

SECURING WATER FOR FOOD

Semi-Annual Report

NOVEMBER 2017 – MAY 2018



SECURING
WATER
FOR FOOD:
A GRAND CHALLENGE
FOR DEVELOPMENT



Prepared by: Dr. Ku McMahan, Dr. Donna Vincent Roa, Kevan Hayes,
Rami Khyami, Steve Simon, and Cassy Rodriguez.

The Kaizen Company | Contract #: AID-OAA-C-15-00011
www.securingswaterforfood.org | securingswaterforfood@gmail.com

TABLE OF CONTENTS

TERMS & ACRONYMS	2
EXECUTIVE SUMMARY	3
ABOUT SECURING WATER FOR FOOD	9
Poverty	13
Gender Empowerment and Integration	15
Environmental Sustainability	16
INNOVATOR UPDATES	17
M&E INNOVATOR PERFORMANCE MONITORING	21
SWFF Supports Two M&E Portfolios and a Verification Program	22
Innovator Trend Analysis	31
Summary of TA Facility Metrics	39
ACCELERATION SUPPORT	45
Overview and Analysis	46
ACCELERATION SUCCESS STORIES	57
Ongoing Challenges and Potential Solutions	62
GRANTS MANAGEMENT OVERVIEW	63
Innovator Capacity Building Aids Compliance and Enhances Rd. 4 Innovators' Financial Operations	64
Readiness and Compliance	65
SWFF Innovators' Financial Sustainability	68
ANNEX A: SWFF INNOVATORS	69
ANNEX B: SUPPORT ENGAGEMENTS	75

TERMS & ACRONYMS

Active	SWFF innovators currently receiving funding and working toward meeting their program targets
Alumni	SWFF innovators that no longer receive funding but did not meet their program targets
Agtech	agricultural technology
AST	Adaptive Symbiotic Technologies
AWP	acceleration work plan
CEC	Centre for Environment Concerns
CEO	Chief Executive Officer
COP	Chief of Party
COR	USAID Contracting Officer's Representative
CSA – MNP	Conservation South Africa – Meat Naturally Private Limited
CSDES	Center for Sustainable Dryland Ecosystem and Societies – University of Nairobi
CUT	Central University of Technology, Free State
Desal	Desalination (as in the Desal Prize)
DST	South Africa Department of Science and Technology
Graduate	SWFF innovators that no longer receive funding and met their program targets
ICBA	International Center for Biosaline Agriculture
ICU	Institute for University Cooperation
IIAC	Innovation Investment Advisory Committee
IVL SERI	IVL Swedish Environmental Research Institute
Local	For innovator: located in country impacted by innovation For vendor: located in Africa or Asia
LL	lessons learned
LOE	level of effort
M&E	monitoring and evaluation
MIT – Tata	Massachusetts Institute of Technology – Tata Center for Technology and Design
MOU	memorandum of understanding
NGO	non-governmental organization
Nonlocal	For innovator: not located in country impacted by innovation For vendor: not located in Africa or Asia
PAS	pre-award survey, an evaluation of a prospective awardee's capability to fulfill a proposed contract
Rd.	Round 1, Round 2, etc.
SAM	System for Award Management, the official U.S. government system that consolidates the capabilities of CCR/FedReg, ORCA, and EPLS
Sida	Swedish International Development Cooperation Agency
SME	small- to medium-sized enterprise
SNV	SNV USA
SO	strategic objective
SOW	scope of work
SWFF	Securing Water for Food
TA	technical assistance
TAHMO	Trans-African Hydro-Meteorological Observatory
USAID	United States Agency for International Development
UTEP	University of Texas - El Paso
WGI	Water Governance Institute

EXECUTIVE SUMMARY



EXECUTIVE SUMMARY

To date, the SWFF program has met or in most cases, exceeded the expected outcomes envisioned when the program was created. In 2014, the program expected that all innovators would in aggregate reach 3 million customers/end users by 2018 (the original end-date of the program). As seen on the opposite page, SWFF innovators have reached a combined 3.6 million smallholder farmers, their families, and other customers well ahead of the expected target at this point in the program. **For every \$1,000 of donor funding spent by the SWFF program, SWFF innovators impacted 156 customers and end users, produced 282 tons of crops, reduced water consumption by more than 832,000 liters, improved water management on 86 hectares of agricultural land, and generated more than \$200 in sales.**

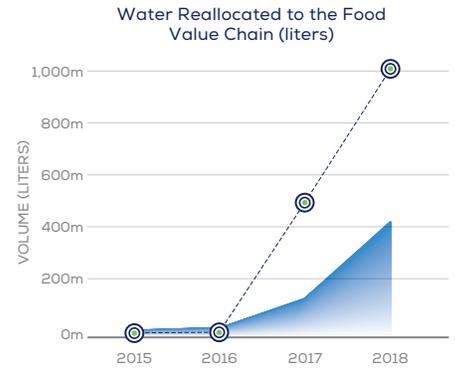
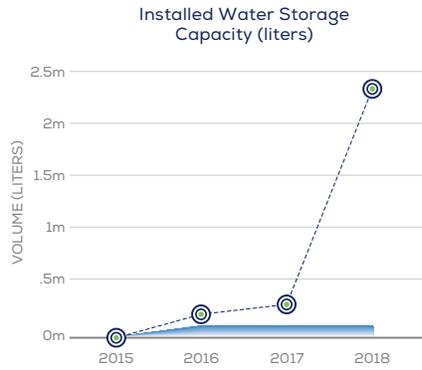
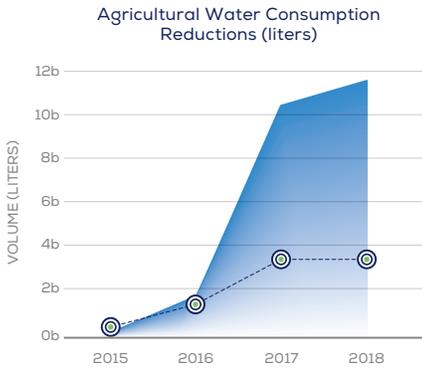
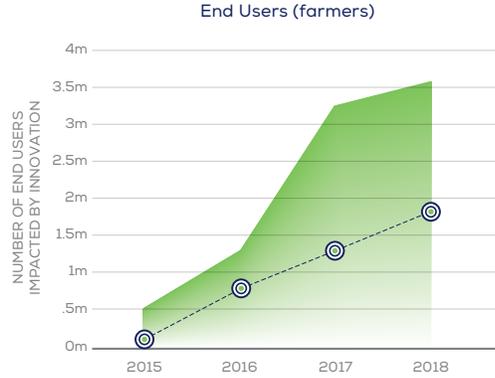
In addition, since the program began, SWFF innovators have helped produce nearly 4 million tons of food on more than 2.4 million hectares of grazing lands and cropland that are under improved practices due in part to SWFF innovations. Both of these numbers are well ahead of the program's expected 2018 targets. SWFF innovations have also helped reduce water consumption by 11.4 billion liters compared to traditional practices, triple the 3.6 billion liters expected in the 2018 program target.

However, SWFF innovators have not yet hit their yearly sales targets. Though SWFF innovators have leveraged SWFF funding for more than \$16 million in additional funding through more than 180 partnerships, their \$4.3 million in sales is well below the 2018 target of \$6.5 million expected sales by the end of 2018. This is due to many factors, but mainly due to the SWFF Round (Rd.) 3 innovators having only completed their semi-annual review, and therefore only having six months' worth of sales results against the full year's targets.



PROGRAM TARGETS AND ACTUAL IMPACT (2014-2018)

Actual Target



An important area of progress since the 2017 Annual Report is the Rd. 4 innovators' progress integrating gender-equitable concepts into their projects. Early in the SWFF program, innovators were very unsatisfied with the program's focus on high-level gender concepts without a focus on concrete, actionable next steps for innovators. Starting with the SWFF Missing Markets Report and continuing with targeted technical assistance, Rd. 4 innovators have made gender integration one of their major foci that is beginning to yield significant results in their customer bases and within their organizations.

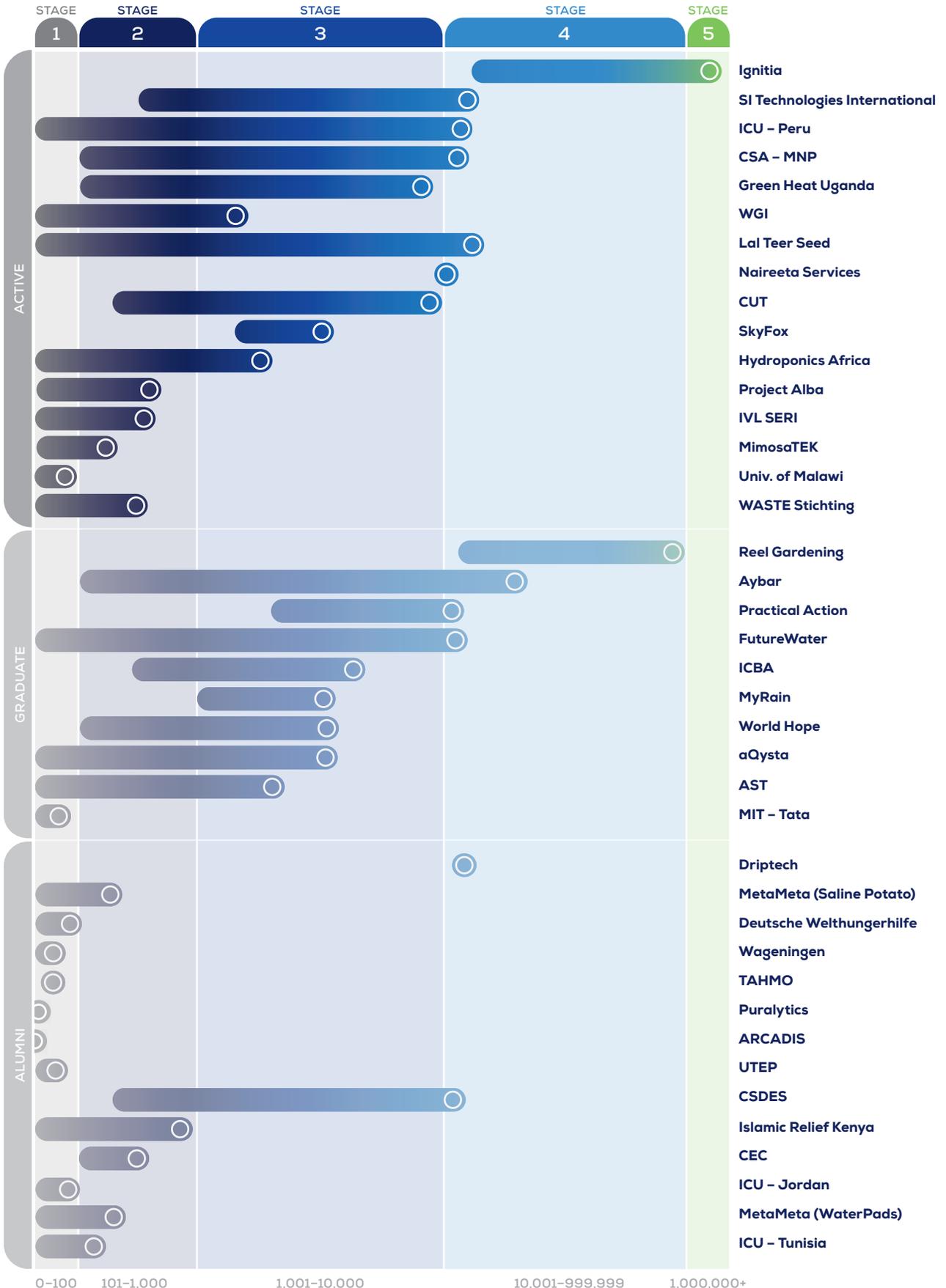
The SWFF program, through the SWFF Technical Assistance Facility (TA Facility), using more than four years of collected data, continues to analyze the overall impact of the program as a whole and the impact of individual innovations. These analyses and lessons learned have helped the program demonstrate the impact of technical assistance and help innovators pivot to make more cost-effective, efficient choices in order to increase the likelihood some innovations will reach sustainable scale by the end of the program. So far:

- Approximately 95 percent of current SWFF innovations experienced increased usage/uptake.
- 100 percent of SWFF innovators, with support from the SWFF TA Facility, have increased technical capacity.
- Approximately 77 percent of acceleration support given to innovators was deemed a long-term success.
- 100 percent of SWFF innovators rate the TA Facility as responsive or very responsive.
- 100 percent of SWFF innovators rate the TA Facility's understanding of their needs as good or very good.
- 100 percent of SWFF innovators rate the TA Facility support as helpful or very helpful toward meeting their overall goals.

SWFF innovators' ability to pivot has been a clear determinant in their likelihood to meet their program targets and goals. SWFF has found that those organizations that have strong customer data and other business intelligence are more rapidly able to respond to their customers' needs. Organizations that have been unable to rapidly pivot often do not meet their milestone targets. This data-driven flexibility has more often than not helped innovators' identify their weaknesses and work to improve their market strategies.

SWFF INNOVATOR PIPELINE (2014-2018)

customer base growth over time



As many innovators approach the end of their SWFF awards and others have graduated from the program, SWFF is increasing its efforts to connect them to other implementing organizations, USAID Missions, and other potential partners and investors. SWFF continues to monitor both graduates and alumni once SWFF funding ends, but has limited data on the long-term sustainability of the innovations. That being said, SWFF believes those organizations that have become less dependent on donor and other public sector funding and have strengthened their partnerships have shown the most positive signs toward long-term sustainability.



ABOUT SECURING WATER FOR FOOD

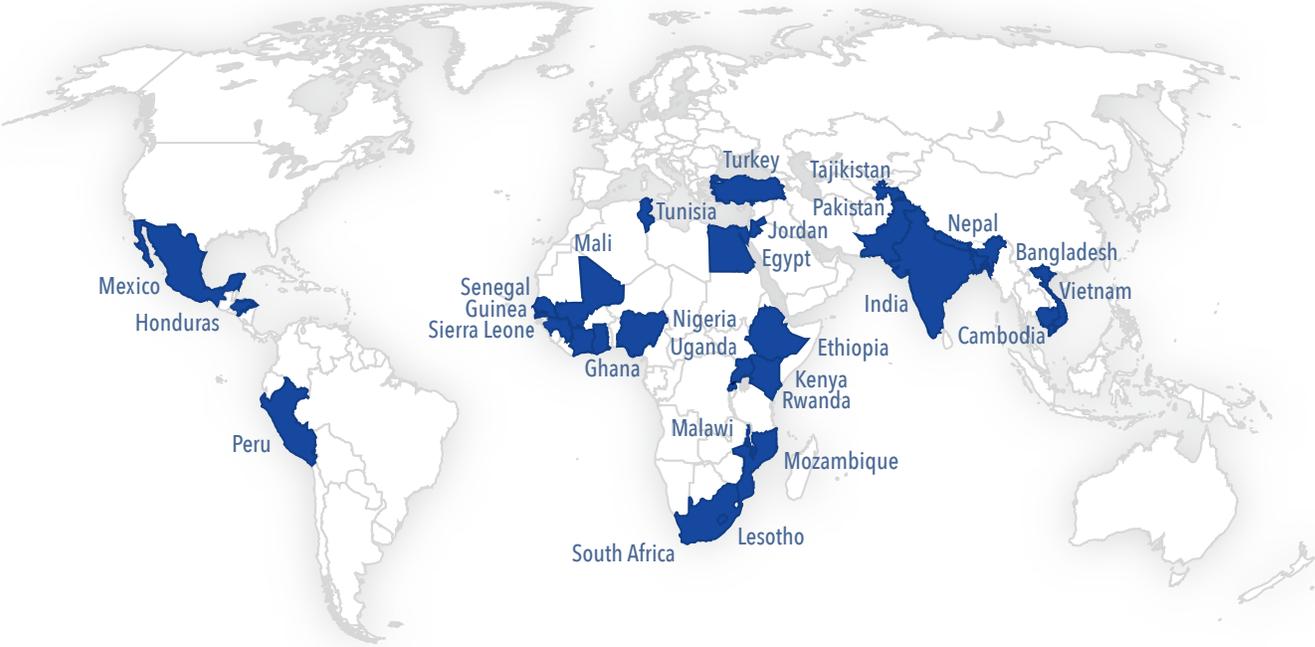


ABOUT SECURING WATER FOR FOOD

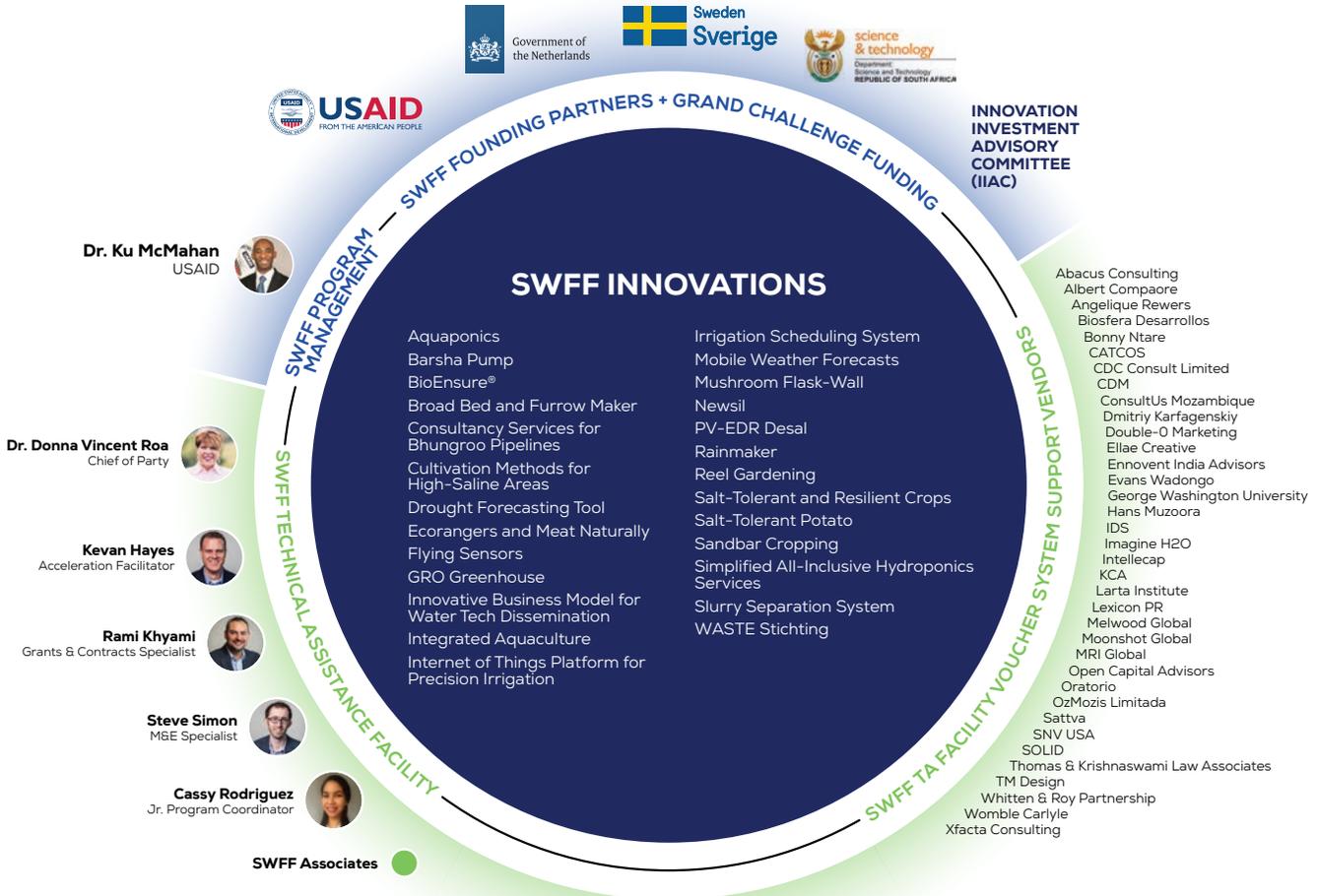
Securing Water for Food: A Grand Challenge for Development (SWFF) identifies and accelerates scientific and technological innovations that improve water sustainability to boost food security and ultimately alleviate poverty. SWFF also aims to increase access to innovations that help farmers produce more food using less water, enhance water storage, and improve the use of saline water and soils to produce food.

