

Final Performance Evaluation of the Fararano Development Food Security Activity in Madagascar



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Three-year-old child, at home in Mangily village (Toliara II District), after recovering from moderate acute malnutrition thanks to support from the Fararano Project. Photo by Heidi Yanulis for CRS.

DISCLAIMER

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ACRONYMS

ADRA	Adventist Development and Relief Agency
ANC	Ante-natal care
BDEM	<i>Bureau de Développement de l'Ecar de Mananjary</i>
	Development Office of Ecar Mananjary
BL	Baseline (survey)
BNGRC	<i>Bureau National de la Gestion des Risques et Catastrophes</i>
	National Office for Disaster Risk Management
CDD	<i>Conseil Diocésain pour le Développement</i>
	Development Council of the Diocese
CHN	Child health and nutrition
CHV	Community health volunteer
C-IMCI	Community Integrated Management of Childhood Illness
CLTS	Community-Led Total Sanitation
CPO	Collection Point Organization
CRS	Catholic Relief Services
CU2	Children under 2
CU5	Children under 5
DFSA	Development Food Security Activity
DRM(C)	Disaster Risk Management (Committee)
EBF	Exclusive breast feeding
EL	Endline (survey)
ET	Evaluation team
FFA	Food for Assets
FFP	Food for Peace (USAID's Office of)
FFS	Farmer Field School
FGD	Focus group discussion
FMNR	Farmer-managed natural regeneration
FY	Fiscal Year
GBV	Gender-based violence
GOM	Government of Madagascar
HDDS	Household Diet Diversity Score
HH	Household
IP	Implementing partner
JMTR	Joint mid-term review
KII	Key informant interview
LOA	Life of Award

MAD	Minimum Acceptable Diet
MCHN	Maternal and Child Health and Nutrition
MDD-W	Women’s Minimum Dietary Diversity Indicator
MJS	<i>Ministère de Jeunesse et des Sports</i> Ministry of Youth and Sports
MVH	Most Vulnerable Households
NCBA/ CLUSA	National Cooperative Business Association/ Cooperative League of the United States of America
NGO	Non-governmental organization
NRM(C)	Natural Resource Management (Committee)
ODDIT	<i>Organe de Développement du Diocèse de Toamasina</i>
ODF	Open defecation free
ONN	<i>Office National de Nutrition</i> National Nutrition Office
PBS	Population-based survey
PO	Producer organization
PSP	Private service provider (for SILC Groups)
QET	Qualitative evaluation team
SBCC	Social and behavior change communication
SILC	Savings and Internal Lending Community
TOC	Theory of change
USAID	United States Agency for International Development
VDC	Village (Fokontany) Development Committee
WASH	Water, Sanitation and Hygiene

EXECUTIVE SUMMARY

Evaluation Purpose and Evaluation Questions

The purpose of this final evaluation is to measure the development outcomes of Fararano, one of two Development Food Assistance Programs implemented in Madagascar funded by the United States Agency for International Development (USAID) Office of Food for Peace (FFP). The primary audience of this evaluation report is the awardee, Catholic Relief Services (CRS), and its partners. Findings from the final evaluation will be used to determine project performance and inform and shape future food security projects. This evaluation was framed by a set of questions that explored the impact, relevance, effectiveness, and sustainability of project interventions: 1) To what extent has the project met its defined goals, purposes and outcomes? 2) Based on the evidence, which project outcomes are likely to be sustained? 3) What are the strengths of and challenges to the efficiency and effectiveness of the interventions' implementation and their acceptance in the target communities? and 4) What key lessons learned and best practices should inform future projects in the country?

Project Background

The Fararano project goal was to reduce food insecurity in 44 communes in three FFP priority regions in Madagascar. The project had three purposes: 1) undernutrition is prevented among children under two years of age; 2) increased household incomes; and 3) community capacity to manage shocks is increased. Promoting gender-equitable decision-making was a cross-cutting priority. CRS and partners implemented activities to increase consumption of diverse, nutritious food; increase utilization of maternal and child health and nutrition (MCHN) services; promote optimal water, sanitation, and hygiene (WASH) behaviors; increase diversified agricultural production; increase on- and off-farm household incomes; strengthen community disaster mitigation, preparedness and response; and strengthen community social safety nets.

Methodology

The final evaluation followed a mixed-methods protocol consisting of a quantitative population-based survey (PBS) and a qualitative study. The analysis also incorporated the review of project documents, project monitoring information, the midterm review, and other secondary sources. This design facilitated the interpretation and triangulation of data from several different sources, providing a balanced evidence base for findings, conclusions, and recommendations.

The PBS was designed to provide endline estimates of FFP program indicators, measure changes in indicators over the five-year program cycle, and provide evidence to prioritize and refine interventions. The statistically representative sample of 1,093 households was drawn from the three regions where Fararano was active (Atsinanana, Vatovavy Fitovinany and Atsimo Andrefana) and replicated the multi-stage clustered sampling approach used at baseline. TANGO International and Agence CAPSULE collaborated for survey training, household listing, and fieldwork; data collection took place in June 2019. The analysis followed a pre-post design comparing key baseline and endline indicators; bivariate analyses including disaggregation by key sub-populations were conducted for the project's two distinct

geographic zones, East and South.¹ The analysis included a comparison of “direct participants” who participated regularly in any project activities and “indirect participants.” The report also includes a regression analysis on selected dependent variables.

The survey was followed by a qualitative study consisting of document review, focus group discussions (FGDs), key informant interviews (KIIs), and observation of infrastructure investments. Fifteen *fokontany* were selected for the qualitative work, covering sites served by all four implementing partners in six districts in three regions. The sample was purposively selected to focus on fewer sites with greater depth and on selected key interventions. Significant attention was accorded to cross-cutting work on youth and gender. The team conducted 45 KIIs at both site and national levels and 80 FGDs.

Findings and Conclusions

Purpose 1

Final evaluation results point to improvements in child health and nutrition (CHN) outcomes, but critical gaps remain. The endline quantitative survey data show significant reductions in rates of underweight, stunting, and wasting in children under five years of age, especially in the East. Consistent with these trends, the final evaluation data suggest children under two years of age—and whole households—are benefiting from greater dietary diversity and quality, as a result of improved nutrition behaviors and access to nutritious foods. However, the data also suggest that women may benefit less from increased access to diverse and nutritious foods than their family members, with no significant improvements for direct participant women in rates of underweight or minimum dietary diversity, which underscores the need for greater focus on the gendered dimensions of food security. FGDs with mothers found satisfactory levels of knowledge of critical preventive and curative services available at local health centers and from Community Health Volunteers (CHVs), with direct participant mothers able to cite the timing, frequency, and benefits of antenatal care. This is consistent with the results of the endline quantitative survey, which measured a significant increase in antenatal coverage. However, there are indications that some of the challenges to child health care that existed at baseline persist and that some gains may not be sustainable. First, mothers in the endline qualitative study noted some of the same barriers to MCHN service utilization as they had at baseline, including distance from their health center and the high cost of medicines for treating sick children. Second, CHV service coverage has shrunk since the close of the USAID/Mikolo health program. In addition, Fararano’s 1,000-day rations distributions were conditional on proof of antenatal care and vaccination. Results for WASH are similarly mixed, despite intensified WASH efforts after mid-term. Although handwashing was the first WASH key practice cited by mothers, and the percentage of households with soap and water at a handwashing station increased from 4.9 percent to 9.9 percent, coverage remains extremely low. Quantitative survey results corroborate significant improvements in handwashing practices, well under the program target of 30 percent, and qualitative evaluators rarely observed handwashing devices at study sites. Access to water is a major constraint, especially in the Southwest, and there was no significant change over the baseline in the percentage of households with access to drinking water or practicing correct water treatment. Although endline data show a shift away from open defecation, the qualitative data revealed multiple barriers

¹ “East” comprises Atsinanana and Vatovavy Fitovinany, both in the humid eastern area. “South” refers to Atsimo Andrefana, a hotter and drier area.

that prevent households from using improved latrines. Barriers to improved latrine construction cited in focus groups included low prioritization of latrines versus other household infrastructure needs, low participation of men due to perceived stigmatization; and, in some villages, dense settlements, and small plot size.

It is unlikely that WASH practices contributed significantly to improved CHN outcomes. While beneficiaries and stakeholders valued Fararano’s integrated package of nutrition-specific and nutrition-sensitive activities, qualitative data suggest that the effectiveness of Purpose 1 interventions was reduced by weak compliance with Care Group approach implementation standards at some sites, infrequent supervision, and support to Lead Mothers, and inadequate adaptation of activities to the local context across diverse zones. Another determinant of effectiveness fell outside the control of the project, when Fararano was unable to match the demand it created for MCHN health services with the supply of quality services from CHVs and local health centers, especially after USAID/Mikolo closed.

Purpose 2

Fararano’s interventions, in particular those related to Savings and Internal Lending Communities (SILC) groups and farmer organizations (i.e., producer organizations, collection point organizations, cooperatives), produced meaningful impacts during the life of the project. This finding is consistent with the results of the endline, which found a highly statistically significant 61 percent increase in per capita expenditures (as a proxy for income). Lead Farmers benefited from increased knowledge of improved practices, along with some seeds and tools, and they shared their knowledge with small groups of other farmers. Endline results showed a modest increase in the adoption of improved practices, with the percentage of farmers adopting three sustainable crop, livestock, or Natural Resource Management (NRM) practices rising from 37.2 percent to 45.3 percent, and to 53.6 percent for direct participants. While farmers trained on improved practices may well continue to apply those practices post-project, the overall sustainability potential of the Lead Farmer model is low, as it is almost entirely dependent on unpaid volunteers and operates in a context where there is no local government extension service. The SILC/Private Service Provider (PSP) model was implemented with great success and at scale, and the endline results confirm that SILCs led to a statistically significant increase in the percentage of farmers using financial services: from an overall project baseline of 16 percent, use of financial services increased to 23.5 percent, with an even larger increase for direct participants where it increased to 29.3 percent. In the East, use of financial services increased dramatically, from 12.3 percent to 29.8 percent, while remaining largely unchanged in the South. Nonetheless, CRS initiatives should consider adjusting the SILC/PSP model to enable it to be scaled more quickly and widely. Producer Organizations, collecting point organizations, and cooperatives also have great potential to enhance income gains for farmers. Such approaches, however, were rolled out slowly and reached less than 5,000 producers, or roughly 20 percent of participants in P2 activities. While some of the groups established already have strong market linkages and can function without project support, that may not be the case for many of the 360 Producer Organizations, particularly those formed late in the project cycle. Infrastructure investments, consisting of rehabilitating irrigation systems and feeder roads, were successful in injecting food resources into target communities during the lean season, but the extent to which they provide significant lasting benefits to communities remains to be seen.

Purpose 3

Community capacity to manage shocks was improved primarily through disaster risk management activities focused on cyclonic events and strengthening social safety nets for the most vulnerable

households (MVH). In close cooperation with the line ministry, the project created and worked with *fokontany* Disaster Risk Management (DRM) committees to address cyclone risks through appropriate preparedness and response activities. However, it failed to adequately address risks associated with recurrent drought in the South. NRM activities centered on Food for Assets (FFA) and reforestation through newly created, but not well supported, NRM committees. Reforestation in the East was partially successful and failed in the South. Many NRM committees are no longer operating or are demotivated by the lack of results, and their understanding of NRM was limited to planting trees and reducing tree cutting and bush fires. NRM committees reported a decrease in bush fires and tree cutting due to the continuous sensitization and protection efforts, though visible abuses continue. Village Development Committees (VDC) implemented social protection activities in close cooperation with the Ministry of Population, Social Protection and Promotion of Women. MVHs were identified, and more than half of VDCs undertook specific social protection activities. Other than participation in FFA, the most cited mechanism to assist MVHs was to include them in SILC groups, and a few VDCs have made land available for MVH vegetable gardening. Unlike Purpose 1 and 2, where approaches and activities target individual/household behavior change, this component relies substantially on collective action and good governance, which place more external constraints on performance. When there was synergy between national capacity and community interests, the results were positive, such as for cyclone and bush fire management. NRM results were generally weak in terms of scale and sustainability, as they were project-driven and not well integrated with Purpose 2.

Gender and Youth

Project monitoring and final evaluation data provide evidence of gender-equitable access to and participation in project interventions, with women integrating farmer groups and SILC groups and reached by multiple MCHN activities, often together with their spouses. Though Fararano faced challenges ensuring Youth Group access for the youngest target youth, the project learned lessons about improving access in future projects. The central lesson regards the need for an intentional, well thought-out strategy for targeting and engaging the youngest youth in general. Fararano (initially) gave a lot of liberty to community authorities to identify the members of the Youth Groups, which gave preference to older youth and to "youth" even older than 25. Community engagement emerged from the qualitative study as the most significant change resulting from Fararano's gender/youth integration. Women and youth benefited from expanded roles and strengthened relationships with their peers, in their couples, and with other members of their communities. The qualitative study found no evidence of increased risk of gender-based violence (GBV) to Gender Champions, Youth Group members, or members of target households, related to project participation, which suggests Fararano implemented its gender/youth approach with sensitivity. However, the final evaluation data show the project was less successful at achieving equitable distribution of benefits across genders and generations. Direct participant female-headed households consistently fared worse than both male-headed households and indirect participant female-headed households on FFP's poverty indicators. Direct participants' endline values for women's dietary diversity were stagnant even as Household Diet Diversity Score values improved. Fararano was also challenged to close the gendered gaps in decision-making about MCHN and use of household revenue. The qualitative data suggest redistributing power between old and young may be at least as challenging as between genders. The main factors associated with reduced effectiveness of gender/youth integration were found to be limited project financial and human resources, which lowered the levels of coverage and quality of gender/youth activities. But the endline

data also reveal a need for greater consideration of the structural drivers of gender and generational inequalities in program design.

Targeting

While the geographic targeting approach was conceptually appropriate, the geographic dispersion of the three project zones posed many challenges for project implementers. In addition, the project targeted a number of extremely remote sites, which compounded challenges for implementers. The project's beneficiary targeting strategy was driven by the goal of reaching the maximum number of Mother-Child Pairs, of whom 60 percent were also to be targeted for livelihood activities. This resulted in some integration, but still meant that only about one-third of households benefited from an integrated package of interventions.

Factors Contributing to Outcomes

The main factors that contributed positively to outcomes were the project's integrated approach, the role of CRS's implementing partners, and the benefits of SILC membership, which cut across project purposes. The project's *fokontany*-level governance work also positively affected outcomes, though efforts are still required to consolidate local governance structures and processes. However, Fararano's highly ambitious and overly complex design negatively affected project outcomes. The challenges and opportunities vary enormously across the three project zones, making it difficult to tailor interventions to each context. The large number of intervention models (+/- 20) created additional challenges in optimizing sequencing and integration.

Contribution to Mitigation, Adaptation to, and Recovery from Shocks and Stresses

Endline survey data on per capita expenditures and poverty rates suggest households in the project zone increased capacity in the face of shocks relative to baseline, but show no significant difference between direct and indirect participants, making it difficult to draw conclusions about the project's contributions. SILC group participation provided the most long-lasting contribution to reducing the negative effects of food security shocks. Project activities that promoted increased agricultural production enhanced the food security of participating households by increasing incomes and reducing food purchases, but few of the improved agricultural practices adopted will provide significant protection to livelihoods in the face of drought. For shocks associated with floods and storms/cyclones, DRM activities contributed to reducing risks of injury and loss of life, but there is little evidence of increased resilience for livelihoods. Mitigation efforts consisted mostly of reforestation activities, and these were largely unsuccessful. Finally, health-related shocks (illness/death) were among the most common faced by Fararano households. The qualitative study found evidence that food distributions and increased utilization of health services contributed to improved health and nutrition outcomes among children under five years of age, but endline survey results showed few significant differences between direct and indirect participants.

Beneficiary Satisfaction

FGDs with community leaders revealed a high level of satisfaction with the project and staff interaction with community members. The interventions most frequently cited as having been beneficial were SILC

groups and food distributions. Mothers expressed satisfaction with the 1,000 days rations and the improvements to their children’s health status. Most Lead Mothers expressed satisfaction with their participation in Fararano, but some expressed dissatisfaction with the lack of compensation for their work and not receiving food distributions even if they did not meet eligibility requirements. Lead Farmers also were satisfied with the project because they were able to apply what they learned to increase their own household food security. For the resilience component, DRM committee members were satisfied, while NRM committee members felt a lack of support. While there was high satisfaction with FFA distributions for the infrastructure activities, there was significant dissatisfaction with the quality of the infrastructure assets. As regards the project’s gender interventions, the qualitative study found that households that received home visits were generally satisfied. *Miranjaka* (Gender Champions) were satisfied with the quality of training they received and the gender toolkits. However, some were dissatisfied with the infrequency of technical training and the level of effort required of them as volunteers. Youth Group members expressed satisfaction with the project’s training and activities but felt that their initial expectations had not been fully met.

Coordination

Overall, the project made consistent efforts to coordinate its work with other actors, particularly relevant government authorities. Overall, community leaders rated the efforts of Fararano staff to coordinate their efforts with the *Chef Fokontany* and VDCs as satisfactory or very satisfactory. KILs with four national Government of Madagascar partners provided evidence of sustained efforts by CRS to coordinate with government partners, who expressed appreciation for CRS’s efforts in the areas of nutrition, youth, WASH, and local governance. Despite the challenges of developing such partnerships in a context of frequent changes of structure and personnel, several collaborations produced positive results.

Sustainability

Specific sustainability issues are addressed under the findings for each project component and vary widely across intervention models. With adequate training, the SILC model is inherently sustainable for most groups. Some Fararano approaches are potentially sustainable due to links to the private sector/markets (e.g., Producer Organizations/ cooperatives) or local government structures (Care Groups linked to health centers). Public-private partnerships for WASH infrastructure offer potential for sustainability, but had mixed results. Models that depend almost entirely on unpaid community volunteers are unlikely to be sustained at any scale post-project.

Recommendations

Overall

- 1) For future integrated food security programs, take a more focused approach in terms of geographic scope and the number of intervention models.
- 2) Where the project zone includes a significant number of remote sites, allocate additional resources and make adjustments to the standard intervention package to take into account the opportunities and challenges presented by such sites.
- 3) Prioritize community intervention models with high inherent sustainability and with strong linkages to either the

private sector or local government structures. 4) Maximize integration by engaging all households targeted for MCHN interventions with one or more livelihood activities to enhance their ability to sustain health and nutritional gains. 5) Continue to strengthen local governance structures /leadership as a foundation for community development in the Malagasy context.

