervailing force that moderates the scaling imperative—the innovator's responsibility to the people affected by her innovation. That responsibility may be met, in part, by how she incorporates uncertainty—or at least transparency about uncertainty—into scaling decisions. She can do this by working with stakeholders to establish their level of *acceptable impact risk* and use it to reach a mutual decision to scale (see Figure 3.1).

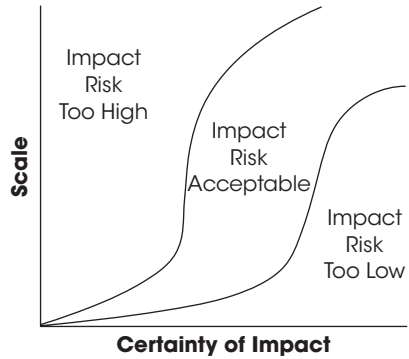


FIGURE 3.1 Acceptable impact risk

Scaling follows a developmental arc that, while often erratic, moves an innovation from a new idea to a meaningful solution. As it progresses along its arc, the innovation presents different levels and types of risk. Not only does the potential for good increase with scale (up to a point), so does the potential for harm. This is why scaling warrants caution. If innovators are too cautious, impact risk is too low and they withhold innovations that may be of value to people. If they are too rash, impact risk is too high and they may cause undue harm.

There is a middle ground: acceptable impact risk. The innovator has a responsibility to work with stakeholders to anticipate the potential benefits and risks associated with scaling, and to learn what risks they are willing to accept at each level of scale.

The *urgency* of the problem confronting stakeholders may change what they find acceptable. When the risk of inaction increases, they may accept more impact risk. If the time in which they must act shortens, they may accept even greater risk. Only the people who are affected can legitimately express what is acceptable to them under a given set of circumstances. Often, they rely on the innovators to construct a way for them to do this, and innovators might be anxious to do so because scaling is only justified when it imposes acceptable risk.[9]

Justification is informed by evidence alongside values

Consider an innovative educational programme that promotes gender inclusivity for an urban district. This district has faced challenges ensuring access to education for girls. The programme begins with a pilot study in a small number of schools. On the whole, the study finds that the programme generates positive results, and there is greater

inclusion of girls in classes. It also finds that customs mediate those behaviours in ways that negatively affect some of the newly included participants. A portion of the girls now find themselves and their families worse off in the immediate term, as their time is shifted away from traditional domestic and income-earning activities.

Navigating these murky contexts is familiar to researchers who apply technical criteria to evaluate the merit of social programmes. But scaling introduces new risks that are often overlooked when technical evidence of effectiveness is carried forward from one setting to another. Scaling the programme changes uncertainty, and uncertainty introduces upside and downside risk.

For example, if a national policy were enacted that made the programme mandatory in all schools, the mix of benefits and risks would probably change. While there may be evidence that some in urban settings will benefit and others not, there is no evidence about how the programme will affect rural participants or whether making it mandatory changes its effectiveness. Of course, establishing a national policy might also crowd out alternative programmes, some of which may be more effective or less harmful. It may also reduce the resources available to support programmes of different types that address other social issues of concern. It is difficult to anticipate systems-level effects such as these, and there is typically little pre-existing evidence about them.

A funder may decide that given this uncertainty, the technical justification for scaling is weak and choose not to support it. The risks of disturbance and negative consequences are simply too great. But what if those who stand to benefit believe the current situation is simply unacceptable? What if they believe that a greater risk is justified if scaling the programme held even a small chance of improving their lives? In this case, what one

group believes cannot be justified technically, another group believes can. Here, both groups are arriving at evaluative judgments that incorporate empirical data *and* personal values. Justifying scaling asks that both technical evidence and personal values are weighed. This is how impacts that matter, and that make the greatest difference, are targeted and achieved.

ACCEPTABLE IMPACT RISK IN CONTEXT

Urgency and Ebola

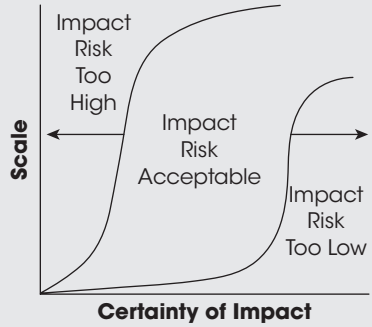
It is important to recognise that what any individual or group defines as an acceptable level of risk can, and should, change. One of the key considerations is the urgency of the need. The 2014–15 Ebola crisis in West Africa provides a clear example. With over 60 percent of those infected with the virus dying and more than 11,000 people killed over two years, the urgency for a scalable solution was high. As were the costs of inaction.

Had there been no Ebola crisis in West Africa, phased clinical trials followed by large-scale vaccination would likely have been judged appropriate. In this case, there would have been norms and laws regulating how the vaccine was scaled up. As the crisis exploded, however, human lives were increasingly at stake and the urgency of the problem grew. Accordingly, a riskier strategy was accepted. Those bearing the impact risk, including medical professionals, community groups, and policymakers in West Africa, were the driving force behind that decision.

There were no fully tested and approved Ebola vaccines. So the decision was made to move forward with a vaccine that had demonstrated early trial efficacy in Guinea. Working together, local and international actors devised an

innovative strategy of inoculation inspired by the approach used to eradicate smallpox in the 1970s. In this approach, a relatively small number of high-risk people (family, friends, and caregivers of known victims) were identified using network analysis and vaccinated. In the absence of an Ebola outbreak, this strategy would have imposed too much impact risk. In the midst of a deadly crisis, the risk was judged to be acceptable.

In the case of an Ebola outbreak, the range of acceptable impact was broadened.



The choice to scale is shared

Acceptable impact risk is the middle ground between action and inaction. But in reality, unlike our Figure 3.1, there are no painted lines that divide these possibilities. What is clear is who bears the impact risk—this is always the people and environment affected by the innovation.

Others will have intractable interests in scaling. Funders stake their capital, reputation, and opportunity. Innovators invest careers, recognition, time, and income. Governments

wager political power and public funds. None of these are small bets. However, none are inherently impact risk.

With some grand challenges, such as public health or climate change, it is possible that all stakeholders face similar risks, but it is not necessarily the case even in these situations. It is in fact rare that scaling social impact does not imply a power dynamic. This is why our review suggests that a legitimate justification for scaling must reflect a shared vision for action between the plurality of parties involved. We might summarise these as:

Funders: Traditionally, scaling decisions are made by those with power and financial resources. That may be the innovator who holds a patent, the organisations scaling the innovation, or investors seeking a profit. In development settings, power and resources are typically concentrated in the hands of external funders associated with governments and foreign development agencies. They have access to the resources that make scaling possible—but no matter how well-meaning and technically evidenced their actions may be, they do not have access to the same information about impact risk as those who will be affected by scaling. Funders have a legitimate voice in justifying scaling and can be the critical catalysts. Without funding, most scaling never happens. In cases of successful scaling, they are not the only voice.

Implementers: Scaling can be well-financed but ensuring the capacity and interest of implementers is critical. For example, an innovative procedure for an emergency caesarian may work well in one setting. The procedure may have a strong evidence base and generous government funding. But if medical training, skill sets, norms, and cultures differ across settings, the procedure may prove too challenging or even detrimental to scale.

Doctors may not know how to perform some of the techniques in the new procedure, or nurses may not want to abandon a procedure they have mastered and used successfully. In this scenario, scaling involves more than having the implementers—nurses and doctors—join the effort. It requires incorporating their insights, opinions, dispositions, and habits in ways that promote success. By helping them get what is most important to them, such as know-how, practical training, encouragement, and equipment, the innovation stands a greater chance of success as it scales.

Stakeholders: The people affected by scaling bear the greatest impact risk and are the ultimate judges of success. They are also the least involved in making decisions about scale. This is problematic. In our review, we have seen how community leadership, facilitation, and co-creation contribute to successful scaling.[10] Approaches such as these might be seen by some funders and implementers as a loss of control. But they never had control over the impacts of their efforts. To the contrary, working with stakeholders increases the level of control that all parties bring to scaling.

Scaling is a shared decision, but that does not imply that it requires all parties to share all power at all times. Like any good relationship, not only can power be shared, it can be divided based on preference or capacity. Stakeholders may not want to participate in all stages of scale for every innovation. How many needs assessments, customer surveys, and town meetings can someone participate in? What is important is establishing a balance of power that all stakeholders find acceptable and endorse. Our review indicates that the best way to understand how people want to share power is to ask them. Moreover, doing so makes the innovation more likely to scale successfully.

A JUSTIFICATION TO SCALE IN CLOSE QUARTERS

An illustration of a full *Justification* can be drawn from the Ecohealth interventions for Chagas disease prevention in Central America (fully described in Chapter 7 of this book). Here, the essential elements of an innovation were technically justified by substantial evidence—home renovation work combined with specific peri-domiciliary activities that could counter the spread of the insect species responsible for disease transmission in people's homes. However, as the intervention was readying for scale on a community by community basis, the implementers not only provided technical justification to community members about why the intervention should be undertaken in *their* homes, but allowed the community to decide what elements of the local culture and what local values must be maintained when this was done. In many cases, this involved letting the residents lead the renovations, in the way that was best for them. When this shared vision and commitment was established, the intervention was morally justified.

Justification in practice

Efforts to scale social innovations commonly start with *how* questions. An innovator might ask, "How can I influence policy with my research findings?" Governments and philanthropists might ask, "How can we use our resources to bring an innovation to more cities?" Financial investors might ask, "How can we increase the impact of an innovation in ways that also increase profit?" These are challenging questions worthy of serious consideration, and they are the subject of numerous research publications, case studies, and organisational dialogues.[11]

That being said, *How to scale?* questions are not an appropriate starting place. The more fundamental question is *Should we scale?*

Starting with *how* instead of *should* assumes that scaling is the right thing to do. It is a manifestation of the *scaling imperative*. Starting with *Should we scale?* helps to counteract the scaling imperative, and forces an investigation of values alongside evidence to judge which impacts are plausible and desirable. The answer to *Should we scale?* provides impetus, resolve, and technical evidence for how scaling might happen most effectively.

Figure 3.2 illustrates how that first step might lead to others through the process of appraising a complete *Justification* for scale. For example, innovations produce a collection of impacts, and innovators have a responsibility to anticipate as many as possible. The impacts they cannot anticipate will be ignored, to the peril of those who bear impact risk. The collection of impacts should not only include the ones that stakeholders find desirable, but those they do not. For each potential impact, innovators gather the available evidence, which will be of varying quality and relevance. The resulting collection of impacts—the plausible, implausible, uncertain, and unknown—is weighed against the values of stakeholders. They may judge some impacts desirable and others not, different stakeholders may judge the same impacts differently.

The purpose of this illustration is not to outline a replicable process map for *scaling impact* with *Justification*. *Justification* is a guiding principle, not a method of scaling. How decisions to scale are reached must be drawn in context, in ways that are suitable and responsible for that environment. Our review indicates that some strategies appear cross-cutting—approach scaling as a decision, respond with evidence of technical efficacy which holds a values-base, in a way that is grounded in the experience of those who will be impacted.

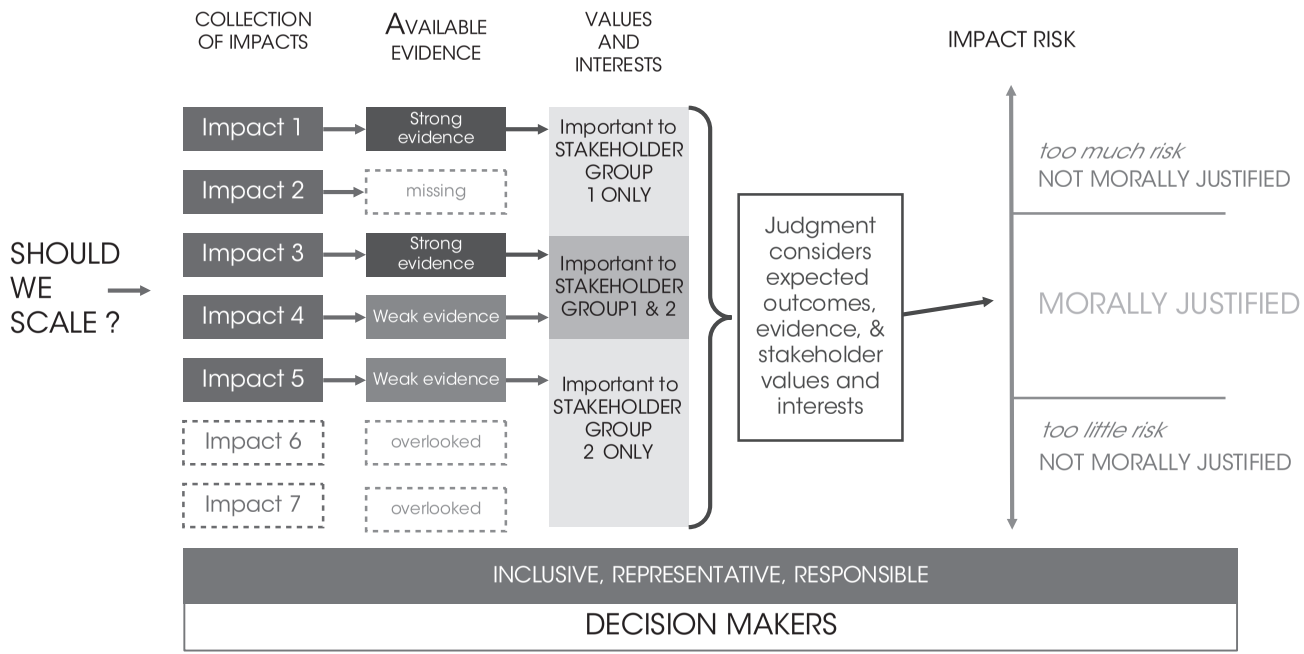


FIGURE 3.2 Should we scale? A hypothetical *Justification* to scale

And there will be complicating factors. Urgency, time, limited resources, and unexpected problems, such as a sudden economic downturn or outbreak of violence, may change the course of a scaling effort. What at first appeared routine may later warrant riskier action undertaken more quickly, or no action at all. There may be greater or lesser degrees of agreement about which outcomes are desirable and whether they have been improved. There may also be disagreement among stakeholders about their willingness to accept risk. Difficult decisions may need to be made about which stakeholder groups perspectives' matter, to what relative degree, and who decides.

Attending to these factors takes time and resources. However, that does not relieve funders, innovators, and others with power of their responsibility to act in ways that will be endorsed by each stakeholder. There is no ready-made way to meet this responsibility. The guiding principle of *Justification* is a way to approach this challenge systematically.

Conclusions

1. Scaling is a choice that must be justified

In the contemporary landscape of social investment and funding, scaling has become an imperative. Innovators are pushed to achieve impacts that are transformative, sustainable, or profitable in a short span of time because this demonstrates success and value. In response, they may rush to scale, believing they have no choice because their financial support will be withdrawn otherwise. But innovators do have a choice, and sometimes it is better not to scale. Unless innovators can approach scaling as a choice, they are more likely to impose unwarranted impact risk.

2. The choice to scale is informed by evidence alongside values

Credible evidence of impact matters. It reveals what an innovation *can* change about the world. However, the decision to scale is not based solely on evidence, it also rests upon the values of those affected. Values tell us what people believe *should* be changed. The values people hold give shape to their desires and interests, and they influence what people perceive to be a problem, the urgency with which it must be solved, and the merit of competing solutions. Values also determine the extent to which the interests and desires of others matter, and whether people are willing to forgo some portion of benefit for themselves in order to increase that of another. In the end, people use evidence to judge whether scaling advances their values and achieves what they believe is right. From this perspective, *scaling impact* is a value-laden objective. When scaling considers values alongside evidence, it is more likely to create welcome change.

3. The choice to scale is shared

Innovators, funders, and others who scale an innovation are stakeholders, as are the people impacted directly and indirectly by the innovation. All have an equal right to realise its potential benefits and avoid its potential harm. However, the latter group bears the majority share of impact risk. Their stake in the innovation is profound, in some cases a matter of life and death, and they should share in the decision to scale. There are many ways for them to take part, some more appropriate than others given the context and circumstances. When done well, impact risk is not imposed but agreed. In the absence of shared decisions, innovators and funders may be unduly influenced by the benefits scaling presents for them over the risks it imposes on others.

WHY IS 'SHOULD WE SCALE?' A MORAL QUESTION?

While the terms 'ethics' and 'morality' are often used interchangeably, many philosophers would argue that there is a distinction between the two. Most broadly, ethics is the systematic study of morality. Due to this, ethics is sometimes referred to as moral philosophy. But what is the precise distinction?

Morals can be understood as an internally situated set of personal values that one directs outward.

Ethics are external standards, often imposed upon a particular group (for example, research, medical, or engineering ethics).

Ethics seek to resolve moral questions by defining sound standards of right and wrong, often formulated in terms of rights, duties, virtues, or utility. Different ethical frameworks can provide different answers to a moral question, each of which would be the right course of action under their respective systems. One way to conceptualise the difference is to understand ethics as a toolkit for making moral decisions or solving a moral problem. Which toolkit you use will depend on your moral convictions; your understanding of where the good lies.

So, to answer the question "Should we scale?", we must articulate a moral belief that it is the right course of action; that, in this context, scaling is 'good'. How we understand that 'good' will depend on which ethical principles we adhere to, and that, in turn, determines which criteria we use to justify going to scale.

4

GUIDING PRINCIPLE 2

Optimal Scale

Scaling will nearly always imply trade-offs. The search for optimal impact—not maximum impact—governs scaling toward balanced and judicious results.

- ➔ More is not necessarily better.
- ➔ Scaling produces a collection of impacts.
- ➔ Impact at *Optimal Scale* balances the magnitude, variety, sustainability, and equity of impacts in ways stakeholders endorse.

Key concepts

Intended impact The set of desirable impacts that an innovation sets out to produce and the undesirable impacts it sets out to avoid.

Collection of impacts All the impacts created by an innovation, including those that are undesirable as well as those that are unanticipated.

Magnitude How much impact is created, which may include the average size or quality of impacts, how many people benefit or are harmed, and the importance, value, or merit of impacts as judged by stakeholders.

Variety How diverse impacts are, which may include the number of different impacts that are produced, the number of levels at which an impact is created (individual, community, and societal), the number of independent ways that an innovation creates the same impact, and the range of contexts in which the innovation is effective.

Sustainability How long impacts last, which may include the duration of impacts experienced by people, places, or things; the length of time over which an effort to create impact can be continued; and the period in which countervailing forces (resistance to antibiotics, market forces, and social norms) have yet to render an innovation ineffective.

Equity How fairly impacts are distributed, which may include prioritising access according to need, not replicating or increasing existing inequalities (gender, wealth, race, and ethnicity), ensuring that one group does not benefit while another is unduly harmed, and balancing the benefits and harm experienced by individuals in ways they judge acceptable.

Endorsement An ideal that may not be fully achievable—if all stakeholders had all available information about the impacts of an innovation, its alternatives, and the contexts in which it would be used, they would choose to scale the innovation (or not) as the decision-makers did.

Shared decisions A way of promoting wide endorsement by ensuring that a diverse group of stakeholders (including those who are impacted) make decisions, and that the voices and values of those who are not decision-makers contribute to the decisions.

Optimal Scale The point at which magnitude, variety, sustainability, and equity of impacts are balanced in a way that is widely endorsed.

Introduction

At a 2006 ceremony hosted by the Clinton Global Initiative, over USD16 million was committed to scaling a promising clean water solution in sub-Saharan Africa known as PlayPumps. The funds were provided through a public-private partnership, which included the United States Agency for International Development and The Case Foundation. With great enthusiasm, then First Lady of the United States of America Laura Bush announced the expansion effort, which was intended to bring clean drinking water to 4,000 communities and schools. The pumps had a proven track record, and the financial and social capital supporting their expansion was remarkable. Few scaling initiatives are as was well positioned for success. Yet it failed to meet its scaling objectives and is widely considered a cautionary tale.

There are many reasons the effort did not succeed, which have been discussed and debated extensively in the development community. Three important reasons are related to an oversight of the principle of *Optimal Scale*.

First, the scaling initiative was premised on a more-is-better logic that did not account for context. In general, providing more access to clean water for those without it is better. In this instance, providing more access with one type of pump was not. PlayPumps were built into a piece of playground equipment called a roundabout. As children spin the roundabout they activate the pump, which in turn carries water to an elevated storage tank. When members of the community want water, they do not need to operate a hand pump. They simply turn a tap and gravity does the work. PlayPumps are a labour-saving device that can

be effective in a limited context—a setting where enough children play consistently, at the same game, and at a location that is accessible to residents of a village small enough to have its water needs met by the capacity of the storage tank. Given these restrictions, installing more PlayPumps in more settings is not necessarily better. Installing more in the right settings may be.

Second, innovations do not produce a single impact, per se, but a collection of qualitatively distinct impacts. Innovators should consider the entire collection when they scale, not only the intended impacts that form their stated purpose. Innovators may judge some impacts desirable and others not. Other stakeholders may judge impacts differently. In addition, stakeholders may not anticipate all impacts, so there is always uncertainty. Nonetheless, those who drive scaling are responsible for the entire collection of impacts. Among the anticipated impacts of PlayPumps, funders considered three to be important and desirable—improving health, reducing labour for women and girls, and increasing school attendance for girls. Many of the poorest, however, did not view school attendance in the same light. Even if the pumps saved their daughters, nieces, and cousins hours of labour carrying water every day that might be spent at school, they could not afford to lose labour that could be put to use in other ways to help support the family. Effectively, for the poorest, school was not considered the next-best alternative to carrying water, with so many other needs unmet. The case of PlayPumps shows how two critical stakeholder groups—funders and families—had impact plans for the innovation that were different, and unfortunately misaligned.

Third, scaling efforts are successful when they balance trade-offs among impacts. The purpose of scaling is to change the collection of impacts produced by an innovation, and four critical dimensions of change are: magnitude, variety, equity, and sustainability. Promoting one can hinder

another, which was the case with PlayPumps. The pumps were designed to be a sustainable solution. The elevated water towers hold billboards that can generate advertising revenue used to support the maintenance of the pumps, allowing them to remain in operation indefinitely. But promoting sustainability in this way adversely affected magnitude (how much impact the pumps provide) and equity (the fair distribution of clean water to communities). It created an incentive to install PlayPumps at sites that were attractive to advertisers but had less need of the pump. Conversely, it created an incentive to avoid sites that were likely to benefit from the pump but unattractive to advertisers. Considered in isolation, more sustainability is better. However, when considered in combination with equity, it is not 'better' because it results in a distribution of pumps that would not be considered fair. Optimal impact balances trade-offs like these in ways that stakeholders endorse.

PlayPumps is an anecdote, but the challenges are not unique. The second guiding principle is intended to challenge innovators to remember that solutions to social and environmental problems have an *Optimal Scale*, and rarely is it the maximum. There are trade-offs when scaling that typically make an intermediate level of scale the most desirable. Although defining *Optimal Scale* is a cornerstone for scaling, the process of doing so is complex. Internal factors like one's skill-set constrain the ability to scale. While external factors such as available resources and political or sociological context influence the way scaling happens.

Three strategies have helped IDRC-supported researchers traverse these trade-offs and this complexity. This section outlines each, and illustrates ways they might be considered in practice.

First, optimality requires being strategic about the level of impact we reach for, and purposeful about its measurement—innovators should challenge the more

is better logic of scaling. Second, it requires a keen eye on the collection of impacts innovation creates. Third, *Optimal Scale* is a holistic concept, which asks researchers to duly consider the magnitude, variety, equity, and sustainability of their work.

With Guiding Principle 1, we have suggested that a *Justification*, drawing on evidence and values, should form the basis of any attempt at scaling. With *Optimal Scale*, we suggest how a response to that *Justification* might be constructed. The two—as are all the principles—are closely linked.

More is not necessarily better

Social innovators often speak of their desire to create "more impact" by scaling. It's an economical expression that conveys an intention to do more good for more people. Taken at face value, however, it reflects an overly narrow view of impact as something that is quantitative (we can have more or less of it), undifferentiable (we need not consider what kind, only how much), and fungible (we can offset harmful impact with an equal amount that is beneficial). Limiting as this view may be, it can easily lurk in one's thinking and influence how we scale. It may lead us to pursue more, when we truly seek to achieve better.

