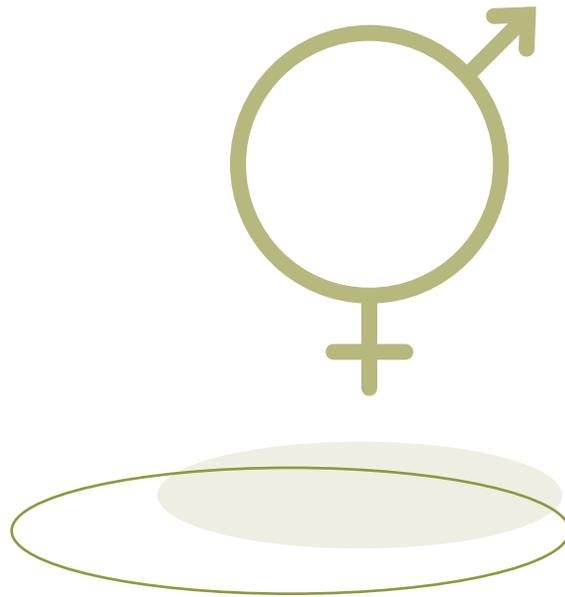


4 GENDER



4.1 Gender Integration Overview

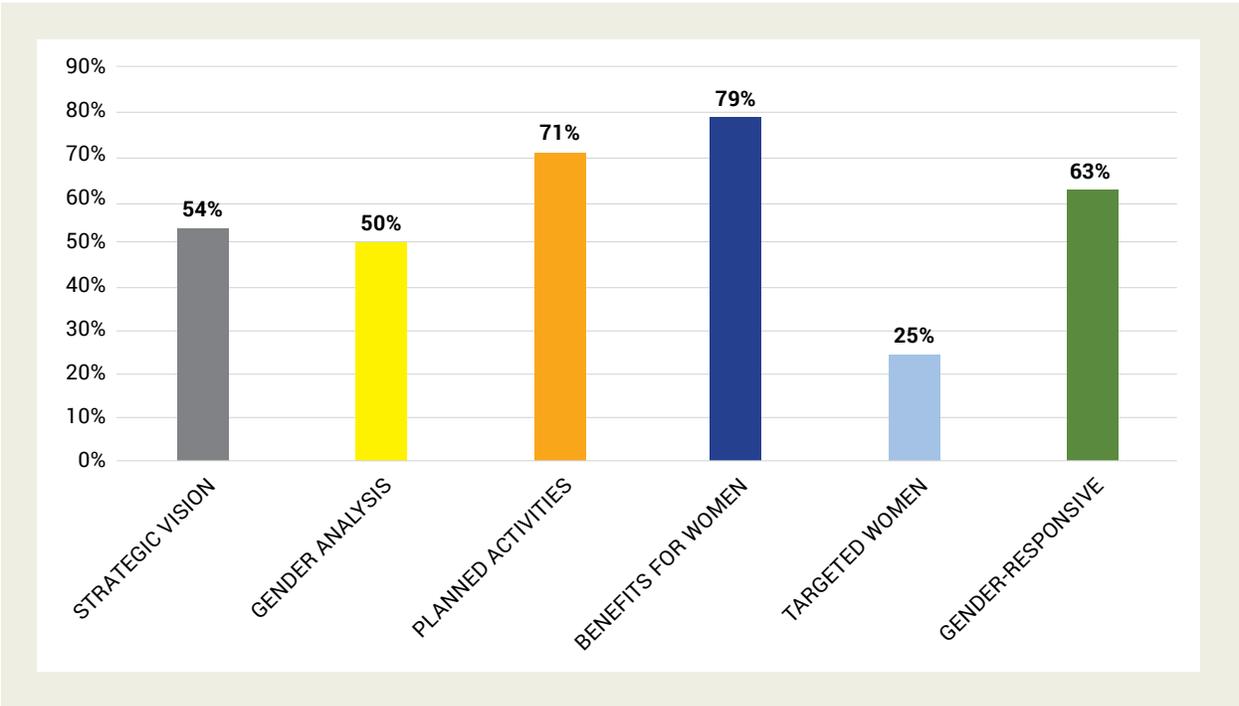
Powering Agriculture has intensified its efforts to ensure that gender issues are considered by the Innovators in the design, development, and deployment of their clean energy solutions. During the reporting period, Powering Agriculture conducted an in-depth assessment of Innovator project plans and reporting documents, complimented by a brief survey and phone calls with its Innovator cohorts about their plans for gender integration. Although many of the Innovators are still in preliminary phases of implementing activities, there are a number of findings and lessons learned about how project planning and design integrates gender and engages women. The following sections detail those results. An expanded, companion report on Powering Agriculture's gender work which contains further details on our findings will be released in early FY2017.