Since its 2013 launch, Securing Water for Food has issued four calls for innovation and awarded more than \$20 million to 40 innovators around the world.

SWFF INNOVATOR LOCATIONS (28 COUNTRIES) (2014-2018)



SECURING WATER FOR FOOD ECOSYSTEM



The Securing Water for Food ecosystem includes four founding partners: the United States Agency for International Development (USAID), Sweden through the Swedish International Development Cooperation Agency (Sida), the Ministry of Foreign Affairs of the Kingdom of the Netherlands (MFA – NL), and the Republic of South Africa’s Department of Science and Technology (DST).

A critical adjunct of the SWFF ecosystem and a unique advisory board in international development, the International Investment Advisory Committee (IIAC) was created to participate in the selection of innovators, as well as provide input on innovator technical and financial milestones for initial and future funding tranches. The IIAC comprises world-class technical experts, business specialists, sustainable development experts, and researchers with extensive experience in water and agricultural innovation. The committee’s critical contributions help the SWFF Founding Partners ensure that the program supports the most technically sound, commercially viable, and sustainable innovations.

The ecosystem also includes the SWFF Technical Assistance Facility (TA Facility), supported by a \$10.76 million contract awarded to The Kaizen Company, with a staff that includes Dr. Donna Vincent Roa, Chief of Party; Kevan Hayes, Acceleration Facilitator; Rami Khyami, Grants & Contracts Specialist; Steve Simon, M&E Specialist; Cassy Rodriguez, Junior Program Coordinator; Nikki deBaroncelli, The Kaizen Company Home Office SWFF Project Manager; and Trevor Baim, Home Office Program Management Coordinator.

In addition, the TA Facility's Voucher System of Support Vendors (Voucher System) comprises 36 firms and individuals providing business acceleration support to SWFF innovators in 21 distinct service categories.

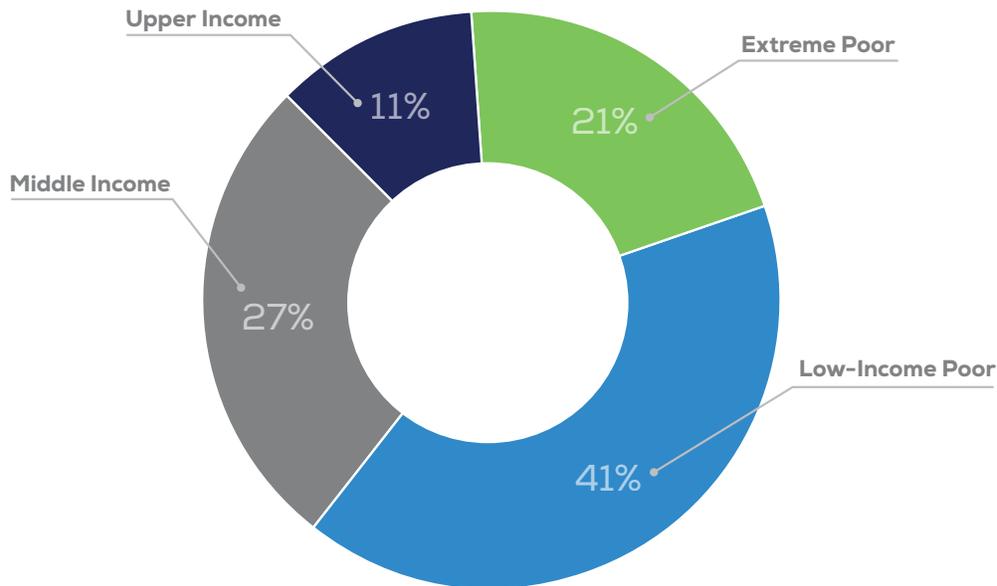
Through semi-annual and annual reporting, the SWFF TA Facility documents project achievements, major activities, challenges, solutions, and innovators' success and impact stories. This report, covering November 2017 through May 2018, includes in-depth analysis of innovator and program data amassed since the beginning of the project.

As part of its process to learn and grow, SWFF periodically performs a program-level analysis of poverty, gender, and environmental sustainability. The next section addresses how the project, through SWFF innovators' work, has influenced farmer behaviors, improved livelihoods, helped alleviate and increase resilience to poverty, and stimulated gender-inclusive strategies and activities.



POVERTY

POVERTY LEVELS OF SWFF END USERS ACROSS ALL INNOVATORS (2014–2018)



Through the products and service of innovators, SWFF continues to make progress toward improving incomes and yields of farmers who are at or near their country's poverty line.

As noted in previous SWFF annual reports, measuring poverty for specific innovations and across an innovation portfolio is extremely challenging. To determine the proportion of innovators' customers and end users who are at or below the poverty line, SWFF uses a combination of innovator-provided information, household survey data, monitoring and evaluation site visits, measurements from the Progress Out of Poverty Index (PPI), and extrapolations from country-level data. Using these sources, SWFF estimates that 62 percent of innovation customers and end users in the program at this time are at or near their country's poverty line – a number that hasn't changed substantially from previous SWFF reports.

SWFF's 2017 annual report noted innovators often find it difficult to create financially sustainable enterprises while meeting the needs of extreme-poor and low-income households. Because it is so difficult to successfully serve customers below the poverty line, SWFF innovators, and therefore the overall program, focus less on the lowest-income subsistence farmers and more often focus on customers and end users near the poverty line who could fall back into poverty easily with an economic shock or prolonged economic stressors.

Only 21 percent of the 3.6 million SWFF customers and end users fall into the lowest-income category. These extremely poor farmers rarely earn any income from farming and find it difficult to afford most SWFF innovations. Many NGOs in the SWFF portfolio initially focused on this group, but modified their operations to focus on the low-income poor who have some basic wealth (homestead, land, livestock, etc.). The assets of the low-income poor can be used as loan collateral for farming inputs, which are the basis for increasing agricultural and aquacultural yields, as well as increasing income from livestock.

For example, SWFF innovator Water Governance Institute (WGI) has experienced difficulties serving low-income end users. A few low-income farmers sold the fish feed given to them by WGI to make a quick profit instead of feeding their own fish, which led them to significantly underperform and fail to meet WGI's expectations. To make its product more affordable, WGI introduced a prototype of its semi-commercial unit with an improved design. It has the same capacity as the older model at a 67 percent reduction in price. Prospective customers have been more interested in the new and improved semi-commercial units than in the smaller standard units. With this improvement, WGI is giving end users more opportunities to make a profit. The innovator has helped generate nearly \$30,000 in farmer income during the last two years.

Many SWFF innovators focus on working with semi-commercial farmers at or above the poverty line who grow a staple crop in one season and vegetables in another season. A substantial number of the farmers own their land and have multiple income streams, including animal husbandry, day labor, and income from small retail shops. However, they have a very limited income overall, with little to spend on anything outside of their agricultural inputs. These farmers represent 41 percent of SWFF customers and end users.

Conservation South Africa–Meat Naturally Private Limited (CSA – MNP) has helped 830 rural households generate nearly \$1 million in livestock sales on more than 575,000 hectares of grassland. In the third and final year of its SWFF award, Meat Naturally increased the average income per farmer from \$555 to \$1,600 through auction sales. This reflects market conditions and livestock improvements realized as a result of Meat Naturally's approach, which increases market access for hundreds of livestock owners, including first-time sellers who are usually excluded from commercial sales.

Although SWFF and the innovators believe it is important to serve customers and end users at or near the poverty line, some marketing efforts of SWFF innovators focus on middle- and upper-income farmers as a pathway to increasing the innovator's long-term financial viability. This helps subsidize costs to the poor while improving overall innovator sustainability. Approximately 38 percent of the 3.6 million SWFF customers and end users fall into the middle- and upper-income range.

GENDER EMPOWERMENT AND INTEGRATION

More than 1.7 million of the approximate 3.6 million customers and end users of SWFF-supported innovations are women. During the past six months, SWFF added a Rd. 4 cohort of innovators that have expanded SWFF's overall gender focus. Many innovators have implemented strategies that promote the participation of women smallholder farmers and are actively looking for ways to include gender-inclusive activities in their programming.

Many innovators continue to report positive outcomes of gender-related efforts such as the hiring of women field agents and the creation of partnerships to help increase adoption of products and services by women. Overall, 90 percent of current SWFF innovators have successfully taken gender into account in their programming or plan to implement gender strategies based on SWFF recommendations. In 2018, 14 active innovators reported increased gender activities in programming, including expanding gender-sensitive trainings and increasing focus on women smallholder farmers as customers.

During site visits, SWFF gained further insights into gender and found that all 10 Rd. 4 innovators had underreported their gender impact. SWFF found that some innovators directly pursue women customers as a central part of their business model and address gender barriers specific to their country's context.

WASTE Stichting demonstrated strong gender integration into its SWFF award last year by helping women farmers form producer companies and seeking to empower women through enrollment in these organizations. Through this initiative, they are building entrepreneurship skills and contributing to the capacity-building of women farmers. There is a conscious effort to include empowered women as staff members and end users. Much of the work of the local organization, RDO Trust, involves empowering women and youth. At least 90 percent of field staff members are women, and two of the four office staff are women.

Hydroponics Africa is another SWFF Rd. 4 innovator making significant strides in its gender efforts. The innovator empowers local women influencers to share stories with other women at self-help groups where women learn about Hydroponics Africa's technology. More than 60 percent of the innovator's customers are women, and most of the company employees are including women in high-level positions such as Chief Operating Officer (COO). Hydroponics Africa currently is seeking to hire a woman for its operations manager position.



ENVIRONMENTAL SUSTAINABILITY

Since 2014, SWFF has sourced innovations designed to decrease agricultural water consumption, reallocate water to the food value chain, increase water storage capacity, and address the problems of saltwater intrusion and soil salinity. As the program (and its innovators) have grown and matured, SWFF has begun to take a more nuanced view of the environmental sustainability of SWFF innovations. Throughout this semi-annual report, SWFF reports each water metric separately, in addition to providing combined water metrics. The program tries to balance the need for simplified public information with a need for increased scientific rigor.

Farmers throughout the program experienced yield increases ranging from 10 percent to 80 percent, reduced water consumption in agricultural production by 11.4 billion liters of water, reallocated more than 424 million liters of water to food production, and increased water storage capacity by 106,000 liters.

Although SWFF innovators have made tremendous progress toward increasing water efficiency in agriculture and reducing water consumption, some farmers are offsetting water efficiency gains from innovations when they expand their farm fields. Most farmer customers are increasing crop yields

(producing more food) using less water overall than they did before using SWFF innovations. However, there is a risk that some farmers will lose their water efficiency gains as they continue to expand their fields and increase agricultural production.

SWFF monitors the overall environmental sustainability of SWFF innovations in addition to monitoring water savings. Of all innovators active last year, 60 percent caused little to no environmental harm. In cases where scaled innovation impact could cause environmental concerns in the future, SWFF will continue to monitor innovation activity and help innovators and their customers find ways to substantially reduce potential environmental damage.



INNOVATOR UPDATES





Green Heat Uganda

The Slurry Separation System (SST) manufactured by Green Heat Uganda uses a solar-powered sewage pump and an innovative heating process to convert slurry into solid fertilizer, which can be stored or used immediately. To date, Green Heat and its new distribution partner, Tusk Engineering, have collectively installed 472 slurry separation systems throughout Uganda, Rwanda, and Ethiopia, benefiting nearly 8,000 end users and reducing water consumption by more than 18 million liters compared to standard biogas digesters. The SST saves time for women and children tasked with water collection and has led to increases in crop yields by 60 percent on average. In Year 3, Green Heat signed an agreement with the Ministry of Energy and Mineral Development (MEMD) to build more than 3,000 demonstrational biogas digesters using the SST innovation in the next three to five years.



Hydroponics Africa

The Hydroponics Africa system is built from local materials, requires no user expertise, and uses as many as five hydroponics methods to help farmers produce maximum yields on small areas, without soil, while using 80 percent less water. The hydroponics method suggested to end users is determined by crop type, water availability, user type, land size, climate, and culture. In the Hydroponics Africa business model, farmers pay up to a 20 percent initial investment and then make monthly payments for approximately one year. To date, Hydroponics Africa has installed 165 hydroponics units and helped produce more than 210 tons of crops. To reach the Year 1 target of installing 427 units, Hydroponics Africa is working with local marketers in Kenya and Rwanda to promote the innovation.



Ignitia

Through a mobile application designed with end users in mind, Ignitia delivers highly localized weather forecasts and alerts farmers of sudden storms. To date, Ignitia is estimated to have reached more than 2.2 million end users, helping to produce more than 3 million tons of produce on an estimated 2 million hectares of land. Ignitia currently is focused on business-to-business (B2B) channels (e.g., NGOs, mobile handset dealers, agricultural suppliers, and farming financial institutions) as a way of leveraging wide networks to reach a broad audience of farmers more economically. A key activity in Year 3 of the SWFF award for Ignitia is its partnership-building and business-development effort to help the innovator enter new markets in Ghana, Nigeria, and Mali. In addition, Ignitia standardized external branding and developed a media kit. The innovator has started to attract new external funding sources so it can continue to expand.



ICU - Peru

This innovator offers Peruvian smallholder farmers an innovative technology that shares climate and irrigation information widely at an accessible cost. ICU - Peru's Irrigation Scheduling System technology has reached more than 20,000 end users, helped produce more than 580,000 tons of produce on nearly 14,000 hectares of land under improved practices, and achieved water consumption reductions of more than 9.8 billion liters. ICU - Peru formed a partnership with SoilSense, a Massachusetts Institute of Technology (MIT) startup in the United States that is producing low-cost soil-moisture sensors. In Year 3, ICU - Peru's technology provider, Wisecon Chile, is working on an alternative technology tailored specifically to small agro-exporters. The technology will be on the market soon.



IVL Swedish Environmental Research Institute

By the end of Year 1, IVL SERI expects to reach 60 farmer households and help farmers produce more than 200 metric tons of produce with its SPONGE irrigation technology. During the SWFF site visit earlier this year, the evaluation team observed that the innovation clearly was benefiting farmer landowners who had reported being unable to grow crops during previous dry seasons. The landowners cited increased access to water through the IVL SPONGE technology as the reason they not only now could grow crops in dry seasons but also expected higher yields. The Initial Environmental Examination (IEE) suggested discontinuing use of the foam and substituting a biodegradable material. The IVL team has started testing alternative materials, but so far has chosen not to use them. This poses a strong environmental concern for SWFF. IVL gives particular consideration to women's needs and encourages women farmers to adopt the technology.



Conservation South Africa - Meat Naturally

Leveraging ecological science, a government job creation program, and market interest in sustainable meat, Meat Naturally implements communal grazing systems for improved water and food security. Meat Naturally has reached more than 17,000 end users with its system and has improved more than 575,000 hectares of land. During the last two years, more than \$1 million was generated in communities that had no source of income before the innovation. On average, Meat Naturally livestock owners make as much as \$10,000 per year in areas where average income was about \$1,000 per year prior to the innovation. In Year 3, Meat Naturally is testing mobile abattoir prototypes, with a suite of incentives to persuade farmers to sign conservation agreements. This potentially would help buffer zone management and improve management of critical ecosystem areas within South Africa.



Naireeta Services

By the end of Year 1, Naireeta Services expected to install 50 new Bhungroo rainwater harvesting systems, reaching 350 households, improving 445 hectares of land, and helping farmers produce more than 534 metric tons of produce. However, as of March 2018, only four Bhungroo systems had been installed. According to Naireeta Services, this was due to personnel delays, faulty site visit selection, monsoon rains, and local elections. Farmers using the Bhungroo system before the innovation typically had one crop cycle per year. With the Bhungroo pipes, farmers can complete as many as two crop cycles per year. As a member of the Women Economic Forum, Naireeta Services has demonstrated strong gender integration into its SWFF award, incorporating gender inclusion in all company activities.



Project Alba

To rapidly disseminate water management technologies, Project Alba partners with farmers and provides technical support with no upfront cost and a guarantee to buy 100 percent of harvests at pre-agreed prices. These services increase crop yields, raise income, and lower farmers' financial risk. By the end of Year 1, Project Alba expects to reach 250 farmer households and help grow more than 310 metric tons of produce. In Year 2, Project Alba is working to ramp up sales and marketing strategies and reduce their per-farmer acquisitions cost. During the SWFF site visit, 90 percent of farmers interviewed noted an increase in crop yield after becoming Project Alba contract farmers. On average, the farmers sold 99 percent of their crops, reserving the remainder for household consumption.



SI Technologies International

NewSil, a crop growth enhancer from SI Technologies International, has helped improve more than 8,000 hectares of land. The innovator achieved more than \$180,000 in product sales and is estimated to have benefited more than 28,000 end users. In Year 3, SI Technologies International is expanding the business in Indonesia and setting up a small production unit in South Africa.



University of Malawi

By the end of Year 1, the University of Malawi expects to reach and finance 400 farmers, reach 7,500 square miles of land under improved practices, and help farmers produce more than 95,625 kg of produce. During the site visit, SWFF verified that the University of Malawi is indeed reaching the farmers it claimed to reach in their reporting, though at a much lower rate than expected in its milestones.



WASTE Stichting

WASTE Stichting's innovation recycles household blackwater (wastewater containing feces and/or urine) and greywater (wastewater without fecal contamination) to produce market-quality compost for cultivating exotic vegetables. Compost from the recycling system allows women farmers to grow better-quality crops, and the system provides an extended crop season. WASTE Stichting is in the process of constructing the greywater recycling units. By the end of Year 1, WASTE Stichting expects to reach 450 farmer households, improve 180 hectares of land, and help farmers grow more than 9,000 metric tons of produce. WASTE Stichting already demonstrates strong gender integration, seeking to empower women through enrollment of women farmers' producer companies.



Water Governance Institute

The Aquaponics farming system offered by Water Governance Institute closes an ecological loop between fish farming and crop farming. The fish- and crop-growing unit provides much-needed nutritional supplements and alternative incomes for Ugandan citizens living in rural, urban, or peri-urban household settings. In Year 3, Water Governance Institute added multiple grow beds to the small standard unit to improve customer adoption. In addition, the innovator introduced an upgraded prototype semi-commercial unit at a 67 percent reduction in price from the price of its original semi-commercial unit. Prospective end users are showing more interest in the semi-commercial units than in the smaller home unit. Water Governance Institute has reached more than 1,550 end users and helped generate nearly \$30,000 in farmer income over the last two years, since the first unit was introduced.