Purpose 1

1) New projects should allow enough time for Lead Mother selection and ensure women discuss with their husbands before accepting the Lead Mother role to ensure that there is mutual understanding of the voluntary nature of the work and time commitment involved. Control the time expected of Lead Mother volunteers by limiting distances traveled and the ratio of mothers per Lead Mother. 2) Reinforce stakeholder coordination to ensure maximum effectiveness of complementary interventions. 3) Provide sufficient supervision and coaching for Lead Mothers to ensure the success of the Care Group approach. 4) In project planning, take into account the time required to achieve and sustain behavior change. 5) At sites where food assistance is used, design and implement measures to avoid dependence and minimize negative impacts. Avoid relying on food distributions for attaining awareness-raising/ Social and Behavior Change Communication (SBCC) targets; and 6) Actively engage local authorities in the implementation of sanitation activities.

Purpose 2

1) Integrate a systematic outreach mechanism into the Lead Farmer model to promote broader adoption of promoted practices. 2) Systematically integrate Lead Farmers and farmers into SILC and other group activities. 3) CRS should continue to implement the SILC/PSP model, but seek to achieve the highest possible levels of group formation early in the project. 4) Involve more trained farmers in Producer Organizations and cooperatives to realize the benefits of collective purchasing and marketing and form such groups as early as possible. 5) Take a more rigorous approach to ensuring the long-term impact and sustainability of any infrastructure assets put in place using the FFA approach.

Purpose 3

1) Continue the approach that led to the excellent results for cyclone risk management with the Disaster Risk Management Committees; this includes adding easy-to-use reference material for members' use and to train others; including Disaster Risk Management Committee leadership in the VDC; and including disaster risk management as part of the Village (Fokontany) Development Plan. 2) Implement a Do No Harm strategy that considers the main known internal and external risks, especially for agriculture and NRM, where the quality and timeliness of planting material are essential. 3) Implement NRM approaches and activities primarily through the agriculture/livelihood component. 4) Continue to include the MVH in the work of the VDC and promote their inclusion in other beneficial group activities. 5) Make drought a more explicit and central focus of resilience-building efforts in drought-prone areas and coordinate with wider drought management strategies.

Gender and Youth

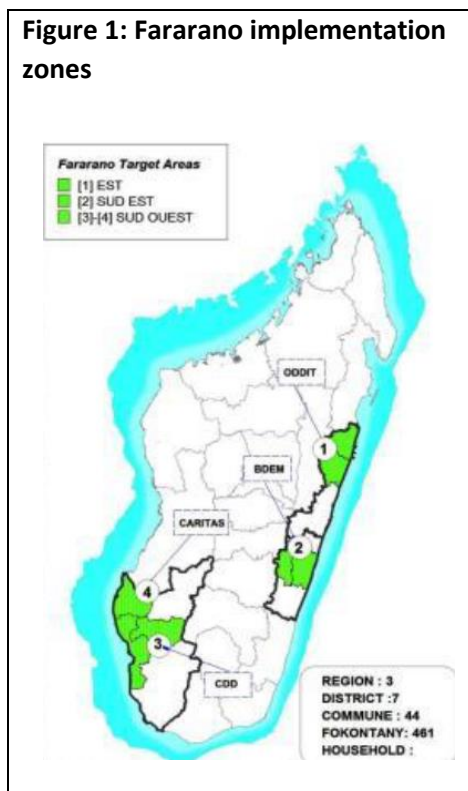
1) Consider waiting until SILC groups are operational before implementing SBCC on gender-equitable decision-making about use of household revenue. 2) Support *Miranjaka* to strategically target their SBCC

activities to focus on Producer Organization and SILC group member households. 3) Systematically mobilize traditional leaders as advocates for reimagining rigid gender-based roles and identities. 4) To draw on the full potential of youth, target local and traditional leaders, parents, and even project staff with SBCC designed to lift social and cultural barriers to youth empowerment. 5) Create separate groups for older and younger youth, with approaches tailored to members' age- and gender-specific priorities and needs. 6) Consider approaches that promote youth-driven problem solving and learning to enable progress from youth mobilization to true youth engagement.

1. INTRODUCTION

1.1 Program Background

In fiscal year (FY) 2014, the United States Agency for International Development (USAID) Office of Food for Peace (FFP) awarded two new cooperative agreements for Development Food Security Activities (DFSAs) in Madagascar: the ASOTRY project, implemented by Adventist Development and Relief Agency (ADRA) and partners; and the Fararano project, implemented by Catholic Relief Services (CRS) and partners, the National Cooperative Business Association/Cooperative League of the United States of America (NCBA/CLUSA), the Development Board of the Diocese of Toamasina (ODDIT),² the Development Office of Ecar Mananjary (BDEM),³ Caritas Morombe, and the Development Council of the Diocese (CDD).⁴



The Fararano project goal was to reduce food insecurity in 44 communes in three of the six USAID/FFP priority regions: Atsinanana, Vatovavy Fitovinany, and Atsimo Andrefana. The program had three purposes: 1) Undernutrition is prevented among children under two years of age (CU2); 2) Increased household incomes (monetary and non-monetary); and 3) Community capacity to manage shocks is increased. Under these three purposes, CRS and its partners implemented a wide range of activities to increase consumption by women and children of diverse, nutritious food; increase utilization of maternal health and child health and nutrition (MCHN) services; promote optimal water, sanitation and hygiene (WASH) practices; increase diversified agricultural production; increase on- and off-farm household incomes; strengthen community disaster mitigation, preparedness and response systems; and strengthen community-based social safety net mechanisms. Promoting gender-equitable decision-making was a cross-cutting priority in the project design. The project's total estimated award amount was \$43 million.⁵

This final evaluation of Fararano is the second and final phase of a pre-post evaluation strategy for both DFSAs. The baseline

study for both projects was conducted by ICF International and its subcontractor, Agence CAPSULE, from January – September 2015 (ICF International, 2016). It employed a mixed-methods approach and provided results from the baseline survey and qualitative study. A joint midterm review of ASOTRY and Fararano was conducted in April/ May 2017 (JMRT, 2017). The endline evaluation was conducted by TANGO International and Agence CAPSULE from May – November 2019.

² French acronym: Organe de Développement du Diocèse de Toamasina

³ French acronym: Bureau du Développement de l'Ecar Mananjary

⁴ French acronym: Conseil Diocésain de Développement

⁵ All \$ amounts are United States dollars.

1.2 Theory of Change

Fararano’s theory of change (TOC) (Figure 2, page 5), as articulated in its technical application, is summarized as follows: If community-based service providers and structures have the appropriate and necessary skills, resources, motivation and linkages at-hand, then they will be able to encourage, train and support households (HH) and community members to actively participate in and acquire an integrated set of knowledge and skills; develop gender-equitable and inclusive decision-making processes; demonstrate optimal health and nutrition behaviors during critical periods (1,000 days); adopt sustainable agriculture, environment and natural resource management (NRM) practices; and put in place mechanisms to mitigate and respond to shocks. The adoption and demonstration of these behaviors and practices will prevent undernutrition of CU2, permit households to build assets through increased on-farm production, income diversification and market linkages, and contribute to increased household and community resilience to shocks and reduce natural resource degradation (CRS, 2014).

This TOC was further articulated into a program framework addressing the key elements of food security, i.e., availability, access, utilization, and resilience to shocks (CRS, 2015). Fararano’s three project purposes were designed to address these elements: Purpose 1 (Utilization); Purpose 2 (Availability and Access); and Purpose 3 (Resilience), as depicted in Figure 2 (page 5).

2. EVALUATION OVERVIEW

2.1 Evaluation Purpose

The overall purpose of this final evaluation was to measure the development outcomes of the Fararano project. More specifically, the purpose was to:

- 1) Provide endline estimates for population-level impact and outcome indicators, which will serve as a point of comparison for the baseline evaluation;
- 2) Provide evidence to prioritize and refine future DFSA interventions (i.e., Refine and Implement).

The specific objectives of the endline evaluation were the following:

- 1) Determine the endline values of key impact and outcome level indicators—disaggregated by awardee, age, and sex as appropriate— in addition to endline values of demographics in target areas and appropriate independent variables;
- 2) Conduct bivariate and multivariate analyses of impact and outcome indicators, with results provided by awardee and the overall Title II country program area;
- 3) Gather qualitative data to assist in validation and interpretation of the quantitative survey data and provide contextual information on the overall food insecurity and malnutrition situation in order to provide feedback to the IPs and FFP, in addition to recommending program adaptations for future procurements; and
- 4) Assess progress toward end-of-program targets for impact and outcome indicators.

The final evaluation uses a mixed-methods approach comparing endline quantitative and qualitative data to the baseline data and the findings of the mid-term evaluation, in order to identify and understand the factors that contributed to development outcomes, identify barriers to performance in achieving these outcomes, and provide useful recommendations to CRS as the primary implementing agency—recommendations that should be useful for follow-on and future projects.

2.2 Evaluation Questions

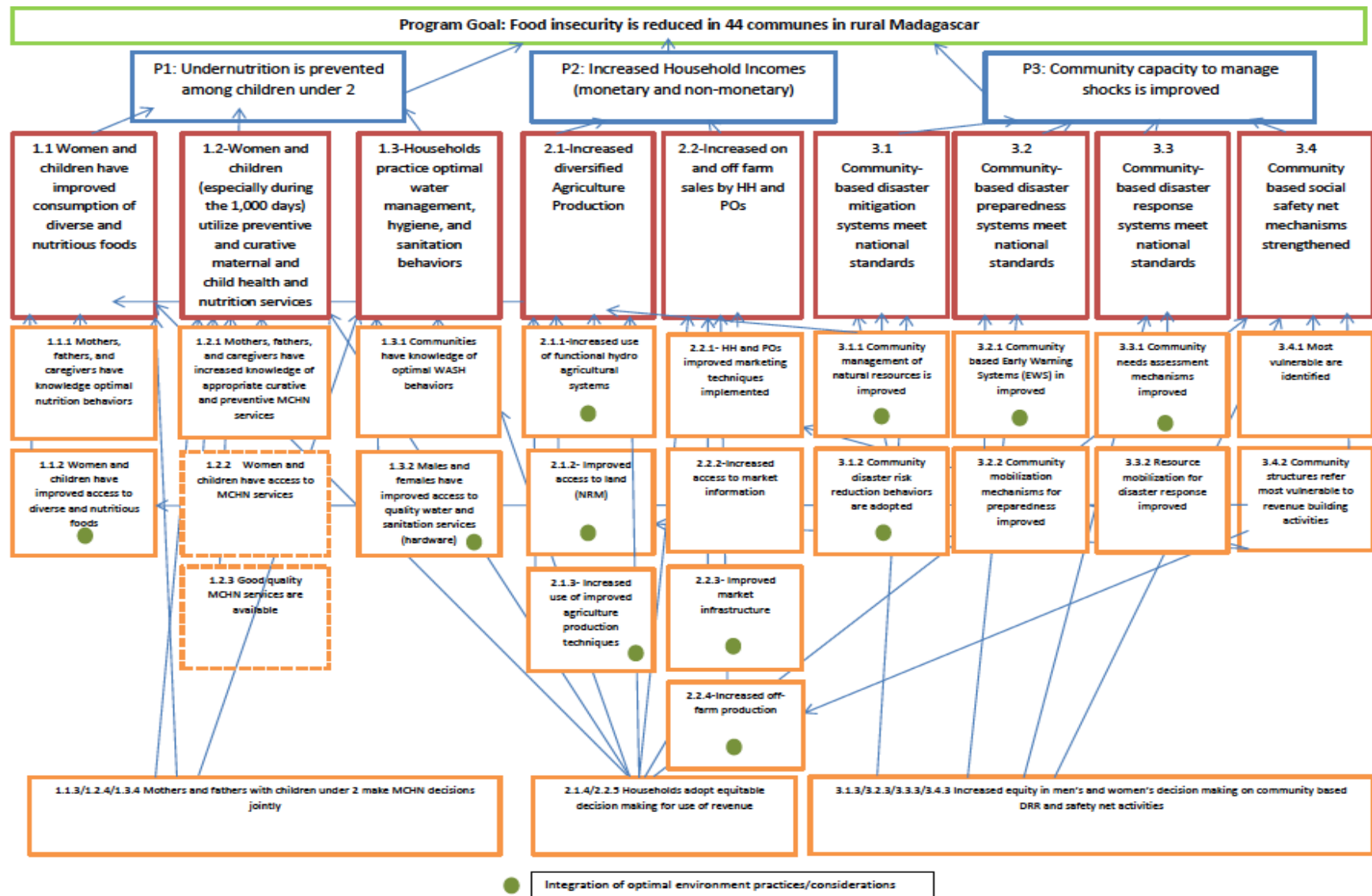
The evaluation was designed around the following questions:

Table 1: Primary evaluation questions and methods

Criteria	Main evaluation questions	Sub-questions	Evaluation method
Impact	<p>1. To what extent did the programs achieve the intended goal, objectives and results as defined by their Results Framework?</p> <p>2. How did program activities improve the ability of beneficiary households and communities able to mitigate, adapt to, and</p>	<p>1.1 Were there any important unintended outcomes, either positive or negative?</p> <p>1.2 What were the main reasons that determined whether intended outcomes were or were not achieved, and whether there were positive or negative unintended outcomes? Which reasons were under control of the programs and which were not?</p>	<p>1. Quantitative bivariate analysis</p> <p>2. Quantitative and qualitative</p>

Criteria	Main evaluation questions	Sub-questions	Evaluation method
	recover from food security shocks and stresses?		
Beneficiary satisfaction	3. How satisfied were beneficiaries with the programs?	3.1 What issues were most important to beneficiaries forming their perceptions of the programs? What were the key successes and challenges of the programs?	Qualitative
Relevance	4. How relevant was beneficiary targeting, considering the needs of the target population?	4.1 Were beneficiary targeting criteria and processes appropriate, transparent, and properly implemented? 4.2 Were the scale, type, and timing of the program activities appropriate to the needs of the target population?	Qualitative
Effectiveness	5. How well were program activities planned and implemented?	5.1. What were the main factors that contributed to whether activities resulted in intended outputs and outcomes? 5.2. What quality standards were defined? How did the programs develop those standards?	Quantitative and qualitative
Coordination	6. To what extent did the programs coordinate with other food security and humanitarian programming, the host country government, and the donor?		Qualitative
Sustainability and Replicability	7. How sustainable are the programs' outcomes?	7.1. What exit strategies were incorporated into program design? Were such strategies implemented, how were they perceived by the beneficiary population, and what were the strengths and weaknesses of the exit strategies adopted?	Qualitative
Cross-cutting issues	8. How well were gender and environmental considerations integrated into program design and implementation?	8.1. Were they successful in meeting their stated objectives? How?	Quantitative and qualitative
Lessons Learned	9. What lessons can be learned future FFP and USAID Title II in Zimbabwe?		Quantitative and qualitative

Figure 2: Fararano Theory of Change



3. EVALUATION METHODS

3.1 Quantitative Data Collection

3.1.1 Overview

The objectives of the quantitative endline survey were to provide endline estimates of FFP program indicators, measure changes in indicators over the five-year program cycle, and provide evidence to prioritize and refine interventions. The analysis followed a pre-post design in which the same survey that was used in 2015, at the start of program implementation, was repeated in 2019, as the program was wrapping up. Pre-post designs provide for measurement and statistical tests of changes in indicators between the baseline and endline, but do not allow for attribution or causation.

The quantitative data were collected via an in-person, population-based survey (PBS) of 1,093 households in the three regions where the Fararano project was active. Survey fieldwork took place in June 2019. TANGO International and Agence CAPSULE collaborated for survey training, household listing, and fieldwork (details in Annex C). TANGO converted the paper-based baseline study questionnaire provided by FFP in English and Malagasy into a tablet-based digital format using Open Data Kit (ODK) and enumerators administered the survey using tablets.⁶ In addition to household identification/consent and the roster, the survey included technical modules that explore household hunger and coping strategies; dietary diversity and food consumption; poverty; water, sanitation and hygiene practices; agricultural practices; women’s health and nutrition; children’s health and nutrition; and gender equity.

3.1.2 Population-Based Sample Design

The statistically representative sample was selected using the same multi-stage clustered sampling approach used in the baseline (ICF International, 2016). While the sampling frame for the baseline was constructed using enumeration areas (EAs) from the 2008-2009 census (INSTAT, 2009) the endline survey used the new, redefined EAs, which were updated for the 2019 census. Fararano program staff provided TANGO with a list of selected communes in each district, and TANGO used these communes to identify all EAs in the project area for inclusion in the sampling frame. Stunting, one of several key measures of food insecurity, was used to compute sample size in the baseline and endline surveys. Sample size is the minimum number of households necessary to detect whether stunting decreased by 6.5 percentage points, the reduction targeted by the project.

Table 2: Baseline values for variables used in sample size calculations

Variable	Baseline values	
	ASOTRY	FARARANO
Total number U5 in BL	1,902	1,809
Stunting rate	53.6	39.6

⁶ See Annex J for the household questionnaire and anthropometry survey.

Variable	Baseline values	
	ASOTRY	FARARANO
Design effect	1.96	2.25
% sampled population U5	16.1	16.1
Avg household size	5.3	4.9

In the case of the two Madagascar DFSAs, FFP called for a sample size of approximately 2,150 households across both projects (1,019 for ASOTRY and 1,131 for Fararano). These minimum sample sizes were computed to be able to detect a difference of 8 percentage points in the stunting rate from baseline to endline using FFP sampling guidance (Stukel, 2018). The values applied in the computations are based on the baseline values for relevant variables (see Table 2). The final target sample size of 2,160 households is derived from the selection of 72 EAs and 30 households per EA, and includes a non-response adjustment of 5 percent.