Setting quantitative and qualitative goals, and matching success measures

Understanding impact at *Optimal Scale* stretches well beyond reductionist, quantitative counts such as the number of beneficiaries served or affected. Other goals, such as improvements to a programme's accessibility for particularly underserved subpopulations or cost-effectiveness gains, can increase overall impact in important ways. At the same time, qualitative aims such as satisfaction or sense of ownership can deeply improve people's lives. In essence,

Optimal Scale is a multidimensional concept that requires an equally nuanced collection of measures of success.

Scaling can be supported by big impact claims and objectives, but these statements are usually tied to impact 'counts'. These can be important mission or vision statements and provide aspirational benefit. But it is critical that when these types of statements are used, they are accompanied by more meaningful measures. Aiming for "one thousand graduates" or "saving millions of lives"—though bold imagery—can instigate unhelpful scaling designs.

A guiding principle for *Optimal Scale* reminds us how the quantitative and qualitative aspects of any measures that we choose are inseparably linked. This is because each time we count to establish a quantitative measure, we necessarily make a judgment about the qualitative features that define what we are counting.

For example, a scholarship intervention may be successful in graduating a thousand students with particular skills for the workforce, but this count only tells us that a thousand people were able to meet the criteria for graduation at their given institutions. It does not tell us about the requirements for graduation, the quality of the education, nor whether these graduates will be prepared for further education or work. A scaling design that considers only the goal of one thousand graduates, without considering the qualitative underpinnings of this goal, could start it down the path of expanding a low quality educational programme—for the sake of growth in graduate numbers. In this case, it is entirely plausible that the benefit for a population can be greater from doing very well on a small scale than doing less well on a large scale. In sum, the qualitative and quantitative elements of impacts are linked and the way in which we define impacts should be carefully considered when determining *Optimal Scale*.

Setting goals is an important part of any social undertaking, and this includes scaling. So too is changing our goals

as internal and external conditions change. An unexpected increase in scholarship funding from the arrival of a new sponsor or an outbreak of political turmoil and a university strike may completely change the potential impact. What we deem as optimal impact should move in response to these changes that might have been within our control or completely extraneous. The concept of dynamism is acutely addressed under the fourth Guiding Principle, *Dynamic Evaluation*.

Endorsement

Scaling impact challenges us to think in terms of advancing the public good. This can be a challenging objective. First, it raises the question of *who* defines 'better' or 'good change'. Ideally, it would be defined by all stakeholders in a way that all find agreeable, a concept we'll call: endorsement. It accepts that there will be uncertainty around *impact risk* and suggests that broadening perspectives can provide a practical tool for understanding complexity.[12] It links closely to the guiding principle of *Justification*.

One way to approximate endorsement is to ask those affected by the innovation to define 'better' or 'good change'. From this perspective, this is where a scaling journey begins, if it is to be legitimate and hold likelihood of success. Doing so can include a transparent discussion of 'optimal' change. This may be done in many ways, such as matrix voting, well-being ranking, or other methods developed for Participatory Rural Appraisal.[13] Regardless of the method, it should reveal the range of perspectives on what constitutes better, provide a way of reconciling different perspectives, and furnish a way for stakeholders to share decision-making.

Another way is to include stakeholders in and throughout the innovation process in its entirety. This idea is seeing rapid growth in the health innovation sector. For example, implementation research is increasingly calling for

stakeholder engagement in asking initial questions, testing scaling assumptions, and deciding how to scale.[14] Scaling with those affected—say patients—helps innovators to make values-based decisions, but, also, to understand the full collection of impacts an innovation may generate earlier.

Another broad consideration is to support stakeholders with the greatest vested interest (upside and downside *impact risk*) by having them lead and direct the scaling process. Placing funders and actors required for scale as implementers serving the affected stakeholder group.

Of course there is no right or wrong way to ensure a wide endorsement. Each situation will require a tailored approach. What is important is that *Optimal Scale* is endorsed by the people who stand to benefit and lose—not just those with the idea or the money or power to grow it.

Collection of impacts

Like many working in the field of development, social innovators tend to focus on the positive impacts they want to bring about. These form their intended purposes, and they scale innovations to achieve them. However, an innovation has the potential to create many impacts in addition to those that are intended, and innovators are responsible for all the resulting impacts. We refer to them as an innovation's collection of impacts. We can describe a collection of impacts using the DIA model (see Figure 4.1). DIA is an abbreviation that stands for desirable, intended, and anticipated dimensions that allow one to place impacts in categories. Mapping, and carefully re-mapping, impacts across these categories can help with endorsement, design, and monitoring.

1. *Anticipated versus unanticipated*. Stakeholders are able to predict some potential impacts before an innovation is scaled, but not all. This creates uncertainty

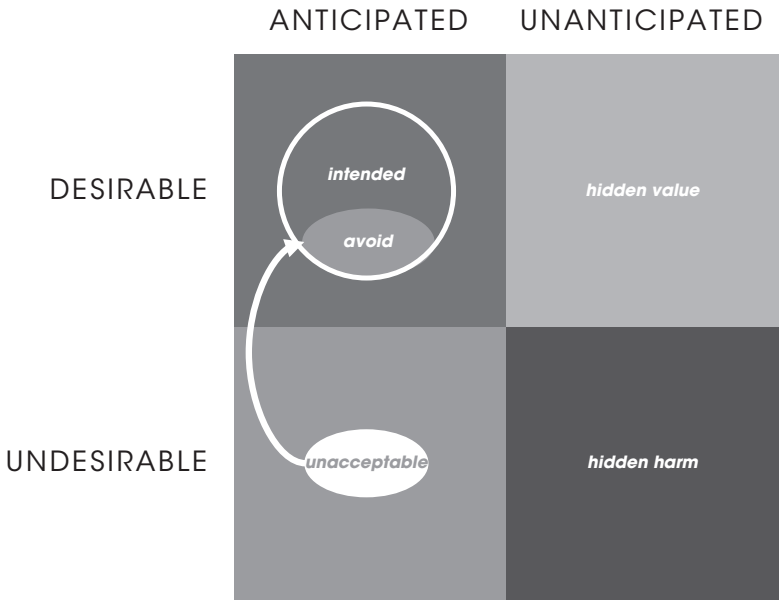


FIGURE 4.1 Desirable, Intended, and Anticipated (DIA) impact model

regarding the success of an innovation because it may create value or harm that is hidden from view. To address this, innovators are challenged to anticipate as many potential impacts as possible. This is best accomplished by engaging the people who are/will be affected by the innovation in the planning and decision-making. Doing so will reduce uncertainty.

2. *Desirable versus undesirable*. Stakeholders may hold different views about which impacts are desirable and which are not. Unless innovators and funders understand the diversity of stakeholder perspectives, they may unintentionally promote one group's view of success over another's. To promote success for all, innovators again benefit by engaging stakeholders in both planning and decision-making.

3. *Intended impacts*. Stakeholders judge some impacts to be more important than others. An innovation should create the impacts they judge most desirable in order to achieve success, and it should avoid those they judge most undesirable. In combination, the impacts to be created and avoided are the intended impacts of the innovation.

A holistic view of optimal scale

Research and innovation can lead to a collection of impacts. Scaling *changes* this collection of impacts. A collection of impacts may change in any number of ways. Four of these dimensions are related to magnitude, variety, sustainability, and equity. Considering these four dimensions of impact encourages a view that stretches over space, time, and within the granularity of a problem. Figure 4.2 demonstrates the multidimensional nature of *Optimal Scale* that this way of thinking provides. This holistic view of

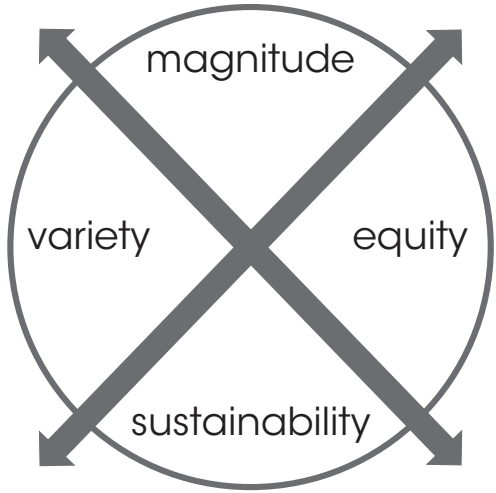


FIGURE 4.2 A holistic concept of *Optimal Scale*

impact is useful to detail in a log frame, theory of change, business plan, or other relevant planning tool.

Where:

Magnitude tends to attract the most attention. The magnitude of a collection of impacts is increased when more people are affected, people are affected to a greater degree, impacts are experienced over greater geographies, and people value how they are affected more deeply.

Variety refers to the number of different impacts an innovation produces, the levels at which impact is produced (individual, community, and societal), and the number of independent ways that an innovation produces the same impact. Variety addresses what is in the collection.

Sustainability addresses the dimension of time. It depends on the length of time impacts persist, how long an effort to create impact can be continued, and how long it takes countervailing forces (resistance to antibiotics, market forces, and social norms) to render an innovation ineffective.

Equity is about fairness. It depends on how the distribution of impacts reduce, reflect, or increase inequalities in a society, and how benefits and harm are distributed across groups.

Most of the time an innovation cannot be scaled in a way that simultaneously improves impacts along each of these four dimensions. As an innovation is scaled, the collection of impacts changes, which in turn changes the trade-offs innovators face. *Optimal Scale* is the point at which the magnitude, variety, sustainability, and equity of impacts are balanced in a way that is endorsed.

Conclusions

1. More is not necessarily better

If the decision to scale has been adequately justified, judicious scaling still requires deliberation. To do this, those involved in scaling must think quantitatively and qualitatively, and receive a wide endorsement for how progress, failure, and success will be judged. Small and beautiful or big and flawed—both can be optimal under different conditions.

2. Articulate and evaluate the collection of impacts that scaling generates

Rarely does scaling create only 'the impact' declared in the ultimate or final outcome of a log frame or logic model. Scaling generates a collection of impacts that will present a mix of benefits and costs to intended and unintended stakeholders in a scaling process. Aiming for *Optimal Scale* encourages those involved in a scaling process to consider the full spectrum. This includes the intended, unintended, desirable, and undesirable changes that scaling may induce.

3. Optimal scale is holistic

Considering four dimensions of impact (magnitude, variety, sustainability, and equity) encourages a mindset that stretches over space, time, and within the granularity of a problem space. *Optimal Scale* implies these components, and the trade-offs that can arise between them, are named and considered.

5

GUIDING PRINCIPLE 3

Coordination

Scaling impact for the public good rests on a dynamic mix of relationships. *Coordination* encourages designing, engaging and adapting within this system.

- → Scaling takes place in complex systems.
- → Complexity requires a flexible scaling process.
- → *Coordination* connects an evolving set of actors to the scaling process.

Key concepts

Scaling system The setting in which an innovation is scaled, which is defined by the people, places, and things that affect and are affected by the scaling process.

Scaling process A flexible set of stages that move an innovation toward impact at *Optimal Scale*.

Evolving set of actors The people and organisations responsible for implementing part of the scaling process

and ensuring that other actors enter and exit the process as needed.

Portfolio approach A strategic means of coordinating multiple innovations to optimise impact and opportunity.

Introduction

Most of the time, a single researcher, innovator, organisation, or other actor cannot improve a social or environmental problem, no matter how bold their scaling objective, on their own. Scaling for impact depends on many. They may be partners working collaboratively, rivals pushing each other competitively, or stakeholders advocating collectively. They may vary in their interests and values, and be motivated by a mix of altruistic and selfish purposes. This messy web of actors poses challenges that may be overcome by focusing on how we 'coordinate' the scaling effort, which encompasses more than the word may first imply.

A guiding principle for *Coordination* is premised on a model of scaling as a system with leverage points that may be used to influence how scaling unfolds. Innovators (or those who may be involved in guiding a scaling process)[15] gain leverage by helping their innovation move through flexible stages of development while upholding their responsibility to the interconnected people, places, and things affected by it. When successful, innovators are able to coordinate the actions of diverse actors with multiple agendas and perspectives in a way that balances private interests and the public good.

How this plays out for scaling is necessarily a case-by-case development. But we have learned that attention to factors of *Coordination* do facilitate impact at *Optimal Scale*.

The Livestock Vaccine Innovation Fund is one example. It is a partnership between IDRC, the Bill & Melinda Gates Foundation, and Global Affairs Canada to develop,

produce, and commercialise innovative vaccines against livestock diseases in sub-Saharan Africa and South and Southeast Asia.[16] The fund coordinates the collaboration of diverse actors as they identify local needs, develop appropriate vaccines, and scale impact through uptake and implementation. A directed approach like this puts innovation in the driver's seat. In the current parlance of grantmaking organisations, directed coordination is often referred to as "collective impact".[17]

Unlike many examples of collective impact, the development and scaling of livestock vaccines may require the coordinated entrance and exit of different collaborators at different levels of scale. Researchers doing the discovery science on vaccine candidates, for example, are rarely the same researchers who test vaccine efficacy in the field. Moreover, researchers are not likely to be responsible for commercialising and distributing animal vaccines to farmers. The actors playing a role in *scaling impact* can change as scaling happens, and this requires a plan that incorporates anticipation, reaction, and facilitation.

An alternative approach to *Coordination* is undirected. Here, coordination entails working together to develop organic systems—such as networks, markets, and professions—in which the independent efforts of many actors become self-organising. In this model, leadership is less central and directive. It is a meaningful way of addressing structural and systems issues that require multiple innovations over prolonged periods of time. It is also a means of inviting those affected by issues to play a part in addressing these issues, on terms that match their perspectives, wants, and capacities.[18] The Community of Evaluators South Asia, a regional professional organisation, offers a powerful example of this approach. They have helped to develop evaluation systems in governments, universities, NGOs, and the private sector across eight South Asian countries. Their work has contributed to improvements in

social enterprises in Bangladesh, sanitation programmes in India, the measurement of Gross National Happiness in Bhutan, and many more positive results. The Community of Evaluators did not plan these outcomes in advance, and neither did their funders. Rather, they arose from the undirected interactions of the members of the organic system.

As the examples of the Livestock Vaccine Innovation Fund and the Community of Evaluators of South Asia show, there are many ways *Coordination* can amplify impact, empower, and leverage. In the following sections of this chapter, we discuss how systems, an evolving set of actors, and scaling processes can benefit from *Coordination*. We also offer a few conceptual models as a starting place for action.

The scaling system

Complexity obscures cause and effect. As such, many have viewed complexity as a challenge that requires solving. In some cases, this is appropriate. But, this approach represents a reductionist way of thinking, innovating, and scaling. It can simplify, but it will also limit knowledge of a scaling environment and undermine efforts. As you will see in the five case studies presented in this book, complexity is an inseparable part of development. Accepting it, rather than ignoring it, is a more realistic way of moving forward. We argue that accepting complexity can also be an opportunity. This section introduces a means of modelling a scaling environment, called a scaling system.

First, we must recognise the plurality of people, places, and things that affect or are affected by scaling. We may be tempted to focus exclusively on people. Funders, implementing agencies, investors, innovators, and stakeholders are the ones who value (or not) the impacts created by an innovation, and, to varying degrees, they are the ones who have power and agency over the scaling process. But innovations may also affect places, which include both natural and built environments. Examples are the ecological

effects of scaling-up agriculture projects by expanding farmland boundaries or production of a certain grain or vegetable over others, or the human food system effects of introducing animal vaccines to improve farming productivity. In addition, scaling is contingent on a multiplicity of non-discrete, implicit, and explicit things. Things such as institutions, culture, social norms, and even ideas. As an exercise to expand one's gaze, it may be useful to imagine that places and things have an interest in how they are affected and their ability to respond. How would a forest ecosystem respond to being managed in a way that preserves most of it but sacrifices some part to provide income for human residents? What wishes would a culture express if an innovation were likely to change it? This is not to say that places and things are explicitly capable of thought, emotion, or action, but the answers to these questions, which must come from a variety of stakeholders, help reveal what is valued and reminds us to keep the complete set of impacts in our frame.

Second, we need to accept that the people, places, and things within a scaling system exist for their own purposes. They are rarely agents of a scaling process, until they are engaged or affected. At this point, they may begin to function within the scaling system in many ways—as initiators, enablers, competitors, or the impacted. The roles are not mutually exclusive, meaning people, places, and things may function in more than one way.

Initiators make it possible to begin a change in scale. They might include innovators, funders, experts, permissions, know-how, a willing community, land with a specific set of attributes, or cultural acceptance. More than inputs, they are the complex arrangement of elements that must be in place before a change in scale can begin.

Enablers are the people, places, and things that, in combination, facilitate the scaling. They may include

service providers, professionals, policymakers, distributors, a factory, a community, or government agencies. Under an industrial paradigm, enablers are the ones who build a new factory or train workers to use a new manufacturing process. They may engage in almost any kind of activity, from passage of legislation to the distribution of fertiliser.

Competitors are the people, places, and things that, in combination, offer a next-best or better-than alternative to scaling the innovation. In commercial settings, the competition would include competing companies and substitute products. When *scaling impact* for the public good, the roles of competitors can be tremendously varied, but they should not be overlooked. An open field may compete with an innovative latrine designed for use in rural settings. The configuration of farmers, habits, and land that make current agricultural practices appealing may compete with efforts to introduce an innovative policy. Researchers', institutions', and innovators' ideas may be competing through a collegial scientific debate. A challenge for innovators scaling for impact is recognising when it is in the interest of the public good to yield to competitors.

The **Impacted** are those who realise scale. They feel the positive and negative results of scaling, and hold greatest control over the ultimate outcome of any scaling effort. They control success whether or not they are empowered through the full scaling process. They can be people, places, or things.

A diagram of the interconnected elements of the scaling system, as described above, appears in Figure 5.1.

The people, places, and things impacting or impacted by an innovation are all elements of an interconnected network. Not all impacts are anticipated and some are difficult

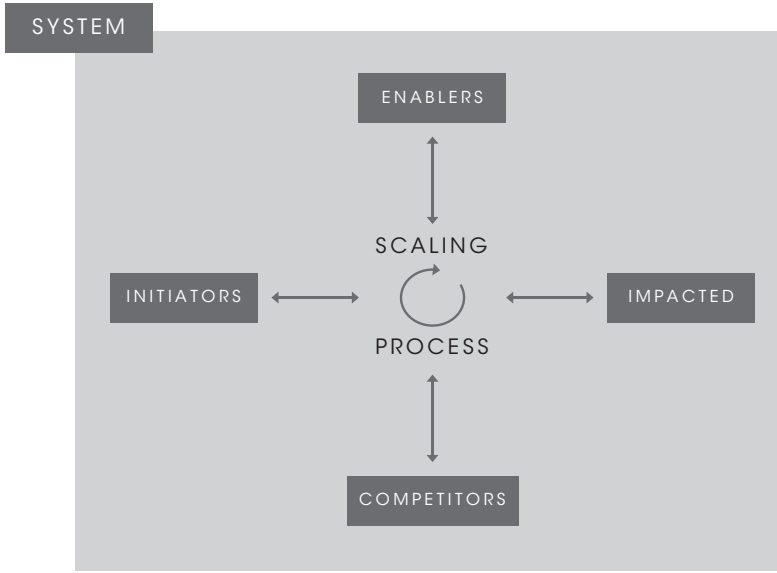


FIGURE 5.1 The scaling system

to measure, so some of those impacted may not be identified unless innovators search for them. This is one role that *Coordination* can play. Innovators have special responsibility to this group and a duty to include them in decision-making and progress assessment.

The central feature of the scaling system model is the scaling process, which interacts with the people, places, and things acting in the four roles. The extent to which they influence the process, or are influenced by it, is a function of the power they have within the system. The way that power is arranged in the system may or may not serve the greater good. The purpose of coordinating scaling is to bring that power into alignment around an objective, creating impact at *Optimal Scale*. This *Coordination* role may be accomplished by directly managing the scaling process or creating an enabling environment in which it unfolds in an undirected manner. Charting the scaling system can help in either scenario.

Above all, *Coordination* efforts should be flexible. Innovations may have impacts that have not been anticipated or may fail to produce impacts that were intended. As impacts take root, stakeholders may begin to value them more or less. Flexibility and openness to change is the key for *Coordination*. We turn to this next.

Coordinating a scaling process

Scaling can be organised in many ways. Let's start with a simple sequence of three stages that captures what may be the popular conception of scaling (Figure 5.2).

FIGURE 5.2 A simple, three-step approach to scaling

It starts with the development of an innovation, then efforts are made to distribute the innovation on the largest scale possible, and finally the impact of the innovation is evaluated. Perhaps a commercial venture to bring a product to customers would follow a similar process if it were competing against other companies racing to bring their alternative products to market. But this model is not exclusive to the private sector. Often, government public policy driven from political ideals and public promises unfolds in such a way. However, the process is inadequate for most research-driven scaling. It is too simple and evaluation comes too late to result in impact at *Optimal Scale*. In this section, we outline how this basic approach can be improved upon it in at least seven ways. This demonstration is presented to illustrate how innovators and researchers may organise a scaling process with flexible stages.

Start evaluating early. There is a common misconception that evaluation comes at the end of the scaling process, as it does in the typical plan-do-review cycle. Southern

innovation that has stimulated public impact shows that nothing could be further from the truth (see guiding principle *Dynamic Evaluation*). Evaluation can play a critical role before, during, and after every stage in a scaling process. If we restrict ourselves to a sequence of stages and were to place evaluation in only one place, it would be most appropriate to put evaluation after development. That way, we could test the efficacy of the innovation before scaling it. This is the approach underpinning the "pilot-testing" means of implementation (see Figure 5.3).

FIGURE 5.3 The "pilot-testing" approach to scaling

Create overlapping stages. In reality, the stages of a scaling process can unfold simultaneously (see Figure 5.4). In that case, evaluation becomes the glue that holds the stages together. While the innovation is still under development, evaluation can help innovators answer questions about evidence and values that underpin a *Justification* to scale, such as: "Which ideas are better?" and "Which potential impacts reflect stakeholder priorities?" Once an innovation has been developed, evaluation can help innovators answer the critical question, "How effective is the innovation?" before they scale. As the innovation is scaled, evaluation might focus on questions such as, "What are the impacts of the innovation?", "How has

FIGURE 5.4 Using evaluation to manage an innovation that insures the largest possible scale

scaling changed them?", and "Do they matter to the people who are affected?" Answering evaluative questions like these helps innovators manage the process.

Conclude with impact at Optimal Scale. Rather than managing scaling to achieve impacts at the largest scale possible (more is better), scaling can be managed to produce impact at *Optimal Scale* (better is better). Impact is optimal when interests, values, needs, and resources are balanced in a way that stakeholders endorse. Optimal impact may result when an innovation is universally applied, as with many government policies; widely distributed, as it often is with vaccines; or selectively allocated, as it is with specialist training programmes (see Figure 5.5).

FIGURE 5.5 Managing scaling to produce impact at *Optimal Scale*

Establish starting criteria. For many social and environmental endeavors around the world, there are only a few restrictions on whether an innovation may be introduced to the public and scaled. For example, an educator can develop a mathematics curriculum and make it available online with no evidence that it helps children learn. Cook stoves can be sold with the promise they will reduce indoor air pollutants and improve health with little reliable evidence that they do so. It is up to those initiating a scaling process to develop the criteria that justify scaling—and this makes scaling contingent upon criteria that innovators and stakeholders develop together. They have flexibility regarding the criteria they choose, but it would

be prudent to include two—a way of designating which impacts are important to which stakeholder groups and evidence of impact that is appropriate for the innovation's stage of development (see Figure 5.6).

FIGURE 5.6 Developing criteria to justify scaling and seeking evidence that the impact is appropriate to the stage of an innovation's development

Chunk the scaling process. One might think about the scaling process as a set of very broad steps that include many activities or as the individual activities that comprise them (see Figure 5.7). There may be times when a schematic presentation of the process makes sense, for example when communicating with the general public. However, for those closely linked to the scaling itself, it is important to understand the scaling process at a more granular level. One strategy is to chunk the process into goal-oriented checkpoints. By making them goal-oriented, innovators can manage the process as it moves toward results while paying attention to the evidence and values that have justified continued scaling. The goals might be about learning, effectiveness, cost, or aligning interest. They need not be performance related or follow a management-by-objective format. Rather, having goals allows innovators to craft starting criteria that are clear and use evaluation strategically at multiple points in the scaling process to gather evidence about whether or not the criteria have been met.

