WASH FOR LIFE

Findings from an evaluation of the partnership between the Bill & Melinda Gates Foundation's Water, Sanitation, and Hygiene team and USAID's Development Innovation Ventures

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In 2011, the Bill & Melinda Gates Foundation's Water, Sanitation, and Hygiene (WSH) team partnered with USAID's Development Innovation Ventures (DIV) to establish WASH for Life, a \$17 million pool of dedicated funding for innovative water, sanitation, and hygiene projects with the potential to scale. In 2017, as the partnership was ending, the WSH team commissioned Mathematica Policy Research to conduct an ex-post process evaluation to identify lessons learned from this unique collaboration. This brief provides a summary of the WASH for Life partnership and the evaluation design; reviews the WASH for Life portfolio, including characteristics of applicants and grantees and an assessment of the degree to which WASH for Life succeeded in stimulating, testing, and scaling innovation; and reflects on WASH for Life's influence on other innovation funders.

Inadequate water and sanitation services contribute to a myriad of health, social, and environmental problems that constrain opportunities for people to live healthy, productive lives. Water scarcity, poor water quality, poor (or nonexistent) infrastructure, and inadequate sanitation facilities and services cause nearly 1,000 children to die each day from preventable water- and sanitation-related diarrheal diseases (UN 2017). Globally, 2.3 billion people—31 percent of the world's population—do not have access to basic sanitation and over 890 million people continue to practice open defecation (WHO/UNICEF 2017). Most of those still without services live in rural areas in Sub-Saharan Africa and South Asia, particularly India, although access to inadequate sanitation services in urban areas is also a major challenge (World Bank 2017). Much progress is needed if the world is to meet the 2030 Sustainable Development Goals of (1) achieving universal and equitable access to safe and affordable drinking water for all and (2) achieving access to adequate and equitable sanitation and hygiene for all and ending open defecation.

For decades, the standard approach to improving access to water and sanitation was to concentrate on supply challenges by investing in infrastructure. Large-scale sanitation construction projects, typically provided to the public by governments or donors, were aimed at addressing the lack of adequate sanitation among rural and urban households in developing countries. But a pattern of poor progress associated with the supply-led model emerged, marked by repeated failures to generate demand for improved sanitation, to spur behavior change among beneficiary households, to produce sanitation products and services that are sustainable (both structurally and financially) beyond the life of a project, and to scale up effective approaches. Intended beneficiaries tend to reject solutions offered by governments, donors, and nongovernmental organizations when they are too expensive, unpleasant to use, difficult to

maintain, or at odds with local culture or context. New models, such as Community-Led Total Sanitation, were developed to focus on igniting a community's desire to change sanitation norms and behaviors rather than providing subsidized infrastructure.

Although challenges associated with a lack of supply remain real and significant, the notion that solutions need to be demand driven, low cost, and scalable marked an evolution in thinking about the water, sanitation, and hygiene (WASH) sector. Governments and donors began to seek innovative ways of finding and testing new models, often leveraging the domestic private sector, which had previously been ignored or even seen as a hindrance.

Meanwhile, parallel changes took place within the international development community writ large, across sectors from education to agriculture. New funding mechanisms emerged to source and test innovative,

USAID's Development Innovation Ventures (DIV) is an open competition that seeks to spur and support new ideas for solving intractable problems around the world—ideas that will deliver more impact, for less money, with greater potential for sustainable scale. DIV uses a tiered, evidence-based funding model to test ideas, gather evidence of what works, find failures quickly and cheaply (without long-term commitments), and continue to support only business models that have the potential to be financially self-sustaining.



demand-driven ideas from all over the world. Inspired in part by the venture capital model, which allows for the "crowdsourcing" of innovation and is designed to spread risk across a portfolio of investments which are each inversely proportional to their level of risk, USAID established Development Innovation Ventures (DIV) in 2010 as a tiered, evidence-based open innovation fund focused on piloting, testing, and scaling new solutions to some of the toughest challenges in development.

In 2011, the Bill & Melinda Gates Foundation's Water, Sanitation, and Hygiene (WSH) team and DIV established the WASH for Life partnership. Both organizations sought to spur innovation and were positioned to take risks to solve the world's most intractable problems related to water, sanitation, and hygiene. The program married the technical expertise and value-chain orientation of the WSH team to DIV's connections with USAID Bureaus and Missions—as well as its infrastructure—to manage an innovation fund and source a wide variety of project ideas from all over the world.

PARTNERSHIP GOALS

- 1 Identify and support promising new technologies and service delivery approaches by awarding 15–35 small grants over five years
- Provide support so that successful projects could be rapidly mainstreamed by host country governments and the private sector
- 3 Support promising new approaches within USAID Bureaus and Missions

The partners intended WASH for Life to foster innovation in the field through a recursive and self-reinforcing flow of information and insights between DIV and USAID's Bureaus and Missions, initially through the grant-making process, and later by mainstreaming and expanding the DIV-funded approaches that were shown to be effective.

Insights into the conditions that led to WASH for Life's achievements can help the Gates Foundation, USAID, and other funders optimize the mechanisms through which they support innovative but risky ideas with the potential to help the world achieve the Sustainable Development Goals for water and sanitation. As the only external evaluation of DIV conducted to date, we also reflect on several topics—such as DIV's grantmaking model, its application processes, and its approach to knowledge dissemination—that are not unique to WASH for Life and might be of interest more broadly.

The remainder of this evaluation brief provides a summary of the WASH for Life partnership and the evaluation design; reviews the WASH for Life portfolio, including characteristics of applicants and grantees and an assessment of the degree to which WASH for Life succeeded in stimulating, testing, and scaling innovation; and reflects on WASH for Life's influence on other funders of innovation. Following a summary of findings, we conclude with some thoughts regarding implications for future efforts to fund WASH innovations.

I. OVERVIEW OF THE WASH FOR LIFE PARTNERSHIP

To establish their partnership, the Bill & Melinda Gates Foundation's WSH team and USAID made matching contributions of \$8.5 million to fund the collaboration from 2011-2017. The backbone of the WASH for Life partnership was its grant-making component (Figure 1). The original aim was to issue an open call for proposals and fund 15-35 projects related to water, sanitation—particularly urban sanitation—and hygiene. DIV encouraged grantees to generate rigorous evidence about impact and cost-effectiveness that could support an innovation's pathway to scale.

As shown in Figure 1, DIV envisioned that public sector channels—such as incorporation into large USAID projects or government budgets—would be important pathways to scale for some effective innovations, while others would be scaled through the private sector.