The characteristics of the quantitative endline sample population and the key household demographic characteristics of the sample are summarized in Table 4 and

	Overall	ASOTRY	Fararano
Total households	228,082	94,109	133,973
Adult Female no Adult Male	37,916	16,319	21,597
Adult Male no Adult Female	17,184	5,367	11,817
Male and Female	170,186	71,389	98,797
Child No Adults	2,796	1,034	1,762
Gendered household type (Percent of households)			
Adult Female no Adult Male	16.6	17.3	16.1
Adult Male no Adult Female	7.5	5.7	8.8
Male and Female	74.6	75.9	73.7
Child No Adults	1.2	1.1	1.3
Average household size (Number of persons)	4.8	5.1	4.6
Percent of households with children under 5 years of age	56.8	57.6	56.3
Percent of households with a child 6-23 months of age	22.9	22.5	23.1
Percent of households with a child under 6 months of age	6.6	7.6	5.9
Household headship (Percent male)	76.3	74.3	77.7
Education level of head of household (Percent of households)			

	Overall	ASOTRY	Fararano
No formal education	32.5	28.8	35.2
Pre-primary	1.8	3.3	0.7
Primary	39.1	45.2	34.7
Secondary	25.1	22.0	27.4
Higher	1.5	0.7	2.1
Number of responding households	2,073	980	1,093
Adult Female no Adult Male	349	167	182
Adult Male no Adult Female	147	55	92
Male and Female Adults	1,556	748	808
Child No Adults	21	10	11
Note: Adults are defined as individuals 18 or older.			

of Annex H. In both cases, the results are based on a total of 2,073 completed household interviews, 980 in the ASOTRY project area and 1,093 in the Fararano area. The population estimates provided here are based on the individual-level data collected from the endline household survey and weighted to represent the entire project area. At endline, the average household in the Fararano project area included 4.6 members. Three-quarters of Fararano households include an adult male and female (74 percent). There are more households with adult females only (16 percent) than those with adult males only (9 percent). Overall, over three-quarters of households are headed by males (78 percent) and less than three-quarters of household heads (70.6 percent) have completed a primary level of education or less.

3.1.3 Data Analysis

Annex D shows indicators, disaggregates and the corresponding questionnaire module. The endline indicator calculation methods are the same as those for the baseline survey. Methods for tabulation of all FFP and project-specific indicators follow the procedures outlined in the Data Treatment and Analysis Plan from the baseline survey (ICF International, 2016) and FFP (FANTA III, 2015). As for the baseline, child stunting and underweight indicators were derived from the WHO child growth standards and associated software (WHO, 2011), but calculated using a Stata command developed for this purpose (Leroy, 2011). Expenditures and poverty indicators were calculated following World Bank guidelines (World Bank, 2019).⁷

In addition to tabulating the indicators calculated in the baseline report, the endline report compares key baseline and endline indicators (Annex F).⁸ All analyses are weighted to reflect the full target

⁷ See also Appendix C of the baseline survey report (ICF International, 2016).

⁸ Indicators were calculated for each project separately as well as for both projects combined. Only the results for Fararano are reported here.

population. Stata version 15 (Stata Corp, 2017) was used for analysis and statistical testing. Bivariate analyses including disaggregation by key sub-populations were also conducted for each project area. Firstly, given that Fararano included two distinctly different geographic zones⁹ with fairly different livelihood strategies (FEWS NET, 2013, 2017a, b), a comparison was made between baseline and endline results separately for those in the East and those in the South (see Annex G). Secondly, endline household survey respondents were asked whether they participated regularly in any of the project activities. Respondents who answered "yes" are considered "direct participants" while those who answered "no" or "don't know" were classified as "indirect participants." The endline indicators for direct and indirect participants were compared to the baseline indicators (see Annex G). In addition to this, statistical tests compared direct to indirect participants. Regression analysis was also carried out on selected dependent variables and is reported on in Annex I.

All tests of statistical difference indicated by the symbols in the figures in this report (i.e., ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001) are between baseline and endline.

3.1.4 Sample weights

Sample weights were computed for each indicator. The sampling weight is the inverse of the product of the probabilities of selection from each stage of sampling (EA selection and household selection). Separate weights were derived for each indicator and adjusted to compensate for household and individual non-response, as shown in Table 3. For modules that asked questions at household level (modules C, F, and H) weights were the inverse of the probability of EA selection, multiplied by the inverse of the probability of household selection, multiplied by the household inverse of the household response rate. For modules D, E, G, J and K that asked questions at the individual level, the sampling weights were calculated for all eligible individuals and also include the inverse of the individual response rate.

Table 3: Survey response rates

	Number Sampled	Number Interviewed	Response Rate (%)
Households (Modules C, F and H) *	1,020	980	96.1
Children 0-59 months of age (Module D)	815	781	95.8
Women 15-49 years of age (Module E)	1,098	986	89.8
Non-pregnant women 15-49 years of age (Module E Women's Anthropometry)	889	1,010	113.6
Farmers (Module G)	1,348	1,148	85.2
Primary male decision-maker (Module J)	365	313	85.8
Primary female decision-maker (Module J)	172	151	87.8
Primary male decision-maker (Module K)	225	95	42.2
Primary female decision-maker (Module K)	314	258	82.2
*Non-response rate was less than the allowed 5 percent for the survey as a whole.			

⁹ Fararano was active in three regions: Atsinanana, Vatovavy Fitovinany and Atsimo Andrefana. The regions Atsinanana and Vatovavy Fitovinany are in the humid eastern area and are referred to as the Eastern zone or the East. The region of Atsimo Andrefana is in the south, a hotter and drier area, and is referred to as the Southern zone or the South.

3.2 Qualitative Data Collection

3.2.1 Overview

The qualitative component consisted of document review, focus group discussions (FGDs), key informant interviews (KIIs), and observation of infrastructure investments. Given the project's broad scope and wide geographic coverage, the Fararano qualitative team made intentional choices to focus its efforts on fewer sites with greater depth and on the impact, effectiveness, and sustainability of key intervention models promoted under each Purpose. In addition, significant attention was accorded to youth and gender as important cross-cutting themes. The core of this qualitative study was a set of FGDs and KIIs at the *fokontany* level, targeting: mothers in Care Groups; Lead Mothers; Lead Farmers; and members of Producer Organizations (POs), Savings and Internal Lending Communities (SILCs), youth groups; Gender Champions (*Miranjaka*); Natural Resource Management (NRM) Committees; and Disaster Risk Management (DRM) Committees.

3.2.2 Sample Design

Qualitative sampling followed a purposive site selection process with input from CRS and its IPs. A total of 15 *fokontany* were selected, of which 10 are “core evaluation sites” in which the full set of tools was used. Core sites cover Fararano's work in six districts in all three project regions and sites served by all four IPs. In addition to geographic coverage, site selection took into account relative performance, accessibility, and proximity to infrastructure investments. See Annex E for the full list of sites visited.

3.2.3 Evaluation Team

The qualitative evaluation team consisted of four members (two female and two male), of whom three were international and one national. Collectively, the team has expertise in the technical areas covered by the project: livelihoods, MCHN, WASH, gender, youth, DRM, and resilience. The evaluators were assisted in the field by a team of interpreters, note takers, and drivers provided by Agence CAPSULE.

3.2.4 Methods

Desk Review

Team members undertook an extensive document review as a part of the qualitative study. TANGO assembled an initial set of project documentation and made it available to team members on Dropbox. Team members added, identified, and reviewed a significant amount of additional documentation, including relevant lessons-learned documentation generated by CRS on many of Fararano's key intervention models.

FGDs and KIIs

The FGDs and KIIs were organized around the main intervention models promoted by CRS under each of Fararano's three purposes. Most tools were developed by the Team Leader and then finalized by each team member according to his/her area of expertise of expertise. (See tools in Annex J). A standard set of FGDs was conducted in each site. The team conducted a total of 80 FGDs in the ten core sites. Participants totaled 625 (399 F, 226 M). The team conducted a total of 45 formal KIIs (19 F, 29 M), including certain types of project participants/volunteers at the *fokontany*/commune level: SILC Private

Support Providers (PSP) and *Miranjaka* (Gender Champions). KIIs were also conducted with senior staff of CRS and its IPs, as well as four GOM partners. Annex J summarizes the FGDs and KIIs conducted.

Direct Observation

Full days were spent in core evaluation sites, which allowed time to observe the condition of these villages and their residents. Road travel between sites and regions allowed additional time to observe conditions in the project area. In addition, a selection of eight infrastructure investments (water, sanitation, irrigation, feeder roads) were identified in target communes for visit during fieldwork; in practice, roughly a dozen such sites were observed.

Analysis, Coding, and Interpretation Methods

FGDs and many KIIs were voice recorded with participants' verbal consent, and both evaluators and note takers took written notes. All notes were subsequently uploaded to Dropbox. Individual evaluators used matrices to summarize their notes for each category of FGD (e.g., Lead Mothers). These matrices informed the identification of strengths, weaknesses, and lessons learned in relation to each key intervention model and have, in turn, fed directly into the findings of this report.

3.3 Integration of Qualitative and Quantitative Data

The methodology followed a mixed-methods evaluation protocol. The data from the endline survey and the qualitative study were analyzed independently using techniques appropriate to each dataset. Integration of the findings from each data source involved two components: i) findings arising from analysis of the qualitative data were used to help interpret those from the PBS data analysis; and ii) where relevant, findings from the PBS data were integrated with those from the qualitative data analysis to produce a more complete picture for each evaluation question.

3.4 Limitations

ODK programming of NRM questions. The natural resource management (NRM) questions in Module G were asked only of those farmers who kept livestock and not of those engaged only in crop production. In most cases, farmers planted crops and kept livestock, so they were asked the NRM questions anyway. The programming error only impacted the few who only planted crops and had no livestock. At the analysis phase the N (denominator) was adjusted to reflect the correct number so that the results were comparable to the baseline.

ODK programming of gender-cash questions. Module J (gender-cash) questions were only asked to adults who were married/living together AND earned cash. For this reason, when Module B (household roster) was programmed, the cash-earner question was only asked to adults who were married. This meant that in the household roster there was not a count of *all* adults (married or not) who earned cash, which was needed to calculate the first cash indicator in Module J *percentage of men and women who earned cash in the past 12 months, overall and by sex*. It was only possible to calculate *percentage of men and women in a union who earned cash in the past 12 months, overall and by sex*. In order to make the baseline and endline values comparable, analysts re-estimated baseline values of the indicator *percentage of men and women who earned cash in the past 12 months, overall and by sex* so that it corresponds to the endline indicator.

Agricultural practices terminology. Since the endline was intended to replicate the baseline, ODK programmers replicated the options and wording used in the baseline survey. This was problematic for some questions in Module G (agriculture). During the qualitative phase of the work, the practices/techniques described in FGDs and KIIs with Farmer Field School (FFS) participants did not correspond well to those listed in the survey tool: some practices listed as response options in the tool were not observed in the field, and others that were observed were not listed in the tool. Moreover, when asked to describe the new techniques they had learned in the FFS, participants in the qualitative study found great difficulty to say more than “we learned better planting techniques” or “we planted better seed.” When they did describe a new practice, they often used terminology that did not appear in the list of choices that had been made available to survey respondents. Without survey response options that reflect farmers’ actual agricultural practices, and the terminology farmers use, the survey tool may not capture data accurately—respondents may end up choosing response options that do not reflect what they are actually doing. While this does not impact a respondent’s opinion of the usefulness of the agricultural interventions, it does raise questions as to the validity of these indicator measures at both baseline and endline. This may help to explain some of the apparent inconsistencies in the quantitative and qualitative data relating to agricultural indicators.

Small qualitative sample. Given the broad scope of Fararano activities, the qualitative study was designed to focus in order to go into greater depth. One resulting limitation is the small number of sites that could be visited (15 *fokontany* in total) in the short period of time available for fieldwork. While a concerted effort was made to ensure that the sites visited were representative of the project area as a whole (e.g., reflecting the range of regions, districts, IPs, and ease of access), care should be taken in extrapolating findings from the sites purposively selected to the project area as a whole. Additionally, it should be noted that CRS’s IPs were asked to identify both high-performing and poor-performing sites for consideration in site selection, and the final mix of sites visited reflects the full spectrum (low-medium-high) of performance. However, poor-performing sites, some with idiosyncratic characteristics, were slightly over-sampled in the final mix of ten sites where all survey tools were utilized. This came about as a result of working with CRS to put together a viable field plan that could be implemented within the time available, working from the long list of suggested sites to the final list of sites to be visited. The implications of this were discussed at length with CRS and partners during the Validation Workshop. The evaluation team has taken care in this report to avoid attributing undue importance to results from the poorest-performing sites.

Scope of interventions assessed. The qualitative tools focused on intervention models which, based on extensive document review and consultation with project staff, were identified as most important to the achievement of project purposes and/or most worthy of closer examination. This limited the amount of information gathered on other project interventions. In addition to key models related to each project Purpose, those related to gender and youth as a cross-cutting theme were prioritized.

Range of KIIs. A final limitation is the limited range of KIIs conducted. CRS and IP staff KIIs were primarily at the senior staff level, with very few field staff interviewed. In addition to time constraints, opportunities to interview field staff were greatly limited by the fact that the project had already ended by the time that the qualitative study was undertaken, so the great majority of project staff were no longer employed by CRS and its IPs. Time constraints, and a very intentional focus on *fokontany*-level data-gathering, also put limitations on the number of KIIs conducted with GOM actors, with only a sample of national level partners interviewed and virtually no interaction with government authorities at commune, district or regional levels.

4. EVALUATION FINDINGS

This section presents findings on the impact of Fararano on participating households and communities during the life of the project. Rates of undernutrition for children under 5 (CU5) decreased significantly, while per capita expenditures increased significantly. Progress in the diversification of both production systems and diets were also observed during the qualitative study. Whether improved nutritional outcomes are sustained will, however, depend largely on whether behavior changes outlast the project and its food distributions, which were reported to have increased household food availability, particularly during the lean season. Whether short-term nutritional outcomes can be sustained will also depend heavily on the results of the project's livelihood activities, which only reached about 50 percent of 1,000-day households. The focus of the qualitative study was on the impact, effectiveness, and sustainability of selected key interventions across Fararano's three purposes, and the findings in this regard varied widely, with SILC groups found to have the broadest impact and highest sustainability. In addition, the qualitative work explored several key aspects of overall project design and implementation that affected outcomes, particularly Fararano's scope and complexity and the degree of integration of activities within and across project purposes. Finally, the qualitative study also explored in some depth Fararano's work to promote gender-equitable decision-making and youth engagement.

4.1 Targeting

Fararano employed relevant and appropriate targeting strategies, which are discussed below at two levels. While appropriate, these targeting strategies had broader implications for project implementation and the integration of activities across project purposes.

Geographic targeting: In FY18, Fararano reported working in 464 *fokontany* in 48 communes¹⁰, spread across seven districts in three regions (CRS, 2018a). Based on qualitative fieldwork in ten communes in six districts across the three regions, the evaluation team can confirm Fararano's integrated package of interventions was highly relevant to the needs of the target population in these communities. That said, the qualitative study did surface issues of perceived relevance in relation to specific intervention models; those are addressed, where appropriate, in subsequent findings sections of this report.

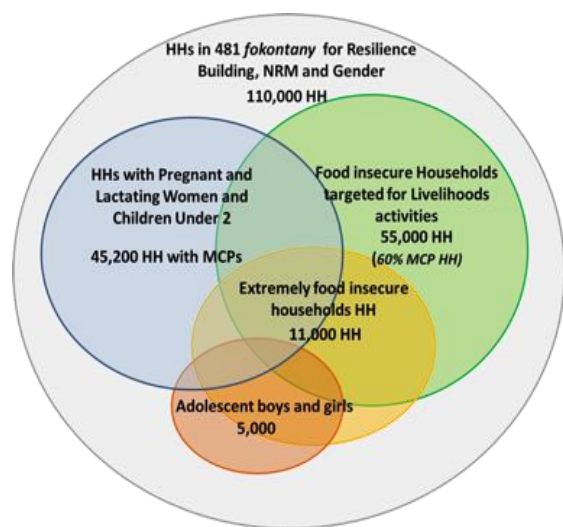
While the project's geographic targeting approach was conceptually appropriate, the resulting geographic dispersion of the three project zones, and the very different challenges and opportunities presented by each, posed many challenges for project implementers, ranging from mundane logistics to the complexity of tailoring approaches to highly diverse local conditions (e.g., agro-ecological zones and livelihood systems). Given the purposive approach to site selection for the qualitative study, the evaluation team also observed a wide range in project performance across locations. Those sites self-reported as "poor performers" by CRS' IPs were observed to be lacking local dynamic leadership and were often in either remote locations or near cities/along main roads. While the qualitative study included several relatively remote sites, no extremely remote sites, which require more than one full day of travel to reach, were included in the site visit plans due to time constraints.

¹⁰ Fararano initially targeted 44 communes but, during the life of the project, a few communes split and created new communes and some new *fokontany*.

The issue of geographic targeting was raised in the Joint Mid-Term Review (JMTR) (JMRT, 2017), which recommended that the project exit from all remote *fokontany* requiring more than one day to reach in order to free up resources to cover more households in the remaining areas. In the end, the project team declined to implement this recommendation based on its commitment to see through the work it started, and the project only exited two remote sites with security problems in Morombe District. (CRS Staff KII). While the evaluation team concurs with the project team’s decision, there is no doubt that the geographic dispersion of project sites (between and within regions) undermined the project’s ability to provide adequate site support and supervision, including to the most remote communities. After the JMTR, Fararano did take some steps to ensure quality in remote sites, including increasing staffing, using quality checklists, and increasing visits to remote sites by CRS specialists (CRS, 2017b).

Conclusions: It was entirely appropriate for Fararano to target highly food-insecure communities in remote locations. However, the inclusion of such sites compounded the challenges for project implementers, whose staff numbers were inadequate during the project’s early years. For future integrated food security initiatives, additional resources should be allocated from the outset to allow for regular on-site follow-up, if a significant number of very remote sites are included. Highly remote sites present a unique set of opportunities and challenges, which may also require the development of tailored approaches to achieve project food security outcomes. While CRS and its IPs report that very remote communities are often the most receptive and motivated, they nonetheless present unique challenges, such as poor access to markets and government services, and providing them adequate staff support is inherently less efficient in terms of cost per beneficiary.

Figure 3: Fararano beneficiary targeting approach



Beneficiary targeting: The Fararano design incorporated a beneficiary targeting strategy driven by the project’s goals (Figure 3). Fundamental to that strategy was the goal of reaching the maximum number of Mother-Child Pairs and their households during the critical 1,000-day period to prevent the long-term effects of chronic undernutrition. Of the targeted 45,200 Mother-Child-Pairs households targeted for MCHN activities, 60 percent of those were also to be targeted for livelihoods activities under Purpose 2. Therefore, of the 54,000 households targeted by livelihoods activities, roughly half (27,100) were Mother-Child-Pairs households, with the rest consisting of vulnerable households and other farmers participating in SILC and Producer Organizations (CRS, 2014). In FY18, Fararano reported reaching a total of 70,000 households (70

percent of the population in the target *fokontany*), of which 45,000 were Mother-Child-Pairs households (CRS, 2018a). This approach to targeting resulted in some integration across project purposes, but still

meant that about one-third of participating households benefited from Fararano’s integrated package of interventions.¹¹

The failure of the project’s beneficiary targeting strategy to deliver a comprehensive intervention package to the majority of Fararano households was strongly criticized in the JMTR, which said that this was likely to result in households remaining food insecure. Following the JMTR, the Fararano team took some steps to improve integration within and between project purposes. These steps included developing a poster, subsequently used by Lead Mothers and field agents, to better inform households of the different activities in their community. In addition, joint field visits and trainings were conducted by field agents across the three project purposes to follow up on specific activities (home gardens, SILC, food transformation) (CRS Staff KII; CRS, 2017b). A target of 60 percent participation of 1,000-day households in livelihood (P2) interventions was set, but the project achieved only slightly more than 50 percent P1-P2 integration.