4.2 Gender Integration in Project Planning Phase

Out of 24 Innovators, 15 (54%) articulated a specific goal or purpose of the CES to promote gender equality. The degree of vision varied from women's economic empowerment as a central project objective to projects including a secondary objective or intended benefit to promote gender equality or empower women.

The majority of Innovators (79%) articulated some benefit for women within their planning documents, as shown in Figure 4.1., 71% included at least one specific actionable activity to integrate gender, 63% percent described a technology with benefits that could be (pending

Figure 4.1 Gender Integration in Innovator Work Plans



evaluation) anticipated to be gender-responsive, 50% included in upfront work plans some type of gender analysis to inform strategy and activities, and 25% explicitly targeted women. The common trait shared by Innovators that had a strategic vision on gender was that almost all (94%) targeted smallholder farmers/producers.

The majority of Innovators (19 out of 24) during planning were able to identify some benefits for women anticipated from the adoption of the CES technology. Out of those Innovators that cited any intended gender-related benefits, the most commonly cited benefits were: time savings (60%), with several other benefits identified at varying levels. These benefits are shown in Figure 4.2.

Sixty three percent of Innovators were found to have technologies that have potential to be categorized as gender-responsive technologies.

“Gender” – responsive technologies are:

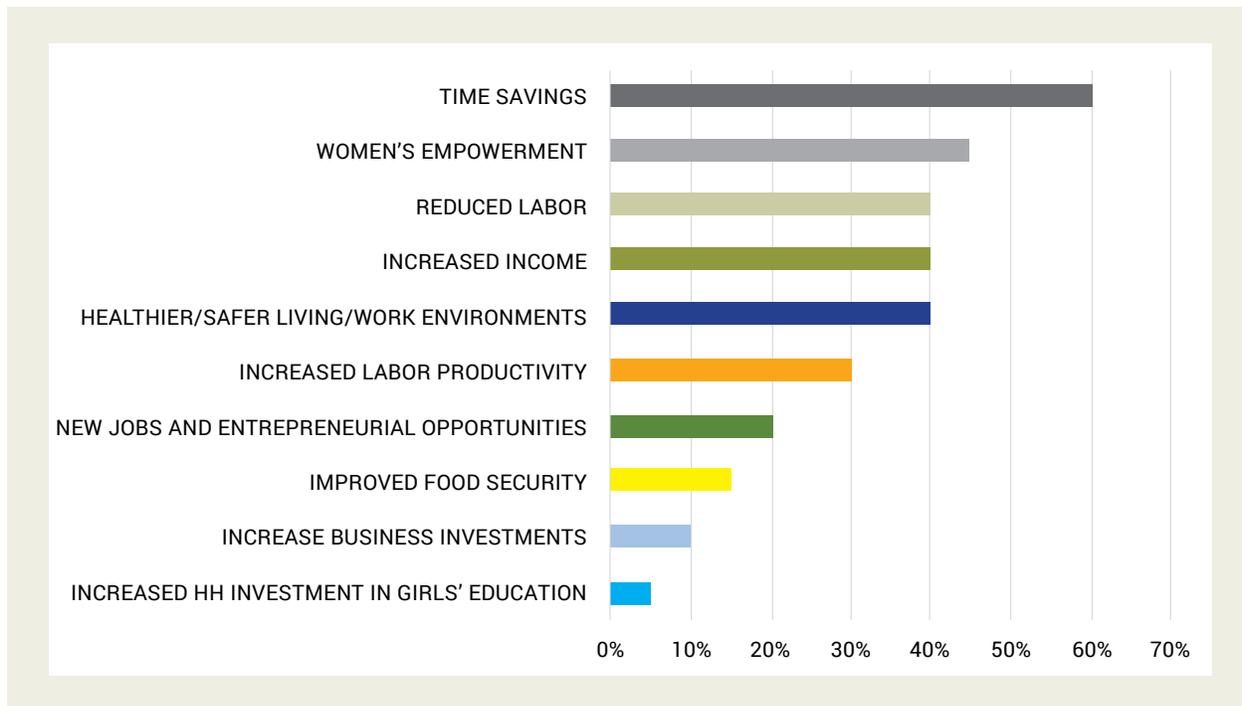
- Based on needs and interests of both female and male farmers.
- Those that reduce time/ labor for female farmers.
- Accessible and affordable to both men and women.”

