

# Delivering U.S. Leadership: Roles for the Public Sector

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The U.S. government and other donors have championed innovation as a key pillar of development policy. Today, opportunities abound for innovation to help donors do development better, cheaper, faster and at scale. The Obama administration has shown leadership in pioneering new mechanisms for developing, testing and scaling development solutions with the potential to reach millions. Past successes from the Green Revolution to smallpox eradication point to the potential for impact of these initiatives. Yet the development landscape is also littered with resounding failures and promising innovations that have failed to scale. This policy brief highlights some of the key challenges and considerations for avoiding the pitfalls. The brief discusses strategies for avoiding fads, managing risk and narrowing the gap between the potential of innovative solutions and their impact at scale.

## WHAT IS THE ISSUE?

Innovation has driven some of the most dramatic development successes over the past 50 years. The Green Revolution, childhood vaccines, the microfinance revolution, oral rehydration therapy and the M-PESA-led mobile money movement are just a few of these game-changing development successes. Their impact has been profound. Agricultural advances have saved a billion people from starvation in the past half a century. Childhood deaths are down more than 80 percent. Smallpox has been wiped out. All these innovations have

benefited from donor funding in their invention, piloting or scaling. And in each case, the benefits of the innovations to the developing world have dwarfed the benefits to any one country or institution, illustrating a clear public good rationale for the donor investments in innovation.

Today, new opportunities abound for doing development better, cheaper, faster and at scale. Innovation is at the heart of this march toward progress and aid effectiveness. As the tools, technologies and approaches to development evolve, innovation can help the development community bring game-changing solutions

to scale. For instance, the near ubiquity of mobile phones, new behavioral insights and fresh evidence from field experiments about what works, advances in low-cost technologies, and the growth in for-profit models for solving pressing global challenges each present an unprecedented opportunity for improving the welfare and livelihoods of the world's poor.

The push for disruptive innovation and scale is driven not only both by a sense of opportunity but also by budgetary necessity. In the current fiscal climate, lawmakers in Washington and other Western capitals have pledged to cut spending and save taxpayer dollars, while donor agencies still aim to cut poverty and save lives. Reconciling these conflicting mandates requires donors to stretch shrinking resources even further, getting more development impact for each dollar. Disruptive innovation is designed to do just that. Innovation can enable development actors to replace standard practice with new, more cost-effective approaches that have a greater impact—thereby enabling donors like the U.S. government to drive down the cost of their core business of poverty reduction and development. Past experience illustrates this marriage between saving lives and saving dollars. In the case of the global campaign that eradicated smallpox, for instance, the Center for Global Development documented that the U.S. government saves the total of all its contributions every 26 days because it does not have to vaccinate against or treat the disease.

Seizing this opportunity, the U.S. government has set out to accelerate this process of development innovation and has championed innovation as a key pillar of its development policy. This high-level commitment is enshrined in President Obama's Global Development Policy, released in the fall of 2010, which calls for investments in game-changing innovation to accelerate progress toward development goals in health, food security, climate change, energy and environmental sustainability, and broad-based economic growth. "A core part of my development strategy is harnessing the creativity and innovation of all sectors of our society to make progress that none of us can achieve alone," said President Obama. Likewise, the State Department's first-ever Quadrennial Diplomacy and Development Review

calls for investments in innovation, while the U.S. Agency for International Development (USAID) has placed innovation as one of the central pillars of its Forward reform agenda.

U.S. government leadership in harnessing development innovation falls into three primary categories: invention, experimentation and competition, and taking solutions to scale:

- *Invention:* Across U.S. government agencies, from the U.S. Department of Agriculture to the National Institutes of Health (NIH) to USAID, investments in scientific research and development have catalyzed the invention of game-changing breakthroughs. Through investments in research laboratories, universities and networks and consortia of scientists, the United States has provided "push" funding for research into breakthroughs like crops that are tolerant of drought and disease, climate change adaptation technologies and HIV vaccines. These efforts are similar to the Pentagon's Defense Advanced Research Projects Agency (DARPA), which develops cutting-edge military technology, and the Department of Energy's ARPA-e program, which promotes the research and development of advanced energy technologies. The U.S. government has done less to exploit the potential of "pull" mechanisms for scientific discovery and development breakthroughs.
- *Experimentation and competition:* The Obama administration has pioneered several innovative new approaches and mechanisms to foster development innovation through experimentation. Increasingly competitions, prizes and venture capital-style innovation funds are used to subsidize promising early stage innovations. For instance, USAID launched a series of Grand Challenges in Development to focus attention on a specific, defined challenge and to invite foundations, corporations and individuals to engage in developing and piloting solutions to these challenges with small seed grants. In 2010, USAID launched Development Innovation Ventures (DIV) as a venture capital-style fund that awards competitive grants to pilot, rigorously test and scale cost-effective development solutions.