Conclusions: In the future, in order to sustain the optimal MCHN behaviors and practices promoted, consideration should be given to involving the overwhelming majority (as close to 100 percent as possible) of 1,000-day households in one or more livelihood activities. While Fararano took steps to increase integration after the JMTR, it is difficult to make such dramatic mid-course corrections, and the steps taken proved to be insufficient to overcome the limitations of the initial targeting strategy.

4.2 Purpose 1: Undernutrition is prevented among children under 2 (CU2)

4.2.1 Introduction

Fararano activities in support of Purpose 1 focused on optimal nutrition behaviors and access to food; utilization of health and nutrition services; and optimal hygiene behaviors and access to quality WASH services. The final evaluation results point to some successes, but critical gaps remain in each domain. The qualitative study focused on evaluating Fararano’s Care Group approach and the activities of Lead Mothers targeting 1,000 days households. This should not be interpreted as a statement on the quality or contribution of the other Purpose 1 approaches designed to help achieve project outcomes, and the analysis of the results should keep the scope of the qualitative study in mind.

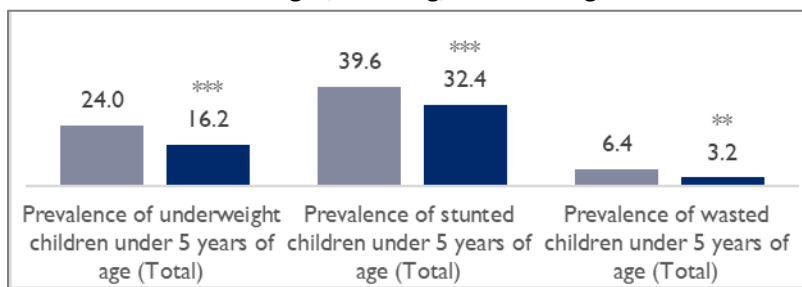
4.2.2 Results

Between baseline and endline, there were significant reductions in the prevalence of children under five years of age (CU5) malnutrition (Figure 4), especially in the East. The greatest improvements measured were in rates of underweight and wasting, and Fararano exceeded its end-of-program targets for both indicators. In FGDs, direct participant mothers reported their children were gaining more weight and were sick less often than before, which they believed could be linked to the improved hygiene and nutrition practices promoted by Fararano.

¹¹ Annex H, Table 12, shows that 69.4 percent of endline survey respondents who were Fararano direct participants in the project participated in two or more project activities. There was considerable overlap between activities such that 40.5 percent of direct participants participated in both nutrition training and agriculture training.

Figure 4: Children’s health and nutrition indicators

Prevalence of CU5 underweight, stunting, and wasting declined from **baseline** to **endline**.



ns = not significant, + p<0.1, * p<0.05, ** p<0.01, *** p<0.001
 Source: Quantitative survey

4.2.3 Sub-purpose 1.1: Women and children have improved consumption of diverse and quality foods

Mothers’ comments regarding improvements in child weight and health reflect Fararano’s TOC, which considers optimal nutrition behaviors and access to food necessary conditions for improving dietary diversity and quality, and for child nutrition overall. Consistent with the positive trends in CU5 malnutrition rates, the endline data suggest children’s food consumption patterns have improved as a result of their mothers’ improved nutrition behaviors and greater access to nutritious foods. The quantitative data show a significant increase in the prevalence of children 6-23 months receiving a Minimum Acceptable Diet (MAD) among direct participant households (from 4.6 percent at baseline to 14.6 percent at endline), primarily for boys (Annex F), although Fararano missed its end-of-program target of 30 percent. The progress on MAD is substantiated by data from the qualitative study, which generated multiple reports of children fed “rainbow foods,” even if mothers’ definition of rainbow foods was sometimes limited to “colorful” foods, instead of diverse foods from each of the seven food groups prioritized by the National Office of Nutrition (ONN).¹² In high-performing sites, mothers also described new practices, including planting home gardens with a variety of vegetables and adapting strategies to ensure healthy complementary feeding remained a priority, even during periods of food scarcity.

Even though the qualitative study was unable to verify the amounts of produce consumed by households or sold to help cover other food needs, the data suggest Fararano’s promotion of home gardens has contributed positively to child nutrition. At high-performing study sites, most mothers had gardens and were growing new varieties of vegetables. Some had applied learning from project training on food conservation and reported feeding their children processed vegetables and other staple foodstuffs. Fararano’s seed distributions were identified as a factor motivating home garden practices and had encouraged some mothers to research and seek additional new types of seeds and tree seedlings to plant.

The qualitative data also suggest mothers may be attaching greater importance to complementary feeding than at baseline, based on their descriptions of how they prioritize children’s dietary diversity and quality, even during periods of food scarcity. In FGDs, mothers described managing household food purchases to enable adding at least small quantities of highly nutritious foods to their children’s diets, and collaborating with Lead Mothers and other 1,000 days mothers to access nutritious foods at low cost, i.e., making group purchases of ground meat, divided into portions costing only 200 Ariary per

¹² French acronym: Office National de Nutrition

child; and taking seasonal work specifically to earn money for improving their children's diets. Mothers also reported increased use of a variety of affordable staple foods and were adding cassava, bananas, and breadfruit to family meals, using recipes shared by Lead Mothers during cooking demonstrations.

However, the qualitative study still found evidence at endline of what had been observed at baseline: some mothers were reducing household expenditures, and even their own food consumption, to better feed their children. Mothers at poor-performing sites often reported they were challenged to use healthy coping strategies to overcome food shortages and would resort to sub-par nutrition practices.

The quantitative survey results suggest the impact of exclusive breast feeding (EBF) practices on child health and nutrition (CHN) outcomes is minimal, with no statistically significant change from baseline to endline (Annex G). FGD data suggested possible causes for this lack of improvement, including limited consideration given to EBF as an essential nutrition action. In the South, mothers failed to mention EBF unless solicited, and perceived their breastfeeding practices were adequate. Women's heavy agricultural workload, which forces mothers to leave infants with other caregivers, was cited as a barrier to EBF both at baseline (ICF International, 2016) and endline. At poor-performing sites, lack of clarity on Lead Mothers' and Community Health Volunteers' (CHVs) respective responsibilities may have reduced the impact of EBF behavior change communication.

Compared to children's nutritional status, the endline results for women's nutritional status are less positive. Although the quantitative data show a statistically significant decrease in the prevalence of underweight women (22.9 percent at baseline to 16.9 percent at endline) and an increase in the value of the Women's Minimum Dietary Diversity indicator (MDD-W), there was no change in the Women's Dietary Diversity Score (WDDS).¹³ These positive results for underweight and MDD-W appear to be driven by the data for indirect participants in both zones and by both types of participants in the East. There was no significant difference in the baseline and endline MDD-W values among those in the South. Additionally, there was no significant difference in WDDS among those in the East or the South. In other words, the data suggest that there has been little to no change in dietary diversity, while at the same time there has been some positive change in household and CU2 dietary diversity, reflected by the significant improvements in the Household Dietary Diversity Score (HDDS) and MAD indicator values seen only among direct participants. This observation aligns well with the qualitative data, which provide evidence of mothers prioritizing the quality of their children's diets over their own.¹⁴

Food distributions may have had a mixed impact on maternal and child nutrition outcomes. During FGDs, mothers commonly identified the 1,000 days rations and Food for Assets (FFA) distributions as the most appreciated and effective Fararano activities. Mothers perceived that when Fararano had been distributing rations, there was greater availability of food during the lean season and the duration of the

¹³ A note on interpreting the various dietary diversity measures (HDDS, MAD, MDD-W, WDDS) and measures of stress and coping (HHS, CSI): because they are based on current food consumption and other behaviors during the preceding day or month, these are highly responsive indicators and therefore impacted by changes in the current context. This is in contrast to the anthropometric indicators, which are not as responsive to immediate circumstances and thus give a better idea of the general trend over time.

¹⁴ It should also be noted that WDDS and MDD-W are based on a 24-hour recall of food groups consumed. In other words, the score can conceivably change from day to day depending on circumstances (which is why the survey asks if the previous 24 hours was unusual [such as for being a festival or day of fasting]). While the BMI can change fairly quickly, it does not respond to events in quite the same manner. In the case of the survey results, a positive change in the BMI points to general improvements in dietary intake whereas a decrease in either of the dietary diversity indicators implies a response to current circumstances – such as an environmental or economic shock that leads to a change in diet composition.

lean season was shorter overall. Purpose 1 social and behavior change communication (SBCC) activities were designed and timed to overlap with food distributions to increase beneficiary participation and coverage without aggravating mothers' time poverty. However, mothers' comments suggested they were distracted during the distributions—largely focused on receiving their share of rations—raising questions about the effectiveness of this activity targeting strategy. Additionally, the qualitative data from poor-performing sites indicated many mothers had used food rations to replace their families' regular diet, instead of as a supplement—possibly undermining the project's efforts to strengthen household capacities for ensuring dietary quality and diversity. As described by one mother from Morombe: "When we were building the road, I was still receiving food rations and did not worry about what we would eat. I prepared the rations distributed by the project, because they were nutritionally balanced foods."

4.2.4 Sub-purpose 1.2: Women and children (especially during the 1,000 days) utilize preventive and curative maternal and child health and nutrition services

Fararano's TOC considered improvements in MCHN knowledge and behaviors, and accessibility and availability of quality MCHN services, as preconditions for achieving gains in service utilization. When disaggregated for direct participants, the survey data show a significant increase in the rate of births receiving a minimum of four antenatal care (ANC) visits (49 percent at baseline versus 62 percent at endline), just short of the end-of-program target (64 percent) (Annex F). Consistent with these results, the qualitative study found satisfactory levels of knowledge of critical preventive and curative services available at local health centers and from CHVs, with direct participant mothers able to cite the timing, frequency, and benefits of ANC. Health center services they most commonly reported using were ANC, vaccination, and sick child consultations—having abandoned traditional practices for treating childhood illness.

However, there are indications that some of the challenges to child health care that existed at baseline persist. Mothers in the endline qualitative study noted some of the same barriers to MCHN service utilization as they had at baseline (ICF International, 2016), including the high cost of medicines for treating sick children. To overcome this barrier, they reported relying on Community Integrated Management of Childhood Illness (C-IMCI) CHVs as much as possible, and borrowing money when necessary. FGD participant mothers and fathers also found SILC group membership invaluable for this purpose. Distance from the health center remains a barrier to accessing preventative services at endline, and mothers also mentioned levels of insecurity, affirming that ANC utilization rates would be higher if services were closer. At poor-performing sites, CHV service coverage has shrunk over time, especially since the close of the USAID/Mikolo health program. Proof of ANC visits and vaccination was required¹⁵ to participate in 1,000 days ration distributions, but this approach should be reconsidered in future interventions. Without food aid as an incentive to utilize MCHN services, there is a risk of gains in utilization rates being reversed.

¹⁵ Although a card was "required," CRS reports that they never refused an eligible beneficiary from participating in food distributions for failure to present a card.

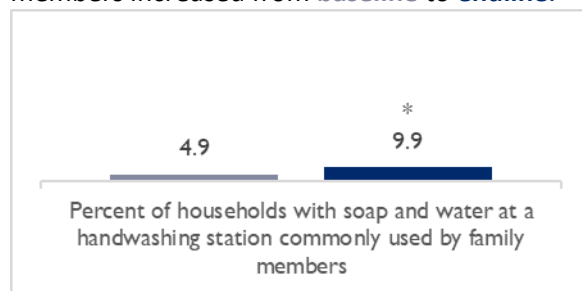
4.2.5 Sub-purpose 1.3: Households practice optimal water management, hygiene, and sanitation behaviors

In Fararano’s TOC, improvements in hygiene practices, access to potable water, and sanitation together, contribute to improved nutrition status. Although the endline quantitative survey measured progress across all domains, only a few indicator values showed statistically significant gains, and the project underperformed on all but one of its FFP WASH indicator targets: percent of households practicing correct use of recommended water bleaching.

Most direct participant mothers were able to recall the key WASH practices promoted by the project during FGDs, and affirmed they had learned the benefits of improved hygiene from Lead Mothers, reinforced by Fararano’s WASH communication campaign, community-led total sanitation (CLTS), and *Tanana Madio* (clean village) contests. Handwashing with soap was one of the project’s eight priority behaviors, and was consistently the first WASH practice mothers cited. Quantitative survey results corroborate significant improvements in handwashing practices (Figure 5). Still, the percent of households with soap and water at a handwashing station commonly used by family members remains low, well under the program target of 30 percent, and qualitative evaluators rarely observed handwashing devices at study sites. Use of improved hygiene behaviors was highest in the East, at 14 percent. The relative availability of water likely contributed to this positive result; mothers cited limited access to water as a handwashing barrier, and this is reflected in results from the more arid Southwest.

Figure 5: Use of improved hygiene behaviors

The percent of households with soap and water at a handwashing station commonly used by family members increased from **baseline** to **endline**.



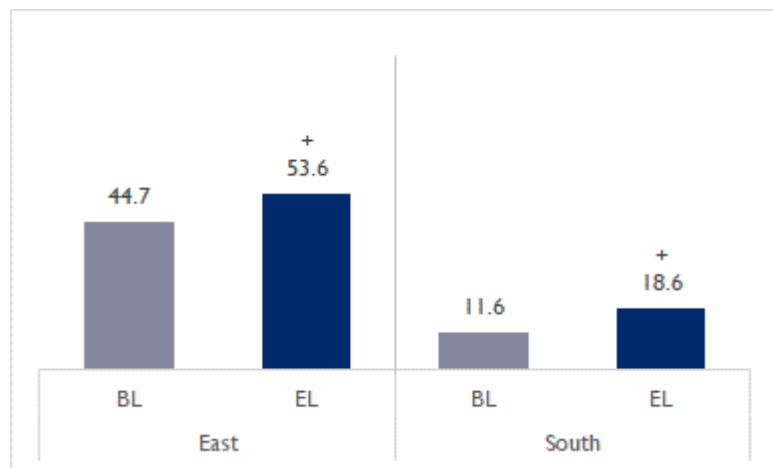
ns = not significant, + p<0.1, * p<0.05, ** p<0.01, *** p<0.001
Source: Quantitative survey

The quantitative data indicate that there was no statistically significant change in the percentage of households practicing correct use of recommended water treatment technologies (Figure 6). However, disaggregation of the results by geographic zone indicates that in the East, not only was the baseline value for this indicator (44.7 percent) already higher than the end-of-program target, but the endline value (53.6) also shows a statistically significant improvement. Similarly, in the South, there was a statistically significant increase from a much lower baseline of 11.6 percent to 18.6 percent at endline. When disaggregated by water treatment methods, the data show a statistically significant increase in the share of households practicing correct water bleaching. These quantitative results are substantiated by the qualitative data, with mothers at almost all study sites demonstrating knowledge of project-promoted water treatment technologies, namely boiling and using Sur’Eau® (a water purification product). Mothers reported Sur’Eau was available at local stores and sold by CHVs, and contrary to attitudes assessed at baseline (ICF International, 2016), they perceived Sur’Eau as relatively affordable compared to the medicines for diarrhea if their children fell ill. But like baseline, the FGDs found water

treatment is irregular, motivated by its appearance (dirty) and who is drinking it (children). In poor-performing sites, mothers reported treating water only during the rainy season.

Figure 6: Use of recommended household water treatment technologies

Use of recommended water treatment technologies increased in both project zones but from very different baselines.



ns = not significant, + p<0.1, * p<0.05, ** p<0.01, *** p<0.001
 Source: Quantitative survey

Quantitative survey results on sanitation behaviors are mixed but reflect poor performance overall for the project’s work in this area. There was a statistically significant decrease in the share of households practicing open defecation at endline, from 71.3 percent to 55.1 percent (Figure 7), but this still fell short of the target of 50 percent.¹⁶ Rates of households with access to improved sanitation facilities remain very low (2.8 percent, versus a target of 30 percent) at endline, with no significant improvement since baseline, even among direct participants.¹⁷ The balance of households, without access to improved latrines and not practicing open defecation, can be assumed to be using latrines not meeting established standards. Like other WASH outcomes, results from the East show the most promise, with only 29.8 percent of households reporting practicing open defecation (compared to 57.7 percent at baseline) and 5.3 percent using improved sanitation facilities at endline (compared to 2.5 percent at baseline) — statistically significant improvements for both indicators (Annex G).

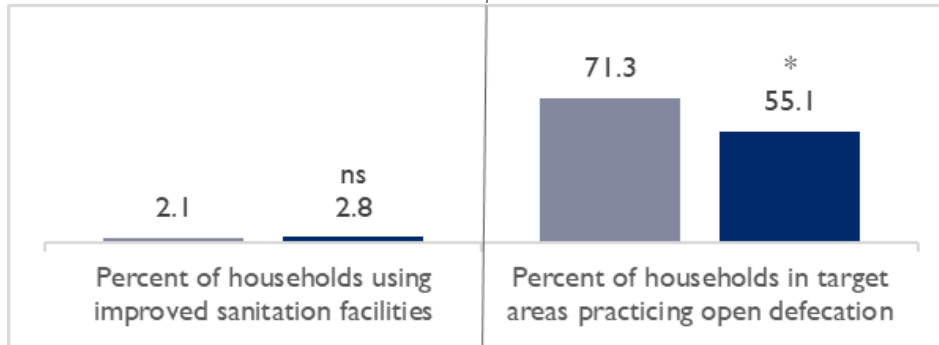
¹⁶For more details on barriers and lessons learned, please see the paragraphs below Figure 7. Please also see the recommendations related to sanitation (R1.6) in Section 5.

¹⁷Inadequate staffing for sanitation activities is cited by CRS as one major contributing factor to poor performance in this area. Following the JMTR, CRS determined that doing CLTS properly in all areas would have required more than 100 staff, which was not budgetary feasible.

Figure 7: Use of improved sanitation behaviors

The percent of households using improved sanitation facilities has remained the same from **baseline** to **endline**.