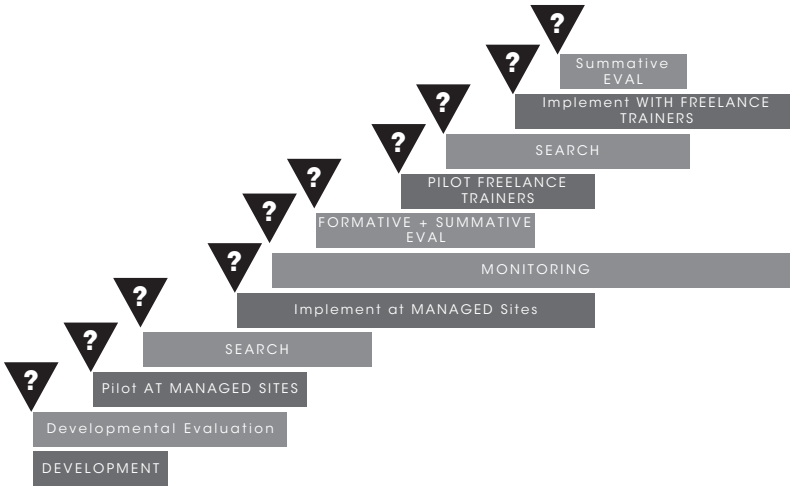


FIGURE 5.7 Using goal-oriented checkpoints to evaluate the achievement of scaling criteria

Iterate, loop back, or stop when appropriate. Scaling for impact requires a level of patience that in many settings can be difficult to validate. Investors may put pressure on innovators to scale quickly to maximise their return. Philanthropists and government agencies may have a limited window of time in which to address a need (that may not be based on the need of a beneficiary, but rather an alternative goal of the agency related to politics or power). Academics may have an incentive to lay claim to being the first to develop an innovation in an area of scholarship. Patience, more than money, may be in short supply when scaling. But sometimes the next stage in the scaling process is not ready to begin. Maybe there is insufficient evidence to judge whether the starting criteria have been met, in which case innovators may want to continue iterating and learning within their current stages. Maybe the evidence suggests that the innovation will not accomplish its purposes; therefore, innovators may want to loop back to a previous stage or stop the scaling process altogether. If the

starting criteria reflect the interests, concerns, and values of all those affected, then there is less chance that innovation will move forward too quickly in order to meet the needs of one group over those of another.

Remain flexible. Innovators and stakeholders learn throughout the scaling process. At the same time, they and the contexts in which they work change. What seemed reasonable at the outset may not be so at a later stage. As indicated in the previous point, those scaling an innovation should remain willing to change the process, their purposes, and the innovation in response to what the people, places, and things involved in the scaling system suggest. Sometimes that means rapid expansion and growth, and sometimes it means stopping. Flexibility is fundamental.

An evolving set of actors

At the centre of the scaling system is a flexible scaling process. Specific criteria are used to judge whether subsequent stages should be initiated, and stages may be modified as evaluative evidence emerges. To achieve impact at *Optimal Scale*, the process is managed in partnership with stakeholders. Those managing the process take responsibility for implementing various parts of it, and they ensure that other actors enter and exit as needed.

Each stage in the scaling process requires different expertise, social capital, and resources. The same set of individuals and organisations working together successfully at one stage may not be the right combination for subsequent stages. Bench researchers are typically not the people who lead global distribution of a drug. A think tank that can develop an innovative economic policy is seldom the appropriate entity to implement it. So one feature of the scaling process is that those involved with it—and directing it—change with scale. Given this, it is important to anticipate

which organisations and individuals are needed to start subsequent stages (initiators) and implement them (enablers). If they are not among the current set of actors, those directing the process have a responsibility to recruit them and connect them with the current set of actors.

Another responsibility of those directing the process is choosing how to respond to competitors. Because social innovators may work in non-commercial or semi-commercial settings, competing innovations are not necessarily a threat. They may create opportunities for collaboration and greater impact. Two university research labs developing different vaccines for the same disease, for example, may share data and expertise in order to find the most effective solution. On the other hand, a private pharmaceutical firm working on a similar vaccine may not, making it all the more important to focus on the objective of impact at *Optimal Scale*.

Coordinating multiple innovations—a portfolio approach

So far we have considered using a flexible scaling process to achieve impact at *Optimal Scale* by navigating a scaling system and an evolving set of actors. For many, the need for *Coordination* is amplified by the challenge of scaling multiple innovations. But this is a good thing. Although a challenge to manage, coordinating the scaling of multiple innovations holds abundant promise. It may stimulate a greater overall benefit by syndicating efforts around a common good. It may also contribute to a longitudinal process of development that may be staggered over years, decades, or longer—as an evolving set of actors is coordinated.

One group that may be particularly concerned with the challenge of coordinating multiple innovations is funders. For funders, a 'portfolio approach' to selecting projects and programmes of innovation presents a great opportunity.

To succeed, *Coordination* is critical. We suggest a mapping tool that can be adapted to help to build clarity.

There are four general scaling strategies outlined in the portfolio approach (see Figure 5.8). These strategies provide quadrants that may help to develop a syndication strategy.[19]

Across the four quadrants there are various scaling strategies. Perhaps the most familiar is an innovator scaling the same innovation for the same purpose repeatedly. When undertaken in the same context, we may call it repetition; when done in different contexts (geographic, disciplinary, sector, or so on), we may call it replication.

Another approach is to use the same innovation to advance different or additional purposes. This is repurposing. For example, an innovative school curriculum that adds employment to its existing goal of academic achievement.

The third strategy is to use different innovations to achieve the same purposes. This might be done to increase the likelihood that the impact will be achieved, which is called reliability, or to increase the magnitude of quality of the impact, which is called reinforcement. An example of this is WASH programmes, which can address water,

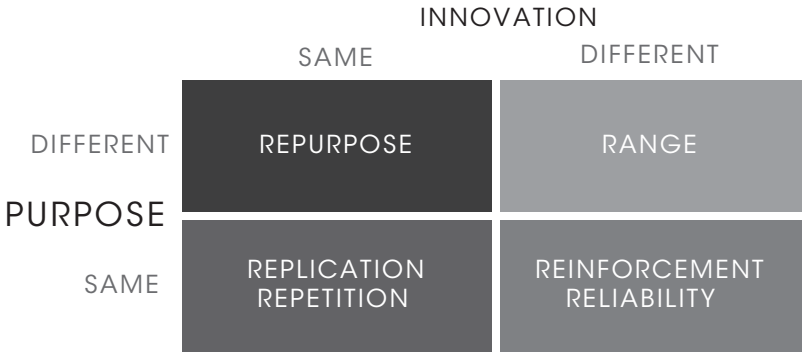


FIGURE 5.8 A portfolio approach to coordinating multiple innovations

sanitation, and hygiene simultaneously in different ways for the common purpose of improving health.

Finally, different innovations might be promoted to produce different impacts, in which case their interest is in what might be called range or scope. This is a common strategy when interested in quality of life within a particular context. For example, a community-based organisation might scale educational, employment, and health innovations simultaneously to comprehensively improve the lives of people in the community.

The collection of innovations within each of the four strategies can be considered a portfolio that is constructed purposefully to achieve specific goals. Innovators may think of the quadrants as areas to look for leverage, hoping to contribute to a system of innovations rather than reinvent it or act on their own. Funders or managers may use the mapping tool to create synergy across projects and efforts, and to plan action over time. The portfolio approach to coordinating multiple innovations can also be a tool for creating transparency and the planning of stakeholder engagement. For funders in particular, it is an important place to contribute value in the quest to improve the way we scale the impact of research and innovation for the public good.[20]

Conclusions

1. Coordination is about more than partnerships

Coordinated scaling considers stakeholders, actors, systems, and scaling processes.

2. Scaling happens within complex systems

The scaling system is the setting in which scaling takes place. At the centre of the system is the scaling process, which

affects and is affected by various stakeholders (people, places, and things). The stakeholders play different roles, which are not mutually exclusive. Initiators make it possible to start a subsequent stage of the scaling process. Enablers implement or support the scaling within and across stages. Competitors offer alternatives that may be better or worse. And the impacted are those stakeholders affected when the innovation is scaled.

3. Complexity requires a flexible scaling process

The scaling process is composed of overlapping actions. The initiation of subsequent actions is contingent on meeting co-constructed starting criteria. The arrangement and nature are contingent on what is learned as we scale through evaluation. Consequently, the scaling process must remain flexible.

4. Coordination connects an evolving set of actors to the scaling process

Those engaged in a scaling process change while scaling happens. Different expertise, resources, and capabilities are required at each stage of the process. Those directing the process have a responsibility to recruit others to the process as needed and connect them with the current set of actors.

5. A portfolio approach syndicates innovations for better impact at scale.

Rarely do single innovations make great change on their own. More often innovations build on one another. Incremental change can be leveraged when multiple innovations are coordinated to work together. Taking a portfolio view of change is a means of accomplishing this.

6

GUIDING PRINCIPLE 4

Dynamic Evaluation

Dynamic Evaluation **encourages that learning underpins scaling from start to finish.**

- ➔ Scaling is an intervention that can be evaluated.
- ➔ Scaling generates dynamic change, which necessitates similarly dynamic evaluation.
- ➔ Dynamic evaluation is a stance that is held before, during, and after scaling.

Key concepts

Evaluation The determination of the merit, worth or significance of something.

Intervention A strategy for creating change. (In terms of research and innovation, interventions often follow the *pathways to scale* typology and exist as programmes, behaviour change, policies, products, methods, and so on. See Part IV of this book for further discussion.)

Scaling intervention Actions taken to change the magnitude, variety, equity, or sustainability of an impact.

Scaling effects The linear and non-linear, quantitative and qualitative relationships between scaling actions and *scaling impact*.

Introduction

Contributing to development processes and progress by *scaling impact* is not straightforward. As presented in this book within the discussions surrounding *Justification*, *Optimal Scale*, and *Coordination*, scaling includes looking beyond immediate users and funders, and being driven to create change that is valued by those affected. In the typology of *pathways to scale*, we illustrate how impact may stem from innovations as diverse as products like mobile apps, programmes like jobs training, policy levers like equity legislation, practices like a safe caesarian birthing procedure, or combinations of multiple innovations travelling different—but hopefully coordinated—*pathways to scale*.

In this context, narrow metrics, such as profit, numbers of users, and total geographies served, are insufficient evaluative measures for the ways innovators—and those who are affected by their innovations—think and act. These measures help to advertise accomplishments, but they fall short when it comes to the instrumental knowledge that can guide, improve, and optimise scaling efforts.

Dynamic Evaluation is a means of continuous learning. It borrows from developmental evaluation and lean methodologies to encourage flexible and adaptive management.[21] Like these approaches, it helps innovators gather feedback rapidly, learn through iteration, and focus on value creation (in our case this means: impacts for the public good). What makes *Dynamic Evaluation* different is how it responds to two features of scaling.

First, it rests on the principle that scaling is an intervention. When organisations scale innovations, they act in new ways that they believe will change the magnitude, variety, sustainability, and equity of impacts. *Dynamic Evaluation* helps one to understand whether an innovation is creating impact, but also whether and how scaling is contributing.

Second, the actions researchers and innovators take are guided by their beliefs about how scaling changes impacts. *Dynamic Evaluation* describes how scaling actions trigger *scaling effects* (linear and non-linear, quantitative and qualitative) that change the collection of impacts. *Dynamic Evaluation* guides one to anticipate and react to these changes.

To illustrate, consider a simple example of cause and effect. If you drive a car at a constant low speed (cause), it handles in a consistent and predictable fashion (effect). However, if you continue to accelerate for a period, the car will begin to handle very differently. This change is the result of scaling. Accelerating may help you reach your destination faster, or it may result badly for you and others on the road.

Dynamic Evaluation is how we manage to drive vehicles at increasing speeds. We use a continuous and adaptive process of gathering, assessing, and acting on the signals we pick up from around us. It is dynamic because it can require changing approaches, frameworks, and theories as we proceed. In a car, if we hear a siren to our left, we turn our head and look out an entirely different window. With the *Dynamic Evaluation* of scaling efforts, if a new innovation comes along that holds more promise, we may slow our scaling, change our designs for *Optimal Scale*, or stop scaling altogether.

Dynamic Evaluation is closely tied to the other guiding principles. When done well, *Dynamic Evaluation* guides a scaling journey that is *Justified and Coordinated to reach Optimal Scale*.

Scaling *is* an intervention

Dynamic Evaluation moves beyond evaluating the impact of an innovation. It accepts that scaling *is* an intervention that can and should be evaluated.

Let's unpack how this is different. To begin, it is important to refresh on the basic means of conducting any evaluation. Say that we wish to understand the value of an innovation. To do so, evaluators might ask, to what extent, under what conditions, through what process, over what period of time, at what cost, and for whom did change occur? Who considered these changes desirable or undesirable, and in what ways, to what degree, and for whom?

Although the innovations we evaluate are novel, these questions follow a familiar pattern. They represent two halves of what is sometimes called the logic of evaluation.[22] The descriptive half answers the question, "What changes have been created?" The valuing half answers the question, "For whom and in what ways are those changes desirable?" When considered together, they form the basis of an evaluative conclusion, which is a judgment of the merit, worth, or significance of the innovation.

Evaluators have developed a technical language that allows them to ask and answer these questions with precision in a wide range of contexts. They typically refer to any strategy for creating change as an *intervention*. The downstream changes produced by an intervention (directly or indirectly, whole or in part) are *impacts*. Any systematic evaluation of the changes brought about by an intervention is an *impact evaluation*. These terms give meaning to well-established approaches that can be used to evaluate the success of interventions in general, and innovations in particular.

Scaling turns much of this on its head.

Established approaches to impact evaluation set out to understand the impact of an intervention at a given level

of scale. Thus, scale is treated as an attribute of the intervention. It assumes a stable cause and effect relationship. However, changing scale is not an attribute of the intervention, it is an intervention in its own right. We scale in order to change the nature of impacts. So *Dynamic Evaluation* not only asks, "What is the impact of an innovation at a given level of scale?" but also, "What is the impact of the scaling?" Scaling is an intervention alongside the innovation, and impacts are in reality a result of both. Traditional evaluation and design tools such as logical frameworks, logic models, theories of change, or impact value chains may help us understand the impact of an innovation, but not the way scaling this innovation changes impacts. Accepting that scaling is an intervention, we next offer some strategies for its measurement with *Dynamic Evaluation.*

Scaling effects

This section explains the concept of *scaling effects*. By this, we mean the effects that the level of scaling action, in a given scaling context, has on impacts. When we move innovations to interventions in the real world, the scale of their impact is not a constant with the level of intervention. This is a simple conjecture, but it is one that is too often overlooked. Measuring this phenomena (*scaling effects*) helps those concerned with impact to understand, adapt, and document the actions that lead toward the optimal. Doing so continuously (i.e., dynamically) is key.

Scaling effects transpire in a multiplicity of ways. Some can be expected and planned for, some are more thorny or elusive and are uncovered only as scaling happens. As we increase our actions quantitatively, the change in impact may be linear, non-linear, or follow any number of changing patterns. It may also qualitatively change the impacts themselves, perhaps making the impacts more desirable in

type or nature. In other cases, scaling an innovation may have negative impacts and displace more effective alternatives. What remains a constant is that the way in which impacts change with scale in a given context—for better or worse—is a critical part of establishing *Optimal Scale*. Accordingly, we need to apply *Dynamic Evaluation* that accepts and directly questions the dynamic nature of the relationship between scaling actions and impacts.

For illustration, let's consider some simple examples of *scaling effects*. As we walk through these examples, consider how evaluation might be used to gather evidence and guide action. As a starting place, *Dynamic Evaluations* should describe, in advance, the scaling effects believed to govern impacts as they scale. Some scaling effects are predictable given an understanding of past interventions of a similar nature, or become well-described through the process of endorsement undertaken to justify scaling in a new community.

Take, for example, a project meant to scale a vitamin-enriched food product in order to address vitamin deficiency in a region. Let's say the aim is to distribute the product centrally—say turn it into a powder or food mix, then convince a local health authority to administer it to everyone freely. The increase in the vitamin-enriched food distributed and consumed would be linear, but the impact of the innovation would not be. While everyone who needed free vitamins would get them, people who did not need vitamins would also be dosed. For these people, there would be little additional benefit from the innovation. Figure 6.1 shows how this scaling effect might look on a very simple graph of action versus impact.

Moreover, providing free vitamins to everyone may come with many disruptive side effects. Doing so may affect the local economy, perhaps hurting those who grow and sell

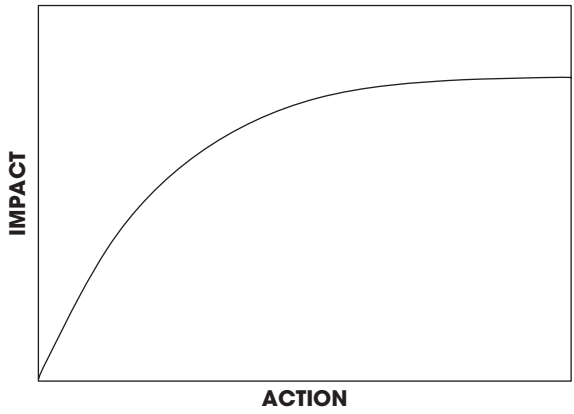


FIGURE 6.1 Diminishing returns to scale

fruits and vegetables. There may be potential cultural impacts of such an intervention programme, based on obligatory dosing with food mixes instead of promoting customary vitamin-rich foods for the region. A *Dynamic Evaluation* that considered the full collection of impacts, and how many would unfold well into a scaling process, could govern the intervention toward a more optimal impact.

For another example, let's consider an innovator's plan for a different means of bringing the product to individuals in need. Here the product is commercialised and brought to market through sales in local shops and targeted marketing campaigns. The impacts of the project may be small at the outset as techniques are developed to manufacture it, producers invest in machinery needed to make it, distribution networks are formed, and customers acclimatise to the product. However, once this is done and the product can be sold at a price that allows producers to flourish, the impacts on vitamin deficiency in a region can scale rapidly without a similar level of action on the part of the actors. In effect, the impact could become self-sustaining. Figure 6.2 shows how this scaling effect pattern might look.

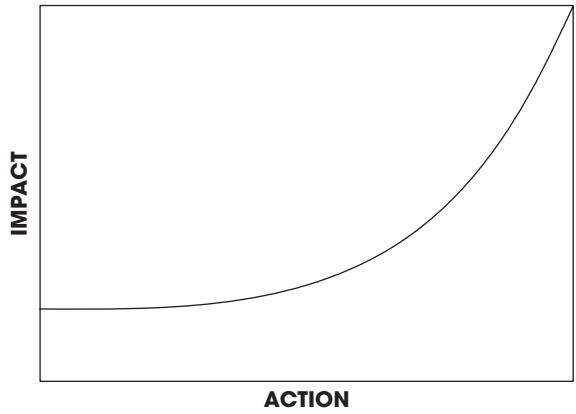


FIGURE 6.2 Increasing returns to scale

Dynamic Evaluations will study this trajectory and judge progress accordingly. It should also aim to help innovators to identify the 'breaking points' where this scaling effect may come into play. In the example above, a breaking point is any price above the viable commercial price that allowed the product to scale across the market.

It is important to note, that, in some cases, the *nature* of the impact can change as scaling happens. Although the number of people using the vitamin products may increase rapidly, using markets to distribute them may mean that those most in need of the product may not be the ones purchasing it. They may become 'priced-out' of the potential impact as the viable price settles at some middle-income price point. This is a cause not of the scaling actions we take, but of the system in which scaling occurs. Markets for vitamins, but also medicines and pharmaceuticals of many types, offer a helpful illustration of how a *scaling system* can generate a *scaling effect* that may be negative or positive. Here, the way that scaling takes place affects both quantitative (*number*

of people getting needed drugs) and qualitative (*which* people are getting needed drugs) aspects of scaling.

In examples such as these, it may seem obvious that these outcomes could result from scaling. In reality, it is not always so. *Scaling effects* should be a part of any scaling plan, but they must also be monitored as scaling unfolds. We can return to the unexpected outcomes that emerged from microfinance or PlayPumps described in earlier chapters—these were seemingly proven innovations by the evaluation standards deemed acceptable by their scalers. But the unexpected results of these innovations, as they scaled, show how the unpredictable nature of innovation demands *Dynamic Evaluation*. To illustrate the importance of dynamism, or continuous learning, let's turn to another example of *scaling effects*.

Consider the differences that persist in primary school enrollment rates by gender. The sex we are born with and/or the way we identify ourselves to others should not correlate with our educational opportunities. It's plain discrimination. But addressing this issue has proven challenging. Some innovations have included programmes that rely on influencing or even changing social norms—gender equity norms—in a community. At the initial stages of scaling, change may be limited and slow to take root. But then, a critical mass of community members may adopt an attitude or behaviour and its scaling takes off. By contrast, changes in impacts may taper off at high levels of adoption when only a few, harder to influence individuals remain. Figure 6.3 illustrates this pattern.

Dynamic Evaluation will ultimately govern when in the scaling process impacts are assessed, and whether multiple evaluations of the same intervention, but at different times, is warranted. As this example of changing social norms illustrates, an early evaluation, one done in a few years, and one done decades later, are likely to

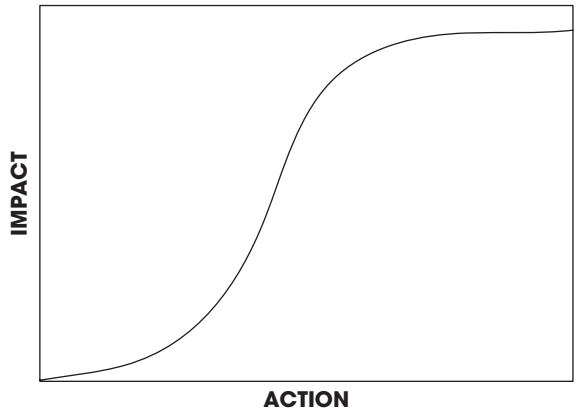


FIGURE 6.3 Varying returns to scale

show very different results for the same intervention. It is only by recognising that scaling is an implicit part of this intervention that success can be judged fairly across the three studies.

So far we have used two-dimensional charts to illustrate the complexity of changing nutrition outcomes and social norms about complex issues like gender and education. In the real world, *scaling effects* go beyond what can be plotted on simple charts. Impacts will change following much more complicated patterns. But here again lies the importance of real and thoughtful *Dynamic Evaluation*. As we have tried to show by using these simplified illustrations, *scaling effects* can combine to make impacts change for better or worse at different levels of action. Over time, the relationships between levels of action and impacts may also change, making what may have at one time been an optimal level of impact no longer optimal. *Dynamic Evaluation* encompasses a process of constantly revisiting what is meant by optimal and how scaling itself is influencing it.

As a final example, consider the case of the Ebola outbreak in West Africa described in the introduction to this book. In this situation, the *scaling effect* of 'herd immunity' played a critical role. Herd immunity implies that as the proportion of vaccinated people increases, the probability that an unvaccinated person contracts the disease decreases in a non-linear way. This is because there are fewer opportunities for healthy people to become infected. It was the reason why vaccinating only those at the centre of social networks slowed and eventually stopped the spread of the disease. Innovators on the ground understood this *scaling effect* and how it changed the mechanism of impact dramatically. To gauge the effect of herd immunity, evaluators looked for decreases in the infection rate that outpaced increases in the vaccination rate. They used that knowledge to establish an optimal scale for vaccination that implied an exponentially greater *Optimal Scale* for impact. This saved resources, reduced negative side effects, and allowed actors to shift their focus to other areas of need. *Dynamic Evaluation* led to a positive result in an extremely urgent situation.

Dynamic evaluation is a stance, not a methodology

Dynamic Evaluation presents two key considerations. First, that scaling is an intervention that can be evaluated. Second, that scaling generates transformations in the impacts of our innovations through *scaling effects*. We have attempted to illustrate how these features can make it difficult to reach a complete evaluative judgment of a scaling process and its results with the typical, predefined evaluation methodologies. A dynamic approach would be preferable. But how does one execute this?