- *Taking solutions to scale:* Several U.S. government initiatives are addressing the barriers to scaling up solutions that prevent the most promising development innovations from reaching millions of beneficiaries. Across the U.S. government, from the Patent and Trademark Office to the NIH, efforts are under way to accelerate patent processing and licensing and to facilitate the commercialization of new technologies. Global partnerships have been established to scale up the use of innovative technologies like clean cookstoves and mobile health applications. At the Group of Twenty (G-20) summit in Cabos, the U.S. and other donors announced financial support for three pilots that will use “pull” mechanisms to reward agricultural innovation and spur the delivery and adoption of agriculture innovations that benefit the poor. Dedicated funds, like USAID’s DIV, have allocated grant money to scale up innovations that are proven successful. Meanwhile, financing from USAID’s Development Credit Authority and the Overseas Private Investment Corporation is unlocking capital to scale up promising innovations through the private sector.

## WHAT NEEDS TO HAPPEN AND WHY?

The public sector has an important role to play in unlocking the potential of groundbreaking innovation to deliver development better, cheaper and faster.

### *Define—and Balance—Innovation*

The term “innovation” is used with such regularity and ubiquity that its precise meaning has been blurred. Too often, “innovation” is seen as synonymous with technology—a misnomer that brings to mind the folklore around the U.S. National Aeronautic and Space Agency’s (NASA’s) space pen. According to popular (albeit fictional) legend, NASA spent years and millions of taxpayer dollars during the 1960s to develop a pen that allow its astronauts to write without gravity. Meanwhile, the story goes, their more frugal and sensible Soviet counterparts simply picked up a pencil.

This NASA folklore illustrates a basic point: Simply because a development solution utilizes a novel

technology or a mobile phone does not mean that the solution is necessarily better, cheaper or faster than the standard approach. A high-tech, futuristic classroom funded by donors in Lahore that is outfitted with the latest computers and visual technology, for instance, does not necessarily increase the student’s learning than a more basic classroom. This type of innovation that increases costs without improving outcomes was dubbed “pseudo-innovation” in a recent *New York Times* column. Nor does the successful development of a high-potential technological innovation necessary guarantee global impact or scale. The development landscape is littered with seemingly brilliant technological solutions that have failed to achieve widespread adoption due to misunderstood consumer markets and poorly developed dissemination plans and business models.

Conversely, some of the most promising game changers in development are decidedly low-tech. Oral rehydration therapy, deemed by *The Lancet* as “potentially the most important medical discovery of the 20th century,” is just a simple solution of salt, water and sugar that replaced a more advanced technology of intravenous therapy, and is attributed with saving the lives of an estimated 1 million children each year. Similarly, researchers at Georgetown University discovered through a rigorous experiment in Kenya that simply posting stickers encouraging bus passengers to tell the driver to slow down resulted in a two-thirds reduction in insurance claims involving road traffic injuries—the leading cause of death of young people in Africa.

What, then, should development innovation mean from the perspective of public investment? Innovation can entail many different pathways to development impact. Many—but not all—involve a *low-cost technology*: a mobile phone application for farmers, for instance, or a new maternal health technology or crowd-sourcing device for mapping violence. Some might entail a *new business model* that unleashes consumer demand, such as a new payment plan for purchasing solar lanterns. Innovation might also mean the introduction or application of a *behavioral breakthrough*, such as new knowledge of consumer behavior that leads to increases in chlorine filtration of water. Or it might mean a *new process, policy or tool*,

such as innovative energy audits or new diagnostic tests that use psychometric analysis to evaluate the creditworthiness of entrepreneurs. Regardless of the inputs, the key criterion for innovation is producing development outcomes more cheaply, better, and faster while reaching more beneficiaries.