SUMMARY OF KEY FINDINGS

- DIV and the Gates Foundation WSH team had an excellent working relationship that was deeply valued and appreciated by both partners. The collaboration bolstered DIV's reputation as a new organization and provided flexibility over when and how to spend the protected funds allowed DIV to maximize the value of its Congressional funding.
- The WASH for Life portfolio was well-rounded: there were twice as many stage 2 grants as hoped, although there was only one stage 3 grant; sanitation and hygiene accounted for more than half the grants and over 40 percent of the funding; and grantees operated in 14 countries, although one-third of the grants were for projects in Kenya and most grantees were based in the U.S.
- WASH for Life funding was critical for stage 1 and 2 grantees. The signaling value associated with a DIV grant influenced how other donors viewed the grantees, unlocking other sources of funding. Stage 2 funding was a unique opportunity that allowed grantees to experiment with different business models and collect data that could be used to convince other funders to invest.
- **DIV struggled with stage 3 grant-making.** It was hard for DIV to find good candidates and the one very large stage 3 grant it made was not able to identify a sustainable source of financing to scale up.
- It is still too soon to judge the performance of roughly half the portfolio, but among the grants that are complete (or nearly so), there are a couple of promising innovations. Five recently awarded grants are also worth following, counterbalancing some of the disappointments among the early cohorts (as is to be expected in a venture funding model).
- **DIV influenced other funders through several mechanisms,** including its tiered funding model borrowed from venture capitalism, movement of staff between organizations, and shared grantees.

In addition to building relationships with USAID Missions, the Global Health Bureau, and the Water Office through WASH for Life's portfolio of grants, the partners designed two other mechanisms intended to foster collaboration between DIV and other elements within USAID, although neither of these was actualized. An innovation fellowship program to place development researchers within USAID Bureaus and Missions was never launched due to constraints in USAID human resource policies. Likewise, a special funding window to support innovative ideas that originated from other departments within USAID only issued one funding call and did not award any WASH grants.

GRANT-MAKING

When DIV issued a call for expressions of interest (EOIs), applicants could propose three types of projects of varying sizes, modeled on an approach used by venture capital investors:

- ➤ Stage 1 grants are designed to support initial testing and "proof of concept" work. These grants of up to \$150,000 fund early, real-world assessments of whether an innovation is technically, logistically, or financially viable. Grantees often assess user demand, willingness to pay, and usage of products and services, documenting social outcomes and real world implementation costs. These grants always have a limited reach and typically have a low success rate. DIV's hope is that at least some of these risky propositions eventually become scalable.
- Stage 2 grants test ideas more rigorously and aim to generate evidence and learning that position projects for scale. Stage 2 grantees receive up to \$1 million to test their interventions for social impact, outcomes, and/or market viability. They generate evidence that allows them to refine operations and their business models, developing a theoretical pathway to sustainability and scale. Ideas with the potential to be scaled via the public sector must rigorously demonstrate impact. Models with private sector pathways to scale must show that they can recover costs and move toward profitability.
- ➤ Stage 3 grants support the transition of already proven approaches to scale, typically in new contexts or different geographies. These grants, valued at well over \$1 million, aim to reach millions of people and progress on a pathway to scale, usually either via the public sector—with revenue institutionalized in governments' or multilaterals' budgets—or the private sector, by becoming profitable with a growing market for their products or services. With their funding "runway" from DIV, grantees address operational challenges, refine their models, and generate additional evidence needed by potential public and private scale-up partners.

TARGETS

With \$14.6 million, or 86 percent, of the total \$17 million collaboration budget dedicated to grant-making, DIV set out to award grants against the following targets:

> Priority sectors: Fifty percent of the funds were to be dedicated to sanitation and hygiene projects.

- > Focal countries: Fifty percent of the funds were to go toward projects in the set of six countries that were of highest priority to the Gates WSH team at the time the grant was made (Ghana, Nigeria, Kenya, Ethiopia, India, and Bangladesh) and Haiti, which was added at USAID's request because Congressional budget rules otherwise prohibited USAID from funding WASH projects there.
- ➤ Stages: The WSH team and DIV expected that there would be approximately ten stage 1 grants, five stage 2 grants, and at least 2 stage 3 grants.

Projects supported by WASH for Life needed to impact the lives of people earning under \$2 a day who lack water, sanitation, and/or hygiene services (or are underserved).

SELECTION CRITERIA

DIV evaluated WASH for Life proposals on the same basis as the rest of its portfolio, using three primary criteria:

- Cost Effectiveness whether an idea has the potential to deliver greater development impact per dollar than standard practices
- ➤ Rigorous Testing whether the potential solution will be scientifically evaluated to identify what works and what does not
- ➤ Pathways to Scale whether there is a convincing plan for eventual scale-up through the public sector, the private sector, or a combination of the two.

II. EVALUATION OF THE WASH FOR LIFE PARTNERSHIP

Based on the WASH for Life partnership's goals and theory of change, Mathematica set out to assess the partnership's accomplishments and the challenges it encountered. The evaluation also aimed to explore how the partnership affected the water and sanitation sector and the development community more broadly by influencing other innovation funds.

To answer the research questions, we drew upon data from four main sources: (1) program reports and documents such as grant applications, progress reports, and grantee publications; (2) administrative data from applications; (3) interviews with WASH for Life implementers and key stakeholders; and (4) an online survey of WASH for Life applicants and grantees.

Program documents. Mathematica reviewed a set of illustrative program documents such as progress reports, tools DIV developed to coordinate with Missions, grantee proposals, and reviewer feedback.

RESEARCH QUESTIONS

- How effective was the WASH for Life partnership at stimulating, testing, and scaling innovation in the water, sanitation, and hygiene sector?
- To what extent did the WASH for Life partnership influence other funders?

We reviewed a sample of both funded and unfunded proposals and expressions of interest (EOIs) to shed light on DIV's risk appetite, enabling us to ask informed, substantive questions about specific projects during our key informant interviews.

- Administrative data. We used DIV's application tracker database to describe the full set of proposed projects and the portfolio of awarded investments.
- ➤ Key informant interviews. Between November 2017 and February 2018, we conducted 46 interviews with a diverse set of key stakeholders including people directly involved with the implementation of the WASH for Life grant program at DIV and key stakeholders from USAID's Water Office, the Global Health Bureau, and several Missions; the program officers on the Gates Foundation WSH team who helped to create and oversee the partnership over the years; almost half of the WASH for Life grantees; and several unsuccessful applicants, WASH sector experts, and other donors.
- ➤ Online survey of applicants and grantees. We conducted an online survey (N=240) as an additional method to gather information from a much wider pool of applicants, as well as all grantees, capturing their perceptions about how the partnership was communicated to the field; how the program's risk tolerance was understood by applicants; whether the application process was helpful or detrimental to stimulating innovation; and whether they were satisfied with their communications with DIV.