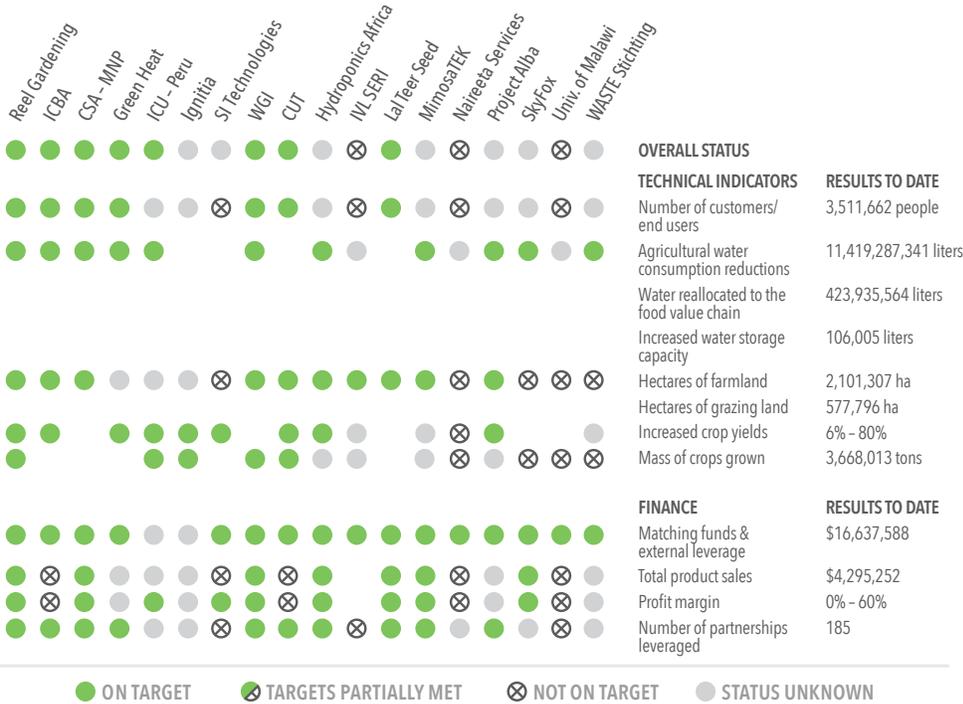
M&E INNOVATOR PERFORMANCE MONITORING



SWFF SUPPORTS TWO M&E PORTFOLIOS AND A VERIFICATION PROGRAM

SWFF monitoring and evaluation (M&E) support is divided into two portfolios. The first portfolio builds SWFF innovator performance-monitoring capacity and helps SWFF Team Lead Dr. Ku McMahan evaluate data quality and progress reported by SWFF innovators. The second portfolio monitors performance of the TA Facility, with results reported in the SWFF TA Facility Performance Monitoring Summary. The SWFF M&E Specialist completes data quality checks on supporting documentation and conducts program-wide reviews of past data. In addition, SWFF carries out monitoring and evaluation site visits to help innovators better understand end users' needs and to independently validate reported data.

INNOVATOR MILESTONE PROGRESS



Overall, SWFF innovators have made significant progress toward achieving their milestones and in the reporting of those milestones. As of May 31, 2018, 10 innovators had completed their third year of implementation, six innovators were halfway through their third year, and 10 were completing their first year in the program. It is important to note that the SWFF Founding Partners granted most of the Rd. 4 innovators a two-month extension to allow them time to meet their Year 1 milestone targets.

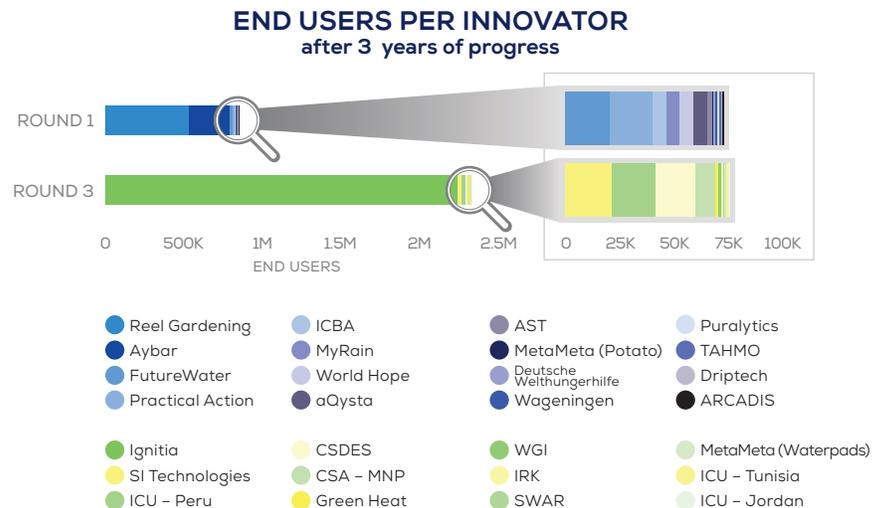
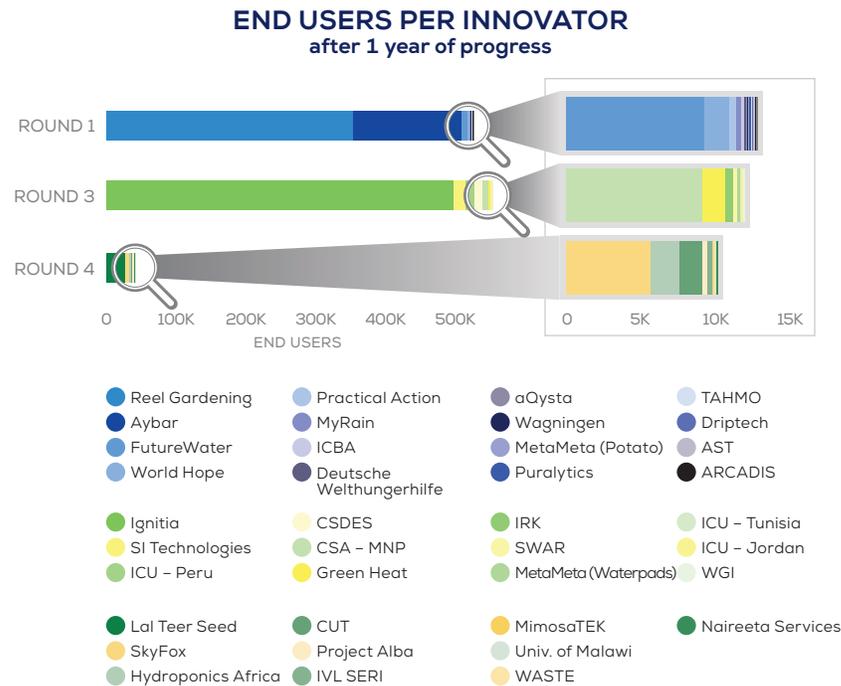
As seen on the previous page, most Rd. 3 and Rd. 4 innovators have not yet submitted complete data sets, which means it is not possible to make a final overall target determination for them at the time of the writing of this report. Innovators are considered to be “on target” if their cumulative results to date meet or exceed their cumulative targets to date.

SWFF innovators improve water consumption reductions/reallocation/reuse of water through a variety of means. Five of the 16 active innovators in the program operate in rainfed areas, with innovations that increase crop yield per amount of water input. These types of efficiency gains are not quantified as water gains per se, but rather as a percentage crop-yield increase as shown in the Innovator Milestone Progress chart. All other water impact metrics are now shown separately in the charts.



End users per innovator

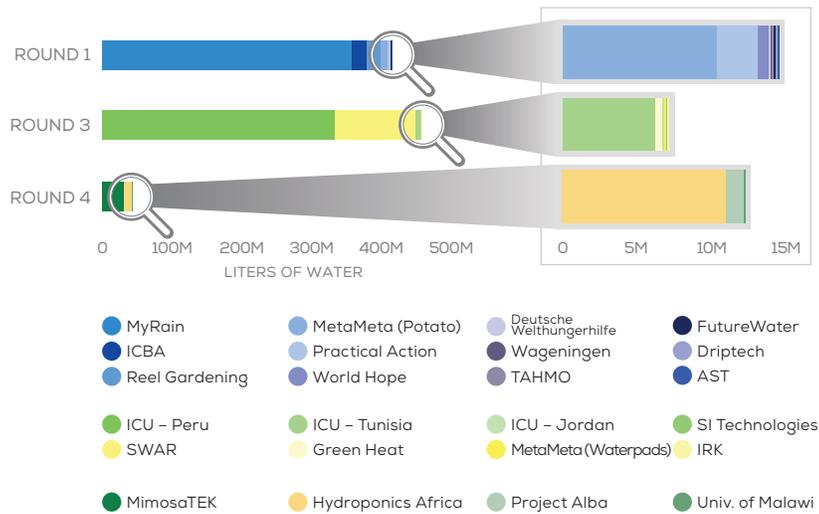
Innovators are split into two tiers, with Tier 1 winners receiving awards of as much as \$500,000 and Tier 2 winners receiving awards of as much as \$2.5 million. To provide a fair comparison across all four SWFF rounds, the first chart in this section examines all SWFF innovators after one year of progress. The second chart examines only SWFF innovators that continued for the full three years of the program. Both charts show that, to date, most innovator impact has been achieved through three innovators with a combined 3.3 million customers and end users: in Rd. 1, Reel Gardening (416 customers per \$1,000 spent) and Aybar (297 customers per \$1,000 spent); and, in Rd. 3, Ignitia (788 customers per \$1,000 spent). Given that both Reel Gardening and Ignitia are Tier 2 innovators that received increased grant funding, this result is expected.



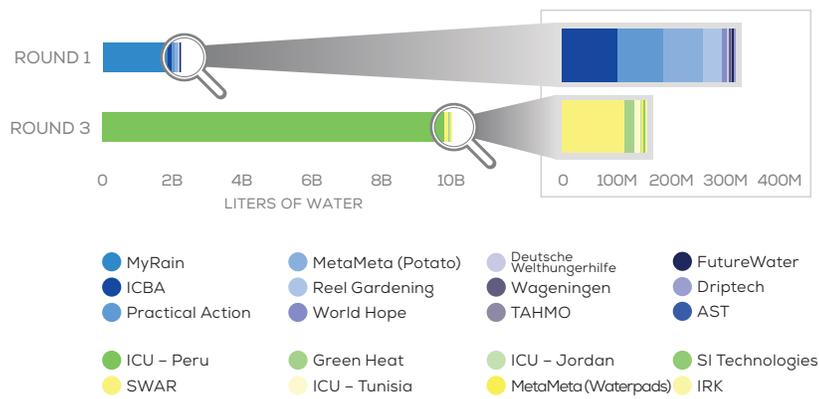
Water impact of SWFF innovators

The charts in this section show SWFF innovators' water impact. To provide a fair comparison across all four rounds, the first chart for each water metric examines all SWFF innovators after one year of process. The second chart for each water metric examines only SWFF innovators that continued for the full three years of the program. Of the 11.4 billion liters in water consumption reductions achieved with SWFF innovators during the three years, 11 billion liters of water consumption reductions came from two innovators: MyRain in Rd. 1 and ICU – Peru in Rd. 3.

AGRICULTURAL WATER CONSUMPTION REDUCTIONS PER INNOVATOR after 1 year of progress

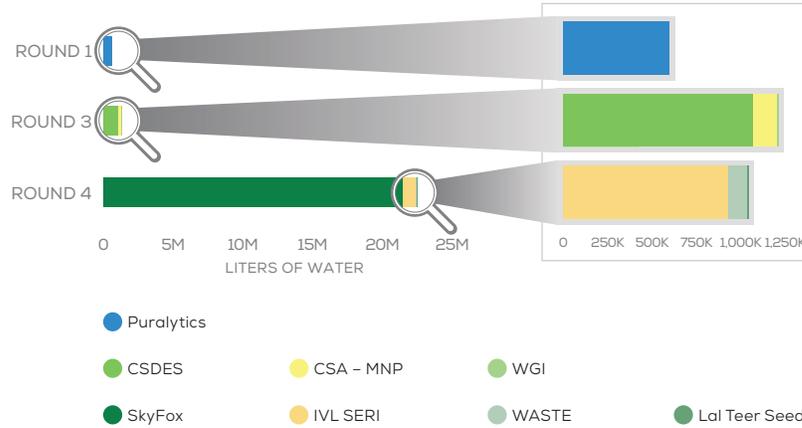


AGRICULTURAL WATER CONSUMPTION REDUCTIONS PER INNOVATOR after 3 years of progress

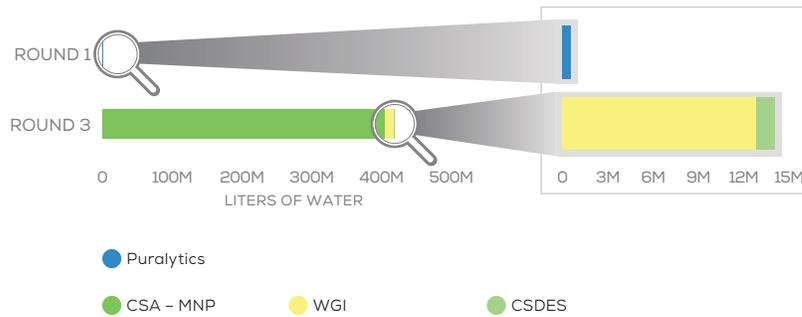


Water reallocation, while significant, is a secondary SWFF impact in terms of magnitude, involving 434 million liters of water. Though SkyFox has made significant progress in its first year in the SWFF program with 21 million liters reallocated, Meat Naturally contributed more than 400 million liters of the water reallocated over three years.

VOLUME OF WATER REALLOCATED PER INNOVATOR after 1 year of progress



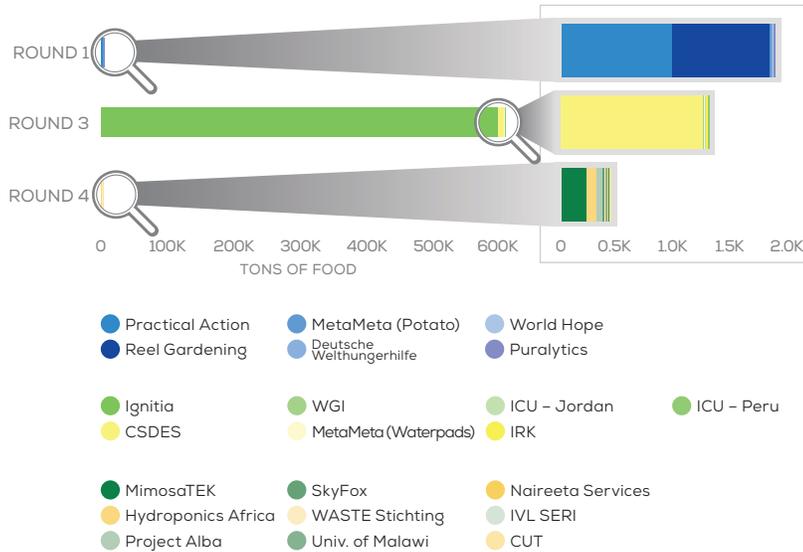
VOLUME OF WATER REALLOCATED PER INNOVATOR after 3 years of progress



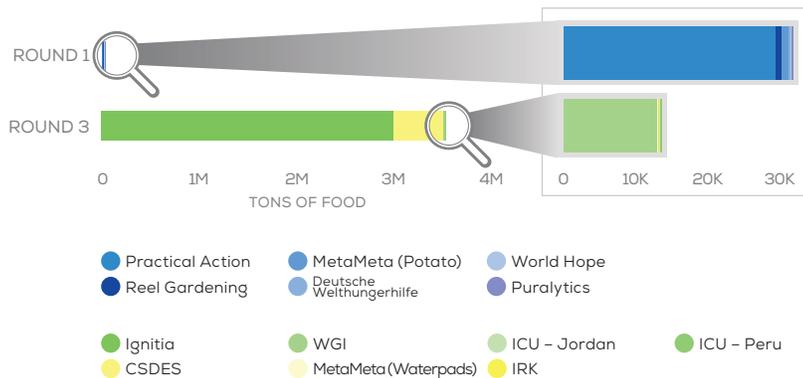
Agricultural impact of SWFF innovators

SWFF's impact on crop yields is partially gauged by innovators that report the mass (in tons) of produce and crops grown by their end users with the help of SWFF innovations. The vast majority of SWFF's impact in this regard comes from two innovators, Ignitia and ICU – Peru, whose innovations benefit large numbers of farmers by providing information that improves farming practices. In many cases, SWFF innovators have helped double crop yields for individual farmers.

MASS OF CROPS PER INNOVATOR
after 1 year of progress

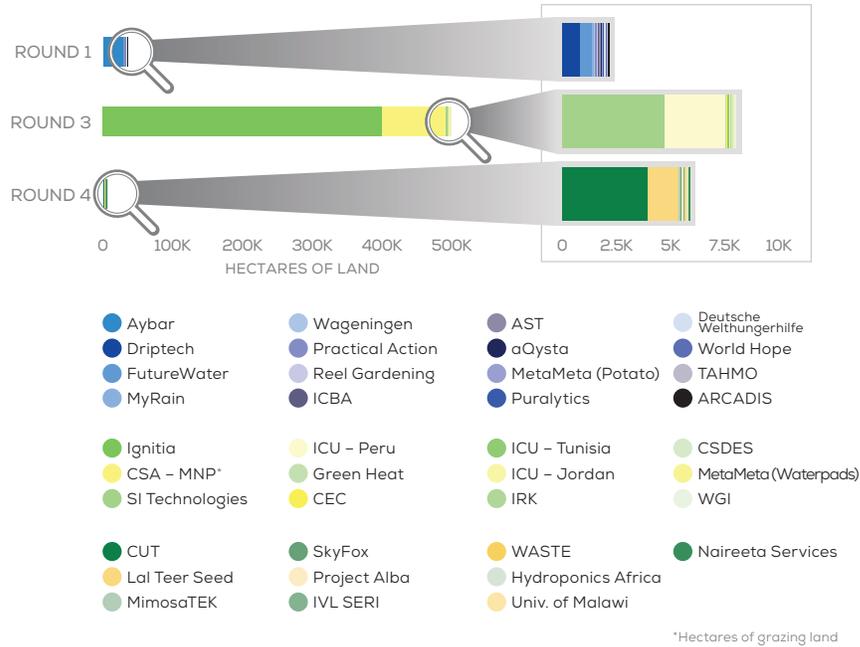


MASS OF CROPS PER INNOVATOR
after 3 years of progress

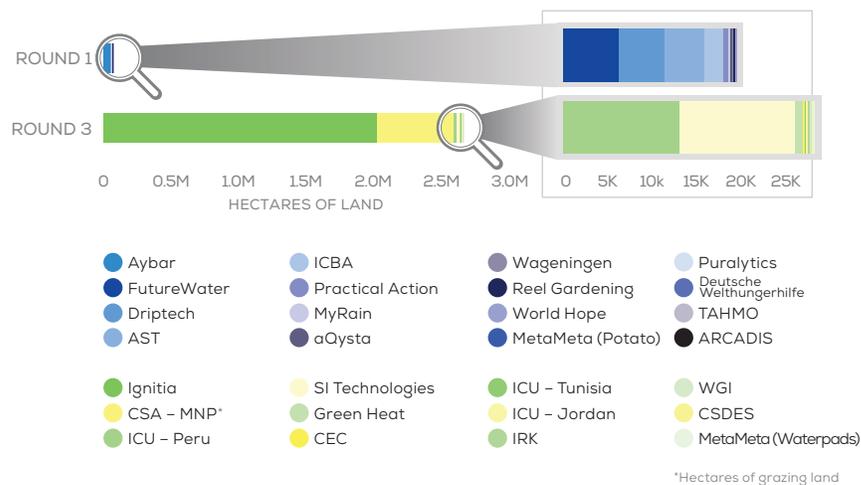


SWFF's impact on grazing and agricultural lands is concentrated among three innovators: Aybar Engineering in Rd. 1, and Meat Naturally and Ignitia in Rd. 3. Aybar Engineering and Ignitia have affected agricultural land through their broad customer bases, while Meat Naturally's innovation has brought vast swaths of communally grazed land under improved management, with a far greater ratio of impacted land to farmers.