The U.S. government should avoid overemphasizing technology in its quest for development innovation, and it should heed the caution to avoid “pseudo-innovation.” The temptation to seek silver bullet technology solutions is strong, particularly when crafting competitions and prizes. However, a narrow focus on mobile and technology solutions can crowd out other potentially higher-impact approaches. Similarly, U.S. government efforts to foster innovation should balance the push for new technology development with equal attention on the deployment at scale of these technologies. Business model innovation and process innovation may be needed to overcome market failures to reaching scale.

### ***Marry Experimentation and Evidence***

Despite the rich legacy of success in donor efforts to foster game-changing development innovation, there are also many cases of resounding failure. The disappointing experience of PlayPumps is one of the most cited examples of this failure. PlayPumps have a novel design: Children push a revolving wheel that looks like a merry-go-round, which draws water from a well at the same time that the children are playing. But the program was a resounding flop; the pumps costs four times as much as traditional pump systems and are overly complex, and even a few hours of play is insufficient to pump much water. After PlayPumps’ \$16 million launch in 2006, by 2009 very few pumps were still operating.

Harvard University’s Michael Kremer and the Center for Global Development’s Charles Kenny have highlighted the PlayPumps failure in their calls to marry innovation with evidence. Kenny points out that many technologies that look great on paper fail miserably in the field. “Africa is scattered with the desiccated hulks of technological solutions that turned out to be less than miraculous,” he warns.

Kremer argues that while some failure is inevitable, donors have still erred by throwing good money after

bad ideas. By failing to adequately invest in evaluation, donors have been caught investing large amounts of money in fads and failures. He calls on donors to seek rigorous evidence early that an innovation is achieving the desired impact, preferably through a randomized evaluation, and to critically assess progress when investing large sums of money. Kremer and USAID’s Maura O’Neill advise donors to conduct evaluations at the early stages of a project, not at the project completion stage, as is often done, to fuel an iterative process of piloting, testing, refining, retesting and scaling.

Of course, though eminently sensible, this approach is not standard practice in aid agencies, where program budgets tend to be large; evaluations are conducted at the end of a project (if at all); and little room is available for testing, iteration and adjustment. There is a growing (albeit nascent) momentum for change. The Obama administration’s acting head of the Office of Management and Budget (OMB) recently issued a memorandum calling on all agency heads to use evidence and evaluation in budget, management and policy decisions, citing the tiered funding approach of USAID’s DIV program.

### ***Manage Risk***

Innovation inevitably carries risk. In the private sector, a venture capitalist seeking the next big innovative breakthrough—the next Facebook, for instance—will expect as much as nine carefully chosen investments to fail for every one grand slam that succeeds. The individual losses are balanced by the success of the overall portfolio. Similarly, without taking some amount of risk, donors lose the potential for very large payouts in the form of development breakthroughs with the potential to improve millions of lives.

This raises several questions: How can the U.S. government and other donors prudently manage risk? How much risk is tolerable, both at the individual project level and overall as an institution? Can USAID sustain a portfolio view of its investments and explain reasonable failures in an environment of intense congressional and public scrutiny?

One interesting case study is USAID’s new DIV, which has introduced a novel way of managing risk through its

staged financing model. Applicants for DIV grant funding can submit proposals for any of DIV's three stages of financing—ranging from \$100,000 for a Stage 1 seed grant to up to \$15 million for Stage 3 funds. The more money an applicant seeks, the higher the standards of evidence required that the approach works. In this way, USAID places small bets of \$100,000 or less to try out promising new innovations that are not yet tested, to support their research, design and prototyping (that is, if a promising new innovation will fail, better to fail early and cheaply). DIV provides up to \$1 million for Stage 2 projects to collect rigorous evidence of an innovation's impact at a larger scale. Only those innovative approaches that have rigorous evidence of effectiveness are competitive for Stage 3 financing of up to \$15 million to take this approach to scale. Project risk is further managed by rigorous selection criteria (including the quality of the management team, soundness of approach, and evidence) and a stringent due diligence processes, including 100 percent external review of short-listed proposals by sector experts in the private sector and academia.