LIMITATIONS & CAVEATS

Many respondents found it difficult to distinguish WASH for Life from DIV as a whole. While most informants we interviewed were only able to speak of DIV's influence, we can informally credit much of the influence to WASH for Life, which enabled DIV to work so deeply in this sector relative to other fields.

The same forces that led to DIV's formation also influenced the entire WASH field. It is difficult to disentangle DIV's influence from the general movement over the past decade toward using evidence to make decisions across the field of international development. DIV is both a cause and an effect of this trend, but DIV does appear to have been at the forefront of the movement toward a greater emphasis on evidence and innovation.

We collected a large amount of rich quantitative survey and qualitative interview data, but our findings may not be representative of all applicant, grantee, and staff perspectives for several reasons. First, the response rate to our applicant survey was around 30 percent, despite several follow-up attempts, including a special appeal message sent by the Gates Foundation. Considering that it has been several years since most of the organizations in the database applied to DIV, coupled with the fact that most potential respondents had not received funding from DIV, this response rate is not particularly surprising. Generally, respondents to the survey were more likely to have applied in recent years, but did not appear to differ from non-responders across any other characteristics that would affect the representativeness of the sample. Second, qualitative data is valuable for its depth, but cannot reflect an entire population. In the

analysis, we took care to be conservative about drawing conclusions and only report those findings which emerged consistently from triangulation between all of our various data sources.

III. THE WASH FOR LIFE PORTFOLIO

In this section, we examine the extent to which the WASH for Life program was implemented as designed and the degree to which the partnership stimulated, tested, and scaled promising WASH innovations. On the whole, we find that the partnership between DIV and the Gates Foundation's WSH team was a success and the funding window was generally implemented as planned, meeting several—but not all—of its grant-making targets. We find that DIV and the WASH for Life team effectively stimulated and tested a diverse set of promising innovations, although it did not bring any programs to scale.

A SUCCESSFUL PARTNERSHIP

The Gates Foundation and DIV had a productive relationship which was deeply valued by both partners. First, the initial process of "co-creating" and designing the initiative together was characterized by a spirit of "thought partnership." In particular, the two partners had a productive collaboration around building a pipeline of applicants/ grantees and reviewing WASH proposals. Gates WSH team program officers actively suggested to some grantees or potential grantees to approach DIV and submit through the WASH for Life window. DIV valued the input it received from the members of the Gates WSH team who were designated as reviewers of WASH for Life applications.

"If I had stayed at DIV... building more partnerships like this one, based on a sector and with a specific institutional funder, would have been a major priority."

- Former DIV leader



ACCORDING TO DIV LEADERS, STAFF, AND GRANTEES...

INNOVATION IS:



- A new way of doing something cheaper, better, or faster, even if this is just moving an approach that works in one context to a new setting, or an incremental improvement in the lives of many people
- Sometimes a new product, but also new or adapted services, a way of financing something that already works, or an idea for a pathway to scale

INNOVATION NEED NOT BE...



- Disruptive to the status quo or a "sea change" (a massive transformation in the way people live their lives)
- · The latest "shiny" new technological gadget
- A product
- Financially sustainable at the outset; it may take time for a business model or way of commercializing an approach to emerge

"Innovation is humility. We don't have the right ideas.

There are good ideas out there that haven't received support.

Humility gives us the best opportunity to find them."

– DIV staff

DIV greatly appreciated the Gates WSH team's "light touch" engagement model. This spirit of partnership began in the early, exploratory days and continued throughout the life of the partnership. The Gates Foundation provided helpful input, but program officers were careful to limit management burden, conveying a high degree of trust in DIV and its judgment, with many DIV staff recalling clear, flexible, and sensitive leadership by the WSH team program officers. Their ideas about making and managing grants were particularly helpful to DIV.

DIV leveraged the Gates brand and credibility to build its own standing. Support from the Gates Foundation demonstrated to USAID, Congress, and the development field that DIV was doing important work. DIV's leaders credited the WASH for Life partnership with enabling DIV to cut through the USAID bureaucracy, gain access to decision-makers, and begin conversations about the importance of innovation.

"We used the 'soft power' of Gates' reputation to show to everyone that we're a legit player and growing in the right direction."

- DIV staff

"[Gates Foundation support] was one of the core ingredients for us to be taken seriously."

- DIV staff



WASH for Life protected and increased funding for WASH, likely leading to more WASH grant-making than would have occurred without the partnership. DIV awarded \$18.6M in WASH grants, 27 percent more than the partners initially committed to spending in 2011. DIV granted \$4M more than anticipated in part because funds from the innovation fellowship program and internal DIV funding window were reallocated, but mainly because USAID contributed more funds than anticipated, a marker of a successful partnership and an indication that DIV received a large number of high-quality WASH proposals.

The WSH team's flexibility helped DIV maximize its congressional funding. The partnership protected WASH funding when DIV's budget was at risk due to institutional factors in USAID outside DIV's control. Over time, as portions of DIV's budget were reallocated toward other priorities, the WASH for Life money protected support for WASH. In other areas, such as agriculture, education, and food security, DIV couldn't build a pipeline as aggressively because leaders and staff weren't sure they would ever be able to make the grants. Moreover, because the funds DIV received from Congress were allocated on a "use it or lose it basis," DIV had to spend those funds first. By allowing DIV to spend its Foundation grant funds very slowly, missing its targets by a wide margin, the Gates Foundation signaled a high degree of trust that the grant funds would eventually be put toward their intended use.

"WASH was always our strongest sector, because we got off the ground early with Gates."

- DIV staff

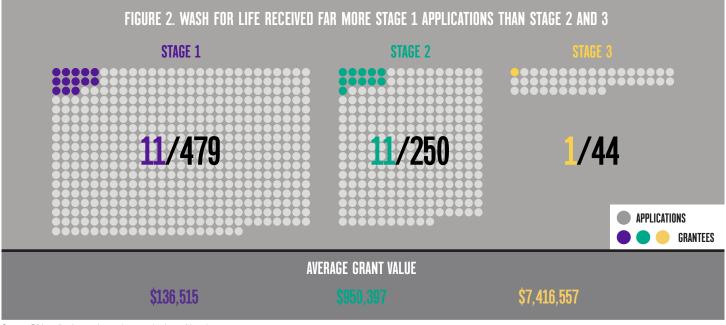
"[In] education, agriculture, food security, we had to be careful not to too aggressively build pipeline. [WASH for Life] enabled us to be really aggressive in pipeline building and not be concerned we would have to turn down qualified applicants because of lack of funding."