HECTARES AFFECTED PER INNOVATOR after 1 year of progress



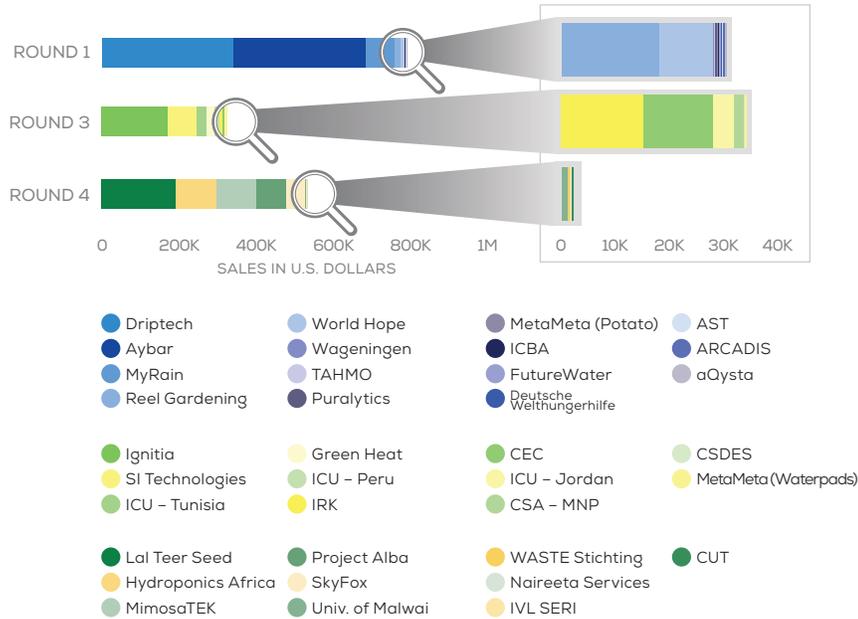
HECTARES AFFECTED PER INNOVATOR after 3 years of progress



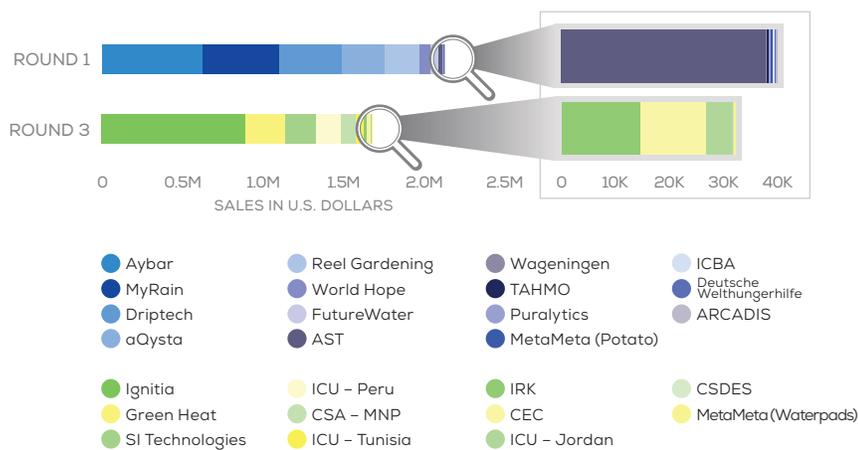
Product sales of SWFF innovators

Among SWFF innovators that sell products, sales have been much more evenly spread as compared to other SWFF metrics noted above. Four Rd. 1 innovators (Aybar Engineering, MyRain, aQysta, and Reel Gardening) and four Rd. 3 innovators (Ignitia, SI Technologies International, ICU – Peru, and Green Heat Uganda) each sold products worth more than \$150,000 over three years of operation.

PRODUCT SALES PER INNOVATOR
after 1 year of progress



PRODUCT SALES PER INNOVATOR
after 3 years of progress





Interestingly, four Rd. 4 innovators already have achieved more than \$75,000 in sales (Project Alba, Mimosatek, Lal Teer Seed, Hydroponics Africa), and 75 percent of the Rd. 4 cohort is expected to reach \$100,000 in sales by the end of their first year in the SWFF program.

INNOVATOR TREND ANALYSIS

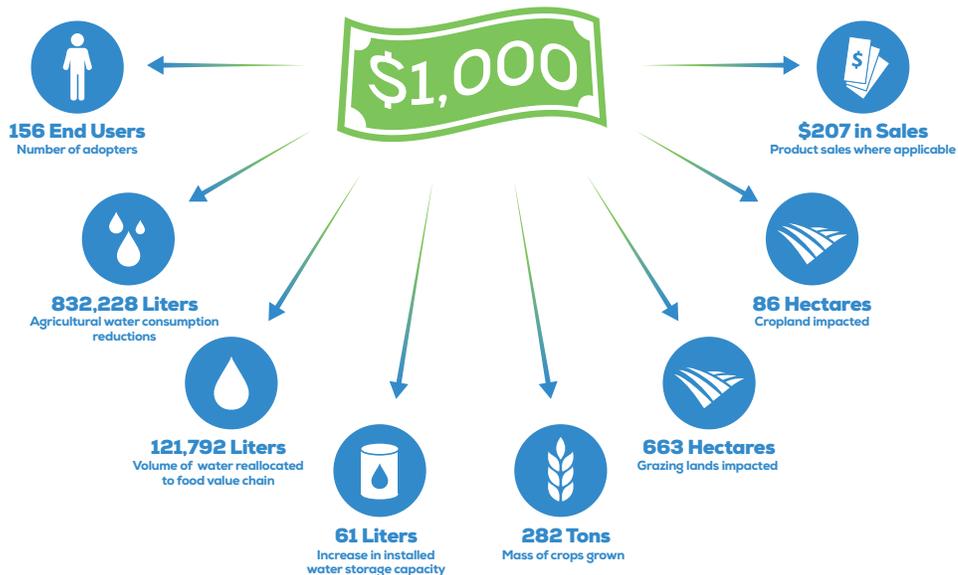
SWFF innovators are required to meet ambitious growth targets, which include reaching significant numbers of customers, reducing water consumption in agriculture, and increasing crop yields. Those that do not meet these targets transition to “alumni” status and no longer receive funding and technical assistance in the program.

Over the five years of SWFF’s operation, 13 innovators have exited the program and become alumni, nine have graduated from the program, and as of this reporting period, 16 are current SWFF innovators.

SWFF impact per dollar

Since 2014, SWFF innovators realized the following impacts: For every \$1,000 of donor funding spent by the SWFF program, SWFF innovators impacted 156 customers and end users, produced 282 tons of crops, reduced water consumption by more than 832,000 liters, improved water management on 86 hectares of agricultural land, and generated more than \$200 in sales.

ACTIVE INNOVATORS’ IMPACTS PER \$1,000 (2014–2018)





END USERS
per \$1,000 of SWFF funding (2014–2018)



TONS OF CROPS PRODUCED
per \$1,000 of SWFF funding (2014–2018)



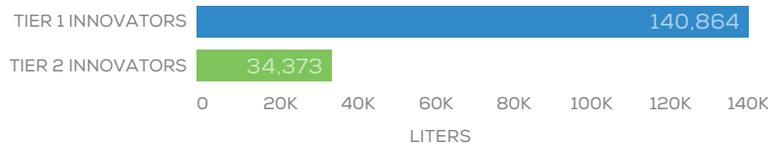
There are substantial differences in impact per dollar between tiers. To date, SWFF has funded \$8.9 million in Tier 1 awards and \$4.7 million in active Tier 2 awards. Innovators receiving Tier 2 awards served significantly more end users and impacted significantly more produce per dollar of donor funding than innovators who received Tier 1 awards. This likely is due to economies of scale, with Tier 2 innovators farther along the commercialization pipeline than Tier 1 innovators.

**WATER CONSUMPTION REDUCTIONS /
WATER REALLOCATED / WATER STORED, BY TIER**
per \$1,000 of SWFF funding (2014–2018)

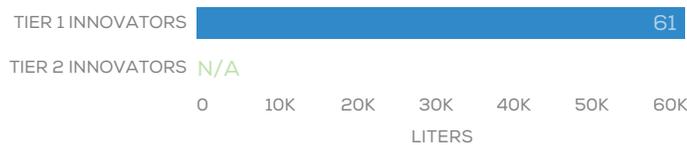
Agricultural water consumption reductions



Liters of water reallocated to the food value chain

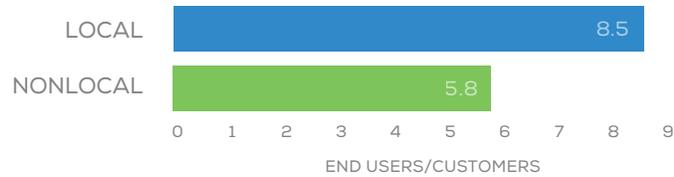


Increased water storage capacity



Whether an innovator receives Tier 1 or Tier 2 funding has not had a significant impact on hectares of land affected nor product sales generated per dollar of donor funding. However, Tier 1 innovators have achieved significantly larger water consumption reductions per dollar of donor funding than Tier 2 innovators. This high level of water consumption reductions per dollar is largely due to a single Tier 1 innovator that currently generates 77 percent of the entire SWFF program’s accumulated total. Even with that outlier removed, Tier 1 innovators reduced water consumption by 276,907 liters of water per \$1,000 in donor funds. This greatly exceeds water impacts measured among Tier 2 innovators.

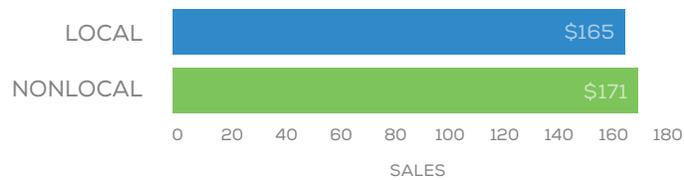
MEDIAN NUMBER OF END USERS IMPACTED, BY LOCALITY
per \$1,000 of SWFF funding (2014–2018)



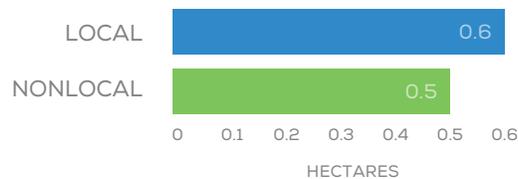
The SWFF program classifies innovators as either “local” or “nonlocal,” depending on whether an innovator’s headquarters and leadership are located within the country impacted by the innovation.

In SWFF’s examination of Tier 1 innovators that received as much as \$500,000 (as listed above), the median local innovator serves more end users. However, there wasn’t a large difference in median tons of crops, sales, or hectares per \$1,000 of SWFF funds.

MEDIAN SALES, BY LOCALITY
per \$1,000 of SWFF funding (2014–2018)



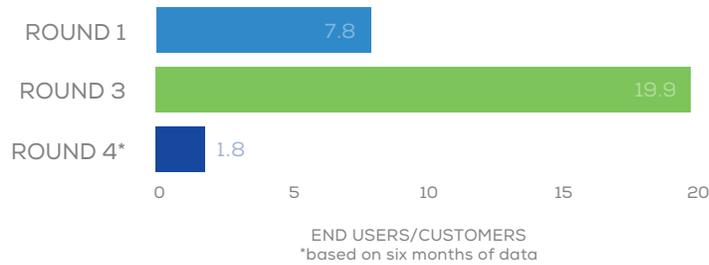
MEDIAN HECTARES, BY LOCALITY
per \$1,000 of SWFF funding (2014–2018)



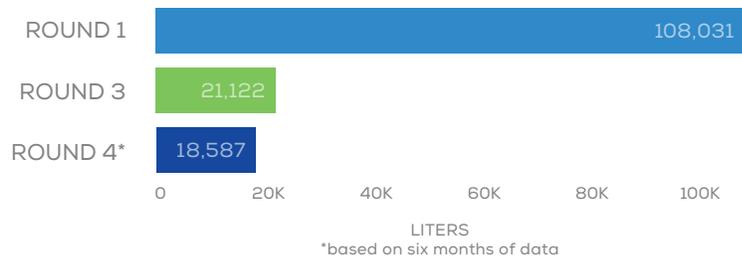
Analyzing innovators according to their round of entry into the program shows that the median innovator accepted into Rd. 3 of the program serves more end users, grows more produce, and affects more land than Rd. 1 innovators. The median Rd. 1 innovator saves more water than Rd. 3 innovators, but has achieved similar sales. Rd. 4 innovators are significantly behind in all categories due to their Year 1 not ending until July.



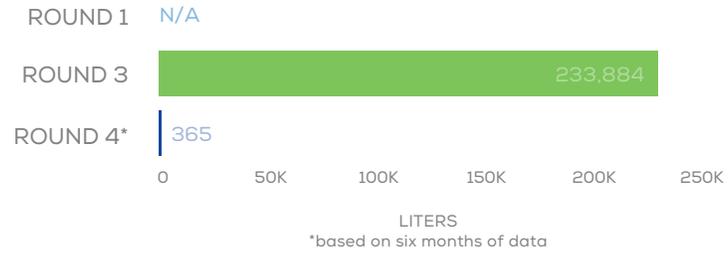
MEDIAN NUMBER OF END USERS IMPACTED, BY ROUND
per \$1,000 of SWFF funding (2014–2018)



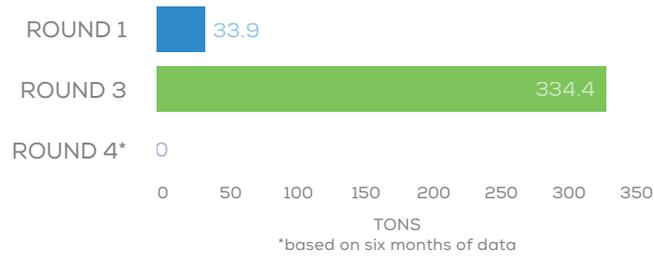
MEDIAN AGRICULTURAL WATER CONSUMPTION REDUCTIONS IN LITERS, BY ROUND
per \$1,000 of SWFF funding (2014–2018)



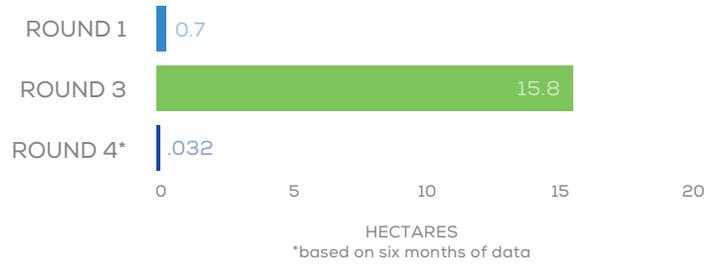
MEDIAN LITERS OF WATER REALLOCATED TO THE FOOD VALUE CHAIN, BY ROUND
per \$1,000 of SWFF funding (2014–2018)



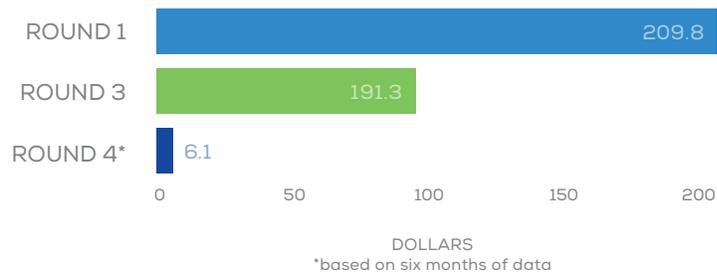
MEDIAN TONS OF CROPS PRODUCED, BY ROUND
per \$1,000 of SWFF funding (2014–2018)



MEDIAN HECTARES AFFECTED, BY ROUND
per \$1,000 of SWFF funding (2014–2018)



MEDIAN SALES, BY ROUND
per \$1,000 of SWFF funding (2014–2018)



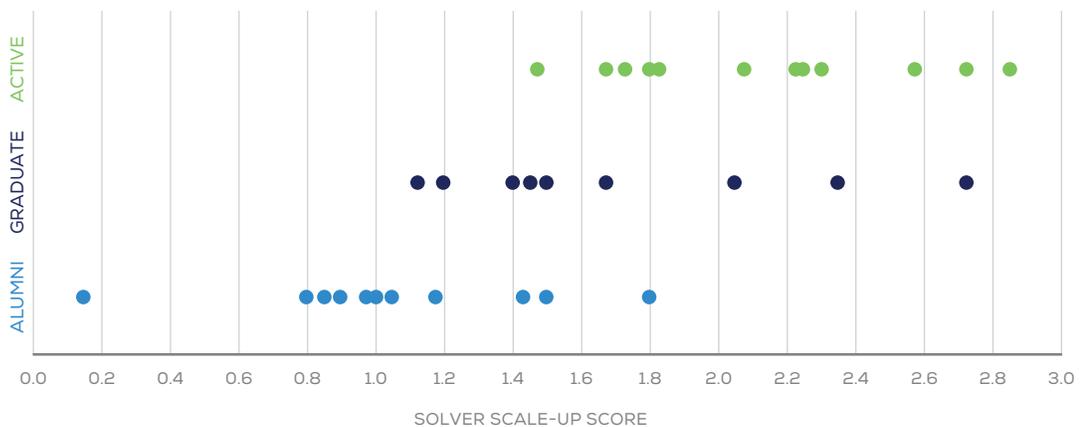
Progress in Scaling

SWFF aims to fund innovations that will reach increasing numbers of end users through market-sustainable channels, so after donor funding concludes the innovations can continue to grow through the awarded organization or through replication in a local context. Every six months, innovators rank their organizations along six scaling dimensions, reporting changes in areas such as the policy environment, plans to scale, and affordability of products in their target markets. SWFF reviews these individual ratings and then combines them into a weighted Solver Scale-Up Score that tracks scaling potential over time.

Composite scores of active and graduate SWFF innovators after their first year in the program diverged significantly from those of alumni. With a median score of 2.85, half of the active/graduate innovators had a higher rating than the highest-scoring alumni. This divergence is largely due to reported differences in affordability, cost structure, and customer-base growth.

Finally, 56 percent of active innovators had a growing customer base with more than 1,000 end users compared to only eight percent of alumni. SWFF refined its selection criteria for new innovators, moving away from funding organizations still piloting innovations and toward funding organizations that can serve a minimum of 10,000 end users within three years. This shift is apparent in the early progress of Rd. 1 vs. Rd. 3 innovators. After one year, the median Rd. 1 innovator had a composite rating of 1.5 vs. a median of 2.2 among Rd. 3 innovators and a median of 2.0 among Rd. 4 innovators.

**INNOVATOR SCALING POTENTIAL AFTER THREE YEARS –
ACTIVE, GRADUATE, AND ALUMNI**
each dot represents one SWFF innovator.



SUMMARY OF TA FACILITY METRICS

The SWFF TA Facility structures its portfolios to address the following metrics: usage/uptake, technical capacity, financial sustainability, public awareness, and efficient management of milestone-based funds. The table beginning on page 40 summarizes TA Facility progress according to these metrics.

Overall, SWFF innovators' technical capacity has increased with assistance from the SWFF TA Facility. In Year 1, 71 percent of innovators demonstrated increased technical capacity as a result of SWFF assistance. That number rose to 95 percent in Year 2 but fell back to 82 percent in Year 3 and has risen to 100 percent in Year 4. Uptake of SWFF innovations increased this year, with 95 percent of innovators showing at least a 10 percent increase in customer base from the previous year. The average level of documented evidence for SWFF innovators rose from 2.6 on a five-point scale in Year 2 to 3.3 in Year 4, reflecting an increasing number of innovators that have demonstrated impact with real world customers.

In 2017, innovators improved their financial systems, with 100 percent of those with poor financial management systems transitioning to acceptable financial controls. A further 20 percent of innovators moved from acceptable financial systems to strong financial systems. Though the SWFF program and innovators have made significant progress, it will take time for them to create viable long-term paths toward sustainable scale.