Global Alliance for Climate Smart Agriculture

This designation is based on criteria such as: the CES is based on needs and interests of both female and male farmers; the technology is accessible and affordable to both men and women, and based on research and Innovator identification of potential benefits, particularly in time savings and reduced labor.

Similar trends are found in work planning documents across Innovators for those

Figure 4.2 Anticipated Benefits of Focus Technologies



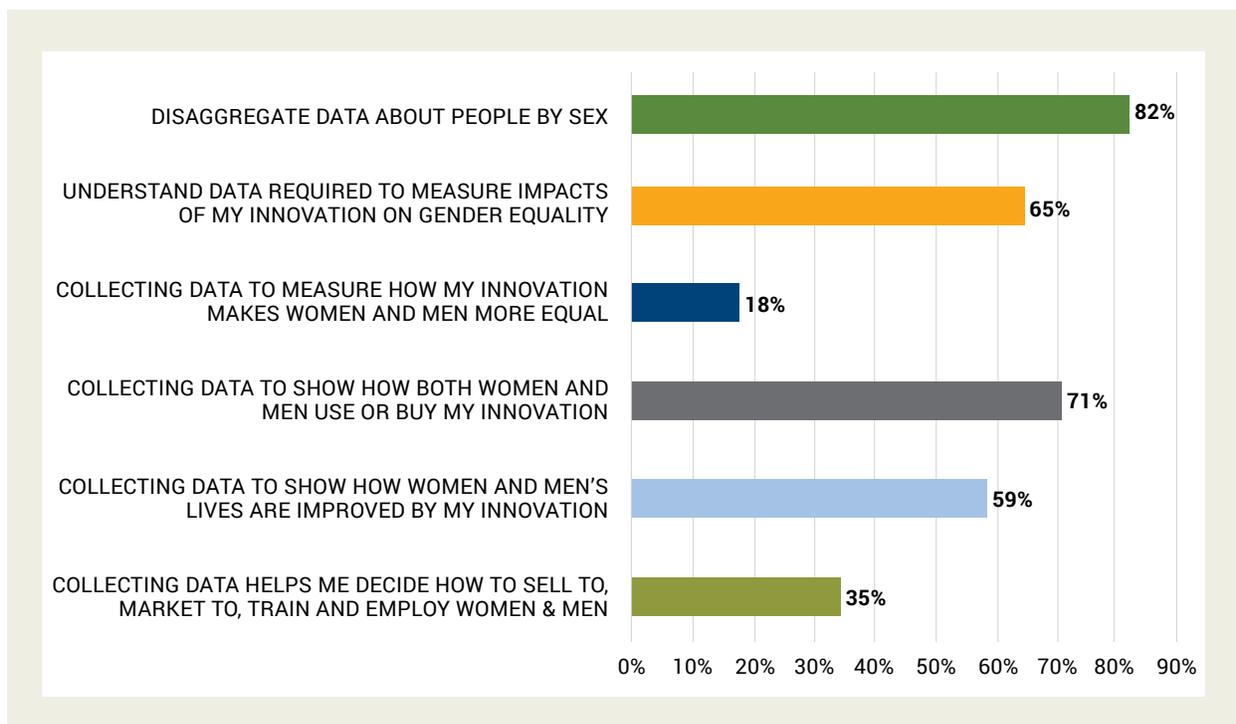
that outline actionable activities for gender integration. The majority (71%) of Innovators identified at least one actionable gender integration activity in their work plans, across technology types and agricultural sector. Innovators who explicitly target smallholder farmers are more likely to include specific gender integration activities in their work plans than Innovators targeting medium- to large-scale farmers or operations. Some examples of actionable activities for gender integration from Powering Agriculture work plans include: enable and encourage sales contracts to be signed by both male and female in the household, to ensure that the woman of the household also holds ownership; and give preference to partnerships and contracts with businesses that promote female involvement in management and operations.