- DIV staff

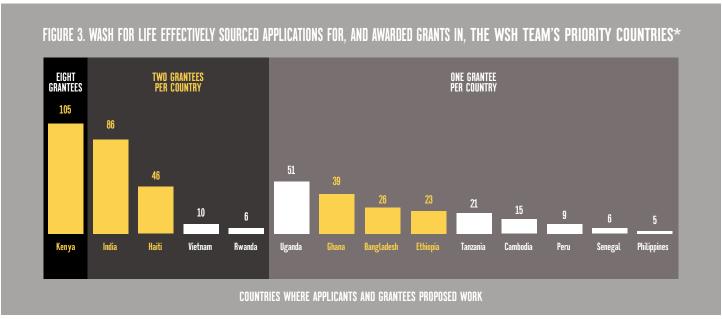
Dedicated funding enabled DIV to provide non-financial support to WASH grantees. DIV's portfolio managers were able to engage more deeply as thought partners and occasionally procured technical assistance for high-performing grantees, such as support from a niche sales and marketing consulting firm to consult on business plans and sales strategies—a type of help it occasionally offered grantees in other sectors, but to a lesser degree.

APPLICANT AND GRANTEE OVERVIEW

WASH for Life received far more stage 1 applications than proposals for stage 2 or stage 3 projects (Figure 2). Of the 773 WASH for Life applications DIV received, 62 percent were for stage 1, 32 percent were for stage 2, and six percent were for stage 3. For all stages, less than five percent of applications were funded, including just a single stage 3 grant to Innovations for Poverty Action for the Chlorine Dispensers for Safe Water project.



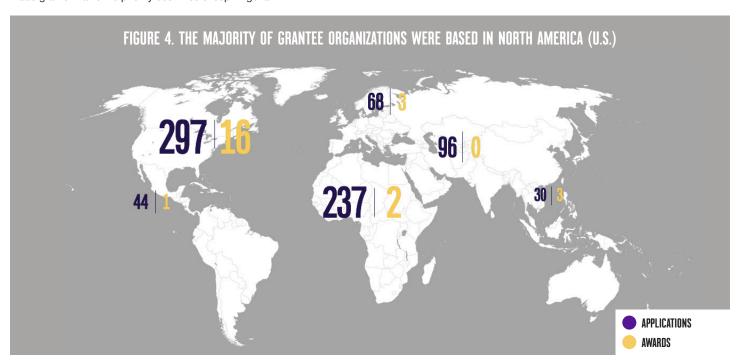
Source: DIV application tracker and grants database, N=773m



Source: DIV application tracker and grants database. There were 448 applications for work in countries where awards were made. Two grants in Kenya were not implemented. *Yellow bars indicate the WSH team's priority countries when the partnership began. No grants were made in Nigeria, one of the seven original priority countries.

WASH for Life effectively sourced applications for – and awarded grants in – the Gates WSH team's priority countries (Figure 3). The seven priority countries accounted for seven out of the eight countries most frequently proposed by applicants. Overall, 78 percent of applications proposed work in countries within Africa or South and West Asia. Kenya had the most proposals by a significant margin, and with eight grantees, it was the only country where more than two WASH for Life grants operated. There were almost as many applications to work in India, but only two of those applications were funded. WASH for Life made grants in all of its priority countries except Nigeria.

The majority of funded organizations were based in North America, specifically the United States (Figure 4). DIV received applications from 74 countries, but the largest share (36 percent) came from organizations based in the United States No other country accounted for even ten percent of all applications. There were almost as many applications from Africa as from North America, but the success rate of these applications was far lower, and of the two grantees that were based in Africa, one was founded by an American expatriate.



Source: DIV application tracker and grants database, N=772. Country of origin was not known for one application.

WASH for Life applicants typically were small to medium-sized not-for-profit organizations founded in the last 20 years, with 5-20 staff and annual budgets under \$500,000.

For nearly half of the applicants, their WASH for Life proposal was one of their organization's first WASH proposals.

DIV had a difficult time finding and funding local organizations.

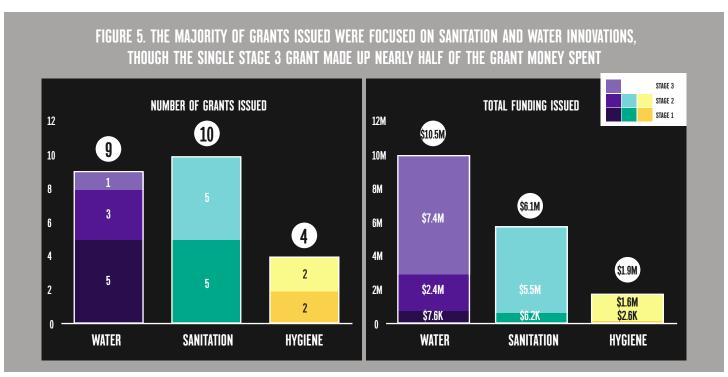
Grantee organizations tended to be founded by Americans with experience living and working as expatriates in developing countries. DIV staff attributed this "bias toward a global orientation" to several factors, including difficulty communicating and socializing the opportunity through Missions; the required use of English in the application materials; the impossibility of working directly with foreign governments and utilities; and the fact that many applications from local organizations were not responsive to DIV's criteria, and instead seemed to be stock applications to fund traditional infrastructure and services (such as boreholes, orphanages, and so on).

Applications covered a wide range of innovations, but scientific or technological innovations, particularly in water quality, were the most common. Approximately half of the applicants who responded to our survey said they had proposed a scientific or technological innovation. Roughly one third called their idea a financial or business model innovation; the same proportion considered their proposed project an innovation in service delivery (respondents could select more than one type of

innovation). Although DIV did not attempt to classify the nature of innovations, we used targeted word searches of project and organization names to identify types of innovations. According to these categorizations, water applications made up 81 percent of coded entries. Among WASH for Life applicants who responded to our survey, 65 percent said their concept focused on water quality, drinking water, and/or purification; 35 percent said their focus was on water quantity.

Applicants did not emphasize evaluation and evidence generation more than usual. Despite WASH for Life's focus on evidence generation, only 12 percent of applicants reported that their proposal had more emphasis on evaluation than other projects their organization had carried out in the past. Applicants most commonly proposed impact evaluations (with experimental or quasi-experimental designs), though cost-benefit, cost-effectiveness, and process evaluations were also common. Only 37 percent of stage 2 applicants proposed impact evaluations or cost-benefit or cost-effectiveness studies, despite this stage's emphasis on generating rigorous evidence to inform potential pathways to scale.