The TA Facility made significant improvements in many categories of acceleration support provided to innovators, exceeding the target for promoter scores. On-time service delivery increased from 41 percent in Year 1 to 67 percent in Year 4, though Year 4 is lower than Year 3 (87 percent).



TA FACILITY PROGRESS INDICATORS

TECHNICAL ASSISTANCE & SCALING

1.2.1 Average Net Promoter Score received on innovator service delivery surveys

The Net Promoter Score is a rating of how likely a given innovator is to recommend to other innovators the service they received on a 10-point scale from "Not at all likely" to "Extremely likely."

1.2.2 % of SOWs started and completed within the time frame agreed with the innovator during the support planning discussions

Scopes of work (SOWs) that have a clearly defined time frame for delivery agreed upon when they are created. The TA Facility measures how many have been completed within the agreed-upon time frame.

1.2.3 % of SOWs with providers from emerging markets

When SOWs are awarded, they are classified geographically to determine if the provider is based in the same region as the innovator being served. Target was set at 65% in Y3 to balance the goal of increased capacity of support delivery in emerging markets and quality of service delivered to the innovator, and increased over time.

1.2.4 % of innovators with increased technical capacity from SOWs

Increased "technical capacity" is defined as: a) technical improvements in the product/approach, b) improvements in selling the product/approach to stakeholders (i.e., customers, investors, donors), c) improved understanding of the needs of customers/stakeholders in a sustainable way, and d) improvements to business processes and organizational structure. During quarterly calls the team determines if, after a SOW has been completed, the innovator has actually increased its technical capacity. If at least 50% of a given innovator's SOWs have increased its technical capacity, it is tallied as an overall success toward this indicator.

1.2.5 % of innovators with increased usage/uptake of SWFF innovations

"Increased usage/uptake" is defined as an increase in the current customer base of at least 10% in a given year. "Customer base" is defined as both primary customers and associated family members/users. Innovators with a customer base (users) under 1,000 are not considered to have "increased."

1.2.6 % of SOWs where defined "desired outcomes" were met

All SOWs have a section specifying measurable "desired outcomes" to be completed by the end of the engagement. The post-engagement survey includes the question: "Did the service achieve the desired outcomes?" with a 5-point scale from "Not at all" to "Completely," with the target set at "4 - To a great extent" for a tallied success.

GRANTS & FINANCIAL MANAGEMENT

2.1.1 % of innovators reporting positive effects of the PAS process on their organization

Question: "Did the Pre-Award Survey requirements have a positive impact on strengthening organizational, administrative, and financial systems?" (Answers: Yes/Neutral/No)

2.2.1 % of innovators with an increased rating of awardee financial systems from TA Facility (Acceptable/Operational/Advanced)

Upon entering the SWFF program, innovators' financial systems are graded on a scale of Acceptable/Operational/Advanced. The % is calculated by tallying all awardees who have increased their rating with TA Facility assistance.

Y1 TARGET	Y1 ACTUAL	Y2 TARGET	Y2 ACTUAL	Y3 TARGET	Y3 ACTUAL	Y4 TARGET	YEAR-TO-DATE	TARGET MET?
6/7	6.93	8/10	8.06	8/10	8.49	8/10	8.88	Yes
50%	41%	50%	44%	88%	93%	85%	67%	No
25%	21%	30%	30%	65%	56%	75%	83%	Yes
75%	86%	80%	96%	80%	100%	80%	100%	Yes
50%	62%	60%	81%	80%	80%	90%	94%	Yes
75%	50%	80%	88%	90%	84%	90%	100%	Yes
75%	65%	80%	100%	50%	92%	75%	82%	Yes
25% of Acceptable move to Operational	0% of Acceptable move to Operational	25% of Acceptable move to Operational	100%	100% of Acceptable move to Operational	100%	100% of Acceptable move to Operational	100%	Yes
13% of Operational move to Advanced	13% of Operational move to Advanced	10% of Operational move to Advanced	10%	13% of Operational move to Advanced	31%	25% of Operational move to Advanced	20% (29%Y1+16%Y3 +22%Y4)	Yes

TA FACILITY PROGRESS INDICATORS

MONITORING & EVALUATION

3.1.1 Average level of evidence of SWFF innovators

The level of evidence is a 5-point scale that tracks the degree to which outcomes can be attributed to an innovator intervention. Given that the current awardee average is 3, the target is set at 2.75 overall to factor in the new Rd. 4 innovators. For reference, the ratings for 2 and 3 are as follows: 2 - Capturing positive changes in outcomes, but unable to establish causal attribution; and 3 - Using a treatment and control group, a reasonable case for impact can be claimed when there is a direct relationship between an innovation and a known beneficial good with proper usage.

3.2.1 % of innovators using M&E data to advance their innovation or business

Innovators are surveyed to determine whether their data collection for SWFF supports the following aspects of their business/enterprise: publicizing impact, strategic decision-making, managing partners, customer analysis, sales/marketing, other. Those that identify themselves as using their SWFF data collection to support any of the above uses are tallied as a success.

COMMUNICATION, VISUAL IDENTITY, & PARTNERSHIPS

4.1.1 # of LL/communication materials produced by TA Facility (including reports, stories, case studies, etc.) that are shared

Lessons Learned (LL) documents and communication materials shared with external audiences (general public, donors, investors, other stakeholders) are tallied and disaggregated by type.

4.2.1 # of partnerships leveraged by TA Facility to address the critical barriers of the SWFF Grand Challenge

Partnerships that serve more than one innovator or have a benefit that is determined to be program-wide by the USAID COR are counted. Voucher System vendors are not counted, unless they provide a pro bono/discounted service.

4.2.2 % of innovators with increased partnerships

Innovators who increase the number of partnerships due to acceptance into the SWFF program, or during the SWFF program, are tallied. Those with partners where a prior ongoing working relationship existed are not counted.

4.2.3 \$ and % of outside funding beyond SWFF award funding

Outside funding is counted from both public and private sources, from both in-kind and cash equivalents.

TA FACILITY ADMINISTRATION

5.1.1 % of innovators that rate TA Facility responsiveness at 6/7

Overall TA Facility responsiveness will be rated on a 7-point scale from "Very unresponsive" to "Very responsive." Target: 80% of innovators rate the TA Facility at a 6/7 or higher.

5.1.2 % of innovators that rate TA Facility understanding of awardee needs at 6/7

Overall TA Facility understanding of innovator needs are rated on a 7-point scale from "Very poor" to "Very good." Target: 80% of innovators rate the TA Facility at a 6/7 or higher.

5.1.3 % of innovators that rate TA Facility as helpful toward awardee goals at 6/7

Overall TA Facility helpfulness toward innovator goals are rated on a 7-point scale from "Very unhelpful" to "Very helpful."

5.2.1 \$ value of volunteer services/\$ value of paid services (ratio)

The value of free services and the value of discounts are compared to the value of paid services provided through the SWFF Voucher System. Note: Metric discontinued due to change in USAID instruction.

Y1 TARGET	Y1 ACTUAL	Y2 TARGET	Y2 ACTUAL	Y3 TARGET	Y3 ACTUAL	Y4 TARGET	YEAR-TO-DATE	TARGET MET?
1.50	1.65	2.00	2.60	2.75	3.4	2.9	3.3	Yes
n/a	n/a	80%	86%	80%	92%	80%	100%	Yes
16	22	75	124	175	216	250	122	No
2	3	2	2	1	1	n/a	n/a	n/a
50%	75%	50%	45%	50%	54%	75%	100%	Yes
\$3,000,000 120%	\$6,092,064 254%	\$7,000,000 140%	\$10,600,000 163%	\$12,000,000 175%	\$13,271,923 135%	\$13,000,000 200%	\$20,233,549 148%	Yes
80%	95%	80%	100%	80%	92%	80%	100%	Yes
80%	75%	80%	95%	80%	92%	80%	100%	Yes
80%	79%	80%	76%	80%	84%	80%	100%	Yes
0%	0%	5%	4%	25%	0.00%	n/a	n/a	n/a



ACCELERATION SUPPORT



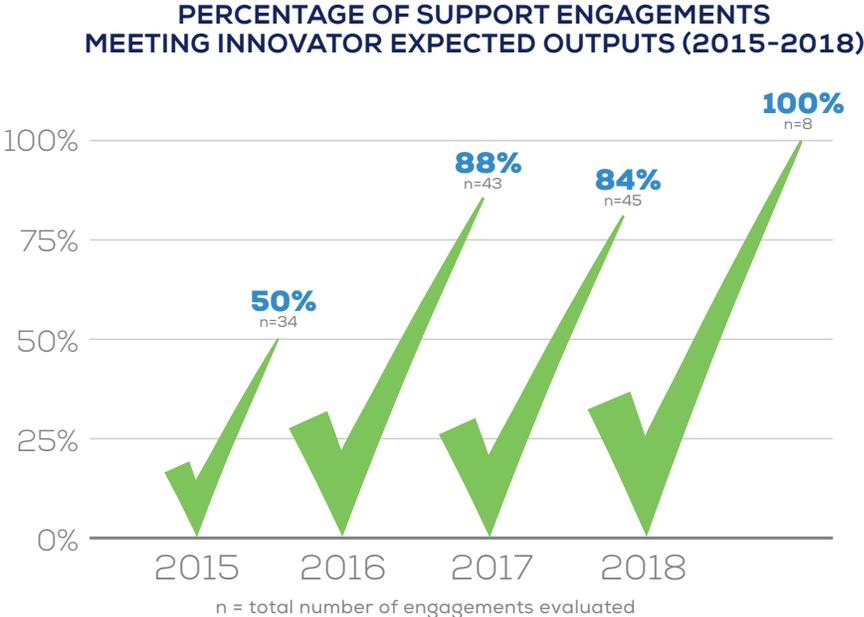
OVERVIEW AND ANALYSIS

SWFF provides acceleration through three lines of support: the SWFF TA Facility, USAID and its partners, and the Voucher System. An increasing number of the vendors in the Voucher System are based in local geographies, reflecting innovator preference for support providers that can offer local/country context and knowledge. Approximately 60 percent of the vendors in the system are now local.

Since its inception, the TA Facility has delivered 132 business service engagements directly to innovators, with an additional 18 engagements in process or planned for the remainder of 2018. Total value of completed business service engagements to date, plus those in process or planned for 2018, is approximately \$1.35 million.

Short-term success and long-term value of SWFF technical assistance

The TA Facility assesses both short-term success and the long-term value of each support engagement. Short-term success is determined simply by answering the question “Did the innovator receive what it expected to receive from the acceleration support?”



Source: SWFF Scope of Work Tracker



In 2015, only 50 percent of business services delivered by the TA Facility were classified as having met innovator expectations. In 2016, 88 percent met expectations. In 2017, 86 percent of completed support engagements met expectations. Of the eight support engagements completed thus far in 2018, 100 percent have met innovator expectations.

The improvement in meeting expectations likely is a result of enhancements made to the acceleration support planning process in Year 2. SWFF introduced and implemented the Innovator Needs Diagnostic Tool to systematically identify organizational, strategic, and operational gaps at the beginning of the acceleration support process. This tool enables a highly focused support discussion with the innovator and results in very specific support goals and expected outcomes.

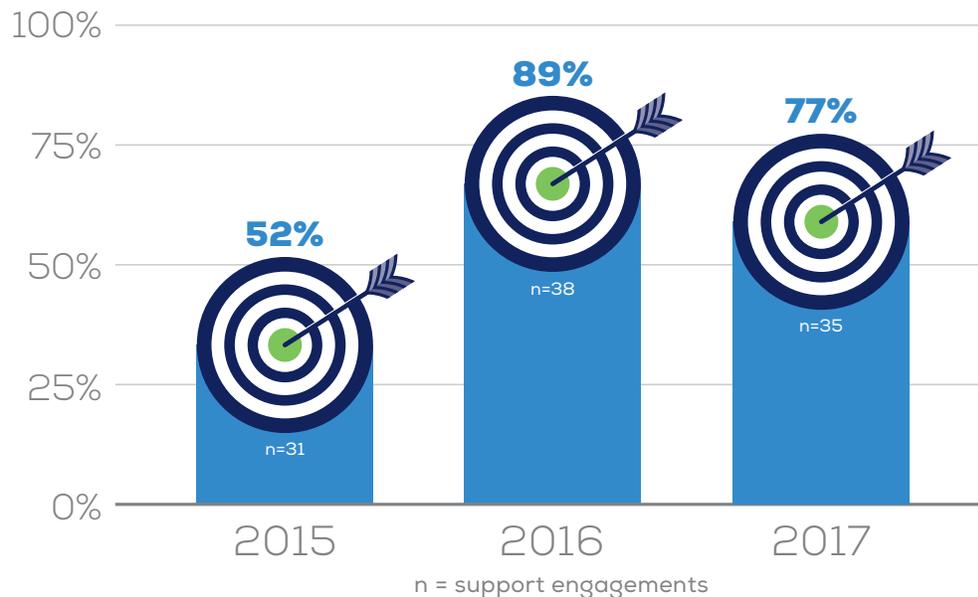
The TA Facility also revised the work-plan template in Year 2. Before delivering acceleration support, the TA Facility uses the template to document specific activities, deliverables, assumptions, and stakeholder commitments. The work plan now itemizes what is not in scope as well as what is in scope to ensure proper orientation of the project and clearly outlines time commitments expected from innovator staff and the support provider. The revised template allows the Acceleration Facilitator to play a more proactive role in focusing the work plan for greater specificity and clarity. SWFF made these changes with the intention of removing ambiguity in deliverables and increasing the likelihood innovators will receive the services they expect.

A support engagement is identified as a long-term success if the services and advice delivered are adopted and applied by the innovator and if the support results in recognized valuable outcomes, such as a shift in strategy, an effective partnership, additional funding, new financial forecasting capabilities, or an improved manufacturing approach or product design. In 2015, only 52 percent of TA Facility support engagements resulted in long-term success. In 2016, long-term success rose to 89 percent.

For 2017, long-term success dropped to 77 percent. The drop was related primarily to two issues. First, SWFF made several connections to third parties that did not lead to valuable partnerships. Second, some innovators believed SWFF advisory sessions on storytelling and gender equality, though highly useful, were too brief to influence long-term thinking in these areas. SWFF provided the advisory sessions to all innovators to improve storytelling capabilities and increase focus on business model enhancements that would improve gender equality outcomes.

It makes sense that SWFF innovator uptake has improved since 2015 as a result of TA Facility advice, because with each passing year the SWFF TA Facility gains a deeper understanding of each innovator and the local context in which it operates. As a result, support providers have become more aware of potential root causes of challenges in scaling. In some cases, promoting support engagements that can address those root causes increased the Acceleration Facilitator’s credibility as a proactive adviser who can more consistently meet innovator expectations and have an impact.

PERCENTAGE OF SUPPORT ENGAGEMENTS THAT LED TO VALUABLE OUTCOMES FOR THE INNOVATOR



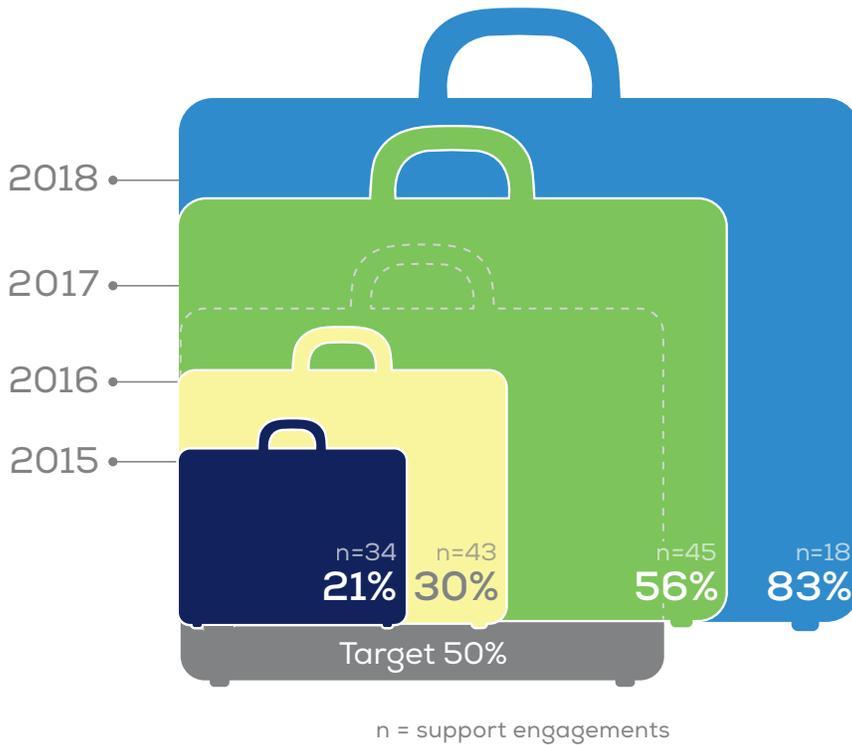
Source: SWFF Scope of Work Tracker

Innovator satisfaction: local vs. nonlocal vendors

Because SWFF innovators believe support provided by local vendors is more valuable than support delivered from a distance by a vendor with limited or no firsthand experience in-country, the TA Facility has worked to increase the number of local vendors in the Voucher System where possible. For SWFF purposes, a vendor is considered local if it is based in Africa or Asia, where most innovators operate.

Currently, half of SWFF’s Voucher System vendors are based in regions where innovators operate. In 2015, local providers delivered 21 percent of SWFF business service engagements. In 2017, that number more than doubled to 56 percent. Of the 18 service engagements completed or currently in progress in 2018, 84 percent are delivered by local providers.