4.3 Gender-Responsive Monitoring and Evaluation Plans and Data Collection

Across all 24 Innovators, 20 (82%) explicitly indicated within their M&E plan that they intended to disaggregate by sex at least one indicator and/or chose to add a custom indicator that included a gender-specific measure or was sex-disaggregated. Many of Innovators seem to be either unaware or unclear that four out of the 10 required Powering Agriculture annual performance indicators mandates that Innovators disaggregate the data by sex. This could be an indication that more training on M&E should be provided to the Innovators to address any knowledge gaps on the data reporting requirements in connection with gender.

Eight Innovator M&E plans (33%) introduced custom indicators in baseline data collection

Figure 4.3 Data Collection for PAEGC

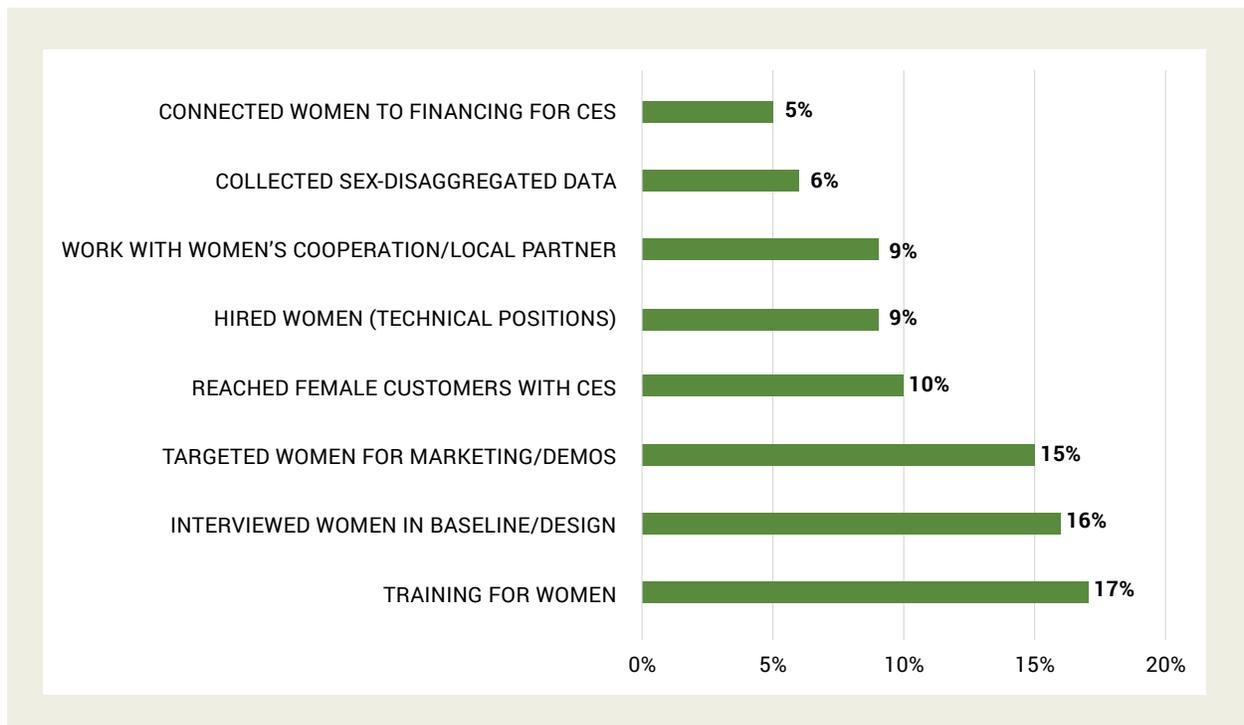


or routine monitoring that collect information on women’s use, access or benefit from CES technologies. In addition, three Innovators included planning for qualitative collection of data related to gender equality impacts; three included specific planning for gender integration in the baseline assessment; and three included plans for quantifying results or benefits to women or gender equality at the outcome or impact level. Figure 4.3 describes the types of data being collected by Innovators. One example of plans to do this is conducting a needs assessment that “will take into account social-economic and educational needs and demands from male and female smallholder farmers within the areas of implementation as well as look examine the differentiated aspects of access to water and impacts of climate change”.

4.4 Activities Completed to Integrate Gender

As noted earlier, at the time of this report the majority of projects were currently in the start-up (44%) or early adoption/distribution stage (33%) for their CES technology. Training is the most frequent activity that Innovators engage in for a total of 17 activities across Innovators, followed by interviewing women during baseline assessments or design as part of gender analyses, baseline assessments, market assessments, or research (16 activities). Several other types of activities have been undertaken by Innovators, as shown in Figure 4.4.