The percent of households in target areas practicing open defecation has decreased.



ns = not significant, + p<0.1, * p<0.05, ** p<0.01, *** p<0.001
Source: Quantitative survey

The qualitative data reflect these same trends, offering evidence of a shift away from open defecation, while at the same time revealing multiple barriers that prevent households from fully transitioning to using improved latrines. Environmental hygiene was commonly cited as one of the most significant changes resulting from Purpose 1 activities, especially in high-performing sites. Among the drivers of latrine construction and use, mothers named the disease prevention advantages of clean, hygienic villages; the shame and embarrassment they felt about unpleasant odors; and levels of insecurity, which made it unsafe to leave home at night. High levels of engagement of local authorities in CLTS re-emerged as a factor in creating an enabling environment for sanitation behaviors and achieving open-defecation-free (ODF) status, as at baseline (ICF International, 2016).

However, the Lead Mothers who reported promoting and monitoring household latrine use (generally limited to high-performing sites) had found it one of their hardest activities because latrine use is not the social norm in their villages. At most qualitative study sites, mothers explained that while latrine use is not taboo per se, people believe that infrastructure construction investments should be reserved for activities perceived as valuable, like storing food—not for storing feces—echoing baseline findings (ICF International, 2016). Some mothers indicated men were reluctant to build latrines because of stigmatization. They reported that some men found this work "beneath their dignity" and damaging to the social status. Densely built villages and small plots of land were other barriers cited, but not latrine cost, as at baseline. Shared latrines were common at most qualitative study sites, although many of the latrines built since the start of Fararano were structurally weak, vulnerable to storm damage, and already in poor condition, and needed to be rebuilt or risk a return to open defecation.

4.2.6 WASH Infrastructure

The project implemented 47 public water projects including the rehabilitation of 14 pumped/gravity-fed village water supply systems, 28 solar/hand pumps, and five multi-function monoblocs. Some of the gravity-fed village water supply systems have been implemented through a public-private partnerships (PPP) model, which shows more potential for sustainability than the commune- or community-managed ones and offer both water kiosks and individual connections. However, the larger schemes visited all faced technical difficulties (failed solar system, iron in the water, water shortages, pipe leaks, water

quality management). Also, as profits are low with a less-than-robust demand (the customer base is not wholly committed/sensitized to paying for an unreliable water supply), there is doubt on their longer-term sustainability, especially if major repairs are needed. This is also reported in the internal study of the PPP approach to management of WASH infrastructure, along with other management issues (CRS, 2019f). The small and simple solar/hand water systems seemed functional and sustainable, at least in the short term. The monoblocs visited were either unused (waiting for the Ministry of Water approval for the private sector to operate) or under-utilized (less than 100 users/day), suggesting a lack of demand. These seem viable only if part of a wider gravity-fed system and not as stand-alones.

4.2.7 Care Groups

Under Fararano, Care Groups are composed of Lead Mothers from several neighboring *fokontany*. Lead Mothers participated in monthly trainings, often at the commune level. After the training, Lead Mothers were responsible for organizing home visits to eight to fifteen 1,000 days mothers (and fathers) on average. Lead Mothers who were required to cover several hamlets in their *fokontany* to reach all their target mothers felt home visits were difficult and required a significant time commitment, and that the ratio of 1,000 days mothers to Lead Mothers was too high. On the other hand, Lead Mothers who lived in villages where the houses were grouped close together did not raise these issues.

At endline, key informants and FGD participants all raised the importance of the quality and frequency of Lead Mother interpersonal communication for ensuring adoption of the health, nutrition and WASH behaviors promoted by the project. This has a bearing on Lead Mother selection criteria as well as on the amount of time Lead Mothers must dedicate to their responsibilities.

During FGDs, 1,000 days mothers commented on the high number of key messages and lessons their Lead Mother had taught them and expressed the wish for more time to fully assimilate and apply everything they had learned, as best as possible.

Misunderstandings occurred where the Lead Mother selection process was rushed, and where Lead Mothers had received insufficient information and training related to their roles and responsibilities before volunteering. Such situations were often a source of demotivation among Lead Mothers, and aggravated by their husband's disapproval in most cases.

Almost all Lead Mothers expressed the desire to continue their activities beyond the end of the project, although their levels of motivation varied greatly. At some qualitative study sites, Lead Mothers demonstrated little interest in volunteering, and recommended receiving monthly allowances for their work.

The division of Growth Monitoring and Promotion responsibilities between CHVs and Lead Mothers appears to be clear, and CHVs represent and report on the work of all community-based health and nutrition volunteers at the health center level, including Lead Mothers. However, CHVs have been challenged to take over from project staff the responsibility of compiling and reporting Lead Mothers' monthly activities to health centers. As a result, Lead Mothers' activities may be under- or incorrectly reported.

The involvement of the *Chef de Fokontany* and the Village Development Committees (VDC) in Lead Mother activities provides support and encouragement, and is one of the critical linkages for ensuring sustainability.

During interviews, key informants emphasized the relevance and effectiveness of the Care Group model for preventing malnutrition: ONN is considering integrating the model in Madagascar's malnutrition

prevention legal framework and has encouraged other stakeholders, such as the Investment Funds for Development program and *Action Contre la Faim*, to implement the model.

4.2.8 Conclusions

According to key informants, what distinguished the Fararano project was its ability to implement an integrated package of nutrition-specific and nutrition-sensitive activities and approaches to address multiple different causes of malnutrition.

The unequal geographic distribution of Purpose 1/Sub-purpose results, reflected in the higher levels of performance in the East versus the Southwest, underscores the need for tailored, contextualized approaches. Similarly, the data showing that boy children achieved better results than girl children for some CHN indicators require further exploration, in view of strengthening gender-responsive MCHN programming.

Participants perceive food distributions as the most useful project activity, which has the potential to create dependence and may ultimately undermine the relevance or importance of other project activities unless distributions are implemented carefully.

The project created a demand among target households for health services from qualified providers, especially for treatment of childhood illness. However, with CHV C-IMCI coverage and service provision outside the control of the project, that demand often went unmet.

Maintaining gains in MCHN service utilization rates requires ongoing efforts because the qualitative study found that, especially in poor-performing sites, MCHN service utilization is often motivated by fear of sanctions by local authorities, or by the conditional transfer of food rations or safe delivery kits.

There is compelling evidence that the project increased mothers' knowledge of WASH key behaviors, however access to water limits practice of optimal hygiene behaviors. During FGDs, mothers commonly identified water supply as one of their critical needs.

The Care Group model is effective only where activities respect implementation standards, including the ratio of Lead Mothers to mothers and distances (between mothers' homes and from Lead Mothers' homes to meetings and trainings), all of which have implications for time required of Lead Mothers to fulfill their volunteer responsibilities.

Although the project provided Lead Mothers with high-quality and easy to use communication tools, the results obtained depended on the frequency of project supervision.

4.3 Purpose 2: Increased household incomes (monetary and non-monetary)

4.3.1 Introduction

The results and conclusions presented here focus on findings from the qualitative work on several key Fararano implementation models, namely Lead Farmer, SILC groups, and Producer Organizations. Data from the PBS have been integrated where appropriate. Information on relevant infrastructure investments is also included, based on the site inspections conducted. (See Annex L for documentation of infrastructure site visits.)

4.3.2 Results

Sub-purpose 2.1: Increased and diversified agriculture production

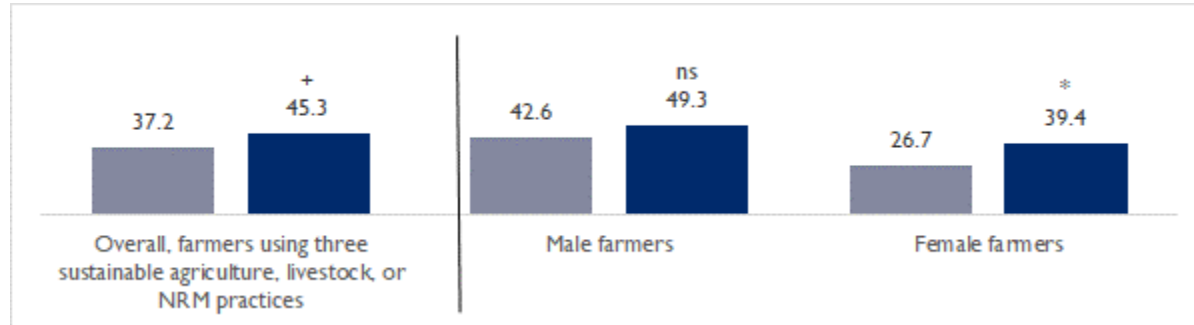
In FGDs, Lead Farmers demonstrated knowledge of multiple improved agricultural practices and reported applying these in their own fields and on demonstration plots. The practices cited as most commonly adopted were: row planting; optimal spacing/planting densities; and use of compost or manure. Other practices cited include: inter-cropping of cowpea with cassava and maize; integrated pest management; seed selection; early transplantation in rice (a System of Rice Intensification practice); improved poultry and pig production; fishpond construction and management; and planting leguminous tree species. These practices were reported to increase production in years with adequate rain and/or reduce costs (e.g., lower seed requirement). Few crops or practices were cited as increasing resilience under drought conditions. Lead Farmers reported sharing their knowledge of improved practices on average with 5-10 other neighbors or family members in small groups of other farmers (*“groupes dynamiques.”*) The qualitative fieldwork did not uncover evidence of wide-scale adoption of improved practices beyond the small circles of producers directly associated with Lead Farmers.

The quantitative survey results showed modest improvement in the adoption of improved practices over the life of the project, with the percentage of all surveyed farmers adopting three sustainable crop, livestock or NRM practices rising from 37.2 percent to 45.3 percent; while this was statistically significant for all farmers, it was not for male farmers as a group—whereas the increase was statistically significant for female farmers. However, the increase was much larger and more statistically significant for direct project participants only, rising to 53.6 percent versus the overall baseline of 37.2 percent (Annex G). Even for direct project participants, however, the results fell short of the Life of Award (LOA) target of 60 percent.

While the results of FGDs with Lead Farmers show that they are convinced of the benefits of the improved practices promoted by Fararano, they also stated that actual results depend largely on weather conditions and pest outbreaks. The findings in the project’s FY18 Annual Results Report bear this out, with production of maize, beans and pulses, and cassava and other tubers falling well below their targets, largely due to drought, cyclone, and the fall armyworm infestation in the Southwest. By contrast, rice production hit 194 percent of its target, which the project attributes to favorable rains in the East and Southeast, along with the introduction of improved rice techniques. A review of results from the previous two years shows a pattern of exceeding targets for rice and maize, with other crops—especially beans and tubers—normally falling short of targets. Vegetable production averaged more than 90 percent of target, except in FY17 when results were poor.

Figure 8: Use of sustainable agriculture practices and/or technologies

Overall, the percentage of farmers who used at least three sustainable agriculture (crop, livestock, or NRM) practices and/or technologies in the past 12 months increased from **baseline** to **endline**. This increase was statistically significant for female farmers but not for male farmers.



ns = not significant, + p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Source: Quantitative survey

FGDs with farmers identified increased vegetable production as one of Fararano’s most beneficial results. FGD participants named some 20 different types of leafy greens and other vegetables, referred to as “rainbow foods,” that were promoted by Fararano. While home gardens were the primary approach to increased household production and consumption of vegetables, farmers also showed enthusiasm for the benefits of including them in a more diversified production system, citing the economic benefits of more regular income from short-cycle crops. Lead Farmers reported that vegetable farming benefited their households through regular income from sales, increased vegetable consumption at home, and reduced expenditures for outside purchases. “Before, we had to buy everything” (FGD participant, Ambodibonary). For direct project participants, the quantitative survey showed a statistically significant increase in the average HDDS from 3.7 to 4.3 (Annex G), which is consistent with Fararano’s promotion of increased production of vegetables and other nutritious foods.

The Fararano project undertook work on 20 irrigation systems across its three regions. As of the project’s FY18 Annual Results Report, 15 systems covering 2,595 hectares had been completed, benefiting 4,601 households.¹⁸ The net increase in production or additional number of households receiving irrigation water resulting from these rehabilitation projects is unknown. Further investigation would be required to render a more rigorous qualitative assessment of the impact of the irrigation system work, but the large reported expansions in area covered may mask issues of quality¹⁹ and sustainability for the 6,000+ households involved in the 20 systems.²⁰ Three irrigation system

¹⁸Data provided by CRS from its FY19 IPTT report that a total of 2,704 hectares were completed by the end of the project, versus the LOA target of 1,200 hectares. The same source reports a total of 6,163 households served by these systems.

¹⁹In the case of the Ankilikasy system in Mangotroko (Morombe District), the design included two additional irrigation canals to the four already in place. One canal was reported and observed to be silted up and non-operational. Some users reported low water pressure after rehabilitation. Lack of any water user fees is bad practice and will undermine sustainability. In the case of the system in Ambohimahavelona (Toliara II), community leaders and farmers reported that the dam constructed is already “leaking a lot” and “could collapse.” Due to time/distance constraints, the dam was not visually inspected by the evaluation team.

²⁰In one site, prior users on the water users committee reported receiving less water than previously due to the deepening of irrigation canals, which may have allowed other users farther from the artesian source to receive water. Another site, not

rehabilitation sites were visited during the qualitative evaluation fieldwork, and FGDs with community leaders in all research sites indicated that infrastructure investments of this sort are highly valued. Where such investments were made, participants also valued the FFA component of the project, which helped meet household food needs during the lean season.

Sub-purpose 2.2: Increased on- and off-farm sales by households and producer organizations

Key informants²¹ consistently identified CRS' SILC group model as Fararano's highest-impact and most sustainable intervention. The success of this model was further validated through FGDs with SILC group members. The SILC model achieved impact at scale under the Fararano project. Internal CRS records for SILC activities under Fararano show that the project formed 1,920 SILC groups, with 42,416 members and current total savings of nearly 2.5B Ariary (\$690,000) (CRS, 2019k).

Outstanding loans totaled nearly 1.7B Ariary. FGDs conducted with SILC group members found that members took out loans for both production and consumption purposes. Those findings are consistent with results included in Fararano's FY18 Annual Results Report, which found the top six uses of loans to be: purchase of agricultural inputs (31 percent); start/support a small business (20 percent); purchase food (19 percent); hire agricultural labor (13 percent); education for children (13 percent); and health care for a family member (11 percent). One female FGD participant reported: "Before, we didn't have money to invest in agriculture. Now we can hire labor or even a tractor."

At its core, SILC remains a savings-led approach. FGD results showed that, as with loans, members use their end-of-cycle share-out for a wide range of purposes. Consumption uses included: purchase of furniture and other household items; costs of children's education; and costs associated with important holidays and community celebrations. Productive uses of savings were primarily to buy/rent land to expand agricultural production, pay for agricultural inputs or labor, and start or expand petty trading or other small business activities.

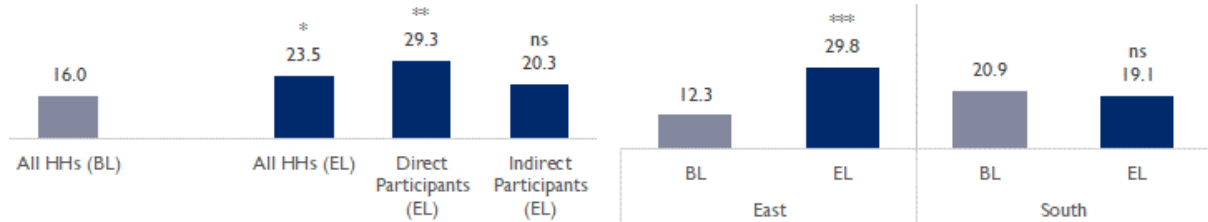
The PBS data suggest that the expansion of SILC led to a significant increase in the percentage of farmers using financial services. From an overall project baseline of 16 percent, use of financial services increased to 23.5 percent, with an even larger increase for direct participants where it increased to 29.3 percent (Annex G). In the East, use of financial services increased dramatically, from 12.3 percent to 29.8 percent, while remaining largely unchanged in the South. By contrast, FGD results revealed almost no use of formal bank or micro-finance institution services (which aligns well with the survey finding that only 3.3 percent of farmers used an MFI and even fewer, 1.4 percent, used a bank [see Table 8 in Annex H]—supporting the observation that the main contributing factor to the financial services indicator was SILC participation.

visited, expanded the system greatly beyond what was planned, but it is not clear how sustainable that system expansion will be in light of water scarcity in the Southwest.

²¹The Key Informants referred to here include virtually all senior CRS staff interviewed, all four local Implementing Partners, and USAID/Madagascar.

Figure 9: Percentage of farmers who used financial services in the past 12 months

Use of financial services by farmers in the past 12 months increased from baseline to endline, particularly for direct project participants and in the East zone.



ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Source: Quantitative survey

Fararano's results demonstrate clearly how SILC functions as both a driver of on-farm and off-farm income generation, and as a safety net mechanism. This latter role was confirmed through FGD results on the "*Caisse Sociale*" component of the SILC model, which provides grants or interest-free loans to members in case of events such as the death of a family member, the birth of a child, or serious illness in the family. FGDs also confirmed the strong sense of ownership and pride that members have in their SILC groups. Members cited many perceived social benefits of SILC membership, ranging from "greater harmony at home" to less conflict with neighbors. Working together for a common purpose was reported as leading to greater social cohesion and mutual support across age groups.

A final noteworthy result of the evaluation teams' focus on the SILC model is the success of the PSP model of training and supporting groups. Five PSPs were encountered during visits to the qualitative evaluation sites, all of whom remain active after the end of the Fararano project, providing on-going services to anywhere from six to 60 SILC groups. The most active PSPs receive a monthly fee for their services, usually in the range of 400-500 Ariary per month per group member. While these fees are small, they can add up quickly with an average group size of 20-25 members. One PSP supporting 60 groups in Toliara II district reported his average monthly income at 900,000 Ariary (\$250), making it an attractive full-time job. In FGDs, members expressed their satisfaction with their PSPs and confirmed their willingness to pay. One risk noted by the evaluation team is the potential for long-term dependency of SILC groups on their PSP to conduct basic group operations, in particular the end-of-cycle share-out. Most PSPs interviewed are still actively forming new groups, in some cases beyond the boundaries of the Fararano zone, making the SILC/PSP model self-replicating post-project. The PSPs interviewed demonstrated strong entrepreneurial spirit and leadership skills; one has since become *Chef de Fokontany* in his village.

Producer Organizations (POs), alongside SILC groups, constituted Fararano's most important intervention to increase household income. The basic approach was to form POs, which could then be combined into Collection Point Organizations (CPOs), some of which could be developed into cooperatives. These CPOs/cooperatives (co-ops) were then linked to private sector buyers by project staff. Fararano's FY18 ARR indicated that 363 POs have been formed, with 4,939 members; these POs have been grouped into more than 50 CPOs or co-ops. The precise number of groups that have achieved co-op status is unclear and reported by different sources as ranging from 20 to 59.