In short, there is no silver bullet. We will not be introducing a precise set of rules for doing a *Dynamic Evaluation*. Instead there is a guiding principle that encourages anticipation, reaction, and flexibility. For it to work, it needs to be interpreted, and reinterpreted, within a problem space.

Conclusions

To draw on the basics that have made *Dynamic Evaluation* come to light, here are three ways to hold a dynamic evaluation stance: evaluate scaling, learn continuously, and be flexible.

1. Evaluate scaling

Dynamic Evaluation aims to measure the collection of impacts of scaling as an intervention. Not just the impacts of the innovation at a single level of scale. It can use a collection of tailored learning strategies to examine how scaling transforms a holistic concept of impacts—assessing the magnitude, variety, equity, and sustainability of change.

2. Learn continuously

Dynamic Evaluation is not viewed as the last step of the plan-do-review learning cycle. Neither is it the first step or the middle point. Rather, it is a body of tools for rounding rapid learning cycles that can be used strategically before, during, and after scaling. It relies on the judgment of those involved in the scaling system, including initiators, enablers, competitors, and those impacted.

3. Be flexible

Unlike traditional evaluation methods such as a "randomised control trial", "ethnographic deviant case-study analysis", or "rapid impact assessment", *Dynamic Evaluation* is fluid. These types of approaches can provide

helpful, scientifically rigorous knowledge about an intervention. But scaling shifts things, and this must include an evaluative focus looking directly at these shifts. *Dynamic Evaluation* might incorporate a randomised trial or multi-year ethnography. But when conditions change, so does the evaluation plan. It accepts shifting conditions and goalposts and works to adjust learning strategies to match these changes in conditions.

Figure 6.4 illustrates a number of activities that could come together to form a *Dynamic Evaluation* stance. The five case studies in this book illustrate how the approach has emerged in particular scaling processes and systems.

FIGURE 6.4 Activities that may comprise a *Dynamic Evaluation* stance

PART III
Case studies

7

SCALING ECOHEALTH FOR CHAGAS DISEASE PREVENTION IN CENTRAL AMERICA

> We wanted to make changes in people's lives. I don't think about science in terms of writing papers and going to seminars. We need to use science for applied change in the real world. When we started, we had an eye to having this work with not just the people of Guatemala but all throughout Central America where Chagas was prevalent. The idea was really to help people with our science.
>
> *María Carlota Monroy Escobar, Universidad de San Carlos de Guatemala, Interview*

SUMMARY

Chagas is a vector-borne disease endemic to 21 Latin American countries and is caused by the *Trypanosoma cruzi* parasite. In Central America, it has been most commonly transmitted to humans via two insect vectors—*Rhodnius*

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prolixus and *Triatoma dimidiata*. The latter is now the principal vector in Central America. In 2003, IDRC funded a project examining the effectiveness of an Ecohealth intervention for managing the transmission of Chagas disease to humans via the *Triatoma dimidiata*.

In contrast to traditional programmes focusing exclusively on spraying pesticides, the Ecohealth intervention consists of a two-step system. First, the vector is redirected to blood meal sources outside of the infested homes. Homes are then renovated to make them less hospitable for the vector. Proving highly effective in several Guatemalan test sites, the intervention was scaled through a second IDRC project to a larger number of communities in Guatemala, Honduras, and El Salvador. The programme's long-term objective was to address the emergence of Chagas disease across Latin America.

The two IDRC projects exemplify the scaling of a programme or system of related, science-based activities from a small set of communities in one country to 40 communities in three countries. The first project supported the Ecohealth intervention in its early, small-scale implementation phase. The second applied the intervention to a broader international context. The projects also provide an opportunity for examining how a systems approach can function, particularly where it is heavily dependent on community participation in diverging social contexts.

Chagas disease

Chagas is a vector-borne disease endemic in regions across 21 Latin American countries. It is caused by the *Trypanosoma cruzi (T. cruzi)* parasite and its effects are potentially life

threatening (World Health Organization 2016). The disease is common among rural and poor communities in Latin America, affecting more than 10 million people, and killing an estimated 10,000 people annually (IDRC 2011: 1).

The disease typically presents in two phases. The first is an acute phase, where large numbers of the parasite are present in the bloodstream. Most individuals suffer from mild symptoms or no symptoms at all during this phase, which lasts for approximately two months upon infection. The second is a chronic phase, where lower numbers of the parasite congregate in the heart and the muscles of the digestive tract. During the chronic phase, patients may suffer heart disease and digestive disorders (megacolon and megaesophagus), which can lead to heart failure or death (World Health Organization 2016).

In Central America, the *T. cruzi* parasite was transmitted to humans via two main insect species. The first, *Rhodnius prolixus,* was not native to the regions in which Chagas disease was endemic and was successfully eradicated by a domestic pesticide programme. The second, *Triatoma dimidiata*, is a native species and can live in homes, peri-domiciliary environments, as well as forested regions (IDRC 2011).

Since the elimination of *Rhodnius prolixus*, long-term management of Chagas disease through domestic spraying campaigns typically fails. Such campaigns can limit infestations, but only temporarily. Since *Triatoma dimidiata* is native to endemic regions, re-infestation often occurs within a few months of a spraying campaign. Moreover, *Triatoma dimidiata* tends to survive in peri-domiciliary and forested regions, migrating back to homes once pesticide levels subside (IDRC 2011).

The Ecohealth intervention

In 2003, IDRC approved funding for the study of an environmental approach to Chagas disease management in

Guatemala. Inspired by the primary researcher's earlier work, the project posited that Chagas disease could be effectively controlled in rural communities through a series of preventative measures, including:

- home renovations and repairs of traditional rural dwellings; and
- changes to peri-domiciliary activities, such as animal husbandry.

Under this approach, heavily infested homes are initially sprayed with insecticide as a preventive and control measure. Led by families themselves, home renovations then helped to create a space that is inhospitable to *Triatoma dimidiata*, significantly limiting re-infestation. For example, dirt floors are eliminated and wall crevices plastered to remove spaces where *Triatoma dimidiata* can thrive. Around homes that are only mildly infested, chickens and other livestock that provide a blood meal source for *Triatoma dimidiata* are relocated and contained to limit human-vector contact.

The intervention's implementation relied on the participation and coordination of numerous key players. Research and field staff communicated the details of the intervention to participating communities and secured their buy-in. Representatives from the Guatemalan Ministry of Health helped research and field staff connect with communities and secure their consent, while municipal officials ensured that construction materials were available to participating rural communities. Consenting community members were also directly involved in home renovation and changes to peri-domiciliary activities. In the Jutiapa Department (located in the southeastern part of Guatemala), the project showed that the transmission of Chagas disease could be significantly reduced through the Ecohealth approach (IDRC 2003: 1).

IDRC consequently funded a second study in 2011 to assess the degree to which the Ecohealth intervention could be scaled up to other communities in Latin America and the Caribbean (LAC). Entitled "Ecohealth Interventions for Chagas Disease Prevention in Central America", the second project applied the intervention to other areas of Guatemala, Honduras, and El Salvador. Overall, the project sought to demonstrate that the risk of Chagas disease transmission could be significantly reduced through Ecohealth intervention activities (IDRC 2011).

The two projects provide an example for scaling a system of related, science-based activities for greater impact (IDRC 2016a). Their combined timeline charts the Ecohealth intervention from its early, small-scale implementation to its application in an international context. The projects also provide an opportunity to examine how a systems approach can function in different settings, particularly where it is heavily dependent on community participation. The intervention also exhibits potential for scaling beyond the scope of the second project. In the long-term, it could be adopted to eliminate Chagas transmission across Latin America.

JUSTIFICATION

Clear continued need

The 2004 environmental project demonstrated the effectiveness of the Ecohealth approach in preventing the transmission of Chagas disease. It developed an approach that was superior to alternatives commonly used to combat Chagas transmission by *Triatoma dimidiata*, the

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primary vector in Central America. The endemic state of Chagas in regions beyond the scope of the first project also demonstrated a clear need to apply the intervention in other contexts. The effectiveness of the Ecohealth approach, combined with the endemic state of Chagas in other regions, provided a strong *Justification* for scaling the intervention.

Insights from scaling

Following the success of the first project, IDRC discussed the potential for scaling with the principal investigator (PI). Scaling the intervention aligned with the PI's original motivation for undertaking this work. The Ecohealth approach was designed to apply to a broad range of rural communities in Central America. The materials used to renovate the homes, for example, were in part chosen for their wide availability. Rural communities also often lacked tools for construction. To ensure broad appeal, the renovations (e.g., plastering walls, replacing dirt floors) were designed to require only a few tools, if any.

Despite these early considerations, expanding the Ecohealth intervention to approximately 40 communities across Guatemala, El Salvador, and Honduras involved more than replicating the intervention used in the Department of Jutiapa. The interventions introduced in each village needed to be calibrated to meet the context of each village. Each community was differentiated by its own leadership, way of thinking, and reaction to the proposed intervention. To successfully implement the Ecohealth approach, the project team needed to actively

engage municipal actors, health and vector control staff, as well as individual community members.

Securing consent also required a demonstration of how the intervention could benefit individual residents. In many cases, one model home was chosen to demonstrate how the renovations would take place and peri-domiciliary activity would be changed. However, as the range of communities involved grew, gaining this trust proved more difficult. Before making a final decision on their involvement in the project, some communities requested that the project team offer a small-scale demonstration of the renovation work. The geographic proximity of the implementing team to participating communities was also key. It provided an avenue for regular contact between the project team and community members to address questions or concerns.

Some key elements of implementation, such as the replacement of dirt floors and the plastering of walls, needed to remain constant. Other elements, however, could be adapted to local preferences. As the intervention work expanded, communities began to introduce unique local features. One community, for example, changed the colour of the plaster used to renovate the homes to mirror its traditional aesthetic. A different community incorporated plant material into its plaster to improve waterproofing.

The intervention's success also rested on clearly understanding and addressing gender roles (Rocío Rodríguez Triana et al. 2016). To successfully secure buy-in, meetings between the project team and community members needed to involve both men and women. Meetings were consequently scheduled on weekends to accommodate the availability of both genders. Some community members were more willing to discuss the intervention in a group of their own gender. Ensuring

gender equity in the composition of project implementation teams was therefore key. Gender also played a significant role in the renovation work. Men most commonly participated in the intervention work by moving construction materials and undertaking manual labour. Women and children, on the other hand, were more likely to take on the plastering of walls. In fact, engineers initially failed to recognise this gender dimension and attempted to engage men in plastering homes. Admittedly, these gender dimensions were not transformative, but understanding and accommodating them was crucial to the success of the scaling effort.

In addition to community participation, the Ecohealth intervention rested on collaboration between the project team, municipalities, and government ministries. In each of the three countries, the nature of this collaboration varied. In El Salvador, for example, the project team exhibited a strong academic background, but limited field experience. It also lacked a strong relationship with the vector control programme. Moreover, the support of the national Chagas control programme did not translate into concrete field engagement. This lack of field experience and limited engagement from vector control staff made initial engagement with communities in El Salvador more difficult. Over time, however, the team was able to account for these gaps by developing a collaborative relationship with primary healthcare centres.

The participation of municipal actors was also critical. They were often responsible for treating Chagas patients. Moreover, while the materials used to renovate the homes were affordable, they often had to be transported from remote parts of the country. These added transportation costs would have rendered the intervention prohibitively expensive for most rural communities; however, municipalities often assumed this responsibility and the related expense.

COORDINATION

Buy-in as the foundation for Coordination

The success of the Ecohealth intervention rested on a participatory multi-stakeholder approach, as well as community buy-in. Scaling came with a more diverse set of communities, marked by variation in the initial level of interest and readiness to participate. This diversity was managed through a close working relationship between community members and the team delivering the intervention.

Community buy-in through local custom

While the scaling of the Ecohealth approach included some constant elements, it was also responsive to local customs. By allowing communities to make the intervention their own, this flexibility also secured buy-in, while facilitating collaboration between community members and the intervention team. Flexibility was thus key to both scaling the Ecohealth approach and enhancing delivery.

Accommodating gender roles

Community participation required a recognition of gender roles. While not gender-transformative in its intentions, the Ecohealth approach recognised that men and women needed to be engaged through different activities. Scaling to a wider range of communities introduced greater variability in gender roles, reinforcing the importance of gender responsiveness for effective delivery.

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Establishing roles for success

The Chagas case also demonstrates that, in the context of scaling, *Coordination* involves more than the participation of stakeholders. It can require a division of roles based on preferences and comparative advantage. The allocation of clear responsibilities and roles to each participating actor made for more effective *Coordination*.

Community dynamics, combined with the strength of partnerships between participating organisations, contributed to variation in implementation rates. As the project's PI notes, some communities struggled to renovate 40 percent of their homes, while others were able to renovate up to 90 percent. In some cases, construction was completed within six months, while in others renovations went on for years. Moreover, in most communities, an 80 percent renovation rate was required to ensure resistance to vector infestation and Chagas transmission.

During the early stages of the Ecohealth project, data was recorded on key participant characteristics, including socio-demographic markers, intervention participation, and communication with other stakeholders. The goal was to draw on this empirical evidence to identify determinants of the intervention's success, particularly at subsequent stages of scaling. Such monitoring and analysis would have provided key insights for adjusting scaling to amplify impact over time. A lack of resources, however, prevented the project team from fully analysing and leveraging the data to inform subsequent scaling efforts.

Despite these early monitoring attempts, most of the determinants of success were established only at later

stages. The project team initially focused on communities only. As the intervention was scaled to approximately 40 communities and participant diversity increased, the body of evidence for identifying unique community, municipal, and national determinants of intervention success grew. New patterns of behaviour and determinants of success emerged, which allowed tailoring the intervention to the characteristics and needs of each community.

DYNAMIC EVALUATION

Anticipating factors for success

The Ecohealth project demonstrates both opportunities for and challenges to anticipating success factors when scaling. Earlier work helped identify patterns of behaviour among strategic partners that were more likely to ensure the intervention's success. As the intervention was applied across a larger sample of communities, however, additional factors of success emerged. In the context of scaling, this suggests a key role for *Dynamic Evaluation* to ensure that programming remains effective.

The scaling process was also characterised by a multiplier effect. As the intervention was scaled and its benefits were more broadly recognised, households and organisations that were not associated with the project began to independently take up its core activities. Motivated to increase their standard of living through an improved living space, for example, some non-participating families adopted the home renovations element of the Ecohealth approach. Similarly, as home renovations showed effectiveness in limiting the transmission of other diseases,

NGOs working in Latin America began to employ the Ecohealth approach to pursue their own disease prevention mandate.

Nonetheless, variation in the application and success of the Ecohealth intervention, combined with its multiplier effects, made determining *Optimal Scale* more difficult. A household renovation rate of 80 percent within communities represents a concrete target. However, the spontaneous uptake of the intervention by individual households and other organisations made it more difficult to determine the degree to which any one programme or organisation should apply the intervention.

Leveraging the self-reinforcing nature of the scaling process and building partnerships proved to be a key feature of the intervention's success. Chagas disease transmission continues in Central American countries, signalling a further need for the intervention. However, it is unlikely that the Ecohealth approach alone will be able to fully address this need. Partnerships and the self-reinforcing nature of the intervention offer an opportunity to scale the Ecohealth approach beyond the project's conclusion.

Rather than focusing on establishing a single optimal level of scaling, stakeholders involved in the intervention often pointed to the need to apply the intervention in endemic hotspots as these were identified. Key regions throughout Central America continue to suffer from high levels of *Triatoma dimidiata* infestation and, by extension, Chagas disease transmission. In fact, the Ecohealth project was supported by the Intergovernmental Commission for Chagas Control in Central America, which has identified a number of priority hotspots. Determining the *Optimal Scale* for the implementation of the Ecohealth intervention is therefore a dynamic process.

To build on these results, IDRC and researchers in Central America have partnered with other agencies to support an integrated approach to Chagas control.

International agencies and local governments will need to assess a variety of issues, including the *Coordination* of multiple actors, the *Optimal Scale* of intervention, and the development of a *Dynamic Evaluation* stance. This effort presents an opportunity to scale the Ecohealth intervention and broaden its reach.

OPTIMAL SCALE

The interplay between intent and scale

The Ecohealth projects demonstrate how *Optimal Scale* is multidimensional. While the intervention was designed to address Chagas disease transmission, it effectively addressed other development and disease prevention needs. Home renovations, for example, contributed to an improved standard of living for families. This positive multiplier effect presents arguments for further scaling. Optimality is thus a function of both the intended effects of an intervention and its scaling effects.

Optimality at the project versus intervention level

Concerns surrounding the sustainability of the Ecohealth intervention demonstrate an interplay between defining *Optimal Scale* at the project level and the intervention level. Projects that apply an intervention often do so to achieve maximum impact given resources and budget, recognising that the project alone may not fully address the need. Where multiple groups are involved, *Optimal Scale* for one group may be a function of the work performed by another. However, to fully address the transmission of Chagas, an optimisation function that ties intervention scale to continued and demonstrated need is necessary.

The scaling of the Ecohealth approach in Guatemala, El Salvador, and Honduras presents a number of key lessons that relate to:

- the importance of addressing regional and community needs in making individually small, but collectively important, changes to an intervention when scaling;
- the need to consider the logistics of implementing the intervention, including timing, and to remain flexible in cooperating with regional partners;
- the need for a strong evaluation design during scaling, including one that considers sustainability in the face of potential scaling effects;
- the need for a policy influence strategy, and knowledge exchange process, such that elements of the intervention can be adopted by others and scaling can continue beyond the life of the project; and
- the need to demonstrate the additional, and sometimes unanticipated, benefits of the intervention to encourage broader adoption and continued scaling.

For more information about the Ecohealth intervention, please see www.idrc.ca/en/project/ecohealth-interventions-chagas-disease-prevention-central-america-0

PROJECT DETAILS

Title: Ecohealth interventions for Chagas disease prevention in Central America

One or more projects: 2—#101812 and #106531

Scalers: Asociacion de Investigacion y Estudios Sociales/ Association for Research and Social Studies

Research institution: Universidad San Carlos de Guatemala (USAC)

IDRC Programme: Food, Environment, and Health

Geographic region: Latin America and the Caribbean

Scale statistics: Intervention approach has been implemented in approximately 40 communities and is being actively adopted by organisations not directly involved in the project.

8

SCALING ACCESS TO JUSTICE FOR SURVIVORS OF SEXUAL VIOLENCE*

Transforming a victim into a survivor is a long drawn process. It is not a matter of merely changing the vocabulary, while keeping intact an oppressive system which constantly re-victimises her, causes her extreme trauma and brings her down several notches in the social ladder from where she was prior to the abuse. She becomes a survivor only when she emerges stronger for having walked through this intimidating system, with someone extending a helping hand, and in the process transforms the system itself, rendering it more humane. It is our hope that having responded to their needs, we helped each of them to overcome their vulnerabilities, and attain their goals and aspirations, beyond their 'case' and become survivors.

RAHAT Team

SUMMARY

The project examined in this case study began in 2012 and stemmed from a single incident: the rape of a four-year-old

girl in Mumbai, India by the watchman at her school. In response, Majlis Legal Centre (henceforth Majlis) offered its support and services to the victim-survivor's family. Majlis is a local non-governmental organisation (NGO) committed to ensuring access to justice for women in India. The case highlighted the structural failure of the criminal justice system in addressing sexual offence cases and dealing with victim-survivors. In taking on this case, lawyers and social workers at Majlis initiated an action-based research project to document and review cases of sexual violence, and analyse how these cases are handled by the justice system. The research objective was to build a Survivor Centric Approach that enhances access to justice. With financial support from IDRC, Majlis collaborated with the local Department of Women and Child Development. The Memorandum of Understanding between the two organisations established the RAHAT team: a survivor support programme that provides socio-legal assistance to victim-survivors of sexual violence and their families.

The RAHAT team developed standard operating procedures (SOPs) for justice officials to use in cases of sexual offences against women and children. To date, these procedures are being followed by over 2000 police officers in Mumbai. The team also designed and implemented training programmes for key stakeholders in the criminal justice system, including police officers, public prosecutors, and judges. Progress towards the institutionalisation of these practices is currently being monitored.

The work of the RAHAT team has since been scaled through replication, adoption, and behavioural change strategies:

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- The Survivor Centric Approach is currently being replicated by the RAHAT team in Navi Mumbai city.
- NGOs and state agencies have voluntarily adopted the approach, in part or in its entirety, and are applying it in other districts. In 2013, for example, the state of Maharashtra adopted the approach and created a District Trauma Team (DTT) to provide socio-legal support to survivors of sexual violence. Maharashtra state now anticipates setting up a DTT in each of its 36 districts.
- Through behavioural change strategies such as training and monitoring, the RAHAT team is supporting several stakeholders (police officers, judges, health care providers, etc.) to improve the way they conduct their duties and discharge responsibilities in accordance with the law. This is helping to minimise the culture of impunity and make state agencies more accountable.

An action-based research project to improve access to justice

In December 2012, a horrific gang rape took place on a bus in Delhi, India. This incident of extreme violence became a symbol for the country's women's movement, and raised the important but taboo issue of sexual violence against women. At the time, data on sexual offences from the National Crime Bureau of India indicated that cases of rape occurred every 26 minutes, molestation every 14 minutes, dowry death every 63 minutes, and acts of violence against women[23] by husbands and relatives every 6 minutes. These crimes were compounded by a high impunity rate. Data from the same bureau indicated that while charge-sheets were filed in 92 percent of cases, the conviction rate was only 27 percent (IDRC 2016c).

A few months before this highly publicised case, a local journal in Mumbai reported on the rape of a four-year-old girl by her school watchman. Lawyers and social workers at Majlis—a women-led legal organisation close to the school (and former IDRC grantee)—chose to offer socio-legal assistance to the victim's family. In taking on the case, Majlis created the RAHAT Unit. Lawyers and social workers working in this unit launched an action-based research project[24] to systematically document rulings from high and supreme courts in cases[25] of violence against women and children, and identify gaps in the criminal justice system and the application of existing laws (IDRC 2016: 1). The project also led to the development of a holistic Survivor Centric Approach.

As described in Majlis' *Pursuing This Thing Called 'Justice'* report, the Survivor Centric Approach seeks to minimise trauma by "prioritising the needs and rights of victims-survivors of sexual violence and keeping in focus support and rehabilitation as a primary concern . . . through this process the victim can be transformed into a survivor" (RAHAT 2015: 20). The approach prescribes collaboration and coordination between numerous stakeholders to provide victims with legal, medical, social, or other support throughout the litigation process and beyond. "As opposed to a stationery model based in a hospital, we have evolved a mobile outreach model to reach out to the victim at her residence, where she is most comfortable, as soon as a rape case is reported" (RAHAT 2015: 20).

Between 2012 and 2015, the RAHAT team followed approximately 500 cases of sexual violence. Tools, protocols, and trainings were developed to support stakeholders within the justice system (e.g., police officers, protection officers, etc.) in fulfilling their mandate.

While IDRC funding of Majlis ended in 2015, the RAHAT Unit has continued to support women and child

victims of violence. The team continues to take on cases and has begun to scale its Survivor Centric Approach. The tools and protocols developed by the team have been used by over 2000 police officers in 93 police stations, as well as by several judges and public prosecutors in Mumbai city and the suburbs. The success of the Unit's approach has also inspired the State of Maharashtra to replicate it.

Insights from scaling access to justice through delivery mechanisms for survivors

Following the success of the Survivor Centric Approach in Mumbai, partners involved in the RAHAT Unit assessed its scalability (Naqvi and Mehta 2015). The RAHAT team pursued both horizontal and vertical scaling strategies based on the recommendations of an external evaluation. Horizontal scaling involves the replication or expansion of an innovation in a different community; whereas vertical scaling institutionalises an innovation through policy, political, legal, regulatory, budgetary, or other [system changes]" (quoted by Rottach et al. 2012: 2; Hardee et al. 2012).

The following questions offer guidance for understanding the scaling process of the Survivor Centric Approach to justice:

- Were there any gender barriers and/or facilitators in the scaling process?
- How can complex but valued cross-cutting issues, such as gender, be integrated into a scaling strategy?
- How can a research-level gender strategy extend into a full scaling strategy?
- How can several scaling strategies such as behavioural change, replication, and adoption be combined into a scaling pathway?