Figure 4.4 Gender Integration in Activities Completed

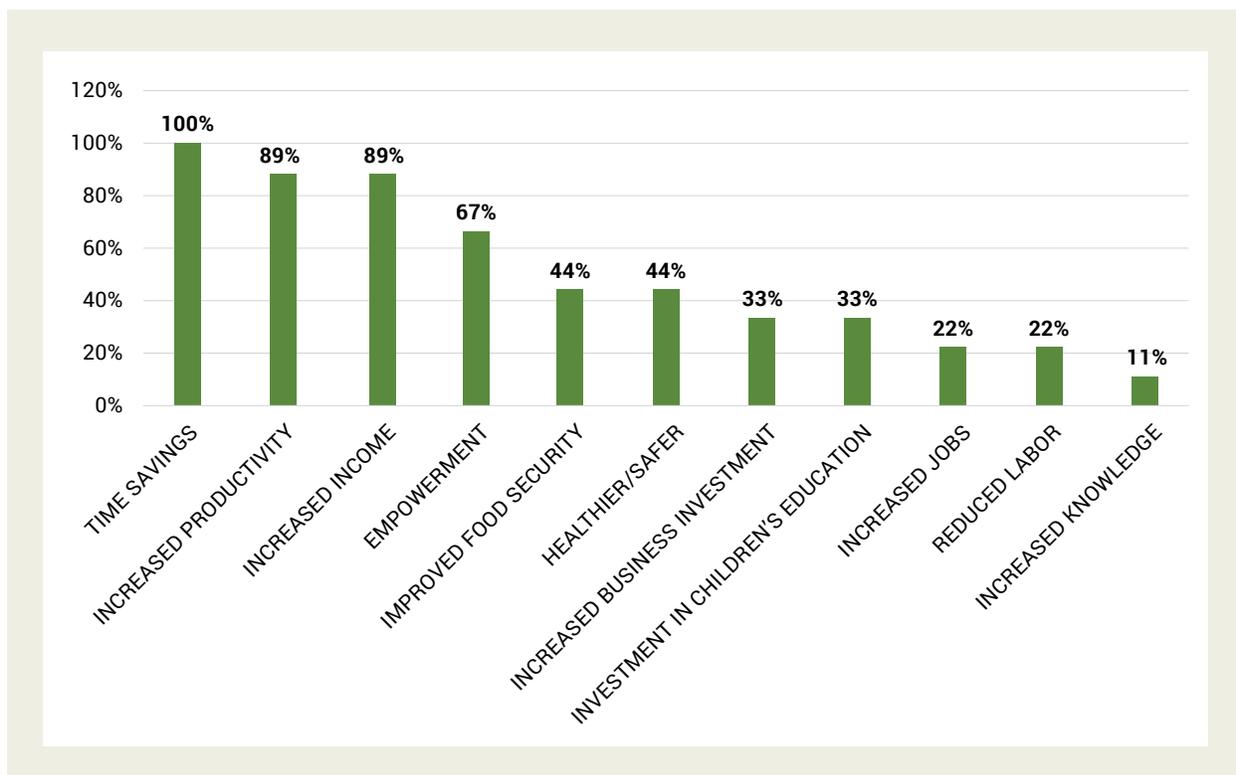


4.5 Observed Changes, Benefits, or Impacts Related to Gender (to date)

Across all 24 Innovators, from award to date, 15 are either not yet at a stage where they are able to demonstrate any tangible impacts, benefits, or change related to gender equality and women's empowerment. However, the rest (9) of the Innovators identified some tangible benefits or changes as a result of use or adoption of their CES qualitatively with anecdotal information based on client reports of benefits, vignettes, or case studies. Out of the nine Innovators that reported some gender-related change or impact as the result of CES use, 100% reported time savings of women, followed by increased productivity and incomes (89%), women's empowerment through financial independence (67%). Additional benefits or changes were identified at lower levels, as shown in Figure 4.5.

At the Bani Kananeh household site where **ECO Consult** worked with a women's CBO to train women in hydroponics, 56 women are using the system to cultivate thyme on individual plots in eight villages. ECO Consult reports that increased profits from introduction of the new technology equal "approximately 100JD (US\$141) per family per month" and could "potentially generate over 390JD (US\$548) per year for each family". At the plot of one thyme grower, Umm Ali, Eco Consult found that production had increased five-fold and that Umm Ali was additionally able to grow and harvest vegetables, for which she employed local Jordanian and Syrian women.

Figure 4.5 Innovator Self-Reported Changes



4.6 Challenges Encountered in Implementing Planned Gender-Related Activities

The Innovators identified a number of challenges that inhibit their ability to better integrate gender considerations into their projects and to ensure that women benefit from their technologies. The most commonly cited challenges were women's limited access to land and financial capital (5 projects), male dominance in decision-making roles in agricultural industries and in the household (4 projects), and a lack of women in agricultural technical fields (3 projects).

Two Innovators which cited lack of women in technical fields (mainly engineering) as a challenge to hiring more female staff, made concerted efforts to identify female technical