WASH for Life awarded 23 grants across six funding rounds spread over more than six years (Table 1). Among the 23 grantees were twelve stage 1 grants, ten stage 2 grants and only one stage 3 scale-up grant, although it accounted for nearly 40 percent of the total grant-making budget (Figure 5). Three other grants were awarded but not claimed by the grantees two sanitation grants in Kenya – one stage 1 and one stage 2. Several strong stage 3 applications late in DIV's funding cycle might have been funded had they been at a more advanced stage of their organizational development, closer to profitability, or if DIV had additional funding to allocate. Awarding the \$7.5 million stage 3 grant in 2012 somewhat constrained WASH for Life's ability to make another grant of similar size in later years.



Source: DIV grants database, N=25

TABLE 1. WASH FOR LIFE GRANTEES

GRANTEE	STAGE	W/S/H	COUNTRY	YEAR AWARDED	DESCRIPTION
STAGE 1					
Sanergy			Kenya	2012	Container based sanitation and fecal sludge management
Sanivation			Kenya	2017	Container based sanitation and fecal sludge management
University of Maryland			Haiti	2013	Fecal sludge management
Bear Valley Ventures			Uganda, Myanmar, India	2013	Fecal sludge management
CARE Peru	1	\bigcirc	Peru	2016	Point of use water treatment
mWater	1	\bigcirc	Tanzania	2013	Data gathering - water monitoring
RAND Corporation	1		Kenya	2012	Point of use water treatment
Triple Bottom Line	1		Ethiopia	2018	Data gathering – water monitoring
SPOUTS of Water	1	\bigcirc	Uganda	2016	Point of use water treatment
Bear Valley Ventures	1	° È	India	2013	Handwashing
WaterSHED	1	°	Vietnam	2012	Handwashing
WSUP and IDEO.org	1		Ghana	2012	Data gathering – open defecation reporting
STAGE 2					
Sanergy	2		Kenya	2013	Container based sanitation and fecal sludge management
SOIL	2		Haiti	2018	Container based sanitation and fecal sludge management
Pivot Works	2		Rwanda	2017	Container based sanitation and fecal sludge management
Delvic	2		Senegal	2018	Fecal sludge management
EarthEnable	2		Rwanda	2018	Flooring
1001fontaines	2	\bigcirc	Cambodia	2016	Water kiosk
Hiraya	2	\bigcirc	Philippines	2018	Data gathering – water monitoring
Johns Hopkins University	2 (\ <u>\</u>	Bangladesh	2015	Handwashing and point of use water treatment
WaterSHED	2	% <u>`</u>	Vietnam	2013	Handwashing
Innovations for Poverty Action	2	° <u>^</u>	Kenya	2013	Handwashing
STAGE 3					
Evidence Action	3	\bigcirc	Kenya, Malawi, Uganda	2012	Point of collection water treatment
^					
WATER SANITATION HYGIENE					

Source: Applications, grantee interviews, and DIV grants database

TABLE 2. WASH FOR LIFE'S NEWEST GRANTS

HIRAYA



- Hiraya Water is a smart water management company that reduces non-revenue water loss for municipal water utilities.
- WASH for Life funding supports two demonstration installations and the development of a sales and distributions strategy to develop a pathway to scale.





\$360,000



EARTH ENABLE

 Earth Enable is a social enterprise that seals dirt floors using soya bean oil to make homes more sanitary.



WASH for Life funding will support a randomized controlled trial of the health impact of Earth Enable flooring as well as a pilot of scaling activities in Rwanda, Uganda, and two other yet-to-bedetermined countries.









SOIL

- SOIL rents small, portable household toilets for \$5/month and processes the waste into fertilizer, sold for a profit.
- WASH for Life funding supports operational improvements to make the business model financially sustainable.





\$500,000



DELVIC

- Delvic uses a Janicki Omni-Processor to produce electricity, potable water, and industrial ash from fecal sludge and solid waste such as plastic bags.
- WASH for Life funding will support collecting a wide range of evidence to assess the scalability and sustainability of its business model.





\$1,000,000

• With an innover



- With an innovative franchise business model called Flowius,
 Triple Bottom Line Enterprises (3BL) seeks to provide Ethiopians with affordable water piping for irrigation and residential use.
- 3BL Enterprises is using its WASH for Life grant to finish developing its pilot Flowius water system, and to eventually expand to more franchises.





Source: Applications, grantee interviews, and DIV grants database

WASH for Life nearly achieved its 50 percent target for sanitation and hygiene innovations. Water-related grants accounted for nine of the 23 grants and 54 percent of the awarded funds. WASH for Life made twelve sanitation grants, which accounted for 36 percent of the total budget. The four hygiene (handwashing) grants accounted for the remaining 10 percent of the funds.

STATUS OF THE WASH FOR LIFE PORTFOLIO

It is still too soon to judge the prospects of half of the 23 projects in the WASH for Life portfolio. Five grants were awarded earlier this year (in 2018) and are just beginning work (Table 2). Another seven grants from previous years are either still in the implementation phase or were implemented successfully but have not yet secured funding to continue developing the innovation.

Four projects ended successfully, although one of those has encountered challenges more recently. Although DIV did not intend for projects to graduate from one stage to the next, two grantees (WaterSHED and Sanergy) did just that, building on stage 1 success with a subsequent stage 2 grant aimed at generating evidence and informing future scale-up. Unfortunately, WaterSHED's handwashing station encountered challenges during its stage 2 grant and no longer appears to be poised for scale. At present, the two innovations that still have the potential to be scalable are:

➤ Sanergy's toilet micro-franchises. Sanergy manufactures Fresh Life Toilets and sells them to institutions and micro-entrepreneurs who run them on a commercial pay-per-use basis. These entrepreneurs receive training and operational support from Sanergy so that they can provide management and local marketing. Sanergy collects waste from the toilets daily and converts it to organic fertilizer and animal feed, two additional revenue streams.

After a successful stage 1 grant that piloted 60 toilets providing daily sanitation services to nearly 3,000 individuals in a Nairobi slum, Sanergy used stage 2 funding to continue to refine and scale its model. Under the second grant, Sanergy nearly met its targets for the number of toilets (700) and operators (350) it was to establish in its target areas, but exceeded its target for access by 30 percent (over 91,000 people gained access) and removed and treated over 5000m3 of fecal sludge. At the time this brief was written, Sanergy had continued to expand to almost 1,700 Fresh Life toilets in operation with over 40 partners listed on their website, including the Government of Kenya and the City Council of Nairobi.

➤ Innovations for Poverty Action's Povu Poa ("Cool Foam" in English). This economical handwashing system for contexts without piped water is a lightweight, portable, and culturally acceptable product that conserves water and soap. The innovative push-operated, low-flow tap can be fitted to either a bucket or a piece of PVC pipe for space-constrained environments such as low-income housing. Powdered laundry soap is fun and cheap to use when mixed with water in the simple foam-creation device. WASH for Life funding supported the human-centered design process and several research activities including a randomized controlled trial of the system in schools and a household willingness-to-pay study. Since the end of its WASH for Life grant, the Povu Poa has been handed off to a commercial manufacturer, which is exploring mass production and distribution channels.