Still in its early days, DIV's first investments have yielded several big wins and numerous positive results—helping DIV build political support and buffering itself from what might have otherwise been more intense congressional scrutiny. Yet it is entirely reasonable to assume that some of the USAID-supported innovations selected through DIV, the Grand Challenges program, or other incubators will not yield positive results. In fact, it is even desirable—if every investment works, it is likely that the initiatives are not taking sufficient risk and are losing opportunities to discover innovations that would have an even greater impact. Though sensible from an aid effectiveness point of view, the likelihood of some projects failing carries reputational and institutional risk for USAID and other donors. Even small \$100,000 investments in early stage innovations that do not work could be singled out by the media and lawmakers as examples of USAID's failure, especially when taken out of context of its overall portfolio. Much work is left to be done to educate the development community and policymakers, especially on Capitol Hill, about the appropriateness of sensible, managed risk.

### ***Support Public Goods in the Private Sector***

Some of the most promising development innovations are being pioneered by commercially sustainable enterprises that aim to deliver positive social change through the private sector. These market-based development solutions developed through “inclusive businesses” have attracted an estimated \$50 billion in impact investment capital to take their solutions to scale. And this is just the beginning; J. P. Morgan has estimated that the potential capital market for impact investing could grow to \$1 trillion—a potentially vast source of new development financing that could be leveraged to support development goals.

Despite this enormous potential for private investors to provide the capital to scale up game-changing development solutions, today that potential is not yet being realized. In a recent report, Harvey Koh and Ashish Karamchandani of the Monitor Group, and Robert Katz of the Acumen Fund argue that there simply is not a sufficient deal flow of investor-ready enterprises that are ready to scale up with private money. Monitor Group's Mike Kubzansky examined 439 promising inclusive businesses across nine countries in sub-Saharan Africa over a period of 16 months and found that only 32 percent were commercially viable, and only 13 percent were operating at scale. Too many promising innovations get lost in the valley of death between invention and scale—stymied by a dearth of funding, the challenges of achieving economies of scale and profitability, and the difficulties of recruiting talent and high volatility.

Koh, Karamchandani and Katz call on donors and philanthropists to provide greatly needed early stage seed capital to “pioneering” enterprises, as they refine business models, create new markets and pave the way for other “copycat” entrants who free-ride on the first mover's marketing investments. Investors are too often unwilling to provide the heavy up-front investments in building out the market, raising awareness and creating the right skills. They urge donors and philanthropists to provide direct, early stage support to promising “pioneering” enterprises with innovative development solutions. Without such

funding, they argue, the volumes of private, impact-capital will remain on the sidelines.

Their case comes from a public good perspective: Pioneering enterprises face first-mover costs that might otherwise deter entrance to nascent markets. Subsidized pioneers can not only become successful individually but can also pave the way for replication of the model more quickly, more easily and more cheaply. Take the microfinance sector: The pioneer Grameen Bank took 17 years to break even in South Asia. But two decades later, SKS broke even in India in just 6 years. And three decades later, Equitas broke even in just one year.

However, others have cautioned against direct public funding of early stage investments, instead calling for public investment in the enabling environment to make private sector investments more desirable, such as in regulations, market information and standards. Charles Kenny has called for USAID to invest in public goods (vaccines), as opposed to private goods (solar lanterns, cookstoves). Still others have cautioned against early stage investments for the very same reasons that private investors have not moved downstream: risk. Koh, Karamchandani and Katz point out that “innovation across multiple dimensions in order to pioneer new business models serving the base of the pyramid is especially risky. In the emerging field of inclusive business, there are still more unproven models than there are proven ones, so the vast majority of investment opportunities are at the early stage. And building and scaling new business models take time: Monitor’s research in India suggests that new inclusive firms take more than a decade to achieve a reasonable level of scale. Meanwhile, the extreme challenges of the base of the pyramid environment mean that margins are typically low and volatile.”

Philanthropic organizations and foundations may have more appetite for this risk—do public sector donors? Do donors have the right skill set in house for due diligence and selection, and for providing support for scaling? Koh, Karamchandani and Katz recommend the creation of a specialist intermediary, with the right

private sector skill set and expertise for scaling up impact enterprises with innovative solutions. Should donors fund an external entity such as this, or develop this type of capacity in house?