Organizing farmers into groups to build social capital and improve the terms of access to markets was a very relevant strategy from which many more participants might have benefited. While the scale of PO membership was less than 12 percent of that achieved by SILC groups, some promising examples of POs, CPOs and co-ops were documented during the qualitative fieldwork. In Ambatobe in Brickaville district, a PO with 40 members specializing in turmeric production during the lean season has achieved co-op status, is selling directly to a buyer (Jacaranda) in Toamasina, and now diversifying into ginger. While co-ops have been most successful in the East, where both rainfall and private-sector buyers are more plentiful, promising examples of POs and CPOs were also encountered in the Southwest. In Ambohimahavelona in Toliara II district, seven POs, each with about 30 members, have joined to form a CPO specializing in rice and beans. For rice, producers store 60 percent of their harvest for 3-4 months to sell at higher prices. A similar cluster is functioning in Mongotroko in Morombe district, specializing in onions, cowpeas, cassava, peanuts, and goats. They advertise on the radio and report no difficulty in finding buyers from Morombe, Toliara, Mahajanga, and Antananarivo.

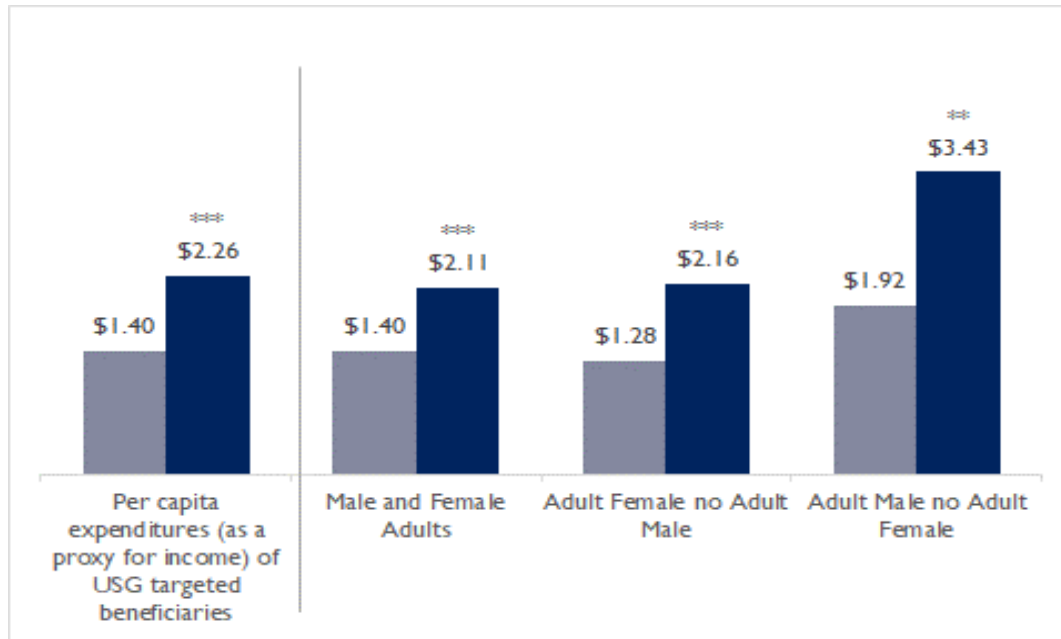
While it is clear that some of the farmer organizations established under Fararano already have established market linkages and are able to function without project support, that may not be the case for many of the 360 POs and 50-60 CPOs/co-ops formed, particularly those established late in the project cycle. Except in Brickaville, Mananjary, and Ifanadiana districts, where CRS' new SPICES project will operate, it is not clear that CRS or its IPs are resourced to provide on-going support to those farmer organizations still not sufficiently mature to operate on their own in the marketplace.

Finally, the Fararano project rehabilitated 14 rural feeder roads using the FFA approach; a total of 221 kilometers of road were rehabilitated versus the LOA target of 140. As with irrigation infrastructure, FGDs with community leaders in all research sites revealed that poor road access is seen as a major impediment to development. The one road rehabilitation project closely inspected by the evaluation team showed both the potential impact of such investments and major concerns as to their long-term sustainability. In Morombe, the rehabilitation of the 17 km road from Antanimieva to Basibasy was a major investment with the potential for significant economic and other benefits. Rehabilitation of this road allowed farmers in Basibasy to quickly expand onion production by making the community accessible to truck transport by buyers from outside market centers. Increased truck traffic, however, soon led to significant damage to culverts. The evaluation team's inspection found one culvert completely broken and two others damaged, already diminishing the road's utility at the onset of the rainy season. Even though the culverts damaged were not built by Fararano, they decrease the value of the project's investment, and an interview with the local road users association found that they have no strategy for dealing with the problem.

Fararano's interventions, in particular those related to SILC groups and farmer organizations (POs, CPOs, co-ops), produced meaningful results for participants during the life of the project. This finding is consistent with the results of the quantitative PBS, which found a highly statistically significant 61 percent increase in per capita expenditures (as a proxy for income) from baseline to endline— from \$1.40 to \$2.26, exceeding the LOA target of \$1.90. The 69 percent increase in per capita expenditures in households headed by an adult female with no adult male is also noteworthy.

Figure 10: Per capita expenditures (as a proxy for income) of USG-targeted beneficiaries

Per capita expenditures increased from **baseline** to **endline** and increased the most for male-headed households with no adult female.



ns = not significant, + p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Source: Quantitative survey

4.3.3 Conclusions

Lead Farmer Model: Lead Farmers benefited from increased knowledge of improved agricultural practices, along with some seeds and tools, and they shared this knowledge with small groups of other farmers. But the Lead Farmer model was sharply criticized in the JMTR— for the low quality of demonstration plots and its lack of peer-to-peer outreach mechanisms— and some adjustments were made after the mid-term review, particularly to increase the number of Lead Farmers per *fokontany* and organize *groupes dynamiques* around each Lead Farmer (JMTR, 2017). The project is reported to have ultimately worked with 2,085 Lead Farmers and 1,208 *groupes dynamiques* (CRS, 2019g). While Lead Farmers and others who benefited from training on improved practices may well continue to apply those practices post-project, the overall sustainability potential of the Lead Farmer model is low, as it is almost entirely dependent on unpaid volunteers and operates in a context where there is no local government extension service into which such volunteers can be integrated. As pointed out in the JMTR, the Lead Farmer model consisted of “program-based trainings with no organizational or farmer aggregation component that would give it a chance to continue beyond the life of the project.”

SILC Groups: The SILC/PSP model was implemented with great success and at scale under the Fararano project. The qualitative fieldwork documented a few sites in which SILCs were either not formed or failed, most often in sites that were either remote/insecure or near urban centers/main roads. In many sites, however, a very high degree of SILC participation had been achieved by project end. Given this high degree of success, CRS is rightly reluctant to tinker with the SILC/PSP model; however, they should consider adjustments that would allow them to scale SILCs more quickly and widely in future projects to

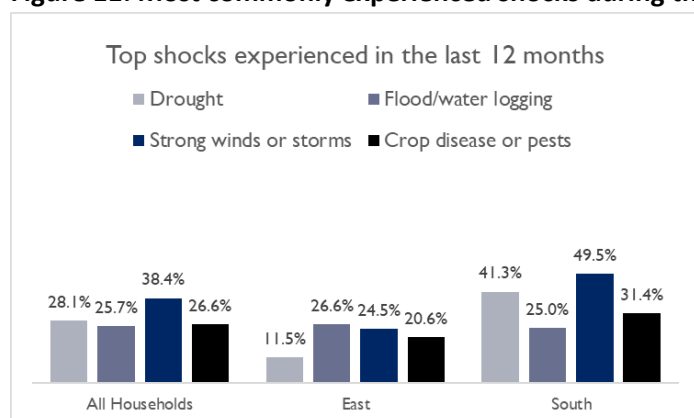
enhance achievement of overall project goals. At the time of the JMTR in 2017, i.e., already in Year 3, it was said that SILC groups “seemed to be very successful, but their reach was very limited.” To some degree, the delays in roll-out were inherent in the cascade of recruitment and training (promoter, PSPs, SILC groups) activities required by the PSP model.

Producer Organizations: The JMTR also highlighted the potential of farmer organizations (POs and CPOs) to “help farmers get better prices for their produce.” It was further pointed out that if farmers benefit from POs and CPOs, “they will likely continue even after the project ends” (JMRT, 2017). These findings have been validated by this endline qualitative study. POs, CPOs and co-ops have great potential to enhance income gains for farmers. Such approaches, however, were rolled out slowly and only reached a small number (<5,000) of producers by project end. While this market-oriented approach may not be suited to the needs of all farming households, particularly the poorest, far more producers could have benefited from membership. POs, CPOs, and co-ops created in Fararano’s last two years may struggle to survive without additional external capacity-building support.

Infrastructure Investments: Infrastructure investments under Purpose 2, which consisted of irrigation systems and feeder roads implemented using the FFA approach, were successful in injecting food resources into target communities during the lean season. However, the extent to which the infrastructure assets thus rehabilitated provide significant lasting benefits to communities remains to be seen. Inspection of three irrigation systems rehabilitated by Fararano and feedback from water users revealed a number of issues of related to system design and construction quality, which could limit their long-term impact. In some cases, water use fees were not being collected, which will further undermine long-term sustainability. While such fees could cover routine maintenance and repairs, they are unlikely to be able to finance major repairs in the event of a cyclone or other major damage. The one feeder road rehabilitation project closely examined also surfaced sustainability concerns, including weakness in the mechanisms to address inevitable post-project maintenance requirements.

4.4 Purpose 3: Community capacity to manage shocks is improved

Figure 11: Most commonly experienced shocks during the last 12 months (percentage of households)



ns = not significant, + p<0.1, * p<0.05, ** p<0.01, *** p<0.001
 Source: Quantitative survey

4.4.1 Introduction

The guiding concept of Fararano’s work under Purpose 3 was increased resilience, consisting of three sub-components: NRM, DRM, and Social Protection. The importance of this component is exemplified by the endline survey findings that 82 percent of all respondent households experienced one or more shock, and that 28 percent of respondent households experienced four or more shocks in the last twelve months (details in Figure 11). The findings in the rest of this section are primarily based on FGDs with the NRM committees (NRMCs), the DRM committees (DRMCs), the VDCs and staff KIIs, as there are little relevant data collected in the annual and endline quantitative surveys.

4.4.2 Results

Sub-purpose 3.1: Community-based disaster mitigation systems meet national standards

In Fararano, NRM activities were split between disaster mitigation (Purpose 3) and agriculture (Purpose 2). In agriculture, the evaluation team found little evidence of participants having adopted practices to increase resilience to drought or other weather-related shocks and stresses, such as agro-forestry, EverGreen agriculture techniques, and contour planting/terracing. The mixed-gender NRMCs received training and support for reforestation and fire management in all zones and Farmer Managed Natural Regeneration (FMNR) and mangrove restoration in the South. However, they did not receive training or reference materials about NRM approaches and activities, answered vaguely about having an NRM plan, and no such plans were observed by the Evaluation Team (Staff KII, FGD NRMCM). It was common for key committee members to be involved in both the NRMCM and the DRMC.

The project engaged well with the Ministry of the Environment at all levels, but the cooperation was constrained by the Ministry’s limited means, such as a lack of vegetative stock for seedling production.²² This was compensated by working with other agencies working in the environmental sector.

Figure 12: Slash and burn area with firebreaks



Photo credit: Bernard Crenn

In 2017, the Ministry of the Environment created a structure for bush fire prevention at commune level and both NRMCMs and DRMCs participated in this national effort with awareness-raising and posters, but the NRMCMs are not recognized entities by the Ministry of the Environment, thus limiting their motivation and sustainability (Staff KII; CRS 2019d).

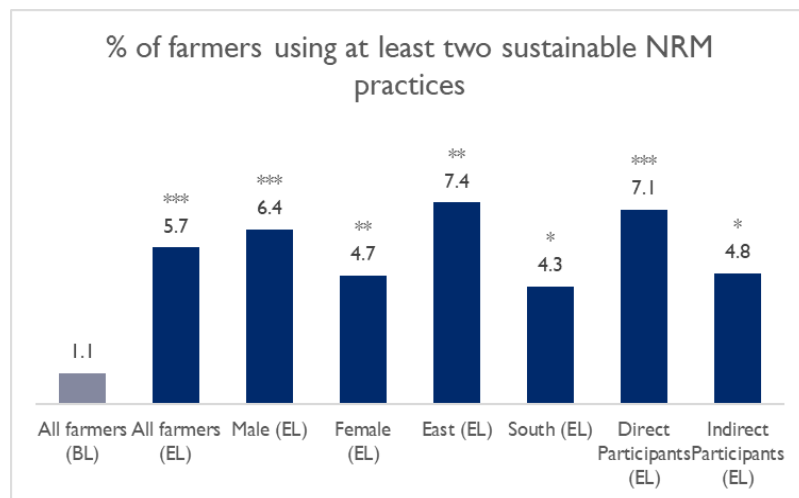
FGDs with NRMCMs show that their understanding of NRM was limited to reducing tree cutting, planting trees and reducing bush fires, with very little mention

of soil conservation, preventing erosion, watershed management, agro-forestry or community nurseries. The communities that engaged more actively in NRM activities were those facing more desperate

²² However, it should be noted that FMNR, which is based on the managed regeneration of existing vegetation does not require planting materials.

situations, such as protecting mangroves to improve fish reproduction or planting trees for house (re-) construction. The committees report a decrease in bush fires and tree cutting due to the continuous sensitization, protection, and governance efforts, though abuses continue and were visible (see Figure 12). Both DRMCs and NRMCs have good fire management awareness, and activities such as ensuring that firebreaks are used around reforested and ready-to-burn areas.

Figure 13: Respondents using two or more NRM practices from baseline to endline



ns = not significant, + p<0.1, * p<0.05, ** p<0.01, *** p<0.001
 Source: Quantitative survey

Many NRMCs are no longer operating or are demotivated by the lack of results, such as the low success rates of reforestation, the difficulty of community mobilization for NRM activities, and the continuous need to sensitize and “police.” There is a general expectation among committee members that NRM activities will be accomplished through external support.

Most NRM and disaster mitigation measures were accomplished through FFA activities, such as tree planting and FMNR in about three quarters of project communes. Overall, the project implemented 84 FFA reforestation/FMNR activities covering about 2,200 ha (CRS, 2018a), ranging from 3 to 50 ha, with most in the 15-30 ha range, but the success rate was not documented. For practical reasons (authorization, access), most of the reforestation was done on flat public land and not in sensitive areas (Staff KII). The limited number of non-FFA NRM and disaster mitigation measures were done at a very small scale and limited to tree planting (East), house strengthening and a few fruit tree nurseries (FGD NRMC and DRMC).

The results on disaster risk mitigation and NRM are geographically distinct. In the East, they were more relevant and successful in addressing the main risk of cyclone damage, using EverGreen agriculture techniques and reforestation. In the South the main risk is drought, which was not a priority of the National Office of Risk and Disaster Management,²³ and a few measures were undertaken after the JMTR, such as the multiplication of more drought-resistant cowpea and sorghum seed, but this lacked

²³ French name: Bureau National de la Gestion des Risques et Catastrophes (BNGRC)

time to show results. In the South, although tree planting failed, FMNR using endemic species and mangrove regeneration (an unplanned response to an expressed need) were more successful (Staff KII).

Loosely connected with reforestation activities and barely mentioned in the NRM FGD, the project promoted low-cost improved cook stoves, primarily as an income-generation activity for youth. Although project participants acknowledged the advantages of improved cook stoves, adoption rates were low, usually explained on the basis of cost or unavailability of construction materials.

The quantitative survey results indicate a small, statistically significant increase in the use of NRM practices from 1.1 percent to 5.7 percent of respondents, but use of such practices remains very low. Male farmers (6.4 percent), those in the project's East zone (7.4 percent), and direct participants (7.1 percent) had a higher rate of adoption than the sample overall. Only four general NRM practices were surveyed across all respondents, with the following rates of adoption: reforestation (13 percent); agroforestry (12.5 percent); protection of watersheds (11 percent); and sustainable harvesting of forest products (4.9 percent)—see Table 10 in Annex H.

Sub-purpose 3.2: Community-based disaster preparedness systems meet national standards

After 2013's devastating cyclones, the National Office of Risk and Disaster Management was revitalized, and Fararano worked closely with its national, regional and district representatives to operationalize its new 2016-2030 strategy at commune and *fokontany* levels (GOM, 2016).

Building on the national decentralization efforts to enhance governance at commune and *fokontany* level, the project successfully established Village Development Committees and DRMCs in each *fokontany*. The mainstay of community-based preparedness are the *fokontany* level DRMCs, which are active and motivated across all project zones and focus primarily on cyclonic events.

DRMC members (12-15 members per DRMC and mixed gender) are selected at a general assembly and must include (by decree) the *Chef de Fokontany*. (In practice, project staff reported that they discouraged the automatic selection of the *Chef de Fokontany* as President of the DRMC for a number of reasons.) Each DRMC member has specific responsibilities, either as a village/hamlet representative or for a specific activity (FGD DRMC; CRS, 2019e).

With National Office of Risk and Disaster Management support, the DRMCs have: received regular training and a standard kit (flags, siren, megaphone, radio); conducted annual simulation exercises (a national first); prepared evacuation plans; and already responded successfully to cyclones. Every year, committees prepare themselves and their communities ahead of the cyclone season through general meetings and house-to-house visits in the more-at-risk areas.

From DRMC FGDs and partner staff KIIs it was ascertained that while community short-term preparedness has markedly improved, there were few long-term preparedness measures effected.²⁴ Due to cost, a few houses were strengthened using bigger structural elements, but there was no mention of the increased use of bracing as a cost-effective measure; the project distributed posters depicting various techniques of house strengthening, including triangular bracing, but the evaluation team saw only a few and these were very degraded. DRMC referred only vaguely to having or using DRM

²⁴ The lessons learned report (CRS 2019e) provided a number of risk reduction measures adopted by participants in other Fararano communities. These included: replacing rotten posts in dwellings; reconstruction of homes on stilts; cutting down trees near houses; construction and purchase of boats to assist with evacuation; construction of temporary evacuation shelters; and promotion of yams and sweet potatoes during cyclone season.

plans (plans kept by project staff or kept at the *fokontany* office) and did not receive training or reference material from the project.

Many DRMCs reported taking into consideration the most vulnerable households (MVH) during their preparation activities through household visits and engaging youth to assist with such activities as house strengthening with ropes, placing sandbags on roofs and moving people to safer places.