As expected with venture capital-inspired philanthropy, there were several disappointments. Six of the 23 projects were unable to meet their targets and have since been abandoned. When grants failed, it was typically because the proof of concept or the pathway to scale failed, or due to the sort of management, financial, and operational problems typical of start-ups.

WASH for Life's sole stage 3 grant reached millions but struggled to scale. Evidence Action estimates that their Chlorine Dispenser program reached 4.5M users during the life of the grant, but to date the program has not found long-term, non-donor expansion financing, despite nurturing government partnerships in three countries, accessing funding through the market for carbon credits, and experimenting with a rental model (see side bar).

REFLECTIONS

Several applicants and grantees felt that DIV's rigid conception of three stages did not accommodate all worthy projects. The three stages were not intended as a progression, and DIV worked assiduously to prevent applicants and grantees from getting the impression they could "graduate" from one stage to the next, but this might not have been enough to convince organizations facing a natural incentive to advance to the subsequent stage. Some applicants and grantees felt that a \$150,000 grant was not enough to generate the evidence base required to be a strong candidate for stage 2 funding and were frustrated that they wanted to make more progress on their idea but felt constrained by the size of the initial award and the requirements for a larger grant. Likewise, some stage

2 innovations that required large capital expenses sometimes struggled to find other sources of funding for those costs. Three years is a relatively short time to achieve full financial sustainability, but stage 3 grants that do not achieve this milestone by the end of their award face an uncertain future.

THE APPLICATION PROCESS ELICITED AND STRENGTHENED INNOVATIVE IDEAS

Most proposals submitted to WASH for Life were for new ideas that had not previously been funded. Based on the survey responses, only around one fifth of proposals submitted to WASH for Life had previously been funded by another organization; about the same rate were funded by another organization afterward.

Grantees and some unsuccessful applicants received helpful feed-back through the application process. DIV staff asked stimulating questions, engaged in robust back-and-forth dialogue, and suggested ideas that catalyzed new thinking. As one unsuccessful WASH for Life applicant put it, "the process of answering [DIV's] questions help[ed] us understand our program better." A different unsuccessful applicant said her organization had applied the new thinking that came out of the WASH for Life application process when it later submitted a successful proposal to a large bilateral aid agency.

WASH FOR LIFE FUNDING WAS CRITICAL FOR STAGE 1 GRANTEES

WASH for Life funding was often the first and seminal grant funding for stage 1 grantees. Several grantees had received small travel grants from incubators, fellowship programs, or business plan competition programs, but had never been awarded anything large enough to support an actual pilot.

WASH for Life de-risked promising approaches. Several stakeholders mentioned that the DIV seal of approval was a meaningful signal sent to other potential funders. Stage 1 funding crowded in other funding to support successful programs, particularly from other innovation funders with whom DIV shared a pipeline and with whom DIV staff had developed connections and collaborative relationships. This additional funding speaks to the role that DIV, USAID, and the Gates Foundation play in signaling value to other potential funders.

"The grant [showed] other [private] investors that we weren't a risk... Without the capital [from WASH for Life], we would have been in a lot of trouble. As much as our idea was innovative, we needed that time to figure things out. We are definitely working on a very complicated challenge that is not a straightforward business solution."

- WASH for Life grantee

WASH FOR LIFE FUNDING FOR OPERATIONAL LEARNING WAS ESPECIALLY VALUABLE TO STAGE 2 GRANTEES

WASH for Life was rare in giving grantees the freedom to test and refine their business models. WASH for Life supported seven such projects, which focused on driving down costs, building revenue streams, and achieving self-sufficiency to enable scale-up. Several stage 2 grantees already had private sector financing, but still needed donor funding as they moved toward sustainability. For example, fecal sludge treatment companies received funds to develop and demonstrate operational capacity at treatment facilities, building out revenue streams in fertilizer, animal feed, energy, and clean water. As another example, a water kiosk grantee received funds to increase the number of franchisees and associated distribution points to a level at which franchising fees covered centralized services and operational costs. Vendors selling to households or governments received funds for marketing, with a focus on reaching sustainability.

Although the evidence grantees generated was very valuable for their own projects, there was very little dissemination of stage 2 results.

The original idea for WASH for Life had envisioned regional "road shows" to share evidence on successful WASH approaches, but DIV did not strategically promote findings at conferences or other events with wide

audiences, despite its aspirations. DIV staff felt stretched and over-committed, and instead informally promoted relevant stage 2 results during visits to Missions.

FUNDING THE SCALE-UP OF INNOVATIVE IDEAS WAS NOT DIV'S "SWEET SPOT"

Several DIV leaders and staff felt finding scalable programs and funding the scalability phase was not DIV's comparative advantage. One of DIV's founders said, "If you forced me to choose, I'd prefer to fund stages 1 and 2; you get more shots at the goal... scale can come from governments and other large organizations adopting the programs [if they work]."

"'Mid-range' is DIV's comparative advantage."

- DIV staff

Moreover, there was a large opportunity cost associated with making the significantly larger stage 3 grants. The only stage 3 grant DIV made, for the Chlorine Dispenser project, was for \$7.4 million, just under half of the total WASH for Life budget—enough money to fund over seventy stage1 grants or seven million-dollar stage 2 grants. In fact, several promising stage 3 proposals emerged late in the partnership, when DIV was no longer able to fund this sort of large-scale opportunity.

CHLORINE DISPENSERS FOR SAFE WATER: WASH FOR LIFE'S ONLY STAGE 3 INVESTMENT

WASH for Life invested nearly \$7.5M in the Chlorine Dispenser System in 2012, making a large bet on an innovative approach to water treatment for communities that lack a piped water supply. Initially developed by Innovations for Poverty Action in Kenya and later managed by Evidence Action, the Chlorine Dispenser System consists of a bulk supply of chlorine installed near communal water source and a local community member who encourages households to use the chlorine. The hardware, location, and promotion make this approach both innovative and effective, as shown by a randomized controlled trial that found that the Chlorine Dispenser System dramatically improved household water quality and child health in rural Kenya. Evidence Action estimated that at scale, it would cost less than 30 cents per person per year to cover hardware, recurring chlorine refills, and operations and maintenance costs (is has have since updated their estimate to 98 cents per person per year).