staff for their projects. The successful approach was instituted by Husk Power Systems in Tanzania which liaised with Tanzania's Board of Engineers and the Institute of Engineers of Tanzania to find suitable candidates.

Three main gender integration challenges identified by the innovators:

- Women's access to land and capital
- Male dominance in decision-making
- Lack of women in agricultural technical fields

Several Innovators also cited women's competing responsibilities in the home as inhibiting their participation in community-project meetings and technical trainings. These projects found this challenge easily mitigated by: 1) consulting with women about the best timing of meetings/trainings; 2) holding women-only meetings, as needed; and 3) requiring a quorum of women before a meeting or training could begin.

4.7 Lessons Learned From the Innovators

1. Integrating gender into CES technology projects makes sound investment and business sense that positively impacts Innovators' bottom line.

Husk Power Systems (HPS) views gender equality not only as a valuable pursuit but also witnesses how it makes business sense because of their customer base. HPS finds that Tanzanian villages *"are dominated by women,"* while men are fully engaged in other activities, and as a result women demonstrate higher levels of interest than their male counterparts in what HPS is doing. Additionally, HPS is aware that major investors will only invest in HPS if they are demonstrating real inclusion of women—not just mentioning it in plans but actually seeing tangible activities on the ground. HPS estimates that approximately 40-50% of their investors want to see, or require, that their investment is making a positive impact on gender equality and inclusion of women within activities.

As well, **KickStart** highly values gender equality as a critical desired outcome to its work. This has also served KickStart well in securing social impact investment funding to continue its work. KickStart depends on philanthropic support for

about 70% of its costs across all its programs in all countries. KickStart notes that funders are prioritizing their investments in meaningful work that promotes gender equality. As such, gender integration is a necessary fundraising tool. KickStart sees the inherent value in gender equality, but also knows they need to excel in this realm to attract and keep major investors.