Sub-purpose 3.3: Community-based disaster response systems meet national standards

With reference to cyclonic events, DRMCs all report decreased damage and no loss of life. As cyclones are announced, they monitor the radio for progress information and physically warn and help people to prepare themselves, using the tools in the kit. After the event, they send written reports to their commune but face transport issues as dirt roads are impassable for long periods and receive assistance only through NGOs. The National Office of Risk and Disaster Management attempted to put in a place an improved early warning system using mobile phones and the project supported this, but the system did not work. The main constraints mentioned were in the field were technical issues of having working phones (charge, credit and network) and higher-up difficulties with the database management. The DRMCs have prepared lists of people and they can be mobilized for post-disaster assessments, usually through project partners.

The constraints to a better response to cyclones that most DRMC report are: the lack of effective inter-committee communication during an event for lack of phone communication; very difficult travel conditions; and the shortage of safe/secure places (schools, when available).

DRMCs, particularly in the South, report other sudden-onset events, such as agricultural pest infestations of locusts and fall armyworm, to the commune administration and other government services. They receive some assistance from intervention brigades from the World Food Programme-supported *Centre National Antiacridienne* (National Locust Center), but no effective solutions have been found to date to fight the fall armyworm other than crop destruction, physical eradication, and early planting (as it primarily affects crops planted late).

In the south, the project contributed to the Food Security cluster early warning platform, but it met irregularly and was constrained by government staff changes. The project trained four people to gather market-based information, which was validated at monthly commune meetings and sent to CRS and the cluster for further processing. Attempts to use phone/tablet technologies proved too complex to manage (Staff KII); on top of the technical issues (power/charge, breakage, network) there was also an issue of staff capacity to use the software.

Sub-purpose 3.4: Community-based social safety net mechanisms strengthened

Community social safety nets have been strengthened in two ways. The first was planned through the VDCs, which received training about social protection, including the identification of MVHs in their Village (Fokontany) Development Plans. Most are now aware of social protection/MVH issues, have prepared lists based on locally accepted vulnerability criteria, and more than half had specific social activities during the life of the project (Staff KII). The second is the incidental increased resilience and social protection resulting from participation in group activities such as SILC and POs.

The project worked closely with the Ministry of Population, Social Protection and Promotion of Women and was able to jointly pilot the implementation of its social protection strategy at commune and *fokontany* level and pioneer MVH psycho-social support through the VDCs (Staff KII).

Other than participation in FFA, the most cited mechanism to assist MVH was to include them in SILC groups, and a few VDCs have made land available for MVH vegetable gardening. Other than exempting MVH from paying health or water charges, other forms of support tended to be occasional and unstructured, such as food donations at harvest time or encouraging youth to provide assistance to MVH.

The Fararano MVH micro-projects, which targeted 265 MVH households, supervised by the VDC (poultry, goats and vegetable gardens), started late in the project as a pilot, using private funds. Initial results indicate that such activities could be adapted and integrated in other social safety net programming by focusing on short-cycle economic activities and integrating support from community experts such as Lead Farmers and Lead Mothers (Staff KII; CRS, 2019b).

Based on identified needs around land tenure affecting food security, the project trained staff in eight communes and re-operationalized three commune land titling offices with training, computer equipment, and mass communication resources. These three bureaus were able to deal with more than 3,000 land certificates (seven times more than in the previous period), which benefitted about one-third of the MVH with land titling issues (Staff KII; CRS, 2019c). However the initiative took a lot of the manager's time, which detracted from their ability to support their field staff. Indications were that titling was a slow process and had not the project staff kept pushing, there would have been fewer successes. Hence while land titling is an important initiative—many claims were registered and the approach also had positive effects on commune-level governance—it proved to be resource-intensive, long-term and too indirect for a food security program. Land titling is best addressed through a focused project rather than as a small sub-component of a food security project.

4.4.3 Conclusions

Unlike Purpose 1 and 2, where approaches and activities target individual and household behavior change, Purpose 3 relies substantially on collective action and good governance. This placed more external constraints on its performance and is reflected by the extreme variability of results. When there were good synergies between national capacity and community leadership and motivation, the results were positive and encouraging such as for cyclone and bush fire management.

NRM results were generally weak at scale and for sustainability, as they were project-driven and not well integrated with Purpose 2, but with some small-scale successes in highly motivated communities. Some of the overall factors negatively affecting the performance of this purpose are the multi-disciplinary knowledge and activities required from the project field officers (DRM, NRM, social protection, governance). Key members of the various committees had several other community responsibilities, which had the benefit of cross-fertilization of ideas (on-the-ground project integration) but also placed a large a burden on them and their families.

4.5 Unintended Outcomes

The qualitative study found evidence of a number of potential unintended negative outcomes across Fararano's three purposes and cross-cutting work on gender. In some cases, the evidence for these findings is very limited and, in all cases, they are recorded here only to flag possible areas of concern to be considered in future interventions:

- In FGDs, some mothers reported cases of timing pregnancy in order to take advantage of Fararano’s 1,000 days food distributions, i.e., to ensure some of the cost of feeding infants would be covered by the project.
- Some mothers also reported treating Fararano food rations (1,000 days or FFA rations) as complete meals, instead of as supplementary rations, and neglecting to incorporate other foods into the diet when rations were available.
- FGDs with SILC groups and KIIs with PSPs revealed that some groups remain dependent on PSPs for basic operations, especially end-of cycle share-out, after several cycles. Since PSPs have a financial incentive, in terms of monthly fees for service from group members, there is the risk of open-ended dependence of groups on PSPs for basic operations.
- Delays in the provision of vegetative matter for reforestation led to failed outcomes, which wasted people’s efforts and led to demotivation (FGDs NRMC).
- Comments made by some qualitative study participants (both male and female) suggest that men’s adoption of joint decision-making may sometimes come at the expense of women’s agency, if men exert control over decisions their female spouses/partners once made alone—for example, related to purchases or taking loans. One example: a male SILC FGD participant expressed the opinion that men and their wives should always be in the same SILC group and manage their contributions and share-outs together. The women participants unanimously disagreed, stating that being in separate SILC groups was better for women, because it minimized their risk if their husbands left them (i.e., divorced) and took their money.

The qualitative study also produced some evidence of positive unintended outcomes. Examples of such outcomes are:

- *Miranjaka* were valued by their communities for their skills and services in conflict mediation, and KIIs confirmed what CRS had already documented (CRS. 2018b), that *Miranjaka* were increasingly engaged in resolving family and community conflicts, even land disputes.
- SILC groups with mixed adult-youth membership show promise as a platform for transforming cultural attitudes about age and equalizing power relations between young and old.²⁵
- KIIs, plus direct observation by the evaluation team, suggest that Fararano’s investments in human capacities at the community level may indirectly contribute to strengthened democracy and good governance if individuals trained by the project decide to run for office or enter public service at the *fokontany* or commune level.

4.6 Factors Contributing to Outcomes

4.6.1 Project Design

Numerous elements of the design of Fararano contributed positively to the project’s outcomes. Fararano’s integrated approach—Maternal Child Health and Nutrition, Livelihoods, and Resilience—was appreciated by all stakeholders and seen as appropriate and necessary to reducing food insecurity in the Madagascar context. The involvement of CRS’ IPs from design through implementation also contributed to the grounding of project activities in the local context and enhances potential for sustainability. The inclusion of the SILC model and its successful scaling under Fararano contributed to the project’s results across its three purposes by both mobilizing financial resources and building social cohesion.

²⁵ Findings regarding gender and youth are discussed in detail in Sec. 4.10.

The central feature of Fararano’s design that negatively affected project outcomes was its highly ambitious and overly complex nature, which posed multiple implementation challenges. From a geographic targeting point of view, the project encompassed three dispersed regions, representing very different agro-ecological zones and livelihood systems/value chains. The challenges and opportunities across these zones— particularly between the project’s southwestern and eastern zones—vary enormously and made it difficult for project implementers to tailor interventions to each context. By way of example, multiple KIIs with CRS and local partner staff pointed to the focus on cyclone/flooding risks in the project’s DRM work and the lack of a strong project response to building resilience to drought in the Southwest.

The challenge of geographic scope was further exacerbated by the large number of activities/ approaches (+/- 20 intervention models) used. As highlighted in the JMTR, initial project staffing levels were also insufficient to implement this complex design. The endline qualitative study also found that participants in some locations expressed confusion and overload with the number of project interventions. After the JMTR, the project team took a number of steps to better communicate and integrate the many opportunities for households to engage with the project, as depicted in the poster shown in Figure 14, which presented the activities and behaviors promoted by the project for a “model household.”

4.6.2 Focus on Governance

Most of Fararano’s efforts to strengthen local governance were focused at the *fokontany* level, forming or strengthening Village Development Committees and supporting them in preparing Village Development Plans. Such work should be seen as foundational for integrated food security programs, and this aspect of Fararano should be seen as having contributed positively to project outcomes. However, strengthening local governance is a complex, dynamic and long-term process, and much remains to be done in Fararano communities to consolidate this work. FGDs conducted with the VDCs in each core qualitative evaluation site revealed a wide range of quality in terms of leadership and plan content. Future initiatives should continue to emphasize local governance development at the *fokontany* level, while allowing more time for the emergence of dynamic local leaders and allocating additional resources to their development.

Fararano’s work at *fokontany* level was complemented by governance work at higher levels. Mid-project, CRS developed a partnership with the National Office for the Coordination of Decentralization²⁶ to strengthen governance at the commune level. This partnership was fruitful and should be integrated into future interventions. KIIs with the National Office for the Coordination of Decentralization and other national GOM partners also provided evidence of sustained efforts by CRS to both support and influence national policies related to food security. Close collaboration with government agencies opens possibilities of greater sustainability and wider dissemination of good practices, but such partnerships remain dependent on the provision of external funding and resource persons for specific activities within these agencies.

²⁶ French name: Office National de Concertation sur la Décentralisation

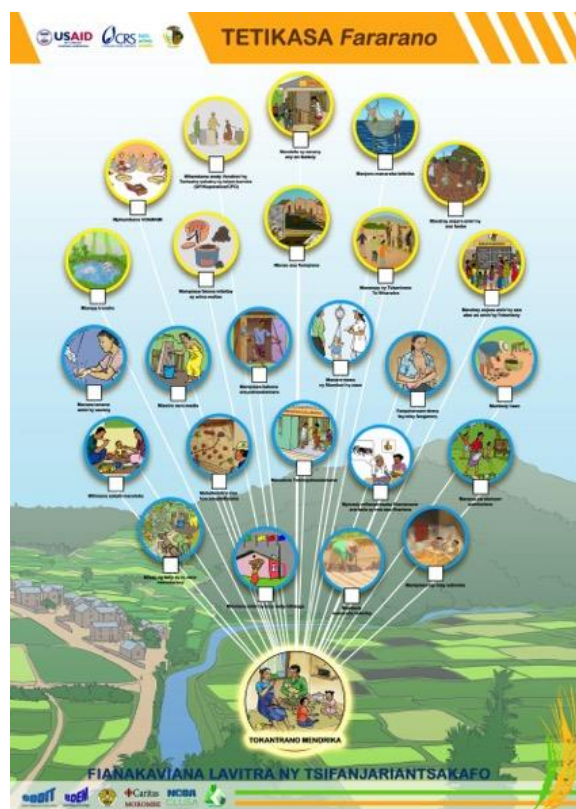
4.6.3 Project Implementation

Fararano’s complex design posed any number of challenges to its implementers, ranging from the logistical challenges of supervising work across its three dispersed zones to optimizing the sequencing and integration of its many interventions. Integration across purposes could have been improved, but some integration was observed at the local level, where many households or individual participants wore multiple hats (e.g., Lead Mother and Lead Farmer). Broadly speaking, overall outcomes and sustainability of impacts would have benefited from faster roll-out and the broadest possible coverage of SILC Groups; engaging more beneficiaries of Purpose 1 activities in livelihoods (agriculture, SILC) to enhance the ability of those households to sustain health and nutritional outcome gains post-project; and greater integration of farmers trained under Lead Farmer model into SILC and PO group activities.

4.7 Contribution of Activities to Mitigation, Adaptation to, and Recovery from Food Security Shocks and Stresses

4.7.1 Findings

Figure 14: Fararano household poster



Endline survey data on per capita expenditures and poverty rates suggest households in the project zone increased their capacity in the face of shocks relative to baseline. While there have been no significant changes in the Coping Strategy Index, there are positive and statistically significant changes in per capita expenditure, which increased from \$1.40 to \$2.26 per day. In addition, the percentage living on less than \$1.90/day decreased from 77 percent to 60 percent, and the mean depth of poverty from 36 to 28 percent. However, the data show no significant difference between direct and indirect participants, making it difficult to draw conclusions about the project’s contribution to these improvements.²⁷

Beyond the short-term impact of food distributions, SILC group participation reached the largest number of households and provided the most long-lasting contribution to reducing the negative effects of food security shocks. In the case of illness and food shortages, members can borrow money to pay for

²⁷ It should be noted that many project activities were actually targeted at the community as a whole. For this reason, one must be careful not to read too much into any differences (or lack of differences) between results for "direct" and "indirect" participants. Additionally, it is also important to note that spillover from direct to indirect participants is actually a desired

treatment or purchase food. In the case of death and serious illness, SILC members can also receive funding from the Social Fund. Accumulated savings give households something to fall back on for emergencies, while productive loans taken can also increase both household income and food availability.

At least in the medium term, project activities that promoted increased agricultural production and diversification enhanced the food security of participating households in the face of shocks by increasing incomes and reducing their need to purchase food. This group consisted primarily of Lead Farmers, members of *groupes dynamiques* and participants in value chain and home garden activities. POs and CPOs, in the limited number of communities where they were successful, also allow farmers to avoid selling all their production at harvest time and having to buy later at much higher prices.

Few of the improved agricultural practices adopted by virtue of project interventions will provide significant protection to livelihoods in the face of drought or pest infestations. By contrast, investments in irrigation, sustainable agricultural practices,²⁸ and drought-resistant crops have the potential to be effective for drought adaptation. However, irrigation investments were made in only 20 communities, and some of the rehabilitated systems already face sustainability challenges. CRS' lessons learned document on DRR (CRS, 2019e) cited as one of its weakness that the project was overly focused on cyclone and flooding risks and did not address other risks, such as drought and army worm in the South until the project's last year.

For shocks associated with floods and high winds/storms (including cyclones), DRM activities have contributed to resilience, particularly as regards reducing injury and loss of life, but there is low evidence of increased resilience for agricultural livelihoods. The project's mitigation activities consisted mostly of NRM initiatives, and these were among the project's least successful interventions. Reforestation activities were modest in scale in relation to need, and many had low survival rates. A number of the project's infrastructure investments (e.g., irrigation systems) are vulnerable to extensive damage by cyclones, and communities are unlikely to be able to mobilize the necessary resources for major repairs.

Finally, health-related shocks (illness/death) were among the most common shocks faced by Fararano households. The qualitative study data found evidence that food distributions and project activities to increase utilization of preventive and curative health services contributed to improved health/nutrition outcomes among CU5. These findings, however, are mitigated by the quantitative survey results, which show no significant difference in key nutrition/health outcomes between direct and indirect participants, such as the CU5 malnutrition rates (for both acute and chronic malnutrition) and CU5 incidence of diarrhea in the past two weeks. Where stronger links have been established between households and health centers, there is potential for longer-term benefits in terms of increased resilience to health shocks.

4.7.2 Conclusions

The project made modest lasting contributions to mitigation, adaptation and recovery from food security shocks and stresses, although many project interventions had at least short-term benefits for households. Increased resilience benefits could have been realized by greater integration of the

outcome since it could be an indication that the adoption of practices promoted by the project are beginning to diffuse amongst the larger population of a community.

²⁸ The qualitative study in the South found very little evidence of sustainable agricultural practices being promoted to reduce drought risk, such as agroforestry, Farmer Managed Natural Regeneration or Conservation Agriculture.

project’s food distribution, Care Group, agriculture and SILC groups’ activities at the household level. The project should also have implemented a simple but clear strategy against drought in the south (drought-tolerant crops, seed storing, and resilient agricultural practices including Conservation Agriculture and FMNR).

4.8 Beneficiary Satisfaction

4.8.1 Findings

FGDs conducted with community leaders revealed a generally high level of satisfaction with Fararano and project staff interaction with community members. Those interventions most frequently cited as having been beneficial to the community were SILC groups and food distributions. Mothers in 1,000 days households expressed satisfaction with the 1,000 days rations, with the knowledge they had gained, and with the improvements to their children’s health status, and hoped that Fararano would return to their communities. During FGDs, most Lead Mothers expressed satisfaction with Fararano training, distributions of seed for home gardens, and with the changes they perceived in their household hygiene and in their overall standard of living. However, some Lead Mothers expressed dissatisfaction with the lack of compensation (indemnities) for their work they had been hoping to receive and with not receiving food distributions even if they did not meet eligibility requirements. Lead Farmers also were satisfied with the project because they were able to apply what they learned to increase their own household income and food security. For the resilience component, DRMC members, who had received regular and “integrated” support from the project and felt the results of their hard work, were satisfied. By contrast, NRM members felt a lack of support and were least satisfied due to the poor results from their hard and thankless work (failed re-vegetation activities). While there was high satisfaction concerning the FFA distributions for the infrastructure activities, there was also significant dissatisfaction with the quality of the irrigation and water supply infrastructure assets.

As regards the project’s gender interventions, the qualitative data suggest that, in general, households who received Lead Mother or *Miranjaka* home visits were satisfied with what they learned, and the support obtained. *Miranjaka* felt esteemed and valued—some had even received small gifts of thanks from persons they had helped. Furthermore, in KIIs, most *Miranjaka* reported they would remain active even after the end of the project. Key factors contributing to *Miranjaka*’s own levels of satisfaction were the quality of training they’d received and the gender toolkits. Key factors contributing to *Miranjaka*’s dissatisfaction included infrequency of technical training and the opportunity costs of volunteering.

Youth Group members expressed satisfaction with the project’s training and activities overall. But even if they saw signs of positive change in their lives and communities, they felt they needed more technical training in subjects directly related to their expressed needs (e.g., farming, livestock raising) and even youth rights. More than one focus group voiced a preference for youth-centered training and support, to enable youth to continue collaborating and learning in peer groups, rather than integrate groups with older adults (e.g., *groupes dynamiques*). At a few sites, Youth Group members had dropped out because they felt they were “wasting their time”; while at others, interested youth had been unable to join groups because of the size limit. And while a few youth FGDs were critical of the quality of project field staff’s support (i.e., “they should act more professionally with us”); others described high levels of support and referred to project staff by name—giving the impression the staff were their allies.