With DIV funding, Evidence Action intended to scale in Kenya and pilot Chlorine Dispenser System programs in Uganda and Malawi. Evidence Action also pursued carbon credits as its pathway to sustainability: providing access to chlorinated water reduces communities' need to use carbon-intensive energy to boil water for disinfection, so Evidence Action could claim carbon credits for each household that had access to a chlorine dispenser and then sell these credits on the secondary market to provide the revenue to support the model and its expansion.

Endorsed by government entities and international funders, the Chlorine Dispenser System was poised for rapid growth. Yet as it scaled, Evidence Action struggled in areas with lower population density. Management bandwidth also constrained the young organization's growth rate. Moreover, major shifts in the political landscape, including national elections and a new constitution that called for devolution to local governments, made it difficult to scale the Chlorine Dispenser System through the government in Kenya. Evidence Action ran into other challenges developing government programs in Uganda and Malawi, concluding that three years was not enough to build relationships and weather any changes in the political landscape, which seemed inevitable. But in spite of all of this, the biggest problem for Evidence Action was that the price of carbon credits collapsed, throwing off revenue projections.

By the end of the award period, the project's next steps were to explore new sources of revenue and to continue strengthening relationships with the Kenyan and Ugandan governments. Evidence Action continues to manage a network of over 27,000 chlorine dispensers across Kenya, Uganda, and Malawi.



MISSED OPPORTUNITIES

Few of the innovative ideas funded by WASH for Life had much input from local stakeholders. Innovations that begin independent of stakeholder consultation require "ex-post" salesmanship and negotiation for scale up through the public sector - often to no avail. While roughly half of the WASH for Life applicants had some conversations with government officials, and 44 percent had even secured a letter of support or memorandum of understanding from at least one country in which they proposed to work, communication with USAID Missions was far less frequent. Only 21 percent of applicants surveyed had "some conversations" with USAID Mission staff and just 4 percent had secured co-funding or a letter from Mission staff. To build stronger USAID and in-country support for projects, potentially enhancing the likelihood of their sustainability, WASH for Life's process could have encouraged innovators to consider the priorities of host governments or USAID Missions, even as DIV remained completely agnostic about sectors and priorities. The Gates WSH team or USAID could have assisted by facilitating consultations with government and providing innovators with guidance on where their innovations might gain traction with local stakeholders.

"The concept of DIV is great, I love it. Some of the projects worked. [Still], there's something off that I can't quite put my finger on. It's a lot of expats working in developing countries, and not a lot of local groups driving this forward."

- WASH sector expert

"What you need is the private sector or government or consumers at the table and participating. If you don't get everyone on the same page and analyze [problems] together, you can't figure out exactly what's broken."

- WASH sector expert

Applicants might not have realized just how much risk DIV was willing to take in order to identify promising innovations. Stage 1 applicants characterized their ideas as relatively safe, with a substantial existing evidence base: over a third of stage 1 applicants said that "sufficient rigorous evidence already existed" at the time of their application (which draws into question how innovative these ideas actually were). Of course applicants would be expected to be sanguine about their ideas, but it is still some-what surprising that in the applicant survey we conducted, less than a quarter of respondents acknowledged that there was at least a medium risk their intervention wouldn't work and a similar share admitted to a similar level of risk that their intervention wouldn't be scalable.

WOULD A STAGE 3 SANITATION GRANT HAVE BEEN POSSIBLE?

Several sanitation applicants, sector experts, and other funders questioned whether DIV's stage 3 model could work for sanitation for several reasons:

- It is difficult and expensive to prove health effects of sanitation because the benefit is hypothesized to come through the community (and therefore requires large cluster-randomized trials).
- It is hypothesized that it might take years before sanitation improvements can overcome decades of environmental contamination.
- Some researchers think we do not yet have a good way to quantify all the benefits of improved sanitation (for example, due to reductions in stunting).
- It is difficult to prove sanitation businesses could be financially sustainable because they may only be profitable at scale. Sanitation infrastructure is often a much larger expense than water treatment or handwashing.

"We were surprised where there was such pushback on us not being profitable yet. My thinking was – if we were profitable, would we be applying to this funding?"

- Unsuccessful stage 3 sanitation applicant

Some grantees missed critical windows of opportunity due to the long application review processes. Long delays were problematic because the innovation process is time- and context-specific and evolution can be rapid. Some DIV staff received credit for attempting to usher grantees through a complex USAID process, receiving praise for shielding grantees from the bureaucracy when possible, and for their patience when unforeseen issues arose. Nonetheless, for WASH for Life grantees, the mean time to award was over one year from the proposal submission.

"By the time we got the award, our idea had evolved to the point of being almost unrecognizable from what was in our proposal."

- WASH for Life grantee

There is an unmet demand for evidence from USAID Missions and Bureaus, other innovation funders, grantees, and experts in the WASH sector. Several stakeholders told us they wish they had heard more from DIV about what it—and its grantees—were learning.

Grantees could have benefited from more networking opportunities.

With the notable exception of Global Innovation Week in 2017, which brought a number of grantees together to showcase their innovations at a conference at USAID headquarters in Washington, grantees had very few opportunities to share learnings or seek help from other grantees and other innovation funders. Although some grantees lamented the lack of cross-portfolio sharing and learning, others felt that it would have been a distraction—they felt they would have been too busy with their core responsibilities to join.

Unsuccessful applicants often gave up. Approximately half of the WASH for Life applicants in our survey said they did not submit their innovation to another funder after their WASH for Life application (Figure 6). These applicants were often simply unaware of other opportunities. DIV could have maximized its indirect influence on the field by informing applicants of other opportunities or other funders that might be a better fit.

FIGURE 6. REASONS UNSUCCESSFUL APPLICANTS GAVE UP ON THE IDEAS THEY PROPOSED TO WASH FOR LIFE

1/2

said they did not know about other opportunities 1/4

said they were discouraged after an unsuccessful application to DIV/WASH for Life

1/5

said they thought no other funder in the sector would be interested because the idea was really only relevant to DIV/WASH for Life 1/8

said the types of relevant funds did not exist at the time

Source: Applicant survey, N=96

IV. DIV'S INFLUENCE ON OTHER FUNDERS OF INNOVATION

This section of the brief examines the extent to which DIV and WASH for Life's strategy, grant-making model, and leaders influenced peer institutions that fund water, sanitation, and hygiene projects. Our interviews with sector experts and leaders from other funds revealed a set of mechanisms through which DIV and WASH for Life likely influenced the field.

DIV pioneered the use of a tiered funding model and reliance on evidence as an approach to risk management, borrowing from venture capitalists. Several leaders of other WASH funds told us that their organizations were influenced by this model, with some adopting something similar while others were prevented from doing so by structural constraints on how their organizations do business. Other funders see DIV as influential mostly for the idea that an evidence base should drive funding decisions.