JUSTIFICATION

A matter of fidelity to the model

Researchers and practitioners must justify why they believe scaling creates acceptable impact risk before determining whether to scale. This assessment should happen in each new community given new contexts and challenges. One risk is that quality may diminish at scale, in this case resulting in survivors of sexual violence not receiving the full benefit of the Survivor Centric Approach. Therefore, the RAHAT team worked to maintain the core elements of its approach, while adapting to local contexts. To meet victims' needs, researchers continuously assessed and adapted their approach to different types of vulnerability (e.g., rural/urban conditions, class, castes, ethnicity, and religion). Support from the Mumbai police commissioner was also a key factor for success. Other police commissioners may have taken a different position on women's organisations and sexual violence. In taking their approach to scale, the RAHAT team had to consider a multiplicity of variables. Key social, economic, or political factors of success could not be treated as constant for communities beyond Mumbai city and its suburbs.

Scaling a Survivor Centric Approach: three main strategies

Scaling is an ongoing process that should be informed by *Dynamic Evaluation*. The RAHAT team is continuously scaling their Survivor Centric Approach through three strategies. The first takes the approach to scale through its **adoption** by the state government or other NGOs. The second strategy pursues the **replication** of the approach in additional sites

across Maharashtra's 36 districts. The final strategy promotes **behaviour change** at different levels of the legal jurisdiction to ensure sustainability, improve the accountability of state agencies, and reduce impunity. The development of SOPs and training programmes, combined with the monitoring of institutionalisation processes, represented the main pathways for scaling up the Survivor Centric Approach.

This combination of mutually reinforcing strategies sought to enhance the capacities of state agencies and other public stakeholders to abide by and apply the law. The strategies also aligned with the fundamental mandate of Majlis, which at the ground level focuses on supporting women victims of violence and advocating for policy change. The RAHAT team is improving survivors' access to justice, holding state agencies accountable, and ultimately decreasing the level of impunity for violence against women. From their perspective, a critical element for the sustainability of this approach is monitoring the behavioural changes of officials and strengthening state capacity.

Each scaling strategy encountered challenges in terms of feasibility, quality of the model, and *Coordination* with stakeholders.

The implementation of the Survivor Centric Approach relied on a high number of partners and collaborators in the original site, Mumbai. The Department of Women and Child Development (DWCD) and the State of Maharashtra served as partners during the project's inception phase. In fact, the Memorandum of Understanding between DWCD and Majlis Legal Centre was key to the project's success. As noted by Naqvi and Mehta (2015: 12), this strategic collaboration "allowed mutual needs of the DWCD and Majlis to merge toward shared goals". The government also sought public acknowledgement of its efforts, with "crimes against women on the rise, and a public mood that was volubly critical of government inaction".

This partnership privileged the RAHAT team with access to stakeholders in the judicial system, including the courts. It also gave them the credibility and legitimacy needed to access the First Information Reports (FIR) recorded by the Mumbai police, and the opportunity to train public prosecutors and judges. Over the course of the project, the RAHAT team in some way became part of the justice system, serving as a forceful advocate for survivors. Their increasing role in supporting victims of sexual violence allowed them to build close relationships with major stakeholders, including police commissioners, public prosecutors, and judges.

In terms of horizontal scaling, RAHAT's formal partnership with the DWCD enabled them to create an environment of trust and build relationships in districts of Maharashtra where they were lesser-known. This was also key to the vertical adoption of the approach and its institutionalisation. The replication of the approach in other districts was facilitated by the presence of a uniform legal system across Maharashtra. The actual application of the law, however, remained challenging and required that local contexts be considered, which was made possible with the help of district-level partners.

This case further demonstrates how scaling requires the participation of many partners and collaborators at multiple levels. Leadership plays a crucial role in scaling, particularly when a small organisation seeks to replicate and diffuse a norm as unconventional as transforming victims into survivors. Moreover, the success of the scaling process is tied to Majlis' championing of the approach, its expansion of the team, and its provision of the expert support necessary at new sites.

It is important to note that replicating the approach was not always feasible or desirable in every community. Competition between organisations doing similar work posed one consideration. Collaboration between local organisations was also not always possible given limited capacities,

competing interests, differing ideological approaches, etc. Such factors must always be carefully assessed along the *pathway to scale*. Prior to replicating their approach in the city of Navi Mumbai, for example, the RAHAT team first mapped all organisations involved in providing social and legal support for victims of violence. This step was critical to understanding the local context in which sexual offences against women and children occurred, and the range of actors involved in tackling such violence.

COORDINATION

Networking to avoid competition and duplication

The initial uptake of the Survivor Centric Approach within Mumbai and its suburbs was effective and efficient because it was built on a robust network of organisations that believed in the approach and trusted the RAHAT team. Close collaboration between stakeholders in the district was key to the successful provision of support to victims-survivors of sexual violence. However, collaboration also complicated replication. To access police stations and state agencies in their new implementation site, Navi Mumbai, the RAHAT team relied on its pre-existing partnership with DWCD and the police commissioner in Mumbai. A network of local NGOs was also leveraged (e.g., shelter homes, women organisations, etc.). As the intervention expanded, mapping activities to identify networks and organisations in each district were conducted to avoid competition and duplication. Feminist organisations with a strong belief in the approach were also sought, as the approach needed to be built on a network marked by shared values.

Gender transformative and accommodative strategies: a pragmatic perspective

When horizontally scaling an innovation, such as expanding access to justice for marginalised women and children, adjustments to different gender contexts may be necessary. "Adaptation of an intervention to new contexts, without compromising the fidelity of the intervention, is critical to its acceptance and success. Additionally, acceptance of and buy-in to the intervention being scaled up can be improved through the application of gender-integrated strategies to deliver a best practice" (Rottach et al. 2012: 13).

Both gender transformative and accommodative strategies were used in scaling up the Survivor Centric Approach. To systematically integrate gender-sensitivity into their scaling process, RAHAT analysed gender barriers and articulated the role of gender at each stage (e.g., at the design of the pilot phase, during pilot testing, and development of the scaling strategy, in partnering and collaborating with key stakeholders, in monitoring and evaluation exercises, etc.).

At its core, the Survivor Centric Approach is gender transformative. It seeks to challenge how the justice system and society view women and child victims of sexual violence, turning victims into survivors. The RAHAT team set out to challenge popular misconceptions; for example, that all rape cases were false. This misconception prevails not only at the community level, but also within state agencies, which in turn normalise police violence and their subsequent inertia in addressing sexual violence complaints. The socio-legal support provided by Majlis, including legal counselling, skills training, and job re-entry programming, aimed to counteract these misconceptions and empower women as survivors of sexual violence, not victims.

The RAHAT team needed to adapt its approach to local gender barriers in order to ensure behavioural change among stakeholders within the justice system. For example,

a massive sensitisation campaign called 'Zero FIR' was conducted. The campaign raised awareness around the importance of police officers filing a FIR within the first 24 hours after a rape is reported.

The RAHAT team also relied on gender accommodative strategies. Accommodative strategies were used to strengthen stakeholders' ownership of the approach and its sustainability. One of the main accommodative components was skills training programmes for police officers.

The training programme included two components. A sensitisation component educated officers on their roles in addressing sexual violence (e.g., the importance of filling out FIRs, following SOP protocols, female officers recording complaints, etc.). The training was deliberately non-gender sensitive[26] (i.e., no direct change in the mindset of police officers regarding sexual violence and women's role in society was sought). This choice reduced resistance from officers and built trust. In this case, a pragmatic gender accommodative approach proved more appropriate than a transformative one.

The programme, however, also incorporated gender transformative elements, including training to empower and reinforce the skills of female police officers. Entitled 'How to Record a "Victim Statement",' an all-women training session was used to raise female police officers' awareness of their legal responsibility to record victim statements. Mandated by nationwide law, this responsibility is rarely respected by investigators, as most police officers are male. The session focused on this issue by working to build the capacities of female officers and their confidence in applying the law. This complementarity between gender transformative and accommodative strategies highlights the importance of continuous gender analysis and responsiveness in the context of scaling. In some circumstances, both strategies may have to be incorporated into the scaling pathway. In other cases, only one strategy is appropriate.

DYNAMIC EVALUATION

Gender-sensitivity through scaling

To systematically integrate gender into the scaling process, local gender barriers needed to be considered and the role of gender at each stage of the project articulated. As the model was replicated in other districts, key contextual factors were investigated and assessed, including the vulnerabilities women faced, the socio-economic context of the area where they lived, the presence of women's organisations, and the availability of resources and support for women. The RAHAT team's original approach was not universal and required context-specific adjustments to be successfully replicated in different districts.

Using both gender transformative and accommodative strategies while scaling

Gender transformative strategies aim to transform power dynamics and empower marginalised people. A transformative strategy also seeks to challenge gender norms and attitudes by promoting the status of women in society. Gender accommodating approaches acknowledge gender norms and inequalities, and develop actions that adjust to and often compensate for them. The overall objective of the RAHAT approach was gender transformative. Nevertheless, the researchers also employed gender accommodative strategies in scaling their approach based on an analysis of local gender barriers. Both strategies were used to enhance ownership of the approach in new districts. This was necessary for creating behavioural change within state agencies and context appropriate replication.

COORDINATION

Acknowledging gender barriers while partnering with police

A major dimension in scaling is *Coordination* with other organisations and stakeholders. How do we identify the 'right' partners for gender integration and scaling? To achieve the latter, RAHAT needed to collaborate with stakeholders that held varying or even opposite perspectives on gender. The law-oriented skills training sessions for police officers, for example, sought to foster application of the law but they were purposefully designed to be non-gender sensitive. Sessions offered to female police officers, on the other hand, were highly transformative and sought to empower the trainees. This pragmatism strengthened local ownership of the training and protocols, and ensured the sustainability of the approach.

Planning and designing a scaling strategy

Researchers should be reflective when taking their innovations to scale. To achieve the same positive impact as in Mumbai elsewhere, scaling the Survivor Centric Approach needed to be carefully planned and designed. The RAHAT team initiated two processes to identify scaling strategies for their model: 1) an external evaluation of the project in September 2015 and 2) an internal process to assess and map out the need and potential for expanding their model at an additional site, Navi Mumbai. The decision to scale the Survivor Centric Approach and, most importantly, the choice of scaling strategies was in part delegated

to external evaluators. As IDRC's funding concluded, an external evaluation was conducted with two well-known Indian feminists working on issues related to gender-based violence and child protection.

The evaluation reviewed the work conducted by Majlis as part of the RAHAT project. It provided expert feedback on the model in addition to addressing scalability in other contexts (Naqvi and Mehta 2015: 6). The evaluators forwarded several recommendations, including some of the strategies illustrated above.

DYNAMIC EVALUATION

Evaluation for decision-making

The expansion of any given project, approach, or model should be informed by an assessment of *Optimal Scale*. A scaling pathway is rarely linear. *Dynamic Evaluations* allow for a more complex understanding of the impact of scaling and the development of a strategy for how scaling should occur. For example, the RAHAT team commissioned an external evaluation during the last year of the project to ask specific questions regarding their scaling approach:

- Why would they scale this model? Who is going to benefit from it?
- Is this model relevant for other districts?
- Are they going to scale the whole approach or only some of its dimensions?
- Should they maintain fidelity to their model?

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The conclusions of this evaluation were used to inform the strategy for scaling the Survivor Centric Approach.

Internal dynamic evaluations

Because scaling is dynamic and contingent, evaluations should be integrated at different stages of a scaling process. In addition to their external evaluation review, members of the RAHAT team directly assessed each potential implementation. The work completed in following cases of victims of violence, for example, allowed the RAHAT team to stay abreast of changes in the criminal justice system and adjust their scaling strategies accordingly (i.e., training, monitoring, etc.). Before approaching state stakeholders in the new district in Navi Mumbai, for example, one member of the RAHAT team was mandated to assess the implementation site to inform the scaling strategy. The assessment focused on the socio-cultural context, the types of violence women were facing, vulnerability factors, as well as the work of other organisations.

The RAHAT project's experience demonstrates how optimality must be considered early in the scaling process. Optimal should result from a dynamic assessment of available resources and local context. The Survivor Centric Approach illustrates some of these challenges. One scaling risk for a grass-root organisation like Majlis was that it relied on other organisations to implement the model.

In Navi Mumbai, the RAHAT team undertook a needs assessment to ensure that its approach was as context-specific as possible. While they had followed a high number of cases in Mumbai to inform the development of their

model, the RAHAT team still needed to better understand contextual factors and replicate the approach at *Optimal Scale* in each new setting. Their experience in the first site, Mumbai, allowed them to understand the complex and local challenges that victims of violence face. Nevertheless, the specific challenges associated with operating in smaller cities or rural areas, including the types and roles of local organisations, required further assessment.

The success of the strategy was also supported by the capacity of Majlis itself. The scaling process' demands on time and expertise risked stretching Majlis' staff to its limits. It is therefore not only about 'quality' or 'fidelity', but also the capacity to deliver a model grounded in staff's expertise. A decentralised scaling strategy, combined with partnerships with similar feminist organisations, may be one way to expand the approach without compromising the capacity to deliver. As explained by Naqvi and Mehta (2015: 5) in their evaluation of the RAHAT initiative:

> [w]hile helping the State system upscale the learning from this project, the Majlis team should take care to maintain its present level of human resource commitment in terms of both expertise and numbers of people on the ground, in the present project sites in Mumbai, as well in subsequent pilot sites which it selects for direct intervention in the future.

The third strategy, changing stakeholders' behaviour, involved numerous training events and rigorous monitoring of court rulings. The latter is one of the model's critical challenges. To expand this strategy, the team will require more human resources or will need to rely on partner organisations. As a small NGO, Majlis depends on external funding support to scale its Survivor Centric Approach. Unfortunately, however, securing funding for the replication of this approach proved to be more difficult

than for achieving case work. Given the limited number of lawyers using a feminist perspective and the years it took to build the specialised capacity of the RAHAT team, this may present a significant obstacle.

For this project, the goal was not policy change, as new regulations were already in place (e.g., 2012 Amendment of Criminal Law and 2012 Protection of Children from Sexual Offences Act). Instead, it was a matter of ensuring proper application of the law. In view of this, *Optimal Scale* might include multiple strategies that work toward behavioural change at the policy level by training state representatives on the existing laws, while replicating the approach at the community level. The two concurrent strategies would build cohesion and support the different stakeholders in progressively adopting the model.

OPTIMAL SCALE

What is the 'right scale' for a social and legal intervention?

The external evaluation addressed specific questions regarding optimality. These included: What is the right scale for this type of social and legal support model and is this model replicable?; In how many sites can we implement this model without affecting its quality?; and What is the right scale: city level, district level, state level? (Naqvi and Mehta 2015). Findings from this evaluation helped the RAHAT team identify the 'right scale' for replicating their approach, as well as any risks that may need to be considered in scaling up such a context-specific intervention. For example, human resource commitments needed to be lowered from the levels of the original project. Financial feasibility is vital to assessing the scalability of a model, as well as its *Optimal Scale*.

Could scaling down be an indicator of success?

The success of scaling up an innovation through behavioural change might entail eventual scaling down. Ideally a successful scaling up strategy would allow the implementing organisation to step back and let others (NGOs through adoption, State agencies through behavioural change) pursue the scaling process. As scaling progresses, a more spontaneous scaling process may occur. In this scenario, RAHAT could still be involved as an advisor, but the replication would occur without its deliberate efforts.

Several key lessons regarding scaling emerge from this case study. These include:

- The RAHAT project's Survivor Centric Approach is highly gender transformative as it seeks to challenge the way the justice system and society view women and children as victims rather than survivors of violence. However, to scale the Survivor Centric Approach, the team relied on both gender transformative and accommodative strategies. Behaviour change within state agencies and context appropriate replication demanded both approaches.
- Even if the general mandate of a project or an approach is gender transformative, researchers/practitioners may proceed to use gender accommodative strategies to scale their approach based on their analysis of local gender barriers.
- To remain gender sensitive and context specific throughout the scaling process, the RAHAT team needed to:
    - *Justify* scaling by assessing the needs and the type of violence against women, in each new replicating site, based on a spectrum of marginality (rural, suburbs, urban, caste, class, illiterate, migrants, etc.) present in that context;

- *Coordinate* with other organisations after mapping the ecosystem in the new district, which allowed them to identify potential partners, including women's organisations and shelter homes, and build trust around the approach itself; and
- Use *Dynamic Evaluation* to adapt the Survivor Centric Approach, develop partnerships with police commissioners, and modify their training to local state agencies.

PROJECT DETAILS

Title: Sexual and Domestic Violence: Policy Protocols

One or more projects: 1—#107101

Scalers: Majlis Legal Centre

IDRC Programme: Governance and Justice

Geographic region: State of Maharashtra, India

Scale statistics: Model has been replicated in another district. More than 2000 police officers have been trained and are using the SOP.

Partners: Department of Women and Child Development

* This case study research was conducted and this report authored by Andréanne Martel, through an IDRC Research Award connected to the *Scaling Science* exploration.

9

SCALING SALT REDUCTION POLICIES AND PROGRAMMES IN LATIN AMERICA

> At the World Health Organization [WHO] level they have established a safe level of salt consumption for any population. What level of policy intervention is needed to get there, that is unknown . . . Interventions will differ from region to region. This is because not only the level of salt consumption differs, but also the way that people consume food . . . [Overall] the project is about progress [towards a salt consumption reduction goal].
>
> *Greg Hallen, International Development Research Centre, Interview*

SUMMARY

High salt intake is common in many Latin American and Caribbean countries. It is normally associated with elevated levels of blood pressure. High blood pressure, in turn, is commonly identified as a factor in most strokes and approximately half of all heart disease worldwide.

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In 2016, IDRC approved a project for scaling a salt reduction approach in Latin America that involved industry, government, NGOs, and consumers. Entitled *Scaling up and Evaluating Salt Reduction Policies and Programmes in Latin America*, the project is led by a coordinating institution in Costa Rica and two collaborating Canadian universities. The project involves five national research teams located in Argentina, Brazil, Costa Rica, Paraguay, and Peru. Three teams bring past experience in salt reduction research and policy development, with two having completed past IDRC-funded projects in similar research areas. The project started in September 2016 and provides an example of scaling, based on best practices, from a national to an international level. Scientific research findings on the effects of hypertension on health, and other non-communicable disease (NCD) policy research, are also used to promote the reduction of salt intake and support the development of salt reduction policies in the five participating countries.

Scaling salt reduction policies in Latin America

Latin America and the Caribbean (LAC) exhibit some of the world's highest blood pressure rates (Blanco-Metzler 2015: 4). A 2001 study on the prevalence of high blood pressure in Latin American countries notes rates as high as 43 percent (Ordúñez et al. 2001: 229). High sodium or salt intake is normally associated with elevated blood pressure, which is linked to an increased risk of death and disability. High blood pressure is also a factor in strokes and nearly half of all heart disease worldwide.

Salt consumption patterns differ considerably across LAC. Some populations are primarily consuming processed foods with high sodium content; others are adding significant amounts of salt during food preparation, for example, through high-sodium condiments. These varying patterns create the need for a wide range of salt reduction policies that address the health risks associated with high sodium intake (Blanco-Metzler 2015: 6).

In 2016, IDRC approved funding for a project to scale existing salt reduction approaches and develop a new salt reduction programme in Latin America. The project supports salt reduction innovations in five LAC countries: Argentina, Brazil, Costa Rica, Paraguay, and Peru (IDRC 2015: 3). The University of Toronto and the University of Ontario Institute of Technology served as collaborating institutions. The project also draws on research teams in Argentina, Costa Rica, and Brazil. The teams in Argentina and Costa Rica have contributed to past IDRC projects on salt reduction strategies.

In 2012, IDRC funded a project to reduce salt consumption in Costa Rica. The project sought to:

- Establish baseline evidence against which to assess the effectiveness of Costa Rica's national salt reduction plan (i.e., evidence on sodium consumption and food sources, supply of processed foods with sodium labelling, consumer knowledge, and attitudes and behaviours relating to salt/sodium and health).
- Collaborate with diverse stakeholders—including government, academia, NGOs, industry, and consumers—to identify salt reduction strategies.
- Develop a knowledge base that may benefit other countries in the region looking to implement salt reduction policies (IDRC n.d.: 1).

In the same year, a three-year project was supported in Argentina to assess the effectiveness of national policies put in place between the early 2000s and 2014 on reducing salt and trans fatty acids (IDRC 2016e). This project aimed to:

- Assess the cost-effectiveness of salt and trans fatty acid reduction policies in Argentina.
- Qualitatively assess attitudes of stakeholders, including industry and consumer representatives, surrounding salt and trans fatty acid intake.
- Review local sources of food production, focusing on salt and trans fatty acids that are added during processing.
- Develop databases to assess changes in food formulation over time.
- Conduct chemical analyses of food products to determine the reliability of labels.
- Survey the general population to understand their salt and trans fatty acid consumption patterns, as well as attitudes and knowledge with regard to both (IDRC 2016d: 1–2).

In addition to building on the experiences of its research teams, the current project leverages the relationships that teams in each participating country have developed with local governments, NGOs, industry players, and other stakeholders. The project is also aligned with the work of the SaltSmart Consortium, an organisation set up through the Pan American Health Organization (PAHO) Forum for Action on Non Communicable Diseases (NCDs). This consortium includes representation from the above-mentioned stakeholder groups, and is designed to support member countries in moving towards consensus on salt reduction (Blanco-Metzler 2015: 4).

Specific goals for the currently funded scaling project are:

- Assessing the salt/sodium content and overall nutritional quality of packaged foods, fast foods, and artisanal/street food.
- Determining if salt/sodium content levels align with the WHO's global strategy on diet, physical activity, and health.
- Comparing sodium content levels with sodium reduction targets in and across the five countries.
- Conducting formative research on reported knowledge, attitudes and behaviours, drivers, and barriers to changes in consumer behaviour, and addressing these through social marketing plans.
- Assessing the health and economic benefits of salt reduction among the participating national populations to inform policy plans.
- Evaluating the salt reduction and partnership initiatives in each of the participating countries.
- Developing and promoting knowledge translation of project findings (IDRC 2015: 3).

The ultimate goal of the project is to reduce salt intake in all five participating countries by scaling best practices. The project draws on research findings on hypertension and health outcomes, as well as policy research on NCDs to support its salt reduction goals.

Rather than adopting a single, universal approach to salt reduction, the project employs multiple approaches to effect change, including food policy reform, multi-stakeholder agreements with industry groups, and social marketing techniques. It examines several activities that combined may effect local policy change. This flexibility is also evident in the project goals above: data collection, the identification of barriers to change, the provision of information regarding economic benefits, the evaluation of

local policy, and knowledge translation all factor into the development of country-specific approaches to salt reduction.

Insights from scaling

While the full impact of the project remains to be seen, its potential reach is substantial. The project's target countries represent over 45 percent of the population in LAC (Worldometers 2016). As the international approach to policy development used in this project is scaled, significant benefits for other LAC countries may also be observed.

The scaling objectives of this project partly emerged from IDRC's approach to funding. Latin America hosts numerous research and policy teams with extensive experience in the prevention of food-related chronic disease. Rather than issuing a call for proposals with a singular focus on national health policies for chronic disease prevention, the original IDRC call for proposals assumed a broader view. It specifically called for projects that involved research at a systems level and promoted an inter-sectoral approach to healthy food systems. Latin American researchers interested in chronic disease prevention were therefore given an incentive to focus on research and policy at the systems level.

The design of the call for funding further facilitated scaling by pairing experienced research teams from one set of countries with less experienced teams from another. Extensive experience is brought to the group by the Costa Rican, Argentinian, and Brazilian research teams. The Peruvian and Paraguayan teams, in particular, stood to gain key comparative lessons from participating in the project. Scaling policy interventions only in countries where past work had occurred was one option. The incorporation of teams from regions with less experience in salt reduction, however, provides an opportunity to develop new approaches and transfer tried-and-tested ones.

OPTIMAL SCALE

"More is better" as a reasonable approach to Optimal Scale

Establishing *Optimal Scale* is challenging and often requires scaling and/or scaling down an intervention. This project is an example where scaling more is likely optimal. The project has the potential to significantly improve health outcomes among a substantial share of the population in LAC. Gains from project's policy work could also be influential in other regions, particularly as lessons learned from national policy interventions could be used to launch international initiatives.