PERCENTAGE OF SUPPORT ENGAGEMENTS DELIVERED BY PROVIDERS BASED IN AFRICA AND ASIA (LOCAL, 2015-2018)

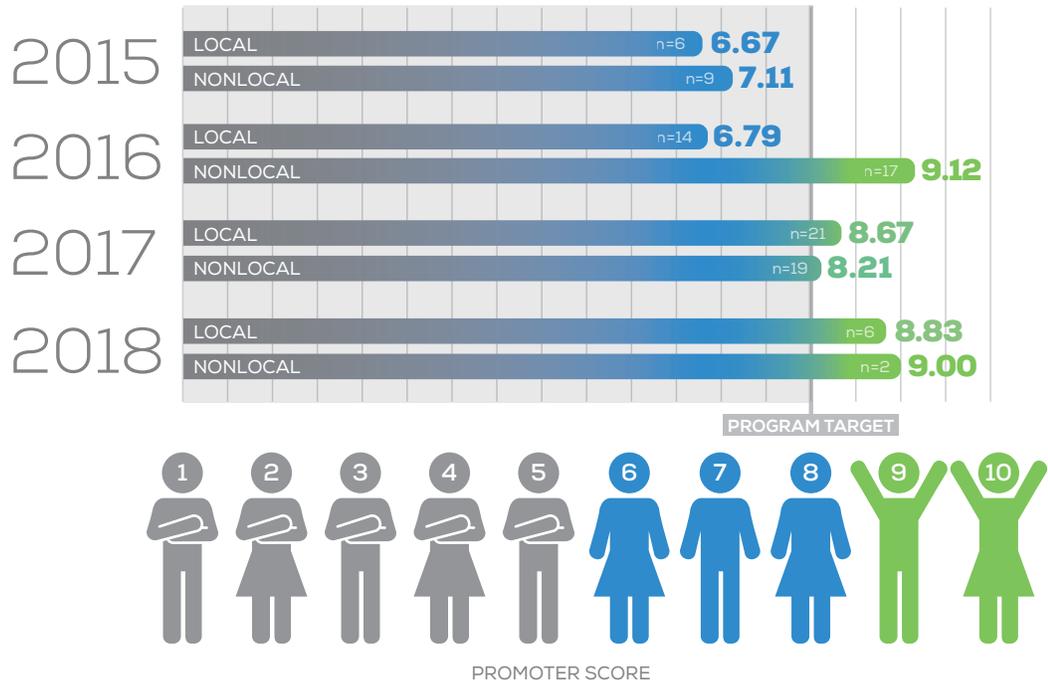


Source: SWFF Scope of Work Tracker

AVERAGE PROMOTER SCORE BY YEAR (2015-2018)

local and nonlocal providers

The likelihood an innovator would recommend a service provider to other SWFF innovators
(1 = would not recommend, 10 = would highly recommend)



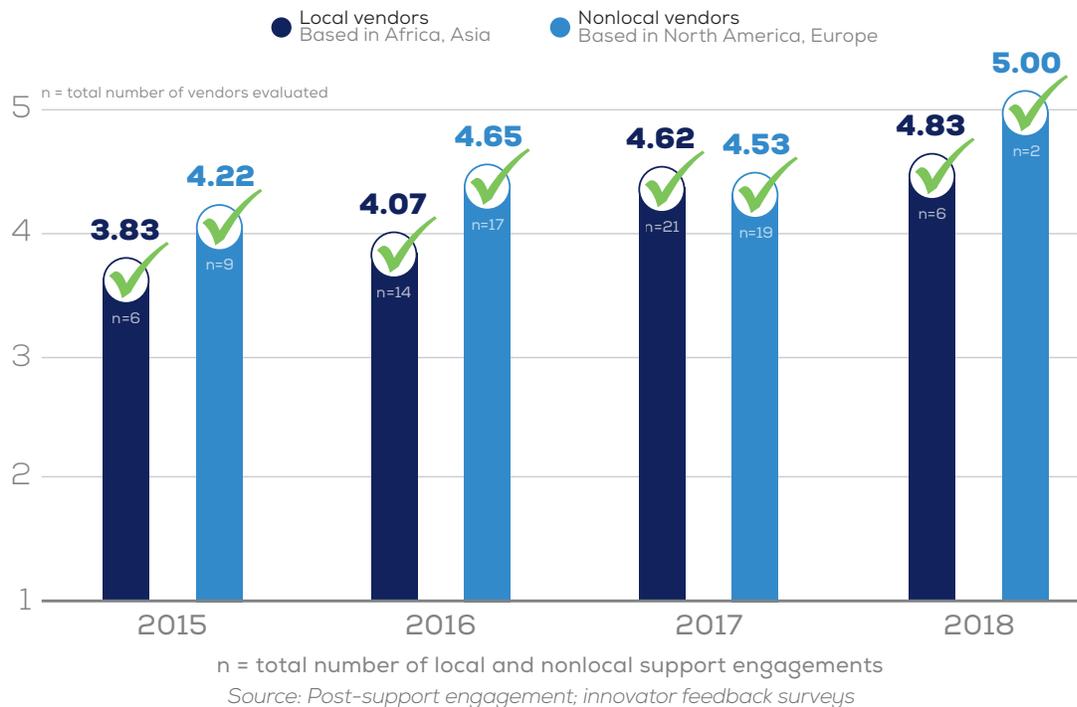
n = total number of local and nonlocal support engagements

Source: Post-support engagement; innovator feedback surveys

In the third year of emphasizing local support, two metrics (promoter scores and innovator satisfaction with support received) confirm the strength of local vendors. Promoter scores indicate the degree to which SWFF innovators would recommend a provider to other SWFF innovators. Based on innovator feedback surveys, the average 2018 promoter score for local vendors is 8.83 out of 10. This score far exceeds the local vendor promoter score of 6.67 in 2015 and is slightly above the previous high score of 8.67 in 2017. The significant improvement from 2015 represents the staying power of the strongest local providers and the removal of providers that were not performing to SWFF innovator satisfaction. Promoter scores for nonlocal vendors continue to remain strong at 9.12 (2016), 8.21 (2017), and 9.00 (2018).

Both local and nonlocal vendors, on average, are meeting or exceeding SWFF program promoter score targets. SWFF believes this is due to the expanded network of local vendors covering a significant proportion of TA Facility support services. This has improved alignment between innovators' business needs and support providers' expertise and regional knowledge. Nonlocal vendors continue to excel in support categories such as business model development and marketing materials design, including website and infographic development.

AVERAGE OVERALL SATISFACTION SCORE BY YEAR (2015-2018)



A similar trend exists in overall innovator satisfaction with the support received. Satisfaction with support delivered by local vendors has increased steadily since 2015. Overall satisfaction with support delivered by local vendors in 2015 was 3.83 out of 5.00. In 2018, overall satisfaction with locally delivered support so far is 4.83. Overall satisfaction with support delivered by nonlocal vendors has improved throughout the life of SWFF. In 2015, overall satisfaction was 4.22, while satisfaction for support delivered in 2018 to the date of this report by nonlocal vendors was rated at 5.00.

Other TA Facility adjustments may be contributing to score improvement for both local and nonlocal vendors. Innovators now participate in final selection of the vendor that works with them. The innovator interviews the top two or three vendors to hear the expertise each brings to the assignment, gauge their own ability to work well with the vendor, and assess each vendor's knowledge of the marketplace.

In addition, beginning in Year 2, the Acceleration Facilitator took a more active role in assuring each support engagement work plan drives toward a higher degree of specificity. A stronger emphasis on specifics led to a more realistic expectation of the time commitment required of the innovator's internal team and reduced the risk of misaligned deliverable expectations. Finally, after several years with SWFF, some vendors have now worked with individual innovators on multiple engagements. This leads to a deeper understanding of the innovator's goals on the part of the vendor and, for the innovator, builds trust and confidence in the vendor over time.

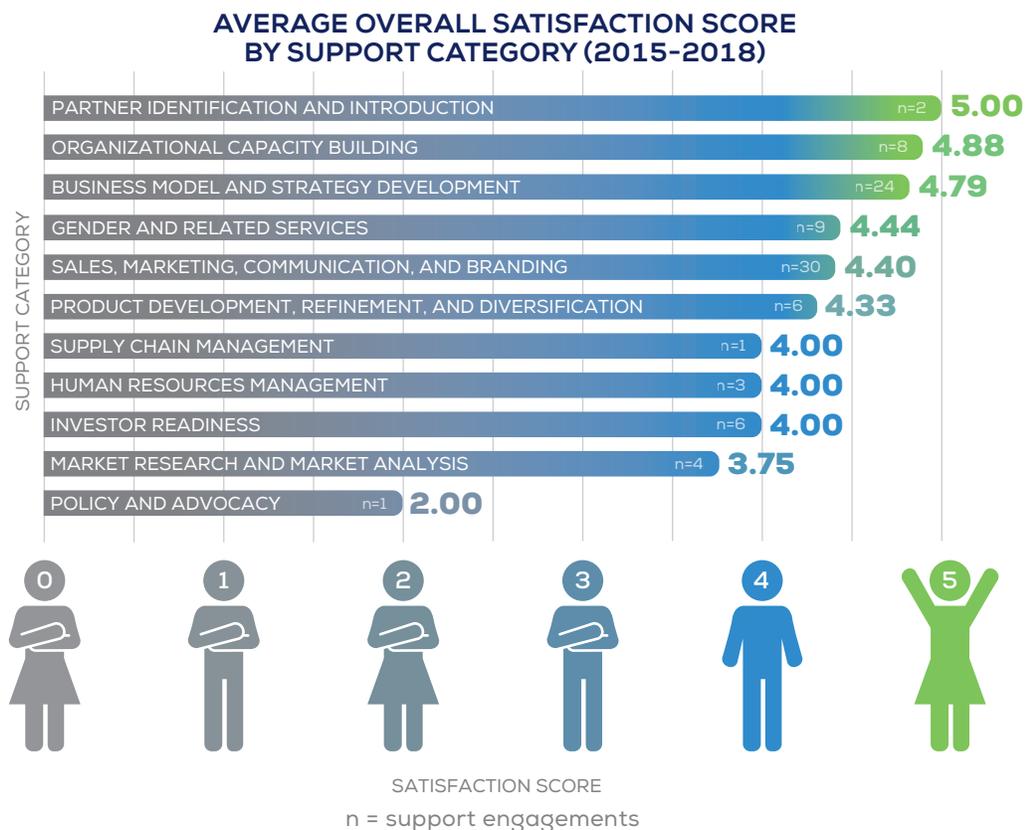
Emerging high-performance vendors

With more than 130 business service engagements completed since 2015, certain vendors are standing out in terms of innovators strongly recommending them to other innovators. For example, when considering only vendors that have delivered at least three support engagements, four out of seven of them are earning promoter scores higher than the program target score of 8.0 out of 10.

When looking at the vendor pool as a whole without considering the number of support engagements, 14 have received scores exceeding the 8.0 goal. In part, these higher promoter scores may be a result of improvements the TA Facility made to support delivery, with associated higher target scores for support providers.

Rami Khyami, Grant Manager for the TA Facility, earned a perfect promoter score of 10 across the four support engagements he delivered. Open Capital Advisors continues to be a standout with a score of 9.67. MRI Global, which transitioned from the TA Facility Consortium to the Voucher System, earned an average promoter score of 8.86 across all engagements it delivered. Sattva, a consulting firm based in India, earned an average promoter score of 8.76 across the 25 support engagements it delivered. The list of promoter scores for all vendors is listed on the following page.

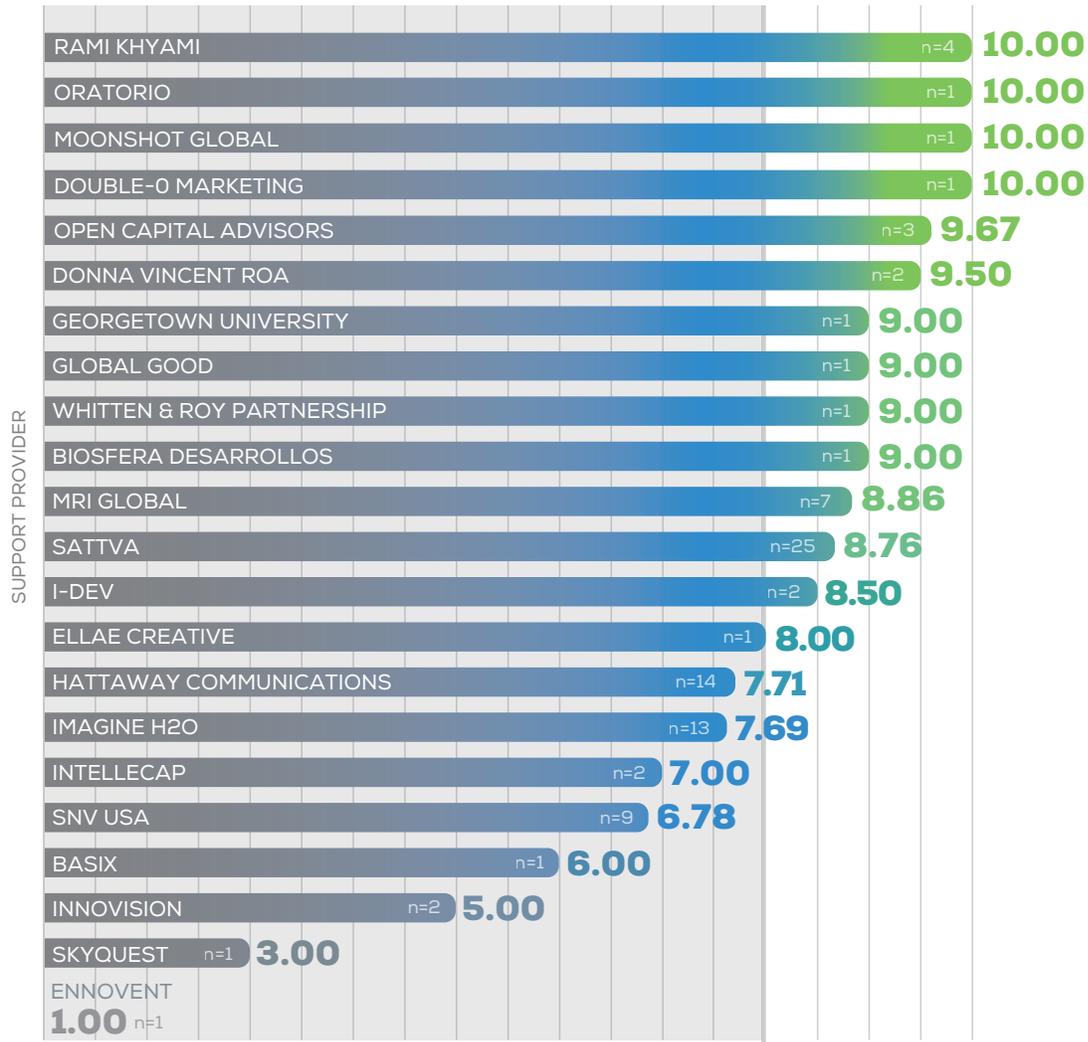
With a substantial number of support engagements having been delivered during the past five years through the TA Facility, SWFF is now able to identify specific support services emerging as strengths within the support-provider network the program built.



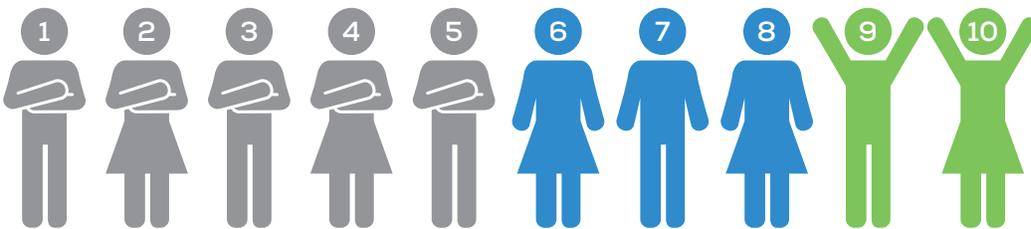
Source: Post-support engagement; innovator feedback surveys

PROMOTER SCORE BY VENDOR ACROSS ALL SUPPORT CATEGORIES (2015-2018)

likelihood an innovator would recommend a service provider to other SWFF innovators
(1 = would not recommend, 10 = would highly recommend)



PROGRAM TARGET



PROMOTER SCORE

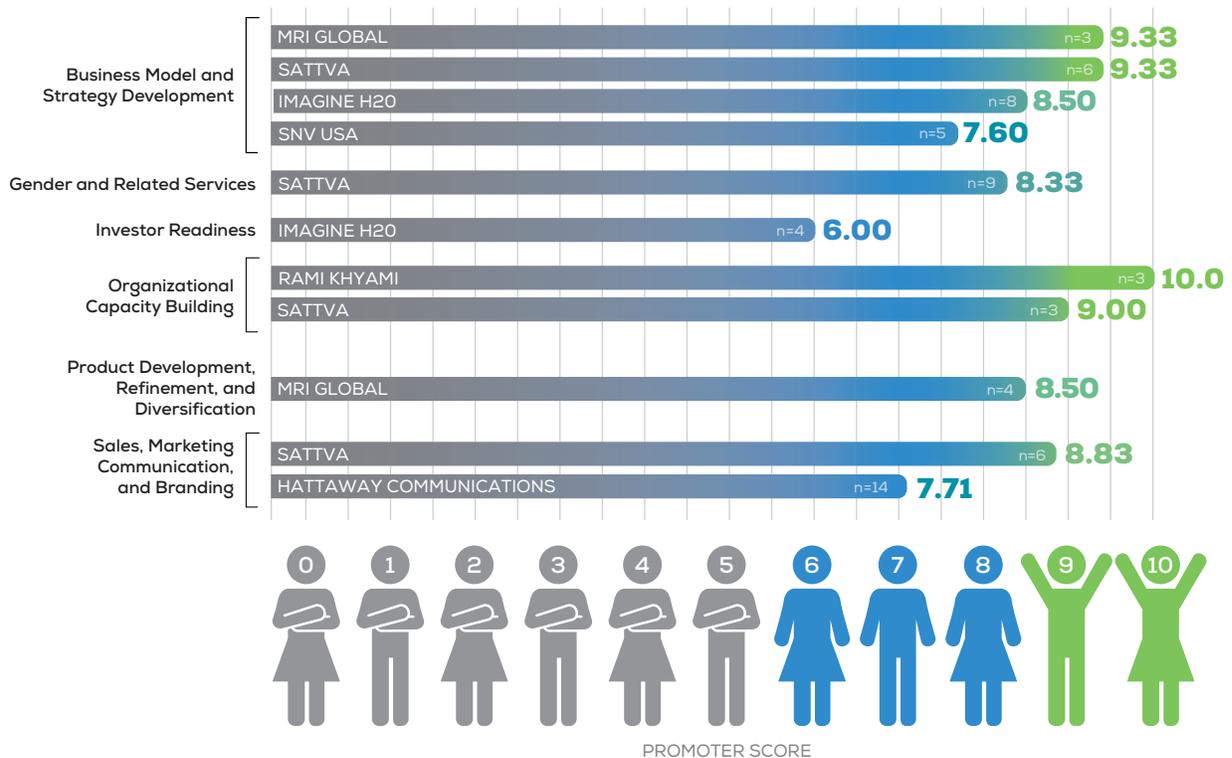
n = support engagements

Source: Post-support engagement; innovator feedback surveys

PROMOTER SCORE BY CATEGORY AND VENDOR (2015-2018)

Minimum of three engagements delivered by vendor in a support category

likelihood an innovator would recommend a service provider to other SWFF innovators
(1 = would not recommend, 10 = would highly recommend)



Source: Post-support engagement; innovator feedback surveys

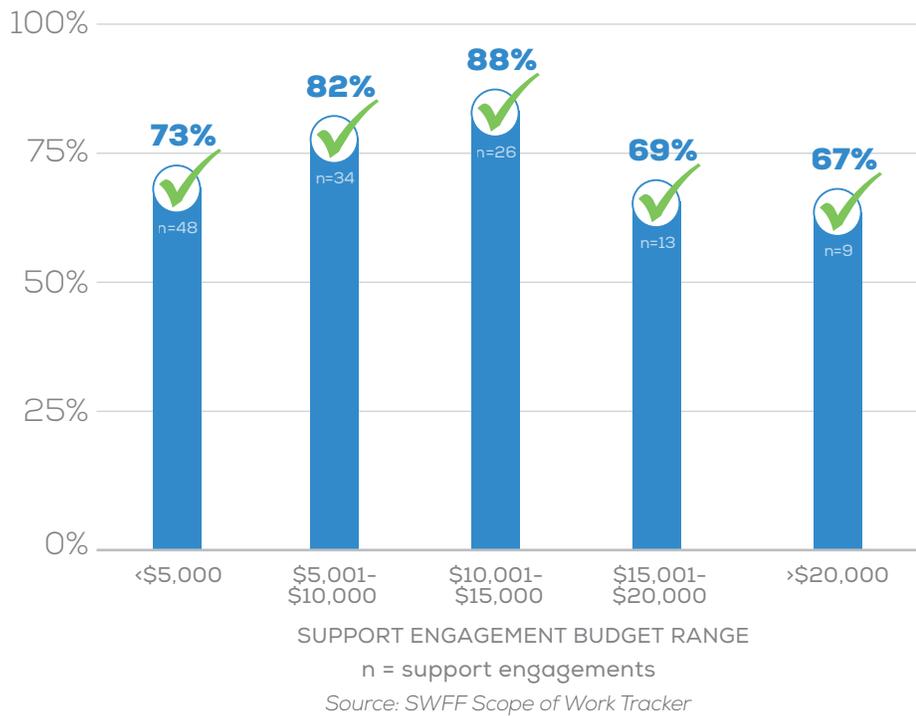
For the following service categories, the TA Facility has delivered at least three engagements and innovators report being “somewhat satisfied to very satisfied”: Organizational Capacity Building; Business Model and Strategy Development; Gender-Related Services; Sales, Marketing, Communication, and Branding; and Product Development, Refinement, and Diversification. On average, innovators report they are “somewhat satisfied” with support received in the categories of Investor Readiness and Human Resources Management.