"The problem is not that there's not enough innovation in the sector. It's just that the ideas aren't subjected to evidence."

Other funder

"The real innovation is in making lowerstakes stage 1 bets on new ideas, so that you can take more risks and try new ideas."

- Other funder

The establishment of the Global Innovation Fund (GIF) is a core part of DIV's enduring influence and legacy. Several interviewees noted DIV's strong influence on the founding of GIF; some of DIV's staff members were even seconded to GIF to help establish the organization. In the face of uncertain future US government support for DIV, a portion of DIV's funding was reallocated to GIF as a strategic means of ensuring the sustainability of "DIV-like" mechanisms. However, GIF remains distinct from DIV in several ways, notably the range of financing mechanisms it can deploy and its accountability to individual donors.

"GIF was 100 percent modeled on DIV."

- Former DIV leader

DIV shares a business and social network with several other innovation funders. A few key leaders moved from one fund or organization to another and/or participated in establishing new DIV-like ventures, such as GIF and Evidence Action Beta, which describes itself as "an incubator of promising, evidence-based innovations.

"It's important to point out how much overlap there is - we're all talking to each other."

- Other funder

Other funders often followed DIV's lead, so small initial grants from the WASH for Life facility unlocked funding from other sources. Other WASH funders we interviewed offered remarkably consistent opinions about the value of DIV's endorsement. The knowledge that WASH for Life funded an organization or project sent a valuable "market signal" to other funders.

"DIV's giving a grant is a good marker [indicating] a good organization worthy of additional funding. DIV was thinking about the right things."

- Other funder

"I see organizations who made it to the final round of DIV very differently... We ask applicants who they're working with and what other funding they have... If we find that we're supporting things that [DIV/WASH for Life] is already supporting, then that's a good thing. It builds on momentum and makes sense."

- Other funder

V. SUMMARY OF FINDINGS

This brief has presented findings from a mixed-methods evaluation of the WASH for Life partnership between the Bill & Melinda Gates Foundation's Water, Sanitation, and Hygiene team and USAID's Development Innovations Ventures group. Drawing on data from program records, our survey of WASH for Life applicants, and over 40 interviews with key stakeholders from DIV, elsewhere in USAID, the broader WASH sector, and both funded and unfunded WASH for Life applicants, we find that WASH for Life largely achieved its goal of stimulating and testing innovation in the WASH sector.

Scaling innovation proved more challenging, and while there is little evidence that the partnership contributed to any meaningful scale-up efforts, several of the more promising stage 2 innovations may prove scalable in the near future as grantees apply lessons learned through their testing grants, refine their business models, and demonstrate impact to interested stakeholders.

There is also evidence that DIV influenced the broader field of funders working in the WASH sector, some of whom adapted a tiered funding model from DIV and often shared the professional and social networks that allowed information about promising grantees and models to diffuse. Influence on the establishment of the Global Innovation Fund is surely one of DIV's deepest legacies, even if little of that can be credited directly to WASH for Life.

THE PARTNERSHIP

DIV and the Gates Foundation's WSH team had an excellent working relationship that was deeply valued and appreciated by both partners. They collaborated to design the parameters for the special WASH

funding window at DIV, to fill the pipeline of prospective applicants, and to review proposals. DIV valued the Gates Foundation's flexibility, which enabled DIV to do its work most effectively. Crucially, the partnership allowed DIV to grow and gain credibility as an organization.

THE PORTFOLIO

WASH for Life generally met targets to balance the portfolio. Just under half the grants (by number and by value) were for sanitation or hygiene. Roughly a third of the portfolio was in Kenya, whereas there were disproportionately few grants in India and none in Nigeria. Most grantees were based in the U.S. despite almost as many proposals being filed by organizations in Africa. While there were twice as many stage 2 grants as targeted, there was only a single stage 3 grant.

Despite some disappointments, there remains a great deal of potential among the active cohort of grantees. Two stage 2 grants are moving toward scale and it is too soon to assess half of the portfolio. Some failures are to be expected in the venture capital model. The failure of the lone stage 3 grant to become financially self-sufficient offers lessons about the risk of working with young organizations, the importance of institutional and political considerations, and how much time is needed to scale up effective innovations. It will be important to monitor the success of the active grants and the organizations funded by stage 2 grants that face uncertain futures despite strong programmatic learning and business model refinement.

COLLABORATION & INFLUENCE

DIV influenced other funders through several mechanisms, though more could have been done to share learnings and refer applicants. When asked to reflect on factors that distinguish DIV from other funders and what might be missed after the WASH for Life partnership ends, many stakeholders we interviewed cited DIV's relentless focus on evidence. DIV was a leader in pushing applicants and grantees to collect the right types of evidence and make evidence-based decisions. As the WASH for Life partnership wraps up, DIV has the opportunity to share results and lessons across its portfolio and with the wider field.

FOOD FOR THOUGHT

Several key learnings emerged from the evaluation of the WASH for Life partnership, which may be broadly relevant to other funders of innovation and evidence, both inside and outside the WASH sector. These lessons may also be useful to public and private organizations that seek to partner with USAID in an attempt to leverage its vast potential.

➤ Can one organization really do a strong job of supporting grantees across all three stages? Focusing on scaling—as opposed to "scalability"—may require a different approach. Funders such as DIV must decide whether making a single stage 3 grant is worth the opportunity cost of dozens of stage 1 grants or multiple stage 2 grants. Partnerships such as WASH for Life may wish to consider focusing on stage 1 and stage 2 "business development" grants, which are a more unusual type of funding. When coupled with an array of technical assistance, these grants could be attuned toward

- helping grantees find public and private sector pathways to scale rather than hoping for a marquee stage 3 "scaling" grant.
- > Could other funders engage more with the WASH for Life portfolio, including by providing non-financial support? Over the course of our interviews with both grantees and DIV leaders and staff, several examples of opportunities emerged in which the other funders could have added value beyond money. Grantees would have valued the networking opportunity and the chance to learn more about other funders' strategic direction in WASH, particularly with regard to sanitation.

REFERENCES

United Nations. "Water and the Sustainable Development Goals." Available at http://www.un.org/waterforlifedecade/waterandsustainabledevelopment2015/open_working_group_sdg.shtml. Accessed August 2017.

WHO/UNICEF (World Health Organization/United Nations Children's Fund). "Progress on Drinking Water, Sanitation and Hygiene: 2017 Update and SDG Baselines." Available at http://www.unwater.org/new-publication-whounicef-joint-monitoring-programme-2017-report/. Accessed August 2017.

World Bank Group, UNICEF. "Sanitation and Water for All: How Can the Financing Gap Be Filled?" Washington, DC: World Bank, 2017.

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