In addition to changing consumer behaviour, the project also seeks to reform food production activities to create an environment where low-salt options exist. Between supporting voluntary reduction efforts and enforcing mandatory regulations, industry players are initially more likely to choose the voluntary route. Previous research on NCDs, however, suggests that this voluntary approach is often ineffective as some producers fail to opt in. Limited opt-in often results in uneven competition and those who voluntarily implement reductions face a relative disadvantage. To ensure an even playing field, industry players interested in salt reduction are therefore likely to eventually support mandatory regulations.

This case also demonstrates how a research team's prior experience can influence its approach to scaling. The team from Argentina, for example, was previously involved in tobacco reduction research and policy development, which led it to support mandatory regulations in tobacco reduction strategies. This research background could potentially

influence the perspectives and choices of research teams with less extensive experience regarding mandatory regulation. However, it could also fuel scepticism among team members that are more open to engage with industry and consider a voluntary approach to salt reduction.

This diversity of actors also presents an opportunity for international organisations to step in and perform a *Coordination* function. PAHO, for instance, has played an important role in establishing the scaling project. As the project progresses and concludes, PAHO could also play an important role in maintaining collaboration between the research teams involved in this salt reduction work and in influencing food systems policies.

COORDINATION

Funding as a tool for scaling design

The salt reduction project builds on years of research funded by IDRC and others. This funding contributed to strengthening capacity among participating actors. Some of the teams had already acquired extensive experience in NCD prevention in Latin America. This allowed IDRC to develop a call for proposals that sought to scale the knowledge base to a broader range of partners. Such a call would not have been successful in other contexts, particularly where the knowledge to be scaled was still under-developed or the group of leaders with experience in applying it was lacking.

Creating an enabling environment to achieve results

The success of the project is also a function of multiple, interdependent policy interventions. Consumer attitudes

towards sodium intake can be changed. Allowing consumers to act on these new attitudes, however, requires a food systems environment that offers low-sodium alternatives. This partly requires industry buy-in and the development of multi-stakeholder policy initiatives that aim to reduce salt intake. Such a two-pronged approach is more likely to show success during the scaling process and in changing attitudes and behaviour.

Allowing partner discovery to achieve policy ends

The dynamic between the research teams and industry players proved complex. The former sought to address the issue of high salt intake, whereas the latter ultimately shaped the context for salt consumption. Certain research teams treated mandatory regulations as necessary, regardless of the industry players' position on such market interventions. To secure the cooperation of industry players, however, the negotiation of new partnerships over the course of the project will be necessary.

Alternative oversight with scale

The project's wide variety of initiatives poses administrative challenges. Some research teams are highly experienced in coordinating NCD prevention work at the national level, while others are not. This imbalance exacerbates the challenges that come with international coordination, suggesting that alternative approaches to managing and overseeing the scaling of complex policy interventions may be necessary. Moreover, while some challenges can be anticipated, others will only emerge as scaling progresses.

The project's monitoring component seeks to assess policy approaches individually, rather than directly comparing them. Contrasting the effectiveness and/or the complementarity of various approaches undertaken by different countries is not the explicit aim. Such a comparative study, however, could be undertaken at a later stage in light of existing variation. It could also serve as a stepping stone for global synthesis and/or knowledge translation work at later stages of the project and/or following its completion.

The international scope of the project has presented a number of challenges and a need for careful planning. Within each country, the project entails numerous initiatives marked by multiple objectives. While these initiatives collectively contribute to the broader goals of the project, each requires individual management. None of the research teams has prior experience in taking on such a multifaceted and international task, contributing to administrative challenges for the lead research team in Costa Rica. Effective project administration has also required context-specific knowledge. Understanding the requirements of scientific review committees in each country, for example, has been crucial so as not to delay the research timeline. Working across policy and research contexts that are marked by different industry regulations similarly raises important considerations, especially in relation to data collection on salt content in food products.

DYNAMIC EVALUATION

Scaling as an opportunity for intervention comparison

The project is composed of similar but unique initiatives in each participating country. While not the explicit focus

of the project, these differences provide an opportunity for comparing effectiveness and testing complementarity. Over time, such analysis may reveal where adjustments are necessary and where a certain combination of interventions ought to be scaled further. Two considerations emerge. First, scaling must be justified by the demonstrated effectiveness of a smaller-scale intervention and its assumed or proven external validity. On the other hand, this external validity can be tested most effectively along the *pathway to scale* as interventions are applied across different contexts. As an intervention is challenged in new contexts, adjustments can be made to directly address local needs or environments.

It is also important to note that in the context of this project, scaling has involved broadening and deepening research and policy interventions, but no basic science that draws the link between hypertension and health risks. In NCD prevention, this link is often assumed and the background knowledge implicitly treated as pre-established. This is the case with tobacco reduction policy interventions, and is now the case for salt reduction work.

The salt reduction project, like other NCD prevention work, relies on established research in epidemiology as the basis and motivation for policy intervention. At the local level, research was undertaken to only determine risk levels. This data on local levels of salt consumption has provided the evidence needed to determine where to intervene and to what extent. "Acceptable" levels of salt consumption and sources of dietary salt may differ based on local factors. Policy interventions can thus be tailored to address local needs, contexts, and consumption trends.

JUSTIFICATION

Basic scientific research as a Justification for scaling

The scaling project did not undertake any research on the fundamental link between sodium and health. Existing research on this subject was therefore key, as it served as a *Justification* for the project's objective. Data collection on locally appropriate levels of intake have helped identify where direct intervention was needed, and inform local policy reforms. The absence of prior research, however, would have weakened a full moral justification for scaling and complicated policy uptake.

Scaling an innovation is often depicted as a linear process, where ideas are developed and implemented in a straightforward way. This scaling project demonstrates an alternative, as its policy reform efforts build on decades of pre-established research. In this case, successful scaling relies on establishing an appropriate entry point for this scientific knowledge in a complex policy environment. It also depends on developing approaches to influence government, non-governmental, industry, and consumer behaviour.

Several key lessons regarding scaling have resulted from this project, including:

- Scaling objectives can be influenced through funder actions.
- Industry involvement in scaling may require time for industry to learn about the potentially complex implications of policies.
- Scaling multifaceted (and in this case, multi-country) projects, comes with significant administrative challenges.
- Basic and epidemiological scientific research can not only support scaling, but provide an initial *Justification* for scaling work.

For more information, please see http://en.cronicas-upch.pe/salt-reduction/.

PROJECT DETAILS

Title: Scaling up and evaluating salt reduction policies and programmes in Latin America

One or more projects: 1—#108167 (based on the work of several prior projects)

Scalers: Instituto Costarricense de Investigación y Enseñanza en Nutrición y Salud, University of Toronto (Department of Nutritional Sciences), and University of Ontario Institute of Technology (Faculty of Health Sciences)

IDRC Programme: Food, Environment, and Health

Geographic region: Argentina, Brazil, Costa Rica, Paraguay, and Peru

Scale statistics: Development of policy interventions in the five major LAC countries representing over 45 percent of the LAC population

Partners: Project 2: Parallel funding with Pan American Health Organization

10

SCALING SOUTHERN POLICY RESEARCH TO A GLOBAL LEVEL

Southern Voice

> There was a discussion of whether these institutions ("think tanks") expected to engage in principally national dialogues, or whether they should also have an international role . . . One of the ideas behind Southern Voice was that if these think tanks wanted to be really addressing power imbalances in international development, then shouldn't they be seen to be on equal footing with other major think tanks, and shouldn't they also have an international voice? This type of discussion had already been taking place, so with 2015 looming large, it seemed clear that this group could really seize the moment to organise itself collectively and contribute internationally.
>
> *Peter Taylor, International Development Research Centre, Interview*

SUMMARY

In the years leading up to 2015, global development organisations were primarily occupied with meeting the

United Nations' (UN) Millennium Development Goals (MDGs). In spite of focusing international efforts for 15 years, the MDGs were widely criticised for not reflecting the breadth of perspectives on development, particularly the experiences of those living in the Global South.

In 2013, as discussions on the post-2015 Development Agenda progressed, an international collaborative network emerged, Southern Voice. Composed of think tanks from countries in the Global South, the network sought to extend the policy influence of its members beyond their national and regional contexts to a global level. More specifically, the network sought to ensure that Southern perspectives were considered and integrated into the framing of the post-2015 Agenda.

The *pathway to scale* pursued by Southern Voice extended the influence of its members. While the formation of Southern Voice and its own scaling over time were intrinsic to this process, the ultimate goal of the network was to scale Southern policy influence and affect development work globally.

Scaling Southern policy influence to a global level

Independent research institutions, including think tanks, are important vehicles for influencing policy, both in developed and developing countries. They do so by providing credible analysis of key local and national issues. Despite this vital role, think tanks in developing countries regularly face challenges, including limited funding and support to carry out their work (Practical Action Consulting 2016). These challenges can limit their positive impact on development outcomes.

The Think Tank Initiative (TTI) is a partnership that supports independent policy research organisations in the Global South. The initiative began in 2008 and is scheduled

to continue through 2019. It has been managed by IDRC since its initiation. In addition to IDRC, five organisations have funded TTI:

- William and Flora Hewlett Foundation;
- Bill & Melinda Gates Foundation;
- United Kingdom's Department for International Development (DFID);
- Ministry of Foreign Affairs of the Netherlands; and
- Norwegian Agency for Development Cooperation [NORAD] (Think Tank Initiative 2016a).

The initiative has three main objectives:

- Identifying, selecting, and assisting in the assessment of the organisational performance of a group of policy research organisations.
- Providing core funding for the identified research organisations and supporting their improvement.
- Developing and disseminating a knowledge base regarding support for the types of policy research organisations involved in TTI (Young et al. 2013: v).

Currently, TTI meets up to 30 percent of the core funding needs of its member think tanks, enabling them to maintain their operating budgets, engage local talent, operate research programmes, and engage in national and regional outreach as well as policy activities. While more than 50 organisations have been supported by TTI since its inception, the initiative currently supports 43 think tank organisations in 20 countries (IDRC 2013; Think Tank Initiative 2016a).

Spanning Latin America, South Asia, and sub-Saharan Africa, the 43 think tanks supported through TTI vary in terms of their context and research focus. Their work covers numerous research areas, including:

- Development
- Economics
- The environment and natural resources
- Evaluation
- Food and agriculture
- Governance
- Health
- Information and communication
- Science and technology
- Social policy (Think Tank Initiative 2016c).

In addition to core funding, TTI offers capacity development to its member think tanks. Capacity development focuses on strengthening "research methods and skills, policy engagement and communication, and general organisational effectiveness". The capacity development component also involves support for "mentoring, learning events, [and] opportunity funds" (Think Tank Initiative 2016a). A third of these activities involve funding for direct collaboration and peer learning between TTI members (Think Tank Initiative 2016b).

TTI evolved through several distinct stages. Planning for the initiative took place during its "incubation period" from 2006 to 2008. From 2008 to 2010, a group of think tanks were selected through a competitive process and core funding was initially released to organisations in East and West Africa, and later to organisations in South Asia and Latin America. From 2009 to 2012, the initiative commissioned a series of baseline studies aimed at informing the planning and implementation of capacity development activities. Since 2011, the initiative has also focused on its third objective of learning and knowledge sharing. To this end, TTI undertook a global learning event in Cape Town, South Africa in 2012 (Young et al. 2013: viii) followed by a second event in Istanbul, Turkey in 2014.

The development of Southern Voice

Southern Voice emerged as a collective from among the institutions supported by TTI. Its formation began at TTI's 2012 global learning event in Cape Town, which marked an important starting point for more active collaboration between the think tanks supported through TTI. At this learning event, which brought together international experts and leaders from numerous think tanks, attendees exchanged ideas and experiences. The event's plenary panel, entitled "Think Tanks: Promoting Local Solutions, Influencing Global Thinking", spoke to the current and possible future role of think tanks (Think Tank Initiative 2012).

During one of the event's open sessions, participants discussed the potential for more active participation from Southern actors in the development of the Sustainable Development Goals (SDGs), the successor to the United Nation's MDGs (United Nations 2016). The MDGs, which had focused global development efforts for 15 years, were set to expire in 2015. Greater participation from the Global South in the framing of the SDGs was deemed critical, particularly to account for the local contexts where most SDG work would occur. From these discussions emerged "Southern Voice on Post-MDG International Development Goals" (Southern Voice, n.d.), a network of Global South think tanks that had received TTI support (Southern Voice 2016a).

At its inception, Southern Voice was guided by the following four objectives:

- Providing a platform for formulating and exchanging novel ideas on post-2015 issues that are grounded in the realities of developing countries.
- Strengthening the participation of Southern researchers in the post-2015 debate by improving their analytical contributions and strategic engagements.

- Creating opportunities for Southern think tanks to explore global development debates in their national contexts.
- Building research and outreach capacities of Southern think tanks to facilitate their emergence as key players in global dialogues on the post-2015 Agenda (Southern Voice 2016b).

Southern Voice approached its first objective with project-based support from TTI and supplementary support from the Hewlett Foundation and the United Nations Foundation. In 2013, the Centre for Policy Dialogue (CPD) in Bangladesh, one of the think tanks supported by TTI, organised an expert group meeting in Dhaka, Bangladesh. The meeting involved participants from 10 different countries and contributed to the development of a publication entitled *First Approximations on Post-MDG International Development Goals* (Southern Voice 2016b). The publication set a collective agenda for Southern actors and laid out immediate actions that Southern Voice could take to influence the development of the SDGs.

The *First Approximations* publication was shared with representatives from, and key advisors to, the UN High-Level Panel on the Post-2015 Development Agenda. This outreach to the High-Level Panel occurred during a mission undertaken by Southern Voice representatives in early 2013. During the outreach mission, the network's chair also engaged in a number of public dialogues on the *First Approximations* publication (Southern Voice n.d.: 2).

Southern Voice has continued to pursue the agenda laid out in the *First Approximations* publication. More recently, among its many international engagements, the network has participated in two collaborative research activities of note (Think Tank Initiative 2016a):

- As a core team member of *Post-2015 Data Test: Unpacking the Data Revolution at the Country Level*,

which supports the UN data revolution agenda by focusing on the production, collection, and use of better data and statistics to support the development agenda, and addresses several key issues related to the measurement of SDG results (Post 2015 Data Test 2016).

- As one of five policy groups that contributed to the *ERD 5: European Report on Development*. Developed by numerous global development agencies, the report examines the use of financial and other resources to support SDG-related work (Overseas Development Institute 2016).

In the evolution of Southern Voice, national research and policy intervention activity is scaled to a global level. The establishment of TTI supported independent think tanks in their national and regional policy development work. Southern Voice, which grew out of TTI, opened an opportunity for these national and regional insights to be scaled to the global level. One additional effect is that Southern Voice's global work often feeds back into national dialogues, reinforcing both the scaling up and the scaling out of policy insights.

Insights from scaling

At its core, Southern Voice addressed the need for greater representation of Southern views in the framing and implementation of the global development agenda. The network sought to address what were perceived as structural power imbalances by extending the influence of Southern think tanks and counter-balancing the representation of views from the Global North.

This mandate crystallised during the network's initial phases. To launch successfully, however, the network depended on clear directives and generous funding. The opportune timing of the 2012 global learning event served

as a crucial catalyst. The existing support for Southern think tanks, provided through TTI, also served as a foundation. Moreover, the network's partnership with the UN Foundation played an essential role in facilitating access to UN platforms and deliberations.

JUSTIFICATION

Greater influence through a network approach

The *Justification* for scaling in the context of Southern Voice is to ensure that Southern perspectives on development issues receive global recognition. Rather than representing each national policy perspective individually, the network provided a unified and collaborative policy engagement approach to Southern actors. A unified or coordinated approach is more likely to extend global influence than a cacophony of national approaches, justifying the network's establishment.

The network's success also rests on mobilising a critical mass of participants, which was in part driven by CPD's leadership. CPD provided guidance and recruited network members and partners to maintain an optimal network size and ensure representation from a variety of regions. Southern Voice includes organisations from Africa, South Asia, and Latin America; however, relative representation from these regions has varied over the network's history.

At the national level, the network has also contributed to amplifying and further developing the knowledge-based products of its members. Policy engagement at the national level has generally involved think tanks identifying an issue,

working on research and policy development in the related area, engaging with national stakeholders, and then taking their findings to relevant stakeholders. These national stakeholders could include the media, NGOs, advocacy groups, academic institutions, or government actors.

Southern Voice amplifies the impact of its members' policy engagement work by scaling it to the global level. Insights from each national context are synthesised to identify cross- and transnational lessons. For example, the newly developed SDGs included 17 ambitious and highly interrelated goals for global development, accompanied by a universal agenda for both the Global North and South. Southern Voice's core work has been to bring the insights of members to bear on the global agenda, a costly activity that cannot be undertaken by its members independently.

Southern Voice's scaling efforts have also produced positive network effects. As certain perspectives are developed and acted on at the global level, they are also disseminated among members of the network itself. The horizontal dissemination of these insights provides an opportunity for organisations to learn from and integrate the experiences of others into their own national policy work.

The ability of the network to disseminate policy insights globally rests in part on members' capacity to undertake policy engagement work. The latter is in turn shaped by the quality and credibility of members' research. Southern Voice includes a cohort of influential organisations and researchers who are regularly invited to engage in international fora, and whose work and perspectives are highly regarded. As more organisations and researchers join, the reach of Southern Voice's policy engagement work could grow further as long as members' capacities are maintained.

Capacity development also plays an even more important role in light of a rapid rise in the demand on network

members to participate in international engagements. Maximising effectiveness has been a key question for the network. This need to prioritise efforts is related to discussions within the network on how to best engage all member organisations. Uneven participation may contribute to the underrepresentation of certain perspectives, limiting the network's ability to scale the dissemination of its policy insights. While member organisations are free to determine their own level of engagement, some may face constraints in terms of building the capacities needed to meaningfully participate in network activities. This is a strategic question that Southern Voice is conscious of and working to address.

OPTIMAL SCALE

Optimal network size and quality

The goal of Southern Voice is to scale members' policy insights to influence global policy. Its success in doing so rests in part on securing an optimal number of members. Without adequate regional representation, the network runs the risk of developing and scaling perspectives that do not reflect the diversity of the Global South's policy experiences. This points to an important interdependence between scaling an organisation (the Southern Voice network) and the innovation itself (Southern policy insights and perspectives). The knowledge to be scaled is, to some extent, a function of the network's size.

Scaling a self-reinforcing activity?

While Southern Voice was launched to focus on influencing global development policy, its experience also exhibits a

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positive network effect on national policy dialogues. Through their participation in Southern Voice, individual members are able to support and amplify the influence of other members at the national and regional level. This externality opens an avenue for sharing experiences. It also strengthens the work of individual members, and, by extension, the network itself. In the context of knowledge and policy networks, scaling can produce originally unintended value.

Scale defined by member capacity

The establishment of the Southern Voice networks represents an important step toward scaling members' policy insights. Southern Voice's ability to scale national policy perspectives to the global level rests, in part, on the quality of its international engagements. The success of these engagements, in turn, rests on even participation as well as research and policy development capacity at the level of individual think tanks. The scaling process is driven by the network's capacity and that of its individual parts.

It is important to recognise that Southern Voice is disseminating policy research and perspectives in spaces that include a diverse and potentially competing set of voices. This is especially true for the SDGs, but it applies to other development policy spaces more generally. A key consideration in scaling its perspectives is to distinguish Southern Voice's insights and messages from those of others. As these spaces become more crowded, global influence will require Southern Voice's active participation in addition to overcoming biases against research from the Global South.

Southern Voice points to various lessons on scaling, including:

- Networks provide an opportunity to reframe and more broadly disseminate knowledge products that support policy dialogue and insight, nationally and globally.
- The development of these networks and their success at scaling knowledge rests on adequate support and effective timing.
- A complex interaction between continuous capacity development and engagement of all network members to sustain scaling of the networks' initiatives.

For more information on Southern Voice, please see http://southernvoice.org/.

PROJECT DETAILS

Title: Southern Voice on post-millennium development goals

One or more projects: 1—#107403

Scalers: Southern Voice Initiative—a collaboration of 48 think tanks

IDRC Programme: Think Tank Initiative

Geographic region: Multiple regions

Scale statistics: Participation of 48 think tanks in the development of various research projects and engagements

Partners: William and Flora Hewlett Foundation, Bill & Melinda Gates Foundation, United Kingdom's Department for International Development (DFID), Norwegian Agency for Development Cooperation (NORAD), and Ministry of Foreign Affairs of the Netherlands

11

SCALING A NUTRITION INTERVENTION ON THE MARKET

Promoting locally fortified sunflower oil using e-vouchers

Small and medium enterprises (SMEs) have demonstrated—for the first time—that unrefined sunflower oil can be fortified on a small scale and reach the most vulnerable people, particularly lactating mothers and children. More than 142,000L of MASAVA-fortified oil was produced by SMEs, and sold by a network of 319 retailers, reaching nearly half a million people. The project supports Tanzania's national food fortification policy, which is making fortification of edible oil mandatory. The results demonstrate how a locally produced crop, processed at local businesses and sold by local retailers, can improve food security and stimulate local economic growth.

Agriculture and Food Security Programme, IDRC

SUMMARY

Vitamin A is essential to child and adult health. A deficiency in this vitamin is not only a leading cause of preventable blindness in children in developing countries, but it can also

increase health risks associated with diseases such as diarrhea and measles. The deficiency is particularly common in Tanzania and, in response, the Government announced a strategy for increasing the consumption of micronutrient-enriched foods.

Unrefined or crude vitamin A fortified sunflower oil has been unavailable in Tanzania due to a lack of regulatory approval. The "Promoting Locally Fortified Sunflower Oil Using E-vouchers" project worked with small and medium enterprises (SMEs) to demonstrate the viability of the sunflower oil fortification process. The project also sought regulatory approval for the production, distribution, and sale of fortified sunflower oil in Tanzania. By setting the stage for the commercialisation of vitamin A enriched sunflower oil, the project's ultimate goal was to address vitamin A deficiency across Tanzania.

While still in its early stages, this project illustrates an important *pathway to scaling* development impact. It shows how commercialisation may achieve a specific development outcome: the prevention of micronutrient deficiency. Moreover, this outcome is pursued in the context of regulatory constraints, demand management challenges, and competition from larger producers. The adoption of vitamin A fortified oil in the project's target regions is a major achievement and shows potential for scaling on a national level. It also demonstrates a *pathway to scale* that does not require ongoing and indefinite intervention to maintain or expand effectiveness.

Vitamin A deficiency and unrefined oil fortification

Vitamin A is a micronutrient that is essential to healthy child development and sustained adult health. Individuals living in developing countries often fail to achieve adequate

vitamin A levels through their food intake. Levels of vitamin A in children can also be reduced by chronic diarrhea and other common childhood illnesses. In developing countries, vitamin A deficiency is the main cause of preventable blindness in children. It is often linked to iron deficiencies, which can result in anemia. Vitamin A deficiency can also increase the health risks of infections, including those associated with diarrhea and measles (National Institutes of Health 2016).

Like many other African countries, Tanzania faces persistently low levels of micronutrient intake among segments of its population. Vitamin A and iron are common deficiencies. To address this problem, the Government of Tanzania announced a strategic initiative that seeks to expand the consumption of micronutrient-fortified foods. Among these fortified foods are a range of cooking oils commonly used in Tanzania (IDRC 2014: 1).

In 2014, IDRC and Global Affairs Canada (GAC) jointly approved funding for a vitamin A fortification project in Tanzania. The project's rationale emerged from the experiences of the main grantee organisation's project manager. He had worked in Tanzania for approximately 10 years, lived close to sunflower growing regions, and developed relationships with a number of SMEs that were producing unrefined sunflower oil. Unrefined oil was in high demand at the time. Even prior to the start of the project, most households that used sunflower oil in their cooking used the unrefined variety. Around the same time, the Government of Tanzania was drafting mandatory guidelines that would require certain products to be fortified with micronutrients. There was a sense in Tanzania that oil fortification would soon be mandated. This posed a problem for producers of unrefined sunflower oil. There was no established process for fortifying unrefined oil at the time; only refined sunflower oil had been fortified in the past.

A technical study was conducted prior to the project's start to assess whether unrefined sunflower oil could be fortified with vitamin A and packaged to maintain shelf stability for an extended period of time. A certain level of shelf stability was required to accommodate the production, transportation, sale, and consumption of the oil before the added vitamin A would break down. The study showed that unrefined sunflower oil could be fortified and maintain shelf stability for 90 days or more. As unrefined oil in Tanzania was primarily consumed within six weeks of its manufacture, commercial fortification seemed viable.