Specific support providers are emerging as leaders within specific support categories. Sattva stands out for its support in Business Model and Strategy Development; Gender-Related Services; Organizational Capacity Building; and Sales, Marketing, Communication, and Branding. Rami Khyami is a highly recommended provider for Organizational Capacity Building. MRI Global is viewed as a highly recommended provider for Business Model and Strategy Development and Product Development, Refinement, and Diversification engagements.

Support-engagement size and scope

The SWFF TA Facility looks at success rates of support engagements to determine if the rates of short-term or long-term successes varied in relation to the following support engagement budget ranges: \$5,000 and under; \$5,001 to \$10,000; \$10,001 to \$15,000; \$15,001 to \$20,000; and over \$20,000.

PERCENTAGE OF SUPPORT ENGAGEMENTS AT VARIOUS FUNDING LEVELS MEETING OUTPUTS INNOVATORS EXPECTED (2015-2018)

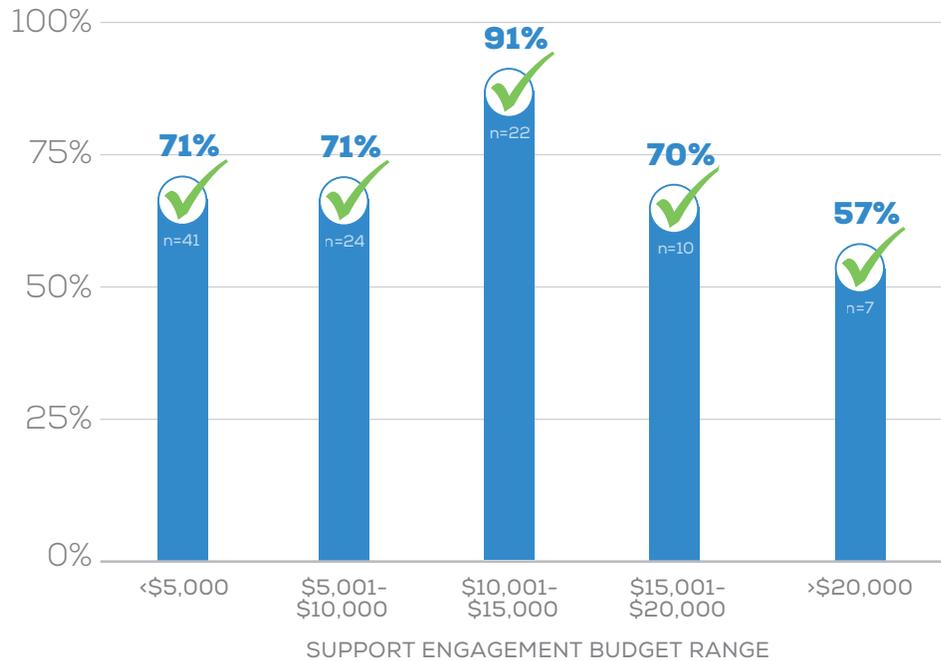


SWFF found the strongest success rates for both short-term expectations and long-term value occurred with support engagements in the \$10,001 to \$15,000 budget range. Engagements in this budget range successfully met short-term expectations 88 percent of the time, while delivering on long-term value 91 percent of the time. Given SWFF’s experience working with innovators across all budget ranges, the organization determined that defined and focused projects with budgets in the \$10,001 to \$15,000 range are large enough to comprehensively meet innovators’ needs but not so large that objectives are too complex and time-consuming.

The next most effective engagements fell within the \$5,001 to \$10,000 budget range. Engagements in this range met innovator expectations 82 percent of the time, while delivering meaningful long-term value 71 percent of the time. SWFF hypothesizes that these engagements likely were successful because they were tightly focused on a very specific objective, such as a business model canvas, website development, or sales training that could be completed relatively quickly while delivering a robust output.

Engagements budgeted above \$20,000 were the least successful. SWFF believes these projects were too complex and too time-consuming to see short-term results. Also, in a startup environment, entrepreneurs need quick wins to meet milestones and build momentum for success. With this lesson learned, the TA Facility now breaks up larger scopes of work into smaller, sequenced support plans to ensure the innovator receives value at an accelerated rate.

PERCENTAGE OF SUPPORT ENGAGEMENTS AT VARIOUS FUNDING LEVELS THAT LED TO MEANINGFUL CHANGE IN OUTCOMES FOR THE INNOVATOR (2015-2018)



n = support engagements

Source: SWFF Scope of Work Tracker

Through its experience, the TA Facility is building and providing a roadmap of support that paints a clear vision of organizational development spanning each innovator’s tenure with SWFF. In the first year, an innovator’s foundational business requirements are supported and solidified. To do so, each innovator generally receives business model support to either create a business model canvas or review its existing business model for opportunities to integrate other pieces of the value chain and better meet its customers’ interests. Support focused on customer validation is frequently provided in Year 1 to ensure the innovator has an accurate understanding of its target customer profile and proper customer segmentation.

In the second and third years of an award, innovators frequently receive support in sales and marketing. As a result of the business model support they receive, innovators better understand how their customers want to be engaged and the problems they need to solve. Sales and marketing support includes assistance with drafting and piloting strategies, refining the strategy over time, and providing sales training to build the selling skills of the innovator’s staff.

Drawing on lessons learned from the many times SWFF has delivered these kinds of support, the TA Facility developed core offerings for each service support category that can be tailored to the specific needs and context of each innovator. This gives the innovator a clear picture of the benefits it will receive while collaborating with the Acceleration Facilitator to shape the 20 percent of the support that needs to be contextualized to the specific needs of each innovator.

ACCELERATION SUCCESS STORIES





Central University of Technology lays the groundwork for a path to commercial sustainability

Central University of Technology's (CUT) drought early warning system integrates indigenous and scientific drought forecasting and uses a mobile application, a web portal, and an SMS service to pool weather information through a network of sensors that monitor weather conditions for smallholder farmers. The system is anchored on the novel integration framework called Information Technology and Indigenous Knowledge with Intelligence (ITIKI). By the end of award Year 1, CUT reached more than 2,000 farmer households, expanded to 14,500 hectares of land under improved practices, and expects to help farmers produce more than 21,000 metric tons of produce.

In its first year with SWFF, CUT received business model guidance from Voucher System vendor Imagine H2O. The support helped CUT document initial hypotheses concerning its business model and built the team's knowledge to test, revise, and revisit those hypotheses as it continues to refine its model over time.

Analysis of the feedback from customers and potential customers collected using a questionnaire designed by Imagine H2O helped CUT better clarify the statement of the problem from the end user perspective that the ITIKI service addresses, as well as highlight value drivers and key points of differentiation from competing services. The data gathered also provided critical insight into the primary ITIKI customer, segmentation, and high-potential methods to reach those customers.

CUT received a financial scenario planning tool, enabling its management to test the impact of revised and new hypotheses on its bottom line and make informed strategic and operations decisions.

"The support has resulted in enormous value to my business in a number of ways. I am now able to contextualize all the components of the business and understand how they work together. This is helping me make meaningful planning decisions and informed projections," said Muthoni Masinde, ITIKI founder.



Lal Teer Seed enhances its customer demand generation strategy

Lal Teer Seed combines locally developed, saline-tolerant vegetable seeds with easily adoptable methods for cultivation in high saline areas of southern Bangladesh, micro-finance linkages, information and communication technology (ICT) support, and extension advisory services. The organization promotes its saline-tolerant seeds through demonstration days with potential customers in attendance. Each demo includes three field days, and 100 farmers attend each day. Lal Teer currently sells to 30 percent of the attendees and sought to increase that to 50 percent or higher. Through Sattva, the TA Facility advised the innovator how to improve the demonstration day sales rate and recommended promising opportunities to enhance demand generation more broadly.

The support focused on three outcomes: (1) an understanding of the Lal Teer ideal customer for customer segmentation and communication. (2) a plan to build social capital among retailers, influential farmers, and women as product evangelists to build a credible, trusted brand. (3) a repeatable demonstration day model based on farmers' needs and includes community members to spread awareness.

Lal Teer adopted many of the recommendations and now focuses its efforts on recruiting high-potential farmers to come to demonstration days. The innovator builds social capital by leveraging lead farmers to identify other potential customers. To date, Lal Teer Seed has sold to more than 4,500 farmer households and reached 900 hectares of land under improved practices. Farmers reported significant annual income increases ranging from \$1,000 to \$2,500 after switching to Lal Teer's salt-tolerant seeds, representing on average a 30 to 60 percent increase in their annual farming income. Crop yields have increased on average between 50 percent and 70 percent with the Lal Teer seeds compared to yields before using them.

"The recommendations from Sattva have focused us on specific farmer engagement tools we need to revisit, refine, and improve, and that should boost sales as a result," Faisal Ahmed of Lal Teer Seed commented.



MimosāTEK implements a customer-first approach to sales and marketing

MimosāTEK’s Internet of Things platform for precision agriculture in Vietnam uses sensors to gather crop data, measure soil moisture, rain, wind, and light and recommends a precise irrigation schedule in real time. The farmer activates the system via a mobile application that improves productivity, optimizes water usage and mitigates water-related risks.

MimosāTEK was not on track to hit its Year 1 and Year 2 adoption targets of 150 farmers and 600 farmers, respectively. It recognized that its sales approaches were not adequate for its revenue growth targets. The company sought support to increase sales rates at its demonstration days, improve its sales and marketing strategy, and build staff selling skills.

The sales and marketing strategy developed with MimosāTEK addressed gaps in its current sales, defined the ideal customers and effective approaches to identify, onboard, and retain them, and recommended steps to improve demonstration day sales rates. MimosāTEK staff members were trained in the sales process, critical metrics to track progress to goal, and best-practice selling techniques.

Now MimosāTEK has the sales pipeline management tools to prioritize customer segments, monitor progress, and make informed strategic decisions toward hitting targets. By the end of Year 1, MimosāTEK expects to hit the 150 farmer target, have 225 hectares of land under improved practices, and enable farmers to grow 810 metric tons of produce. Farmers using the system report increases in annual income of \$200 to \$800 after switching to the MimosāTEK system.

Chief Operating Officer Lan Anh Le commented, “Sattva taught us a systematic and practical approach to engage our customers and sell our products that is customer-oriented, with more rigorous processes.”



SkyFox produces catfish and nutrient-rich water

SkyFox's innovation involves top-of-the-hill aquaculture ponds capable of producing two tons of catfish twice a year and nutrient-rich water for irrigating 25 acres at the base of the hill. SkyFox leases ponds and irrigation land and provides extension services to resource-poor farmers. By the end of Year 1, SkyFox expects to reach 18,000 farmer households, have 72 hectares of land under improved practices, and help farmers produce more than 7,000 metric tons of food. Despite its successes, the company is facing challenges with EPA approval in all of its implementation countries. Future success will be dependent in part on favorable determinations in those assessments.

There is an inherent risk in SkyFox's business model due to inconsistencies and fluctuations in the supply and quality of fingerlings and fish feed sourced from its suppliers in the value chain. Through Voucher System vendor Open Capital Advisors, the TA Facility supported SkyFox to evaluate the potential for greater integration of the value chain into its business model and identify and assess various integration opportunities that could be undertaken to address some of the challenges and reduce risk.

In response to key recommendations, SkyFox is working with multiple suppliers of fish feed and fingerlings to mitigate against variability in the quality and supply of both. To further ensure quality, SkyFox has established a formal feed quality appraisal process to ensure consistency. To mitigate against fingerling risk as well as reduce logistics costs for its clients, SkyFox is setting up its own hatcheries at central locations. Relationships with third-party suppliers augment fingerling supplies as and when necessary.

Patrick Apoya, cofounder of SkyFox, commented, "The recommendations from Open Capital have strengthened our position for better deals, partnerships, and investments."

ONGOING CHALLENGES AND POTENTIAL SOLUTIONS

In Year 4, the TA Facility is applying insights gained from its analysis of to-date acceleration support delivery to increase short-term and long-term success rates for future support engagements and provide acceleration support faster.

Providing acceleration support faster. The acceleration support process was created to ensure the right support is delivered to the innovator by the most qualified vendor. In response to innovator feedback, and in the interest of ensuring better service engagement outcomes, the SWFF TA Facility began allowing innovators to participate in selecting service providers. However, the process can be time-consuming. It takes time to schedule vendor conversations and complete back-and-forth revisions to the scope of work and the work plan. This extra work, as valuable as it is, can lead to delays in receiving the actual support.

The TA Facility now has a catalog of both scopes of work and work plans within commonly requested support service categories. In many cases, a new scope of work can be based on a previous version, but tailored to the context and specifications of the newly identified business need. This should result in faster turnaround for developing the scopes of work published for vendor response. These scopes of work have been tested in the marketplace and revised with new learnings from the resulting projects. As a result, the vendors are able to submit proposals with a fuller understanding of the complexity of the work requested and outcomes, and therefore can begin the engagement better prepared for a quick start.



GRANTS MANAGEMENT OVERVIEW



INNOVATOR CAPACITY BUILDING AIDS COMPLIANCE AND ENHANCES RD. 4 INNOVATORS' FINANCIAL OPERATIONS

During this reporting period, the SWFF TA Facility focused on providing assistance to Rd. 4 innovators support and strengthen the innovators' administrative and financial systems to meet the SWFF awards' standard operational requirements and support innovators' business acceleration plans. Many innovators realized they have to streamline their SWFF award budgets, not only to support activities' adjustments on the ground, but also to meet annual milestone requirements and targets.

The table below reflects pre-award survey (PAS) assessment results for SWFF Rd. 4 innovators and indicates the level of efficiency and robustness of each innovator's financial systems.

PRE-AWARD SURVEY STATUS, RD. 4 INNOVATORS, YEAR 1

MET DURING PRE-AWARD STAGE	MET DURING FIRST YEAR	NOT YET MET DURING FIRST YEAR
Lal Teer Seed	IVL Swedish Environmental Research Institute	University of Malawi
MimosāTEK	Naireeta Services	
Project Alba		
SkyFox		
WASTE Stichting		

Most SWFF Rd. 4 innovators met standard pre-award requirements as of this reporting period. To continue in the SWFF program and move to Year 2, the University of Malawi needs to address the action plans recommended by the TA Facility to meet pre-award survey requirements. The SWFF team will focus efforts during the remainder of this year on providing support as SWFF innovators streamline and enhance budgeting and forecasting systems and increase growth opportunities.

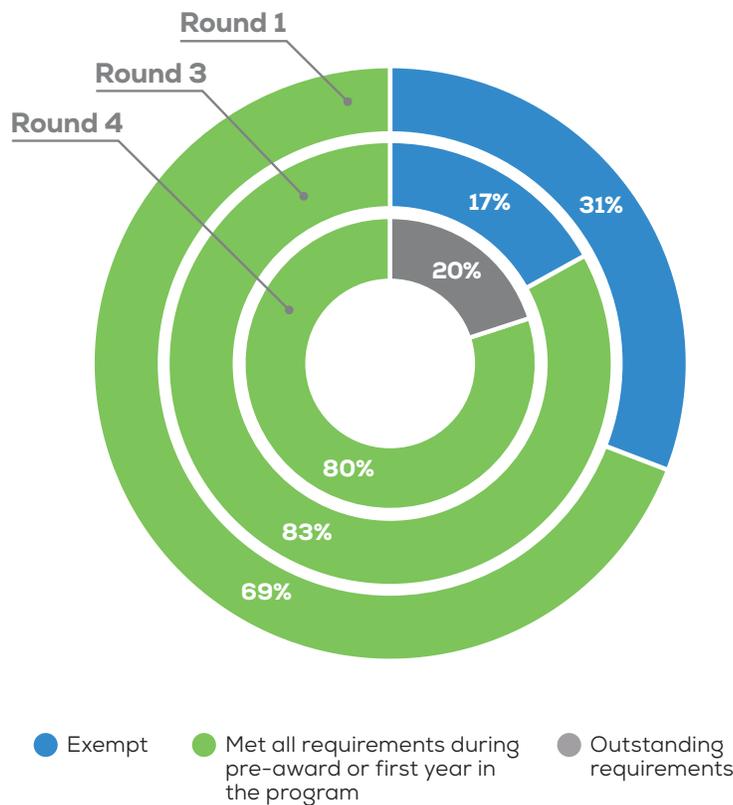
READINESS AND COMPLIANCE

SWFF innovators have worked simultaneously on strengthening financial operations and administrative systems. With SWFF’s recommended support and assistance, innovators who opt to implement annual budgeting and forecasting tools for upcoming years have a more informed understanding of how to achieve financial sustainability and growth.

During this reporting period, Lal Teer Seed (Rd. 4 innovator) deployed an ERP (enterprise resource planning system), allowing better monitoring and control of financial reporting. This is expected to support cash-flow management, forecasting, and sustainable organizational growth.

INNOVATORS’ ORGANIZATIONAL READINESS FOR MANAGING A SWFF AWARD

Percentage of innovators by round that met SWFF award requirements prior to joining the program



Meat Naturally (Rd. 3 innovator) is in the process of implementing a streamlined accounting and financial management system to support its regional operations and administration of public accountability funds.

Green Heat Uganda (Rd. 3 innovator), ICU – Peru (Rd. 3 innovator), and aQysta Holding (Rd. 1 innovator) achieved major improvements by implementing three-year to five-year financial forecasting models that estimate future financial outcomes and allow management teams to anticipate results based on previous financial data.

The “Strength and Advancement of Innovators’ Financial Systems” chart illustrates the SWFF innovators’ advancement by round from acceptable accounting and financial systems to operational and advanced stages since entering the SWFF program. During this reporting period, Lal Teer Seed and Meat Naturally advanced to the operational stage. Green Heat Uganda, ICU – Peru, and aQysta Holding reached the advanced stage.