## RECOMMENDATIONS AND NEXT STEPS

### ***Measure Cost-Effectiveness and Set Clear Targets***

Ultimately, innovation is a push for doing development cheaper, better, faster and at scale. Realizing the high-level commitment for incorporating innovation in the U.S. government’s development programs should lead to the adoption and scaling up of approaches that are significantly more cost-effective than current practice. As innovations are piloted, tested and evaluated, donor agencies should have an incentive to adopt the most successful and cost-effective development solutions. However, USAID does not measure cost-effectiveness of programs in such a way that comparisons could be meaningfully drawn, and improvements in cost-effectiveness could be measured. USAID should undertake a major effort to incorporate measures of cost-effectiveness and cost/benefit analyses in its programming, and set clear targets for annual improvements in cost-effectiveness. Such indicators would create the needed incentives for the adoption and scaling up of cost-effective innovations.

### ***Set Aside Funding for Evaluation and Learn from Failure***

Failure is fundamental to the process of discovery—fueling a process of iteration, innovation and improvement. In this sense, failure can actually be a public good, if it leads to fresh insights and learning that pave the way for future development success. But this can happen only if the lessons from failure are first acknowledged, grappled with and shared. Obviously, the political and institutional pitfalls of publicly acknowledging failure serve as a deterrent. USAID might be even more reluctant than other government agencies to highlight its failures, given the difficult budget climate and scrutiny on Capitol Hill.

At a bare minimum, USAID’s new policy, planning and learning office should lead internal efforts to share lessons from failure and to encourage missions to foster a culture of learning and iteration. OMB’s recent guidance to all agency heads to improve public access

to evaluations of what does and does not work provides an additional opportunity. OMB could take a lead role in creating a government-wide culture and forum for sharing lessons from failures. From a game theory point of view, if all government agencies put forward lessons from failures, no one agency or department would alone risk a reputation of underperformance. The Pentagon's DARPA program, for instance, may have more political flexibility to highlight instances of failure, thus giving more political cover to USAID and other agencies.

### ***Create Multidonor Special Intermediary to Seed and Scale Up Innovative Private Sector Solutions***

The U.S. government should spearhead a multidonor initiative to create a new external entity dedicated to seeding and scaling up game-changing developing innovations through the private sector. The initiative could have a narrow focus on a select number of development sectors that are especially ripe for early stage support and where the private sector is key to scaling up innovation, in particular energy poverty.

The initiative could deploy a combination of innovative mechanisms to seed, develop and scale up the most promising solutions. "Pull" mechanisms and advance market commitments could be used in combination with DIV's staged financing model. The initiative could provide specialized technical assistance and business support to help the enterprises overcome the market barriers to growth, and work closely with impact investors, such as the U.S. Export-Import Bank and the Overseas Private Investment Corporation, to prepare for later stage deals. By bringing in a multitude of partners—foundations like the Rockefeller Foundation and Hewlett Foundation, impact investors, incubators and accelerators, private sector firms, and a range of multilateral and bilateral donors—along with private sector skills and expertise, the U.S. and other public sector partners could manage their own institutional risk exposure.

The initiative could be launched at the Group of Eight (G-8) summit in the United Kingdom in 2013, starting with a major push for seeding and scaling up sustainable, market-based approaches to expanding energy access in Africa and Asia. Since Rio+20, there has been a growing momentum in the international community around this

call for expanding access to sustainable energy in the developing world. Innovation and private sector scaling are central to this objective, but donors and smart public sector support can play a critical role in catalyzing investment opportunities and addressing barriers to growth. In a recent Center for Global Development report, Nigel Purvis and Abigail Jones describe the global push for providing sustainable energy for all as akin to the market for cell phones, and less like drugs for infectious disease. "Markets and consumers, not philanthropy and aid" will drive the sustainable energy revolution, the authors contend. Donors should seek strategic interventions that help unlock the latent demand for energy services in poor communities and that help small and medium-sized businesses, startup companies and social enterprises overcome market barriers to the rapid dissemination of innovative off-grid and mini-grid solutions. They warn that despite keen interest from investors in global clean energy opportunities, there simply are not enough projects today that meet basic investment criteria. The U.K.'s presidency of the G-8 provides an opportunity to galvanize support for the creation and launching of the new initiative for seeding and scaling up development innovation, starting with a major push on energy for all goals.