The IDRC and GAC-funded project focused on two regions of Tanzania—Manyara and Shinyanga (IDRC 2014). It examined the feasibility of leveraging the private sector to address vitamin A deficiency and sought:

- To test whether unrefined sunflower oil can be fortified by SMEs for local consumption in contexts where inventory turnover is rapid and long shelf-life is not required.
- To test sustainable business models.
- To test whether using electronic vouchers [e-vouchers] can succeed in promoting consumption of fortified oil.
- To test whether the fortified product can reduce micronutrient deficiencies in vulnerable groups, specifically targeting the lactating mothers of infants (IDRC 2014).

The project team worked with SMEs to develop the technical expertise needed to produce vitamin A-fortified, unrefined sunflower oil for distribution to retailers. Using a combination of behavioural change activities and subsidies in the form of e-vouchers, the project then promoted this fortified oil as an alternative to other popular oils in the two regions. After testing the effectiveness of this oil

in addressing vitamin A deficiency, the e-vouchers would eventually be discontinued to assess consumers' willingness to purchase the fortified oil at full price.

This project exemplifies an important scaling story by illustrating how a micronutrient deficiency may be corrected through commercialisation. The adoption of vitamin A fortified, unrefined oil in the project regions opens the door for national-level scaling. It also demonstrates a *pathway to scale* that does not require ongoing and indefinite intervention to maintain or even expand effectiveness.

JUSTIFICATION

Addressing health risk and government policy

The project's *Justification* for scaling vitamin A fortification is micronutrient deficiency, a widely identified health risk in Tanzania. The project also complements government policy on fortification by helping SMEs comply with anticipated regulations that would require large-scale manufacturers to fortify their oil. Commercial infrastructure and the capacity for fortification in Tanzania are developed with a clear local economic benefit and in the absence of a better alternative. The project is thus justified by its commercialisation efforts, as well as its pursuit of a specific development goal.

Insights from scaling

Testing the technical feasibility of unrefined sunflower oil fortification at the SME level required significant outreach. The project team needed to identify forward-looking enterprises that saw the long-term benefits of

participation. Financial support provided through the project, however, could not fully offset the added costs of transitioning towards fortification. Businesses were required to install new equipment and learn the techniques involved in vitamin A fortification. To secure entrepreneurs' commitment, the project was framed as an investment in their future competitiveness that supported their compliance with the government's planned fortification policy.

SMEs, rather than large-scale producers, were targeted to participate in the project for a number of reasons. Large-scale producers tended to sell refined sunflower oil. This product was typically fortified with vitamin A, but largely unavailable in the rural regions targeted by the project. In fact, approximately 40 percent of the sunflower oil used in Tanzania is unrefined. Local SMEs lead the production of the unrefined share and stood to benefit the most from developing and adopting fortification techniques. SMEs were therefore not placed in direct competition with large-scale producers, which tended to service markets that differed from those targeted by the project. This relationship temporarily shifted when low-cost imported fortified oils grew more common in rural areas. Recently imposed import taxes have since reduced the supply of fortified oils in rural regions.

The project's feasibility also rested on the development of a manufacturing and fortification process that complied with the regulatory requirements of the Tanzanian Food and Drug Administration (TFDA). Participating SMEs had to demonstrate that their product satisfied the TFDA's requirements and that their manufacturing process followed best practices. In this effort, technical experts from Germany's BASF were brought in to adapt vitamin A fortification techniques traditionally used by large-scale producers for use by SMEs.

Individuals involved with the project noted that the TFDA was particularly cautious. The approval process dragged, somewhat delaying the project. It was the first time that commercially produced, vitamin A fortified, unrefined sunflower oil would be sold in Tanzania. Eventually, participating SMEs received a permit to produce and sell their fortified, unrefined sunflower oil.

Overcoming this regulatory hurdle rested in part on the project's early incorporation of national stakeholders in the research and scaling process. From its inception meeting, the project team attempted to incorporate as many local, national, and international stakeholders as possible. This allowed the actors involved to understand the intent of the work and its position within Tanzania's fortification strategy, and establish relationships to share information as scaling progressed.

Overcoming barriers to scaling

Once TFDA approval was secured, the project faced the challenge of scaling up the production, distribution, and sale of the oil to individuals in its two target regions. One hurdle, for example, was posed by consumers' price sensitivity. The cost of producing fortified oil at the time was higher than the cost of producing unfortified oil. In addition, sunflower oil tended to be of higher quality and more expensive than readily available alternatives such as cottonseed oil, especially during seasonal crop cycles where sunflower seeds were scarce. In Shinyanga, and to a lesser extent in Manyara, consumers regularly substituted cooking oils in response to relative price changes.

Two approaches were employed to address such barriers to scaling. The first directly promoted the use of fortified sunflower oil. Outreach activities, such as clinic shows and cooking demonstrations, were held

to familiarise consumers with the fortified sunflower oil. By strategically engaging with religious leaders and decision-makers on household spending (men in this case), these outreach activities also sought to address misconceptions surrounding micronutrient fortification. These activities were, in turn, monitored to evaluate their effect on sales and overall impact.

Effectively leveraging e-vouchers

The second approach set up an e-voucher system to subsidise the cost of the fortified sunflower oil. The system allowed consumers to download an electronic coupon to their mobile phone, which they could redeem for fortified oil at select retailers. Retailers would then forward the coupons to SME producers, who were compensated by project representatives. The e-voucher system was designed, in part, to monitor household consumption by tracing coupon redemption to specific cell phone numbers. It was also intended to be a transitional subsidy to facilitate market entry. As the consumption of fortified oil spread, the subsidy would be phased out.

The e-voucher system encountered a number difficulties and was consequently adjusted during the project's implementation. Shortly after the system's introduction, sales varied dramatically. Some retailers were barely selling, while others performed extremely well. The e-vouchers also proved time-consuming, especially for consumers in regions with limited or inconsistent cellular connectivity. In response, some retailers sold their fortified sunflower oil at a discount, later collecting electronic coupons from friends and family for reimbursement. Moreover, the retailers' response to limited cellular connectivity impeded the system's monitoring function.

DYNAMIC EVALUATION

Learning from failure as Dynamic Evaluation

To assess the effectiveness of its commercial approach to scaling, the project relied, in part, on the E-voucher system to track household consumption of fortified oil. Early on, it became clear that vouchers were not being used at the retail level as originally intended, limiting the system's ability to capture accurate data on household consumption. While this eliminated one opportunity for *Dynamic Evaluation* of the scaling approach as originally intended, it also provided indirect information resulting in adjustments to a key project element. This experience demonstrates how even apparent "failures" provide learning opportunities for effective scaling.

Volume and packaging factors also affected the scaling process. A special opaque packaging proved necessary to maintain the oil's shelf stability. The vitamin A used to fortify the oil breaks down with exposure to air or sunlight. Moreover, to support the original e-voucher system and track sales based on container barcodes, retail packaging was necessary. The project initially determined one litre containers of oil to be the smallest commercially viable packaging option. Nevertheless, due to low incomes, many consumers purchased their oil by the "scoop" or in small volumes that could be used in one to two days. Consumers brought reused containers to the store, which retailers filled with oil from a larger container. One litre containers complicated this distribution method.

The project introduced an eWallet payment system to overcome these barriers (Horton et al. 2017: 4). Under the

eWallet model, retailers received a direct subsidy from the project for the amount of fortified oil they sold by matching pre-issued vouchers to product barcodes. The shift from the original e-voucher system to the eWallet system also led to the development of alternative packaging. The project team developed 5, 10, and 20 litre containers that retailers could use to distribute smaller amounts of oil and more effectively meet demand. Tests were also conducted to ensure that shelf stability was not undermined by this distribution process.

Beyond the challenges associated with the voucher system, scaling was further complicated by the distribution method employed by SMEs. Rather than directly marketing their products to retailers in the two project regions, most SMEs relied on distributors that specialised in selling to a particular area. Such distributors were not part of the original scaling plan and needed to be incorporated into the project at a later stage.

COORDINATION

Aligning with commercial interests

The project's success rested on buy-in from a variety of partners involved in the production process, including SMEs. As an initiative that used commercialisation as a *pathway to scaling*, the project needed to ensure that its objectives and implementation also aligned with the commercial interests of SMEs.

Choosing the right partners for scaling

The project demonstrates how scaling relies on both the effective *Coordination* of partners and their careful selection.

(continued)

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The choice of SMEs, rather large-scale producers, allowed the project to introduce unrefined, fortified sunflower oil to Tanzanian markets. It also developed local production capacity. The project's commercial approach to scaling would not likely have achieved the same level of success without the strategic choice of partners.

Aligning with other initiatives

The project also exemplifies how *Coordination* extends beyond actively working with partners for the delivery of programming to include alignment with other related local initiatives. The project team accounted for the Government of Tanzania initiating a broader micronutrient fortification strategy, and approving the production and sale of non-refined sunflower oil. Although government representatives were not directly involved in scaling activities, their strategy and regulatory initiatives needed to be effectively identified, deliberated, and navigated to ensure the project's success.

Working with market structures

Given its commercial approach to scaling, the project team needed to coordinate the work of delivery partners, and accommodate existing market structures and demands. Pre-established consumption patterns had to be accommodated as the product was brought to scale. The end consumer's practice of purchasing very small amounts of cooking oil, for example, required not only a change to the project's planned packaging size, but also its approach to product incentive-structure and marketing. In the absence of these adjustments, the commercialisation of unrefined, fortified sunflower oil may have proven less successful.

A sub-study of the project examined the composition of the SME sector in Tanzania. It found that approximately 60 medium-sized businesses across the country could be realistically targeted for vitamin A fortification using the unrefined oil approach. Even the manufacturing and fortification equipment needed for 60 SMEs could impose significant costs. Scaling to even smaller businesses will also require more innovative solutions. Continued scaling of vitamin A fortified sunflower oil rests on identifying more affordable but equally effective equipment; however, the feasibility of this remains uncertain.

It is important to note that the project has been monitoring the effects of fortified sunflower oil on vitamin A deficiency in the two target regions. For this purpose, a steady supply of fortified, unrefined sunflower oil was necessary. Participating SMEs were required to limit their sales to the two target regions. Once the nutritional monitoring phase is completed and shows positive results, this restriction can be lifted. SMEs will then have the opportunity to distribute their fortified sunflower oil in any part of Tanzania that exhibits demand. At the time of writing, increased demand for fortified oil beyond the project's main intervention area was already observed, albeit in higher income markets.

As scaling proceeds, micro-level inputs such as machinery and equipment will also require further assessment. The project initially trained three SMEs using relatively expensive and high-end production and fortification equipment. The rationale was that the regulatory approval process could be sped up by demonstrating that participating SMEs were following best practices. Installing equivalent machinery in additional SMEs, however, may not be feasible, especially without financial support from the project.

This increased freedom may produce more valid lessons on how markets can be used to scale up agricultural innovations. It could also address trade-offs between different project objectives. Conducting research to understand

effective scaling, for example, competes with the objective of undertaking interventions in a way that maximises development impact. If this increased flexibility results in a wider distribution of fortified sunflower oil throughout Tanzania, it may also produce synergies between the two objectives.

OPTIMAL SCALE

Structural limits on scaling

Using SMEs as a vehicle for the production and distribution of fortified sunflower oil imposes structural limits on the degree of scaling that can be undertaken. Approximately 80 percent of Tanzania's SMEs are micro-enterprises with one to four employees. Even with cost reductions and simplification of the fortification approach, it is unlikely that the total population of micro-enterprises could be effectively converted. This places structural limits on possible scale up. These and similar challenges are likely to arise along a commercial *pathway to scale*, where profitability lies at the heart of an innovation.

Market targeting and Optimal Scale

The project demonstrates an important dynamic between *Optimal Scale* and the ability to fine-tune an intervention activity through commercialisation. To date, the project has been able to direct the distribution and sale of fortified sunflower oil to two regions suffering from relatively high levels of vitamin A deficiency. The success of this effort rests, in part, on subsidies provided through the project. As these subsidies are withdrawn, producers, distributors, and retailers will likely adjust their demand in the face of rising oil prices. Demand will also be a function of the Tanzanian government's policies on fortification. Combined these factors of demand significantly shape *Optimal Scale* for the commercialisation of fortified sunflower oil.

Based on the volume of oil sold and the average per capita consumption of cooking oil in the project regions, the project team is still estimating the number of individuals that regularly consume vitamin A-fortified sunflower oil. Nevertheless, approximately 300 retailers in the two project regions were involved in selling the product. With that in mind, many key lessons regarding scaling have resulted from the project. Scaling a commercial innovation requires actors to account for the:

- Production, distribution, and consumption patterns in target markets;
- Need to consider scaling in the context of broader national or international strategies;
- Need to establish strong connections to national policy and policymakers; and
- Need to accommodate market volatility and the changing environment in which SMEs operate.

For more information on the project, please see www.meda.org/masava.

PROJECT DETAILS

Title: Promoting locally fortified sunflower oil using e-vouchers

One or more projects: 1—#107790

Scalers: Mennonite Economic Development Associates and Sokoine University of Agriculture

IDRC Programme: Agriculture and Food Security

Geographic region: Tanzania

(continued)

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Scale statistics: Three small and medium enterprises manufacturing unrefined vitamin A-fortified sunflower oil, along with a network of distributors and approximately 300 retailers distributing the product in the project regions.

Partners: Funding partnership with Global Affairs Canada

PART IV

Pathways to scale

12

PATHWAYS TO SCALE

This chapter outlines a number of *pathways to scale* that may be travelled by innovators. It provides a backdrop for the four guiding principles and case studies presented in this book.

Pathways to scale represent non-mutually exclusive, non-hierarchical, non-exhaustive means of *scaling impact*.

Navigation approaches help an innovator to name trade-offs and decision-points faced while moving along *pathways to scale*.

Bringing research and innovation to impact at scale is complex. One source of this complexity stems from the array of ways innovation can transform itself from an idea into a meaningful change in the world. To compound

matters, in many cases, a single innovation is merely an entry point into a broader system that requires much more than one invention or change for real and lasting development to take hold.

This chapter provides a synthesis of common ways of scaling impact. The result is a presentation of a typology of *pathways to scale* followed by a set of *navigation approaches*. The *pathways to scale* are five fluid categories of operationalising research and innovation. There are many others. These are the more common paths for turning ideas into impact identified within the review conducted as a part of the *Scaling Science* exploration at IDRC. The *pathways to scale* are presented as a starting point, and a backdrop for the remainder of the book. The *navigation approaches* outline a means of planning and documenting decisions that may be faced as an innovation scales. To conclude the chapter, and exemplify the concepts, we offer a series of examples. These same examples are fully detailed in the cases in Chapters 7 through 11.

Funders, innovators, and innovation users may find these useful ways to articulate a vision for change and plan the actions they will take to get there. Evaluators might use what follows for stratifying scaling efforts for analysis during a review.

This chapter offers a means of outlining a journey for scaling impact. We suggest it presents a map, not a set of directions. The road can be flooded unexpectedly, traffic can jam, and the boda boda can stall. Under these circumstances—when complexity enters into travel plans—it is better to have a map of the terrain than a set of directions. A map allows us to use our own intuition to find the route that works best for the situation at hand. Our study of IDRC-supported work indicates this is how impactful innovation travels too.

Pathways to scale and *navigation approaches* can be considered complementary to existing means of managing for impact and scaling. The focus on pathways (i.e., the journey or in more technical speak the 'mechanism' or the 'how') over endpoints (i.e., the impacts) is purposeful and it is the key difference. A simple pathway mapping exercise is designed to match the broader position established through this book: that scaling impact is rarely a straightforward linear process that can be planned fully in advance and evaluated as such at the end. Accordingly, the aim here is to support sound planning and implementation, but in a way that helps one to avoid the traps and shortcomings of linear trajectory models[27] and the structural rigidities that come with them.

Pathways to scale

Table 12.1 presents five *pathways to scale* synthesised from Southern experience. It should be read with three considerations in mind.

Three key considerations

1. This typology is **non-mutually exclusive**. A single innovation or group of innovations may travel to impact at scale along one or many of these pathways at the same time or in a staged manner. The case studies of IDRC-supported research provided in Chapters 7 through 11 showcase several instances of multiple, reinforcing pathways.
2. There is **no hierarchy** to this typology. The choice of *pathways to scale* impact is a contextual one. It is based on the type of research being undertaken, the intended beneficiaries of the research, the environment in which the research is taking place, and the

TABLE 12.1 Five *pathways to scale*

Pathway to scale	*How does scaling happen?*
Policy An evidence-informed policy is adopted and implemented for a given place, sector, or jurisdiction to support the public good.	→ Evidence used to inform a new policy or change an existing policy → Evidence influences replication and/or adaptation of a policy to a new jurisdiction or system → Evidence informs the expanded application of an existing policy
Programme An evidence informed programme, offering a set of goods or services, provides value to a group of participants or beneficiaries.	→ A novel programme is designed and implemented with evidence for an identified group or need → Evidence informs the replication and/or adaptation of a programme in a new setting or for a specific group of users → Expansion of programme catchment with evidence → Quality improvement of an existing programme is informed with evidence → Partnerships are formed for the growth, development, and/or improvement of services offered by a programme

Behaviour, practice, and skill An evidence-informed behaviour, practice, or skill, simply described as an action or grouping of actions, is adopted and commonly applied to contribute to the public good.	→ Behaviour change interventions: formal, such as laws, and informal, such as awareness campaigns, are designed, implemented, improved, and expanded with evidence → Guideline creation to outline practice standards based on evidence → Learning and training interventions to teach new skills or improve pre-existing ones
Product and technology A product or technology, whether distributed publicly or privately, is used/consumed/embedded, which, in turn, contributes to development.	→ Commercialisation and market access research → Public systems and actors utilised to spread the distribution of a good → An existing good is improved, pivoted, or made more accessible or distributable with evidence → The value-chain underpinning a product or technology is improved with evidence
Methodology A way of knowing and/or doing is strategically adopted and used to generate social impact.	→ Publication/sharing of new concepts and ideas or improvement on existing methods → Inter-, multi-, trans-disciplinary interchange → Participation processes for users and stakeholders → Advocacy for increased use of research and evidence → Leadership and capacity strengthening to undertake and apply research and innovation

internal factors that enable and constrain the research (e.g., data quality, researcher capacity, knowledge-user readiness and appetite, etc.).

3. The typology described hereafter is **non-exhaustive.** It does not capture every pathway by which research results can be brought to scale. Instead, it offers a starting point for describing and elaborating on several of the more common channels. Those identified here are derived from our review of IDRC-supported research projects.

Navigation approaches

In 2005, Robert Chambers published a reflective article on the experiences and lessons he observed in the rampant "instant" scaling that had occurred with the Participatory Rural Appraisal (PRA) methodology. We have built upon this reflection by adding observations from the review of IDRC-supported research projects.

To begin the illustration of *navigation approaches* and how they factor into scaling processes, Figure 12.1 presents typical focus points along a *pathway to scale*. That is to say, areas observed as common 'hot spots' or 'requiring attention' in the scaling of impact via a policy, programme, product, practice, or methodology based on research.[28]

Where:

Demand is the interest/preference/need for an intervention within the intended user group.

Design is the creation and construction of the innovation.

Manage is the implementation, adaptation, and overall leadership of the innovation through its lifecycle.

Learning is the evaluation and evidence-use strategy for the innovation.

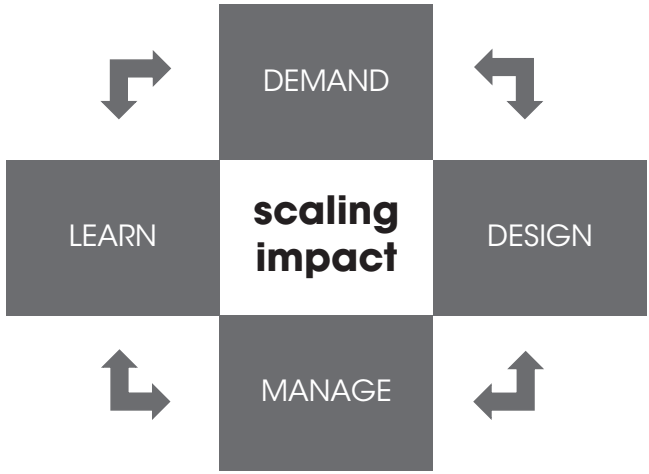

FIGURE 12.1 Four 'hot spots' on a *pathway to scale*

Next we introduce the concept of trade-offs to the model. And this is the central argument we aim to forward with this subsection:

> ***Pathways to scale are laden with trade-offs. Identifying, documenting, and revisiting scaling strategies to navigate these trade-offs inspires more realistic designs, creates accountability and transparency, and offers evaluative learning and improvement opportunities.***

The trade-off represented in Figure 12.2 is a 'straw-dog'; one of flexibility vs. inflexibility. But it should be useful to illustrate the concept of planning a *navigation approach*—as this is one of the more prevalent trade-offs we identified in our review of R4D and scaling impact. There are many others, but, the conceptualisation and mapping procedure will remain largely similar as the particular demand, design, management, and learning components of a scaling pathway are travelled.

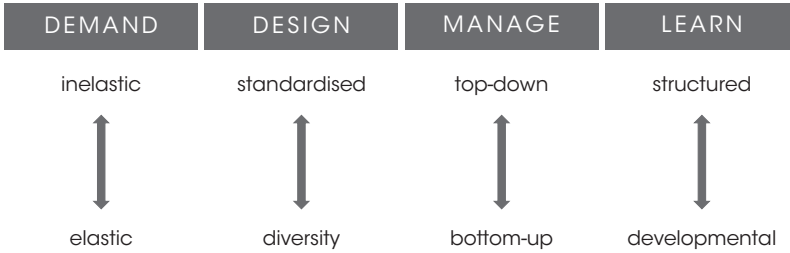

FIGURE 12.2 A spectrum of 'flexibility' trade-offs along a *pathway to scale*

At the upper end of the spectrum, flexibility is limited. Here, the actions of designers, managers, evaluators, and users—and thus scaling strategies—are typically more prescriptive and constant. In this scenario, both innovators and users feel convinced they know what represents a good change. At the lower end of the spectrum, flexibility is high. Here, adaptive programming, iterative management, and developmental learning strategies are best suited to meet dynamic and uncertain user demand.

In Figure 12.3, five approaches to navigating a scaling pathway are identified and positioned on the spectrum. The five *navigation approaches* reflect a practical response to the varying degrees of flexibility an innovator is willing to accept along their scaling pathway. Like the *pathways to scale*, these *navigation strategies* should be considered non-hierarchical, non-mutually exclusive, and non-exhaustive. In reality, the particular innovator and users own inputs will be required.

There is no preference from one end of this spectrum to the other that applies to all settings and contexts of innovation. Nor is there a direct or recommended relationship between any *navigation approach* and any *pathway to scale*. That is to say, not all products will go viral and self-scale, and, likewise, not all policies should be enshrined in a country's federal legislation. The purpose of such a mapping exercise is to make space for questioning and

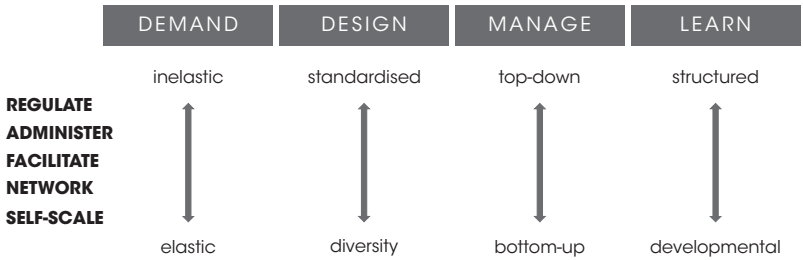

FIGURE 12.3 A spectrum of five *navigation approaches* of flexibility trade-offs along a *pathway to scale*

unpacking, designing, and redesigning scaling strategies to match the planned *pathway to scale*.

To achieve this, fitting innovations for the context is critical. For example, if a research finding is externally generalisable with strong confidence, is of immediate implementation benefit for a large percentage of a population, is endorsed by all stakeholders, and shows little risk of negative consequences, implementation through a regulation such as a government policy is a potentially viable approach. On the other hand, a new research methodology, that requires further testing from peers in new contexts, would likely be best implemented through a self-spreading process where other researchers adopt the methodology, but only when they perceive the potential value to do so.