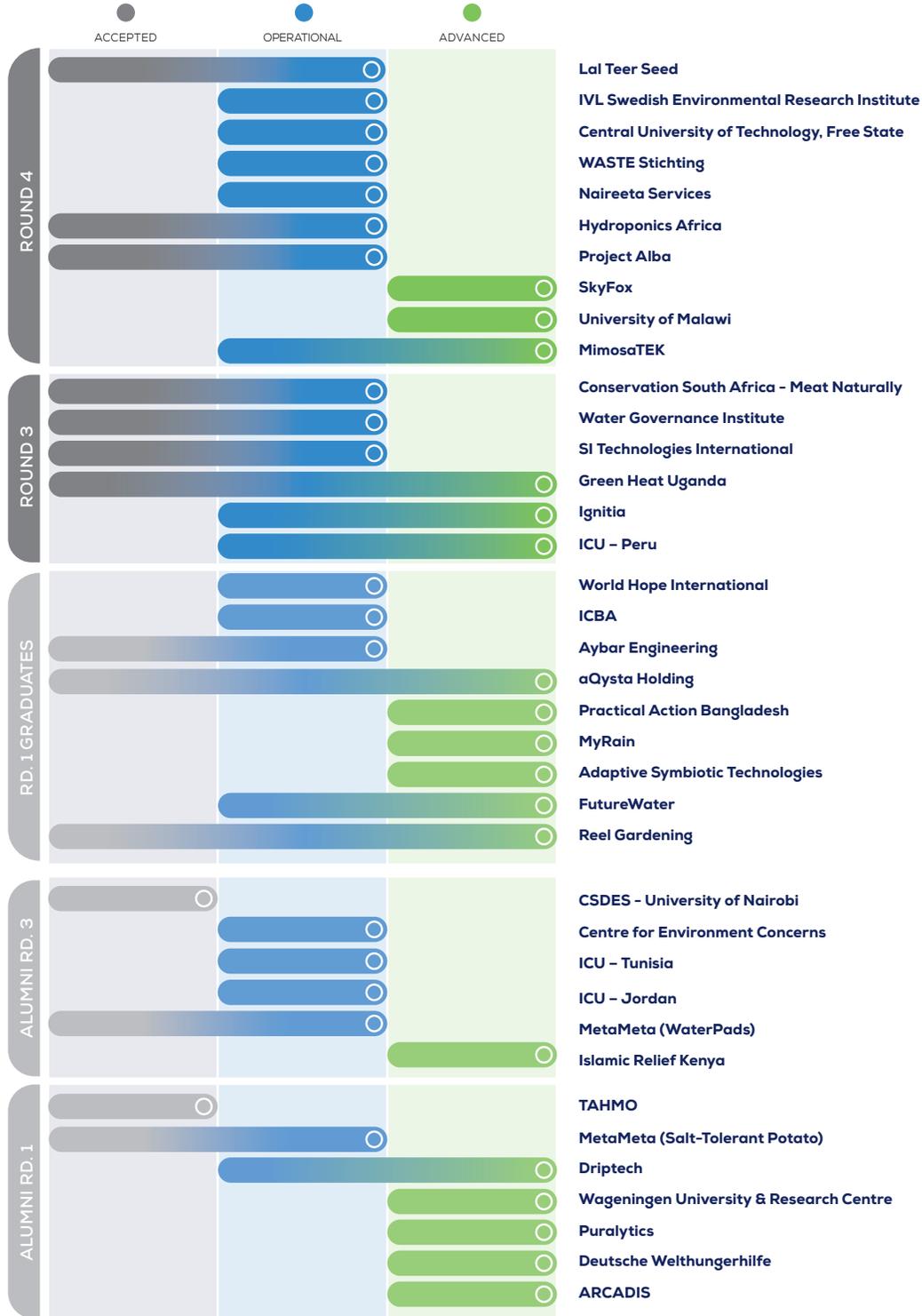
DEFINITIONS OF THE THREE STAGES:

- **Accepted:** basic accounting and financial reporting functions are in place
- **Operational:** standard accounting procedures, periodic financial reporting, basic budgeting, and an annual audit are in place
- **Advanced:** standard accounting procedures, periodic financial reporting, basic budgeting, an annual audit and a standard practice of three-year to five-year financial forecasting and analysis are in place

The SWFF team directly supported this advancement for many innovators through additional business and financial technical assistance provided by the Grants & Contracts Specialist and specialized firms from the SWFF Voucher System of Support Vendors.

STRENGTH AND ADVANCEMENT OF INNOVATORS' FINANCIAL SYSTEMS

innovators' financial system strength and improvement by round from time of entrance into the SWFF program through April 2018 semi-annual reporting -

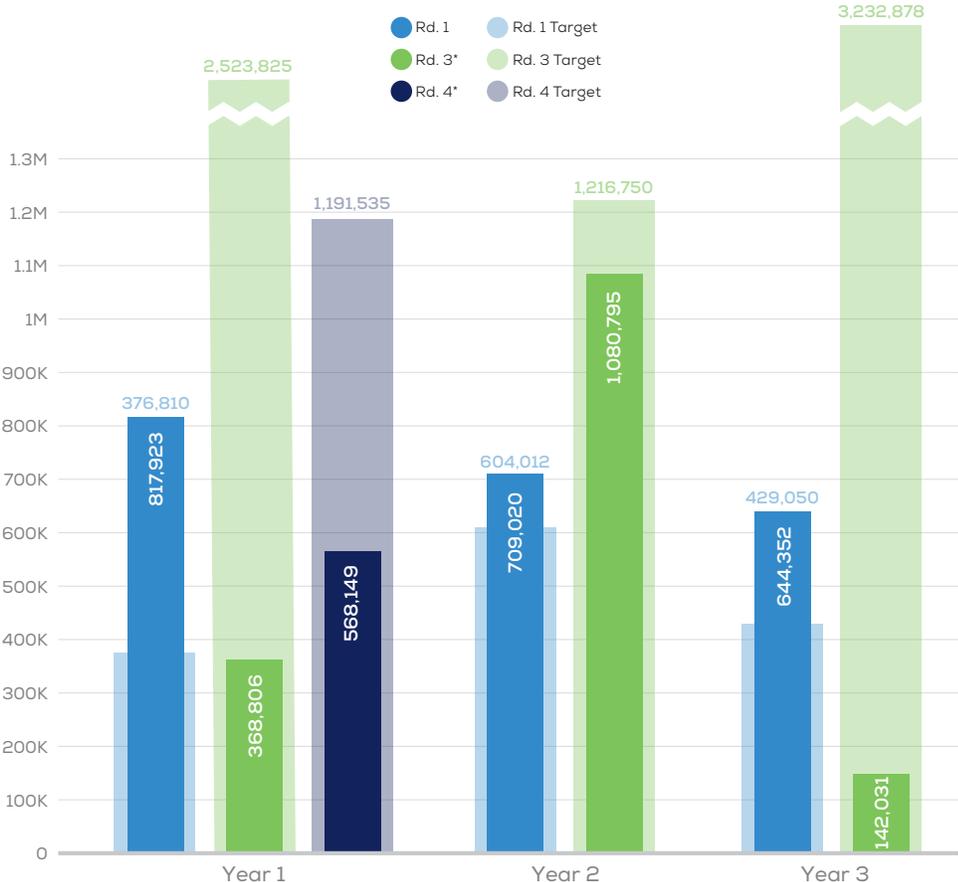


SWFF INNOVATORS' FINANCIAL SUSTAINABILITY

The chart below illustrates combined revenues by round and year, reported by innovators who were required to report revenue. Not all innovators are required to report revenues, and not all innovators are working toward sales or revenue targets. Figures in the chart reflect actual revenue as of this mid-term reporting period. Final annual figures for Rd. 3 and Rd. 4 innovators will be updated in the upcoming SWFF 2018 annual report.

SWFF Rd. 1 innovators (SWFF graduates) met their annual targets and witnessed sustainable revenue increases during the past three years. Rd. 3 innovators witnessed growth in revenues in the second year, but struggled to meet the aggressive targets they set for themselves so far in Year 3. Based on current reports, the SWFF team expects Rd. 3 innovators will face challenges in meeting their Year 3 targets, and Rd. 4 innovators may not meet the aggressive Year 1 targets they set for themselves.

RD. 1, 3, & 4 TARGETS AND REVENUE STREAMS FOR-PROFIT VS. NON-PROFIT



*SWFF gave Rd. 4 innovators a two-month extension to allow them time to meet their Year 1 milestone targets.
 *Rd. 3 innovators have completed only 6 months of toward their yearly targets.

ANNEX A: SWFF INNOVATORS



SWFF INNOVATORS

INNOVATOR	INNOVATION	PRODUCT SUMMARY
SWFF INNOVATORS, RD. 1 – GRADUATES		
Adaptive Symbiotic Technologies (For-Profit)	BioEnsure Microbial Inoculant	Fungus found in Yellowstone National Park reduces water consumption, increases drought tolerance, and enhances crop yields with no negative impact when applied to seeds
aQysta Holding (For-Profit)	Barsha Pump	Low-cost, hydropowered irrigation pump requires no fuel or electricity, has no operating expenses, and does not emit polluting greenhouse gases
Aybar Engineering (For-Profit)	Broad Bed and Furrow Maker (BBM)	Cultivation equipment reduces planting time and drains excess water away from crops – made of lightweight materials appropriate for farmers
FutureWater (For-Profit)	ThirdEye Flying Sensor	Drones carrying sensing equipment provide smallholder farmers with insights critical to improving their application of limited resources, such as water, seed, and fertilizer
International Center for Biosaline Agriculture (Non-Profit)	Salt-Tolerant and Resilient Crops	Non-GMO, salt-tolerant quinoa enables significant food production in saline soils without the need for freshwater
MyRain (For-Profit)	Rainmaker Custom Drip Irrigation System	Customized irrigation system design tool helps small agro-retailers across India avoid the complexity of drip irrigation design and installation – enhances water efficiency by as much as 50 percent
Practical Action Bangladesh (Non-Profit)	Sandbar Cropping Technique	This low-cost cropping technique transforms previously unused sandy islands appearing after each rainy season into productive large-scale farms
Reel Gardening (For-Profit)	Biodegradable Seed Tape	Simple, quick, and effective biodegradable paper tape encases organic fertilizer and seeds at the correct depth and distance apart, resulting in potential saving of 80 percent in water consumption
World Hope International (Non-Profit)	Affordable Greenhouses	Affordable greenhouses enable a year-round growing season, address food insecurity, conserve water, and promote the equal participation of women in the economy
SWFF INNOVATORS, RD. 3		
Green Heat Uganda (For-Profit)	Slurry Separation System (SST)	Slurry separation system vastly reduces water demands of anaerobic digesters, creates an easy-to-handle solid fertilizer, increases gas production, and improves removal of contaminants in the bio slurry
Ignitia (For-Profit)	Mobile Weather Forecasts	Accurate weather forecasts help farmers sow, fertilize, and harvest at the optimum time, manage their daily activities, improve crop yields, and optimize food production
Institute for University Cooperation (ICU) – Peru (Non-Profit)	Irrigation Scheduling System	Irrigation scheduling system provides farmers with direct indications of when and how much to irrigate – using a climate station, the system measures air temperature, humidity, wind speed and direction, intensity of solar radiation, and rains

SWFF INNOVATORS (CONT.)

INNOVATOR	INNOVATION	PRODUCT SUMMARY
Conservation South Africa – Meat Naturally (For-Profit)	Communal Grazing Systems and Ecorangers	Services combining ecological science, a government job creation program, and market interest in sustainable meat help implement communal grazing systems that result in improved water and food availability
SI Technologies International (For-Profit)	NewSil Growth Enhancer	Silicic acid applicator – applies acid to food crops in an affordable and environmentally friendly way that substantially reduces crop loss in times of water stress and drought
Water Governance Institute (Non-Profit)	Aquaponics Farming System	All-in-one aquaponics system allows for crop production and fish rearing at home – closes the loop between fish and horticultural crop farming to provide much needed nutritional supplements and alternative incomes to farmers
SWFF INNOVATORS, RD. 2 (DESAL PRIZE)		
MIT – Tata Center for Technology and Design (For-Profit)	Electrodialysis Reversal (EDR) System	Desalination process separates salts from water by applying electric potential to electrodes and pulling dissolved salt ions through ion-exchange membranes
SWFF INNOVATORS, RD. 4		
Central University of Technology, Free State (University)	Drought Prediction Tool	Early warning system integrates indigenous and scientific drought forecasting using a mobile application, web portal, and SMS service to pool weather information through a network of sensors that monitor weather conditions for small-scale farmers
Hydroponics Africa (For-Profit)	Hydroponics Services	Simplified, all-inclusive hydroponics services leverage use of local materials to grow healthy plants and help smallholder farmers produce maximum yields in small areas without using soil, while using 80 percent less water
IVL Swedish Environmental Research Institute (Research Organization)	SPONGE Irrigation Technology	Techno-biological irrigation system greatly improves water use and supply – uses water from fog and dew to increase water reliability in a region that has abundant but highly intermittent water availability
Lal Teer Seed (For-Profit)	Saline-Tolerant Vegetable Cultivation Methods	Locally developed saline-tolerant vegetable seeds, combined with easily adoptable cultivation methods in high-saline areas of southern Bangladesh – innovation package includes microfinance assistance, information and communication technology (ICT) support, and extension advisory services
MimosaTEK (For-Profit)	Internet of Things Platform for Precise Irrigation	Internet of Things (IoT) platform for precision agriculture – monitors and analyzes farm data using sensors (to measure soil moisture, rain, wind, and light) and then recommends a precise irrigation schedule in real time
Naireeta Services (For-Profit)	Bhungroo Rainwater Harvesting Technology	Handmade pipes 10 to 15 centimeters in diameter are used to filter, inject, and store rainwater underground for use in lean periods to provide food security – also can supplement household water needs

SWFF INNOVATORS (CONT.)

INNOVATOR	INNOVATION	PRODUCT SUMMARY
Project Alba (For-Profit)	Technology and Farming Practices Advisory Services	Business model addresses barriers related to both technologies and practices for efficient water use and increased crop yields – allows for rapid dissemination of water management technologies to smallholder farmers in Cambodia
SkyFox (For-Profit)	Integrated Aquaculture and Crop Production	Top-of-the-hill aquaculture ponds capable of producing two tons of catfish twice a year, as well as enough nutrient-rich water to irrigate 25 acres of land at the base of the hill – services include leasing ponds and irrigation land and providing extension services to resource-poor farmers
University of Malawi (University)	Flask-Wall Mushroom Growing House	Water-efficient flask-wall mushroom-growing house is designed for smallholder farmers in Malawi
WASTE Stichting (Non-Profit)	Circular Economy with Black and Grey Water Recycling	Circular recycling system for black and grey wastewater aids in exotic vegetable cultivation
ALUMNI		
ARCADIS (For-Profit)	Freshwater Management System	Sustainable, innovative freshwater management system prevents groundwater salinization in coastal areas
Center for Sustainable Dryland Ecosystem and Societies – University of Nairobi (For-Profit)	M-Fodder Mobile Ordering System	Mobile phone SMS system enables smallholder livestock farmers to send an SMS and receive high-quality hydroponically produced fodder for livestock
Centre for Environment Concerns (Non-Profit)	SWAR Subsurface Drip Irrigation System	Subsurface drip irrigation system spreads moisture at plant root zone, improving cultivation of vegetables, flowers, and fruit/forestry trees and using only one-fifth the water of other drip irrigation systems
Deutsche Welthungerhilfe (Non-Profit)	Greenhouse Technology	Combination of low-cost rainwater harvesting and greenhouse technology allows farmers to produce vegetables during colder months when no water for agricultural production typically is available
Driptech (For-Profit)	Affordable Drip Irrigation	Low-cost drip irrigation system uses an innovative laser punching technology to ensure uniform water application at the root zone of all crops in a field – provides the same benefits as drip irrigation used by large-scale farmers at a 70 percent lower cost
Istituto per la Cooperazione Universitaria (ICU) – Tunisia (Non-Profit)	Buried Diffuser Irrigation Technique	Patented underground irrigation technique for field and greenhouse trees, shrubs, and vegetables enhances efficiency of water resources, increases crop productivity, and makes rainfed agriculture sustainable

SWFF INNOVATORS (CONT.)

INNOVATOR	INNOVATION	PRODUCT SUMMARY
Instituto per la Cooperazione Universitaria (ICU) – Jordan (Non-Profit)	Groasis Waterboxx Planting Technology	Integrated planting technology allows farmers to plant fruit, fodder, trees, and shrubs in degraded farmland and rangelands in Jordan
Islamic Relief Kenya (Non-Profit)	SunCulture AgroSolar Irrigation Kit (ASIK)	Off-the-shelf, no-frills, cost-effective solar-powered drip irrigation technology
MetaMeta/Salt Farm Texel/Jaffer Brothers (For-Profit)	Salt-Tolerant Potato	Non-GMO, salt-tolerant potato requires very little freshwater for cultivation – scaling up access to this potato will contribute to better use of lands and waters with high salinity and will reduce pressure on freshwater resources
MetaMeta (Non-Profit)	WaterPads Water Buffering Technology	Sandwich of paper and jute with a 0.5 mm inner layer of large granular polymers in dry form – granules retain water at binding tension, absorbing 100 times their own weight in water (7 grams of granules absorb one liter of water)
Puralytics (For-Profit)	LilyPad Water Treatment System	Reusable, chemical-free, solar-activated water treatment product floats on a body of water where it kills viruses, bacteria, and protozoa in water used for agriculture
Trans-African Hydro-Meteorological Observatory (Non-Profit)	Weather Sensing Stations and Mobile App	Weather stations measure meteorological and water resource variables (rainfall, radiation, temperature, humidity, wind speed/direction, soil moisture, etc.) and send the data via GSM networks to a data server – provides accurate, localized, timely weather information to farmers via mobile devices
University of Texas – El Paso (University)	Zero Discharge Desalination (ZDD) Technology	Hybrid process uses reverse osmosis (or nanofiltration) as the primary desalter and electrodialysis metathesis (EDM) to recover additional water from desalination brine
Wageningen University & Research Center (Research Organization)	Salt-Tolerant Quinoa	Non-GMO, salt-tolerant quinoa enables significant food production in saline soils, without the need for freshwater



ANNEX B: SUPPORT ENGAGEMENTS



The table below is a summary of Year 3 and Year 4 support engagements assigned to the TA Facility's lines of support, which include USAID staff, Voucher System vendors, TA Facility staff, and other vendors.

SUPPORT PROVIDER	SUPPORT CATEGORY	INNOVATORS SUPPORTED
BIOSFERA DESARROLLOS	Market Research and Market Analysis	ICU – Peru
DOUBLE-0 MARKETING	Sales, Marketing, Communication, and Branding	Green Heat Uganda Meat Naturally
ELLAE CREATIVE	Sales, Marketing, Communication, and Branding	Ignitia
HATTAWAY COMMUNICATIONS	Sales, Marketing, Communication, and Branding	Central University of Technology, Free State Green Heat Uganda Lal Teer Seed MetaMeta (Salt-Tolerant Potato) MimosaTEK Naireeta Services Practical Action Bangladesh Project Alba Reel Gardening SkyFox SI Technologies International University of Malawi WASTE Stichting Water Governance Institute
IMAGINE H2O	Business Model and Strategy Development	Central University of Technology, Free State
INTELLECAP	Business Model and Strategy Development	Meat Naturally
MOONSHOT GLOBAL	Partner Identification and Introduction	Aybar Engineering
MRI GLOBAL	Business Model and Strategy Development	University of Malawi Water Governance Institute
	Product Development, Refinement, and Diversification	Adaptive Symbiotic Technologies SI Technologies International
OPEN CAPITAL ADVISORS	Business Model and Strategy Development	SkyFox
SATTVA	Business Model and Strategy Development	Hydroponics Africa IVL Swedish Environmental Research Institute Naireeta Services Practical Action Bangladesh Reel Gardening WASTE Stichting
	Gender and Related Services	Adaptive Symbiotic Technologies Green Heat Uganda ICBA Ignitia Project: GEC innovator consultations Project: Missing markets report Meat Naturally
	Organizational Capacity Building	MyRain Project Alba World Hope International
	Sales, Marketing, Communication, and Branding	aQysta Holding Ignitia Lal Teer Seed MimosaTEK Reel Gardening

SUPPORT PROVIDER	SUPPORT CATEGORY	INNOVATORS SUPPORTED
SNV USA	Business Model and Strategy Development	ICU – Peru
WHITTEN & ROY PARTNERSHIP	Organizational Capacity Building	FutureWater Green Heat Uganda
FOUNDING PARTNER	Policy and Advocacy	ICU – Jordan
SWFF TA FACILITY	Partner Identification and Introduction	Green Heat Uganda
	Sales, Marketing, Communication, and Branding	Lal Teer Seed MimosaTEK





SECURING
WATER
FOR FOOD:
A GRAND CHALLENGE
FOR DEVELOPMENT

Securing Water for Food has sourced and invested in a portfolio of innovative solutions that aim to help farmers use water more efficiently and effectively, improve water storage for lean times, and remove salt from water to make more food. Our cohort of innovators are helping people in 30 low-resource countries with tools they need to produce more food with less water.

To learn more about Securing Water for Food,
visit www.securingwaterforfood.org.