"Our top four funders providing support with multi-year, multi-million commitments expect that we're talking about gender equality. Our investors who account for the lion's share for philanthropic investment, including Exxon, Ikea, and others have high expectations for work on gender equality. We have to speak to gender before they even consider investment...it's a deal breaker."

—Kickstart International, October 2016

Social impact investors and philanthropic organizations are a key resource for investments in technology, and are increasingly interested in ensuring that their investments are supporting gender equality and empowerment of women.

2. Integrating gender analysis into marketing assessments and strategies helps reach the targeted market and an expanded customer base.

SimGas views gender integration not as something additional, but as basic to sound business planning and marketing. SimGas' partner, SNV, integrated a number of questions regarding gender into their market survey for Rwanda, after noting that the absence of such questions in their Kenya and Tanzania market assessments limited their ability to develop

business plans that took into account the significant role of women in the dairy value chain.

Improved Market Assessment through Strengthened Gender Analysis in Rwanda

After completing market assessments in Tanzania and Kenya, SimGas realized they were missing information. As a result, they ensured the next market assessment in Rwanda integrated more gender-specific questions related to roles and responsibilities across the dairy value chain from feeding and milking to sales, collection, and decision-making over milk.

Assessment responses revealed that women dominate most areas of the value chains; thus, the integration of gender analysis into their market assessment assisted SimGas to better tailor their marketing strategy to women. SimGas expects that they can now better determine how to incorporate gender equality into the entire customer journey, starting with awareness creation and marketing targeted at women, enabling women to access their proposed milk payback schemes, customer trainings targeted at women, forming groups of female ambassadors to promote the product in their communities, etc. SimGas created a female persona and customer journey map that is incorporated into the business plan.

Futurepump also recognizes that women are a key market to tap. There are many places in rural Kenya where women and men farm jointly, and many instances of men migrating to larger cities or out of Kenya for work, while women remain on farms. As such, Futurepump recognizes the importance of female sales team(s) and is currently exploring the possibility of a “Sisterhood of Sales” approach, tapping into existing social capital and networks among female community members. Futurepump is actively seeking to recruit women in sales and marketing positions for this purpose once staff positions open up.

3. Upfront gender analysis and detailed work planning to integrate gender at the earliest stage possible can identify ways to facilitate success and avoid costly or time-consuming mistakes, while also laying the groundwork for documenting gender-specific impacts.

After many years of experience globally, iDE has found that women are as likely as men to benefit from CES technologies, and vice versa, if women are involved in the consultation and design stage. As a result, iDE actively encourages and facilitates women’s participation by identifying and addressing their specific needs and aspirations, and by monitoring and evaluating the impacts on both women and men. iDE has further concluded that the most successful way to reach women is through existing organized women’s groups which serve as a platform for women to engage with local product and service providers.

University of Toronto read studies about gender equality in Bangladesh, including women’s and men’s roles in fish farming and included some of this analysis of constraints and opportunities

in their original work plan. However, they did not have discussions with their local implementing partner, BRAC, early on to discuss how this would affect their work. University of Toronto noted that this impacted their first field visit and selection processes for farmers that they met with, who happened to be all male. Looking back, University of Toronto has learned that it would have been advantageous to have had discussions with BRAC earlier on in the process, and to request sex balance in initial meetings with farmers, so that there could have been better distribution of men and women in the first field trip in order to identify more about male/female dynamics, challenges, expectations, and realistic activities to mitigate challenges earlier on to inform the rest of the process.

VIA has found that women in off-grid villages spend up to one hour per day processing crops by hand to feed their families. VIA estimates that saving one hour per day for 250 million women globally would result in an additional 100 billion hours/year of productivity – the equivalent of an 8-hour day for the entire workforce of the UK or France. Saved time can translate into more time spent in fields and gardens increasing food security and engaging in non-agricultural income-generating activities. VIA estimates that women can earn 5-10 times more per hour if they switch from processing crops by hand for 0.5-1 hour per day to some other income-generating activity.

4. Early engagement with community organizations, local partners, and women's groups can improve entry of the technology into the community with potential benefits in the success of technology adoption and marketing.