Practical illustrations

Here we describe each *navigation approach* and how it can relate to the various *pathways to scale*. Short examples from the case studies present illustrations.

Regulation: An entrenched, often mandatory, process. In many cases, this *navigation approach* will include formal mechanisms for enforcement. Examples include a law implicating a certain course of action or a policy with enforcement mechanisms strong enough to ensure implementation and

pursuance. Research and innovation for policy influence will often follow this trajectory where research findings are reproducible, commonly endorsed, and little debate exists about the required immediacy of action.

> *The Salt Project seeks to reduce non-communicable disease incidence through industry regulation. Although in this particular case, voluntary adherence is not disqualified, mandatory regulations establish an acceptable level of salt in foods produced by manufacturers. Given the prevalence of these prepared foods in the countries where the project operates, fixed regulations have the potential to reduce salt intake considerably, and therefore the health outcomes of many (see Chapter 9).*

Administration: Here scale occurs with soft regulatory or process adherence, likely driven by relevant actors (individuals or institutions) within the setting. Often administrators hold formal or informal power positions, which allow for certainty of implementation and *administration*. Examples include practice guidelines for physicians or defined approaches for teachers implementing an education curriculum. Innovation will follow this trajectory, where clear practice- or policy-oriented research questions have been addressed and findings are conclusive and applicable to the context of implementation.

> *The work of the RAHAT Project Team in India seeks to embed justice for survivors of sexual violence in State-wide practice. Part of this process involved establishing a Memorandum of Understanding (MoU) between the Department of Women and Child Development and the Majlis Legal Centre to work toward shared goals. The MoU provided access and credibility for the team among stakeholders in the*

justice system, and allowed the team to work towards implementing change and advocating for victims of sexual violence (see Chapter 8).

Facilitation: With *facilitation*, promoters or champions of the innovation play a catalytic role in scaling impact. *Facilitation* will have more to do with inspiration than enforcement and should allow for differences from one site or intervention to another to emerge and be accepted. An example of *facilitation* is the spread of a newly developed methodology for collecting data from a hard-to-reach population. The method may have proven effective in a first application, and, to scale its potential impact, it has been spread coupled with *facilitation* and championship of its core components, for use in a new setting.

The Southern Voice project relies on facilitation on the part of individual members of a consortium to promote policy perspectives developed or identified by members of the network. In effect, it is an undirected system of champions. Working on issues that matter to them and their communities. In the model, think tank members will identify, research, and work with stakeholders on an issue and will then take their findings to national or local actors—such as NGOs, the media, and advocacy groups—to promote and act to address the issue (see Chapter 10).

Networking: *Networking* implies planned dissemination of the innovation to targeted groups, which allows for the uptake and application to be chosen and defined by local people or network 'nodes'. Examples of this trajectory are the sharing of product plans at an investor summit, spread of programme improvement strategies via a professional organisation or programme manager's network, or workshops demonstrating a new practice or skill.

When research results are preliminary and show promise of impactful benefit, this trajectory can allow the decisions of new users to lead the process of implementation. *Networking* can lead to selected uptake where an innovation holds potential and is particularly needed.

> *The Southern Voice project focuses, in part, on bringing national-level policy insight from its members to the international stage (as in the Facilitation example above). This contributes to international policy agenda setting and also helps share national policy insight among network members. These members can then use the national findings to influence their own policy work in new contexts (see Chapter 10).*

Self-scaling: *Self-scaling* implies that the innovation is left in the hands of users (i.e., beneficiaries, policymakers, practitioners, investors, academics, buyers, and so on). When it works well, this scaling pathway is largely synonymous with the concept of 'going viral'—and uptake of the innovation is beyond the realm of control of the innovator. The scaling of research-informed tools or techniques which people seek out and use on their own can fall within this category. Individuals electing to adopt healthy eating habits is an additional example. The case of a product being brought to market can be another. It is possible that any type of research or innovation can follow this trajectory to scaled impact. Being mindful of the quality of results and the social implications (at varying scales) becomes incredibly pertinent for the innovator, researcher, and/or those wishing to follow this approach.

> *The Sunflower Oil project seeks to increase vitamin A intake in Tanzania not through regimented policy or a programme, but by developing and marketing a product that Tanzanians buy and consume. The project*

focuses on laying the groundwork for the sustainable, local production of vitamin A-fortified sunflower oil rather than simply providing this product directly to consumers. Once production is economically sustainable and the product is adopted by consumers, it can become a self-sustaining means of addressing vitamin A deficiency (see Chapter 11).

Making practical work of *Pathways to Scale* and *Navigation Approaches*

In our review, many cases of scaling impact involved, and necessarily so, multiple *pathways to scale* for the same research project or innovation. For one example, getting hospital doctors to their wash hands at more frequent intervals (a seemingly simple behaviour change) can require a rigid hospital policy coupled with an education programme that is championed/facilitated by key hospital leaders and the development of a network across hospitals sharing successful results and reinforcing good practice. In reality, scaling becomes complex.

However, planning for the 'how' of converting ideas into impacts is a critical component of a scaling strategy that can be frequently overlooked, or just assumed, during research and innovation projects. Making and spending time to map an expected *pathway to scale*, declare the trade-offs that will be faced on that journey, plan and make transparent how the trade-offs will be navigated, and then revisiting this plan during the scaling process, will foster accountability, inspire more realistic designs, and ultimately more productive and strategic action. We hope the concepts presented in this chapter contribute a starting place.

PART V

Moving forward

13

ADVANCING A SCIENCE OF SCALING

Across the globe, there is increasing dissatisfaction and discontent with traditional paradigms of scaling scientific research and innovation for the public good. That is not to say that scaling is viewed negatively, but that scaling has been too frequently equated with the methods designed for scaling profit and market share. These approaches have worked well for profit, but have proven unsatisfactory when the objectives are people and the environment. We believe there is another possibility.

Scaling impact means seeking an optimal result where the impacts that are proven effective and desirable to stakeholders are cultivated and encouraged; and those that may cause harm, lead to waste, or are not desired by the impacted community are inhibited. Since most stakeholders sit outside of the organisations taking action and hold different views about what is desirable, defining, let alone achieving, what is optimal, is challenging. At the very least, it requires that we transcend private perspectives (of organisations or people) without dismissing them.

But this is not how traditional models of scaling approach the problem. This is why we have argued there is a need for a new paradigm. But how should we be thinking about *scaling impact*?

This book outlines one contribution we have called "*Scaling Science*". It presents a countervailing perspective on scaling that follows a comprehensive review of Southern-led research and innovation. This book has organised what was learned, named it, and described it in ways that reflect our worldviews and experience. It would be impossible for us to present this work otherwise. It is important that this bias is made transparent.

But this is not the end. The characterisation of *Scaling Science* presented in this book is not complete or ideal. It is new and emerging. We encourage others to borrow what is useful, abandon what is not, and develop what is incomplete or inadequate. We have worked to identify a starting point with the hope that innovators, working alongside their communities, will use it to identify their own pathways and destinations. This is the purpose of presenting what was learned in IDRC's review as a *science of scaling*. In this way, everything in this book demands careful experimentation, open debate, and development.

We continue to draw inspiration from the imaginative ways Southern innovators are *scaling impact* in complex settings. There remains much we can learn. Today, the world is being continuously reshaped by forces of globalisation, the rapid convergence of the public and private sectors, and unprecedented national collaborations and tensions surrounding development, science, and innovation. Complexity, it would seem, only increases.

In our changing world, innovation for the public good requires the participation of many. Unrelenting change demands a flexible approach, and guiding principles provide

a systematic foundation for adaptation, contextual discretion, and emergence. We hope the four guiding principles of *Justification, Optimal Scale, Coordination,* and *Dynamic Evaluation* presented in this book will help others to develop innovations about scaling as well as scientific innovations that should be scaled. We hope the *pathways to scaling* and *navigation approaches* offer starting blocks for those wishing to base their scaling strategies on the lessons of those who have taken similar journeys.

Above all, we have learned that for meaningful change to take hold, people matter. *Scaling impact* for the public good is a social effort just as much as it is a public goal. In this way, working together to advance our understanding of how to scale does not devalue a science of scaling, it re-evaluates different ways of knowing and doing, and it encourages us to ensure that the public good is at the heart of our actions. We believe that *Scaling Science* presents a way for people affected by scaling to exercise power over it. You can participate here, and we sincerely hope that you do.

APPENDIX

Methods note

This book is a result of a learning and engagement project undertaken by the Policy and Evaluation team at Canada's International Development Research Centre (IDRC). The *Scaling Science* project aimed to contribute to the Centre's ability to scale the impact of the research and innovation it supports.

Overarching approach

Co-creation

Principles of use-oriented research were employed to undertake the *Scaling Science* exploration, and the project was embedded in user-identified needs from initial study conceptualisation and design. It was led by IDRC's Policy and Evaluation unit in tandem with an external researcher, Dr. John Gargani, from 2015 to 2018.

To begin, the project was called for, and its design was approved by, the executive management committee of IDRC. At the kick-off of the project, IDRC-based "knowledge-users" were engaged in shaping the study. While these individuals were self-selected, we ensured engagement stretched across the diversity of programming at the Centre.

The process of engagement was governed by an advisory group that became known as the "*Scaling Science* Critical Friends". The group was chaired by IDRC's Donor Partnerships Division with a view to encouraging broad study utility and interest. The Critical Friends met at various stages of the project to discuss study design, data collection, data interpretation, and results sharing (each phase is discussed below). The diversity and the input of the Critical Friends strengthened and enriched the study immensely.

Members of the Critical Friends group included: Lisa Burley (Chair), Donor Partnerships Division; Alvaro Paz, Agriculture and Food Security; Carolina Robino, Employment and Growth and Think Tank Initiative; Greg Hallen, Food, Environment, and Health; Leah Mwai, Maternal and Child Health; Matthew Wallace, Foundations for Innovation; and Peter Taylor, Think Tank Initiative and Inclusive Economies.

External grounding

As findings from this study emerged, they were truth-checked with members of IDRC's research, international development, and evaluation communities.

Events in our research community included field visits to three agencies in Buenos Aires, Argentina working to scale policy impact for the reduction of non-communicable disease. The three agencies were Fundacion InterAmericana del Corazon—Argentina (FIC), the Institute for Clinical Effectiveness and Health Policy (IECS), and Centro de

Estudios de Estado e Sociedad (CEDES). Together we elaborated on our study design and objectives, and unpacked emergent results. We learned from hearing about these colleagues' experiences with *scaling impact* and benefitted greatly from the exchange of ideas and learning.

On two occasions, we brought the *Scaling Science* study for formal presentation and informal discussion with grantees, evaluators, researchers, and development partners in South East Asia—once in Kathmandu, Nepal and once in Thimphu, Bhutan.

In 2016, we hosted a special meeting on the topic of "*Scaling Impact*" at the American Evaluation Association Conference in Atlanta, Georgia. We discussed and debated emergent concepts with development partners, including DFID, USAID, the Rockefeller Foundation, Oxfam GB, among others. The same session hosted a number of IDRC grantees and opened the study to critical feedback from this group. During the session, we also received critical insight from academic leaders on the topic of scaling and research evaluation. A report of this meeting is available on the IDRC website (IDRC 2016b).

In 2017, we presented preliminary results of the study at the Canadian Evaluation Society's National Conference in Vancouver, British Columbia, and, on two formal occasions in 2017, we met and discussed our project objectives and results with colleagues from Global Affairs Canada.

At IDRC, we hosted multiple brown bag lunches, team meetings, and more formal seminars as the study moved from design to results sharing. In particular, in 2017, we led a panel discussion and participatory exercise with IDRC's programme staff at the annual general meeting. All of the feedback, critique, and correction we received has shaped what is presented in this book.

Study protocol

Phase 1: Preliminary review and environmental scan

The first phase of data collection involved an internal and external scan of the 'state of the art' in scaling R4D impact. This included:

- Literature scan and review (academic and organisational grey literature).
- In-depth interviews with IDRC staff at all levels.
- In-depth interviews with an international sample of scaling experts and development agencies.

The preliminary review was used to contextualise the remainder of the study to ensure the value and utility of the work. Specifically, this review helped us to understand key areas of need for IDRC as identified by its own staff, and to identify key areas where IDRC could contribute to the broad state of knowledge on scaling.

Phase 2: Empirical review of Southern innovation (inductive multi-project review and deductive case study analysis)

An empirical review of the experience of innovators in the Global South was completed using a two-step process to examine IDRC-supported work.

First, a broad scan of IDRC projects was conducted to inductively identify trends, consistencies, and anomalies in R4D scaling. The pathways and mechanisms of change (i.e., the typology of *pathways to scale* and the four guiding principles) were first conceptualised through this process.

Second, five IDRC innovations were selected as case studies and deconstructed in significant detail. Pathways and guiding

principles developed in the first stage were deductively tested across very different research contexts, scenarios of *scaling impact*, and mechanisms of IDRC support.

Inductive analysis via multi-project review

The inductive review of IDRC practice used a retrospective analysis over 200 IDRC-funded projects that had closed between 2010 and 2015. The objective was to investigate a Southern concept of *scaling impact* by looking across the diverse experiences of the IDRC-funded research community.

The review was based on project documentation. Projects reviewed were first classified using a number of descriptive criteria such as global region(s), field/topic of research, IDRC programme area, timing of study, and type of study. With this information in hand, a landscape of projects could be captured. Following this, a second set of criteria for stratifying the projects was developed and applied. These criteria aimed to more adequately focus on the issue of *scaling impact*. These included having an explicit scaling strategy, having demonstrated achievement of or likely achieving impacts at scale, and aligning with corroborated opinion regarding their potential usefulness in informing IDRC's ongoing scaling research (as determined within the Critical Friends group). Next, these categories and classifications of IDRC projects were analysed by three reviewers to identify cross-project trends.

The methodical classification and review of multiple IDRC innovation experiences facilitated a comprehensive review of Southern research projects and the mechanisms within each that facilitated and/or inhibited scaling.

Deductive testing of emergent findings with in-depth case studies

Following the broad review of IDRC-funded projects, a shortlist of experiences was generated for in-depth case

study analysis. Shortlisted cases were supplemented with suggestions from IDRC's programme staff holding detailed knowledge of these projects (and others previously funded by the Centre). This process of co-review/co-selection helped address feasibility concerns and anticipate insights into scaling that could be drawn from the shortlisted cases. It is important to note that an early finding of the preliminary interviews and grounding sessions with IDRC staff, and later verified by our review of projects documentation (described above), was that scaling efforts are not confined to the parameters of a research project. They more often span multiple projects, years, and interventions.

To prepare for shortlisting, projects were further stratified by emerging characteristics of scaling from the broad case review; for example, an early version of the typology of *pathways to scale*. The aim was to capture the diverse nature of *scaling impact* strategies within IDRC-supported research, and provide a lens for structuring an in-depth analysis. As outlined in Chapter 12, the typology included the following categories:

- Policy influence
- Programme development
- Practice, skill, or behaviour change
- Product development
- Methodologies for knowing or doing

Following this review and comparison, with input from the Critical Friends group and discussions with the IDRC programme officer responsible for each project, we reduced the sample to the following five projects:

1. Ecohealth Interventions for Chagas Disease Prevention in Central America (see Chapter 7).
2. Promoting Locally Fortified Sunflower Oil Using E-Vouchers (see Chapter 11).

3. Scaling-up and Evaluating Salt/Sodium Reduction Policies and Programmes in Latin American Countries (see Chapter 9).
4. Southern Voice on the Sustainable Development Goals (see Chapter 10).
5. Sexual and Domestic Violence: Policy Protocols (see Chapter 8).

Table A.1 provides a cross-walk of the five cases, noting the typology of the pathways and other key selection criteria for each case. The aim was not to showcase the strongest examples of scaling success, but to illustrate a multi-disciplinary, cross-cutting, and broad view of how scaling in research and innovation may take shape.

Case study research approach and protocol

Each case study was grounded in a common approach to data collection, analysis, and reporting. A systematic approach to case study analysis aimed to ensure that a comparable and contrasting analysis was conducted for each of the very different innovation experiences selected for further study. From this common approach, case-specific explorations were prioritised and planned for each of the five studies. Key differences and areas of interest were used to version the informant interview guides for each case. Indeed, to explore the idiosyncratic elements of each case study, some flexibility and emergence in the data collection protocol was planned and encouraged.

All the case studies involved two main data collection activities:

1. A dive into the full set of documentation related to the case, including IDRC documentation about the project and the innovators' research outputs and results. This provided background information on each case. It also

provided a formal capture of claimed scaling goals, processes, and results.

2. A series of semi-structured, in-depth interviews with key stakeholders for the case. These included: IDRC staff, the 'principal investigator' for the project(s) in the case, other research leads as necessary, and innovation stakeholders—focusing primarily on the *scaling system* related to the project.

The interviews and document review were performed iteratively, meaning both processes informed the progress and saturation point of the other. Through this two-part process, a number of key issues were identified for each case that helped guide and advance explorations around scaling.

A standardised case study analysis approach was developed to ensure consistency between case studies. Insights regarding scaling from each case could thus be aggregated around similar themes; namely, the four guiding principles. The consistent use of the four principles, along with a structured approach to the presentation of each scaling experience, further provided an opportunity for a collective case study analysis and informed our understanding of the scaling experience of these diverse sets of researchers. Importantly, it also facilitated a feedback loop, where key stakeholder responses to, and critique of, the emergent guiding principle framework could unfold.

TABLE A.1 Case study stratification

IDRC programme	*Project title*	*Geographic area*	*Pathway*	*Notes of interest*
Governance and Justice	Sexual and Domestic Violence: Policy Protocols Sexual Violence and Impunity in South Asia	Asia (India)	Policy and Practice	Gender and Scale
Food, Environment, and Health	Eco-health Interventions for Chagas Disease Prevention in Central America	LAC (Guatemala, Honduras, El Salvador)	Multiple (Programme, Policy, Practice, Methodology)	Multiplicity of Pathways to Scale Used Traditional Scaling Model (Pilot & Scale)
Canadian International Food Security Research Fund	Sunflower Seed Oil	sub-Saharan Africa (Tanzania)	Product and Policy	Commercialisation Private and Public Sector Entry Points
Food, Environment, and Health	Assessing the Impact of Current National Policies to Reduce Salt and Trans-fatty Acids in Argentina	LAC (Argentina, Peru, Paraguay, Costa Rica, Brazil)	Policy	Shifting Learning from one Research Context to Another (Tobacco Policy to Sodium Policy) Replication Across International Borders
Think Tank Initiative	Southern Voice	Global	Methodology and Practice	Methodology Development Coordination to Move Global

ENDNOTES

1 The first section of the introduction is derived from an article first published in the *Stanford Social Innovation Review* available in open access, see Gargani and McLean 2017.

2 Take for one example the concept of innovation. The definition of innovation is debated extensively in development. And, much of this thinking has been advanced, or perhaps leap-frogged, from business, economics, industry, and engineering, among other sectors. In this book, our view of 'innovation' is a purposefully pluralistic concept. The intention is to be broad and inviting of an eclectic mix of ways of thinking and doing. Commonly employed definitions of innovation can be reviewed in the Oslo (OECD/Eurostat 2018) or Bogota (Jaramillo et al. 2001) manuals. For a small selection of leading academic voices on innovation from across fields see the work by Joseph Schumpeter, Peter Drucker, Richard Nelson, Luke Georghiou, or Judith Sutz. For an account of *Innovation and the Development Agenda*, see Kraemer-Mbula and Wamae (2010). For more on IDRC's work in this area, see its Foundations for Innovation programme.

3 Perhaps the most prominent conceptualisation is that defined by the Canadian Institutes of Health Research which has suggested knowledge translation as a "*dynamic and iterative process that includes synthesis, dissemination, exchange*

and ethically sound application of knowledge". In a 2018 international study (McLean et al. 2018), 33 terms for the concept were in use at research funding agencies around the world.

4 See van Rooyen et al. (2012) for a systematic review of the evidence of microfinance impact in Africa, for one example.

5 For example, see Business Insider (2012) or Kumar (2012).

6 For a review of innovation in this context, see Ciarli et al. (2018).

7 For example, see Ben Charif et al. (2017) or Milat and Li (2017).

8 For insightful self-reflection and analysis from the Grameen Bank, see Goldberg (2005) or Odell (2010).

9 For a tour-de-force on the positive potential of, and need for, facilitation methods see the works of Robert Chambers. As an introduction, see his recent book, *Can We Know Better?* (Chambers 2017).

10 Increasing numbers of models and approaches to include people in research and innovation are being developed, and many have been tailored for particular contexts. For just a few examples, see *Participatory Rural Appraisal* in agriculture and planning, *Action Research* in social policy development, *Integrated Knowledge Translation* for behaviour and practice change in health, *Empowerment Evaluation* for programme development and improvement, and arguably *Lean* for product development, and the list goes on.

11 Two strong publications related to the 'how-to' of scaling-up are Gabriel (2014) and World Health Organization/ ExpandNet (2010).

12 See Stirling (2010).

13 For example, see Chambers (2005).

14 See, for example, Graham et al. (2014), Lavery (2018), and Nature (2018).

15 We will use the term "innovator" as short-hand for all who could be involved in guiding a scaling process. This may include: innovators, researchers, users, those affected, funders, organisations, governments, and so on.

16 For more information, see www.idrc.ca/en/initiative/livestock-vaccine-innovation-fund.

17 For the foundational resource on the concept of collective impact see Kania and Kramer 2011.

18 The concept of undirected coordination might be linked with the major critique of collective impact offered by Tom Wolff and his colleagues in Wolff (2016) and Wolff et al. (2017).

19 The quadrants and axes may be tailored to your strategy. The figure is a simple representation based on general scaling strategies uncovered in our review—what is most important is *Coordination*.
20 Those interested in learning more might look to the comprehensive review of Wallace and Rafols (2015).
21 To see more on Developmental Evaluation, see Patton (2010). For more on Lean, see Womack and Jones (1996) or Krafcik (1988).
22 For further discussion of the logic of evaluation, see Scriven 1980 or 1995.
23 Referred to as "cruelty" in the document mentioned above.
24 This unit came from a collaborative project of the Department of Women and Child Development, Government of Maharashtra and the Majlis Centre, a women's legal organisation created in 1991 in Mumbai in the State of Maharashtra. The action based research project titled "Interrogating Sexual and Domestic Violence and Evolving Protocols for State Agencies" came into effect in August 2012 and was funded by IDRC for three years.
25 The team documented positive rulings of High Courts and the Supreme Court, and analysed them. Concretely, they have followed up on 490 cases (2012–2015) and analysed 140 judgments of trial courts (2011–2012) to ascertain trends in rape trials.
26 However, they were also using several strategies to sensitise police officers. A pledge by the Mumbai Police to treat women and children with dignity was posted at the entrance of every police station in the city.
27 For a few examples of these important, but at times restrictive, approaches to planning, design, and evaluation see: logic models, logframes, and the results-based management frameworks that embed them. These instruments are at the front lines of programme design, implementation, and evaluation. They offer much value under certain circumstances, especially when planning for results at a static level of scale. Further iterations common in development can include theories of change, pay-for-performance strategies, and/or deliverology.
28 In our review, we observed that the most successful efforts do not travel these 'hot spots' linearly. Instead, the four are traversed as dynamic stopovers with frequent revisits. When and how to revisit is a contextual decision.

ACRONYMS AND ABBREVIATIONS

CPD	Centre for Policy Dialogue (Dakar, Bangladesh)
DFID	Department for International Development (UK)
DIA	Desirable, Intended, and Anticipated
DTT	District Trauma Team
DWCD	Department of Women and Child Development (Mumbai, India)
FIR	First Information Report
GAC	Global Affairs Canada
IDRC	International Development Research Centre
LAC	Latin America and the Caribbean
NCD	Non-communicable disease
NGO	Non-governmental organisation
PAHO	Pan American Health Organization
PI	Principal Investigator
R4D	Research for Development
SME	Small and medium enterprise
SOP	Standard Operating Procedure
TFDA	Tanzanian Food and Drug Administration
UK	United Kingdom
UN	United Nations
WHO	World Health Organization

FIGURES AND TABLES

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