UVG, in identifying communities for its micro-grid project, took its time to make sure that partnerships with organizations with a strong gender component were present in the communities with which they worked. The project was slow starting up because they re-evaluated the community selection criteria and processes to make sure the selections were sound. Selection criteria included the existence of community networks with partners that already have a strong gender component and female empowerment at the household level. They consider these communities to be more “mature” and viable for success. A key lesson learned for UVG is that, looking back, they realized that their first step into community engagement should have been, and should be moving forward, identifying and contacting all of the NGOs and INGOs that already operate within the communities to request existing community maps and gender analyses in order to help inform their community engagement and outreach for each individual community. UVG found that work was already done by many organizations and that in some places there was existing extensive information on community mapping and contact details for female community leaders and active women.

During **ECO Consult's** first year of implementation in Jordan, its Hydroponic Green Farming Initiative (HGFI) was successful in laying the foundation for achieving the program's objectives. ECO Consult noted that CBOs such as Bani Kananeh, a women's cooperative, had great success managing and marketing their hydroponic produce, indicating a possibility for replication and expansion in other communities throughout Jordan. ECO Consult drew on lessons learned

in year one to note that it is most important to continue documented success by “Focusing on vulnerable demographic groups, namely women and youth, when designing key outreach and dissemination activities”. Indeed, ECO Consult’s documented benefits in terms of increased job opportunities, incomes, and observed women’s empowerment is noteworthy as a case study for lessons learned for others.

5. Although finding women with appropriate skills in science, technology, engineering, and math (STEM) is challenging, targeted approaches to recruiting and training women pays off.

In their work on various projects in STEM, UVG has realized that there are not as many girls/ women going into the field of science and engineering, so when they set targets to reach 50% females, it can be quite challenging. However, UVG recognizes that this does not mean that it cannot be done, but it rather means they need to be aware of the challenges and identify how to reach more women/ girls and reach their 50% target. UVG also sees an inherent benefit in hiring more women—they view them as desirable technical operators on their micro-grid projects because men tend to migrate out of the communities, especially once the men have learned skills or received technical training. UVG invests time and resources into training operators, and they find women are less likely to leave the communities because women have young children and strong connections to their communities. Thus, UVG employs specific strategies to meet their 50% target, including strong upfront community engagement and linkages to women’s organizations, as well as targeting of trainings (location, timing) in order to accommodate women’s schedules and household responsibilities.

Husk Power Solutions worked doggedly in Tanzania to find qualified female engineers. In Tanzania, similar to other places, there are fewer female engineers, so it would be easy to simply continue to employ and train male engineers. However, they have worked with the Board of Engineers, and the Institute of Engineers of Tanzania to provide them with the Terms of Reference (TOR) and job descriptions/ solicitations to circulate among engineers. In addition, they tell these organizations that they have a 50/50 male/female requirement, and specifically request unemployed female engineers to send CVs. This has been successful—they are still receiving applications for an upcoming solar power training, and so far they are receiving applications from enough qualified female engineers that they expect it will be easy to achieve their requirement of 50/50 male/ female trainees out of the total of 25 targeted engineers.

6. Adapting flexible work conditions harmonized with women’s roles at home can successfully open-up more income-generating and job opportunities for women.

In India, **Husk Power Systems** innovated a way to convert rice husk char to incense sticks. In order to manufacture these incense sticks, HPS recruited and trained approximately 150 women from communities from which HPS supplies power. To employ women, HPS mandated a production-based payment system and not a regular 8 am to 5 pm schedule. This flexibility in work was necessary for women in these villages as they are typically responsible for household chores and sending children to school. Given the success of this model, HPS plans to replicate a similar process in Africa by converting rice husk char to briquettes and employ women for manufacturing. HPS plans to provide similar

time flexibility to these women in Africa so that they can send their children to school as well as earn a living by manufacturing these briquettes.

Overall, the Innovators recognized the importance of considering both men and women in the deployment of their clean energy

solutions. Whereas the 2013 Innovator cohort have integrated gender on a more ad hoc basis, the 2015 Innovator cohort have been informed of the importance of gender from the start of the award and have been better able to plan for its systematic integration.