4.8.2 Conclusions

The qualitative fieldwork revealed a high level of appreciation for the support provided by Fararano. FGDs in all communities expressed disappointment that the project has ended and expressed the hope that they would have other opportunities to collaborate with CRS' local IPs.

4.9 Coordination

4.9.1 Findings

FGDs were conducted with community leaders in all core qualitative evaluation research sites. Overall, community leaders rated the efforts of Fararano staff to coordinate their efforts with the *Chef de Fokontany* and VDCs as satisfactory or very satisfactory. The evaluation team also conducted KIIs with four national GOM partners. These KIIs provided evidence of sustained efforts by CRS to coordinate with government partners, who expressed appreciation for CRS's efforts in the areas of nutrition, youth, water and sanitation, and local governance. KIIs with senior CRS staff highlighted the importance the project placed on collaboration with key GOM ministries, but they also noted the challenges of building effective partnerships with some due to frequent government reorganizations, changes of ministers, and subsequent turnover of ministry focal points.

In the area of local governance, representatives of the National Office for the Coordination of Decentralization were highly knowledgeable about and engaged in Fararano's efforts to strengthen (and eventually secure official recognition for) *fokontany*-level governance structures (VDCs). Although this collaboration only began in Year 3 of the project, it proved very fruitful, in particular as regards strengthening commune-level governance structures and linking those to Fararano's *fokontany*-level work.

Representatives of the Ministry of Water, Sanitation and Hygiene reported good alignment of the project with GOM policies, regular coordination through quarterly and annual meetings and occasional field activities, and the joint promotion of a family hygiene poster (see Figure 14) as a communication tool. However, they reported not receiving regular data for their online data collection system and commented on the low success rate of CLTS in Fararano, possibly because the project did not follow the protocol established by the Global Sanitation Fund in Madagascar, the leading authority on CLTS in Madagascar.

The project focal point at the Ministry of Youth and Sports (MJS)²⁹ described good coordination between the project and the MJS. An added value of Fararano, from the point of the MJS, was its ability to focus on rural youth in the most remote *fokontany*, whereas MJS services are limited to the district level. This meant there was strong complementarity between Fararano and MJS services in terms of reach. The MJS focal point was also aware and supportive of CRS plans to connect associations of rural youth to existing MJS-supported youth centers.

The ONN reported good coordination between CRS at the national level; less so between the IPs and the Regional Offices of Nutrition, who could have been more involved in project M&E, for example. CRS

²⁹ French acronym: Ministère de Jeunesse et des Sports

consulted ONN during program planning and throughout implementation, and during the periodic Care Group evaluations through the end of the project. ONN was involved in the design of Purpose 1 curricula and materials, along with the Ministry of Health, and in the design of management tools. Sometimes, CRS/Fararano utilized nutrition communication materials developed by ONN. “But if the IPs had taken GOM partners into consideration, the project results would have been better. Regional Offices of Nutrition could have provided support for monitoring [nutrition activities]” (KII, GOM official).

Fararano was challenged to coordinate field implementation and activity targeting with the USAID/Mikolo health program, which was responsible for making key contributions to the achievement and/or sustainability of Fararano project outcomes. This mainly affected the referral and treatment of suspected cases of childhood illnesses. Although Lead Mothers created a demand for these critical services, in sites where there were few or no CHVs trained in C-IMCI, the demand went unmet. Similarly, Lead Mothers created a demand for nutritional services at health centers, which went unmet due to frequent stock outages of nutrition rehabilitation products.

4.9.2 Conclusions

Overall, the project made consistent efforts to coordinate its work with other actors, particularly relevant government authorities from local to national level. Despite the challenges of developing such partnerships in a context of frequent changes of structure and personnel, several collaborations produced positive results, can be built on in future projects, and have potential for longer-term impacts at a policy level.

4.10 Gender and Youth

Fararano’s TOC considered the effect of gender relations on the project’s ability to achieve tangible and sustainable results under each Purpose (CRS, 2016c). Its results framework included three intermediate results focused on promoting women’s equal participation in and benefits from project activities by improving gender-equitable decision-making at household and community levels. Central to Fararano’s gender integration was an SBCC strategy implemented by a cadre of community-based Gender Champions: Lead Mothers promoted fathers’ engagement in MCHN, and *Miranjaka* promoted fair, joint decision-making about household revenue and gender- and youth-inclusive community development. The project trained at least one volunteer *Miranjaka per fokontany* (CRS, 2018b), of which 60 percent were men (CRS staff KII).

Besides gender, Fararano recognized that age dynamics in families and communities also influence food security and nutrition outcomes, and that while youth in the project zone are highly vulnerable to food insecurity, they also have enormous potential to contribute to solutions. With limited project resources but strong support from senior management, Fararano piloted an approach designed to develop youth’s human and social capital and inspire youth’s contribution to project outcomes. Under the approach, Fararano mobilized one mixed-gender Youth Group and two Youth Leaders per *fokontany*, organized life skills training and youth events, supported youth peer education and civic engagement, and provided small grants and coaching to a select group of Youth Entrepreneurs (CRS, 2019i). IP field staff integrated gender and youth into their respective implementation responsibilities, supported by one Gender Specialist per IP and the CRS Fararano Gender/Youth Specialist.

Gender, Cash Earning and Decision-Making

Fararano monitoring data (CRS, 2018c) and final evaluation results offer evidence of gender equity in terms of access to, participation in, and benefits from household economic-strengthening activities for women and men (Annex G). However, the project underperformed on most of its end-of-program targets for FFP gender and cash indicators, and its impact on equitable decision-making about the use of household revenue is inconclusive.

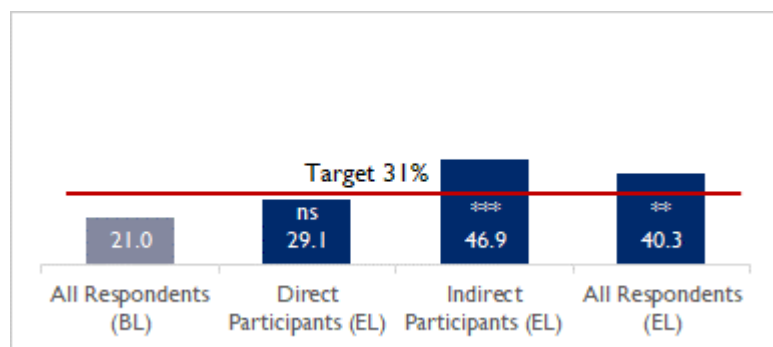
Fararano's objective was to increase the percentages of married men and women reporting earning cash in the last year. Quantitative survey data disaggregated for direct participants (Annex G) show a statistically significant increase in the percentage of married women who earned cash (from 35.9 percent at baseline to 45.4 percent at endline), whereas there was no change for women who were indirect participants. On the other hand, there was a statistically significant decrease in the percentage of married men who earned cash (from 83.2 percent at baseline to 74.7 percent at endline), though no significant difference between direct and indirect participants. These data are challenging to interpret. Especially for programs that promote men's and women's access to income-generating opportunities such as Fararano, FFP's desired direction of change for this indicator is an increase for both men and women; however, if the cash was earned from agricultural or off-farm daily wage labor, which is common in the Fararano project zone (ICF International, 2016), research has shown this could indicate that a household was unable to meet its subsistence requirements from its own production and needed to supplement it with food obtained from off-farm work (Brown et al., 2006). If this were the case, then a reduction in the percentage of people earning cash might be a sign that their farms are doing better. On the other hand, it might simply signal a change from payment in cash to payment in kind—which is not necessarily positive or negative. It could also signal that less off-farm work is available from neighboring farms and so fewer people are earning cash because less work is available. The decline in the percentage of respondents who reported earning cash in the previous 12 months should not be interpreted as a failure of the project in the absence of clear qualitative results indicating the reasons for the change.

For decisions about self-earned cash, Fararano's objective was to achieve higher rates of joint decisions for married men and married women, and higher rates of married women making decisions alone. The quantitative survey data show a statistically significant decrease in the percentage of men who made joint decisions about self-earned cash—opposite of the desired trend. However, when disaggregated by participant type, the data reveal there was no significant change between baseline and endline in the percentage of direct participant married men who made joint decisions about self-earned cash (TABLE A 3 Annex G). On the other hand, although the quantitative survey data show a statistically significant increase in the percentage of married women who made sole decisions about self-earned cash, in line with the desired trend, when disaggregated by participant type, the data reveal that the percentage of direct participant married women who made sole decisions was essentially unchanged between baseline and endline. (Figure 15). So, although Fararano's cash decision-making objectives were not entirely met, the data suggest that there might have been contextual factors that influenced a reduction in couples' joint decision-making, especially in the South, but that the direct participants in the project were somewhat insulated from that impact. However, the qualitative study was unable to generate a conclusive explanation for these trends.

The ambiguity in the survey results for cash and decision-making also speak to the challenge of evaluating gendered decision-making dynamics. Although FFP’s joint decision-making indicator is able to measure who of the couple makes decisions about cash, it is unable to capture the gendered differentials in level of control over those decisions, depending on the amount and intended use of cash. At endline, even the qualitative data are unable to clarify how much joint decision-making about use of household revenue is truly equitable, where women (and men) are both able to exert a fair degree of control over the outcome. On the one hand, FGDs with SILC members and Lead Farmers/POs and KIIs with *Miranjaka* all generated reports of increased and more transparent communication within couples about use of income, with women describing their participation in decisions about significant household

Figure 15: Percentage of women in union and earning cash who make decisions alone about the use of self-earned cash

Fararano met its end-of-program target (31 percent) for percentage of women who make solo decisions about self-earned cash.



ns = not significant, + p<0.1, * p<0.05, ** p<0.01, *** p<0.001

investments such as purchase of land or livestock, or about sales of assets. More important, the qualitative study also documented a few reports of increased willingness among men to seek consensus within the couple and compromise on the final decision. But there were a similar number of reports of no perceived changes in decision-making dynamics about income, and a few study participants’ comments suggested the emphasis on joint decisions could be having the unintended effect of limiting women’s ability to make their own financial decisions. And by and large, *Miranjaka* key informants said they had perceived greater improvements in women’s community engagement and communication and leadership capacities since the start of Fararano, than in gendered decision-making dynamics.

The qualitative study identified several factors that may have reduced the effectiveness of Fararano’s strategy to promote gender-equitable decisions about household revenue. Among them, the project’s planned supervision of *Miranjaka* was infrequent and unable to resolve program quality issues, such as keeping *Miranjaka* focused on strategic SBCC activities targeting Purpose 2 participant households. Although Fararano’s initial barrier analysis had identified conducting separate and mixed-gender discussion groups as a priority activity for promoting increased couples communication and joint decision-making (CRS 2016b) only one *Miranjaka* interviewed reported doing so, with the majority citing home visits and conflict resolution as their main activities. None reported intentionally targeting Purpose 2 participant households. The qualitative data also suggest uneven and limited collaboration between *Miranjaka* and Purpose 2 community volunteers (i.e., Lead Farmers, PSPs, etc.) and groups.

Miranjaka occasionally encountered resistance to their SBCC, often due to factors outside the control of the project, including low levels of education, alcohol abuse, and violence (often interrelated).

However, factors perceived to facilitate gender-equitable decision-making were also identified, namely increased household incomes and access to cash (i.e., through SILC), which study participants said helped reduce intra-household conflict—thus making it easier for couples to plan and manage household finances jointly. Additionally, the success and high levels of participation in SILC groups among both women and men helped couples define joint savings and investment objectives, where previously they had acted alone. The data also suggest men have compelling incentives for sharing control of household revenue decisions with their spouses where they recognize the benefits to their overall financial security: men’s standing in their communities is reinforced when their households’ basic needs are met without having to borrow money, and when there is less fighting.

These findings also suggest that as long as Fararano’s Purpose 2 outcomes show promise of sustainability for both men and women (i.e., through sustained use of new agricultural technologies, membership in POs enabling greater profitability of agricultural livelihoods, and membership in high-performing SILC groups, for men and women), there are reasons to be optimistic about the enabling environment for gender-equitable decision-making about the use of cash, even without Fararano’s direct support.

Although the final evaluation data are unconvincing about the added value of *Miranjaka* for promoting gender-equitable decision-making about household revenue, the qualitative data suggest the *Miranjaka* model itself is potentially sustainable, although perhaps with a shift in focus to conflict resolution (in couples, families, and communities) and gender-based violence (GBV) prevention. The qualitative study found high levels of motivation among *Miranjaka*—even if most were unaware of any strategies in place for post-project training or support—and evidence of community demand for *Miranjaka* services. At some study sites, the project had registered *Miranjaka* associations before closeout, with one example of linkages between the *Miranjaka* to the Ministry of Population, Social Protection and Promotion of Women for the provision of community-based GBV prevention and monitoring.

Gender and Maternal and Child Health and Nutrition

Fararano’s TOC considered that improving MCHN outcomes requires greater involvement and support of fathers of CU2 and increased knowledge of optimal MCHN practices among both parents. At the end of the project, although Fararano largely exceeded its output-level targets for fathers and mothers trained in MCHN practices and joint decisions (CRS, 2018c), none of FFP’s gender-MCHN outcome-level indicator targets were met. The share of parents of CU2 with knowledge of MCHN practices was essentially unchanged from baseline (no statistically significant difference) without any statistically significant difference between participant types (Annex G).

There was also little perceptible change in mothers’ MCHN decision-making dynamics. The endline percentages of mothers making MCHN decisions jointly with their spouse/partner and of mothers making those same decisions alone all remained unchanged over baseline—with no statistically significant changes (Annex G). On the other hand, the values for fathers’ MCHN sole decisions moved in the opposite direction of the desired trends. In particular, the quantitative survey detected a statistically significant increase in the proportion of married fathers of CU2 making CHN decisions alone (11.1 percent versus 33.4 percent at endline), and the increase was significant among both participant types.

Here again, these results raise questions. Although there were noticeable differences between different endline qualitative study sites, mothers at high-performing sites demonstrated satisfactory levels of MCHN

knowledge—even if mothers generally observed that it was hard to absorb so much new knowledge at once. In FGDs, Lead Mothers attested to fathers participating during home visits, and a few correctly described the SBCC approach for targeting parents separately and together. Mothers confirmed these reports, and both mothers and *Miranjaka* provided examples of fathers who were more involved in child care and willing to accompany sick children to the health center. During the study, only two mothers made comments suggesting their husbands might have an outsize influence on MCHN decisions.

The apparent contradictions in the data make it difficult to draw conclusions about the impact of Fararano’s gender and MCHN strategy, or the factors that influenced its effectiveness. However, key informants agreed that limited financial and human resources allocated to gender integration had created constraints to achieving impact, CRS senior management support for gender (and youth) integration notwithstanding. Multiple qualitative data sources suggest the factors described below also merit consideration, regarding effectiveness.

- **Quality and tailoring of interpersonal communication:** Although FGDs did not raise any specific challenges associated with Lead Mother implementation of gender SBCC, and Fararano reviews of Lead Mothers’ gender SBCC capacities are largely positive (CRS, 2018b; 2019a), the qualitative study found that some Lead Mothers struggled to fulfill all their responsibilities, and received inadequate technical supervision. This negatively affected the frequency and quality of their interpersonal communication in 1,000-day households, and was a barrier to achieving MCHN behavior change (Section 4.2). Qualitative evaluators were unable to observe Lead Mothers’ technique, but the evidence suggests that although Lead Mothers communicated standard messages and initiated couples discussions around gender-MCHN using the gender toolkits, and promoted home gardens as an entry point for engaging fathers in MCHN, the same issues raised in Section 4.2 also affected Lead Mothers’ abilities to tailor gender communication to couple- or community-specific barriers.
- **Mix of approaches:** Multiple data sources pointed to the importance of having relatable gender role models, i.e., Lead Mothers and *Miranjaka* who demonstrated gender-equitable behaviors in their couples and households. However, a few Gender Champions also perceived that knowledge and evidence from outside their communities was critical for reinforcing their credibility and extending the impact of their SBCC. Specifically, they cited the project’s attractive, illustrated gender toolkits, and the support of Fararano staff who repeated gender key messages when they visited the *fokontany*. (Of note, none cited the project’s gender videos or radio broadcasts.)
- **Engagement of traditional leaders.** Study participants felt that where traditional leaders were actively and visibly supportive of Fararano’s gender SBCC, it had broken through social barriers and incentivized men to share household responsibilities traditionally assigned to women, such as fetching water and household hygiene. Finding effective ways to challenge social norms—for example, by engaging traditional leaders as allies—is particularly relevant for improving MCHN outcomes, because the practice of MCHN behaviors is heavily influenced by cultural and social gender norms and gender roles (CRS, 2016c). However, project efforts to mobilize traditional leaders and model fathers in support of gender equity were unsystematic, and represent a missed opportunity to increase the gender-responsiveness of MCHN interventions.

Youth Engagement

Because of the way in which Fararano implemented its youth approach, the baseline and endline surveys did not capture any quantitative data regarding youth. For this reason, all results and conclusions on youth were generated through the qualitative endline study. The study found that establishing Youth Groups increased youth’s visibility within their communities and to local leaders, and enabled youth contributions to local

efforts to reduce food insecurity: youth helped build latrines and clean their villages, planted trees, and implemented disaster early warning systems, for example. Fararano’s Youth Groups also created opportunities for young women to voice their ideas, develop their leadership, and demonstrate their potential—where none previously existed (CRS, 2016c). Female Youth Leaders seized these opportunities, and earned their male peers’ respect. In Tuléar II District, one young woman leader of an otherwise exclusively male Youth Group explained that taking that role had been hard for her: initially, and she had been embarrassed to speak. But she had absorbed everything she could from the project training and grown self-confident. Her male peers enthusiastically affirmed that she was an effective leader.

However, although youth’s contributions were valued and the project successfully expanded roles for both young men and women, shifting the balance of power between old and young proved more challenging. Though local leaders reported greater youth community engagement as one of the project impacts, their examples were largely focused on using youth to provide labor. And during FGDs in both poor- and high-performing study sites, Youth Leaders described acting upon instructions from project staff and waiting for project staff to convene meetings. The endline data suggest it was hard to break from the cultural biases that marginalize and instrumentalize youth—biases that Fararano had already identified in its initial Gender Analysis (CRS, 2016c)—both within communities and in project implementation.

This finding is relevant, because the data also suggest a Youth Group’s empowerment is associated with its members’ level of motivation and the group’s capacity to address members’ collective needs. This was seen across high- and poor-performing study sites. Where groups’ interactions with project staff and community actors mirrored traditional age-related power dynamics, members were less engaged and had stopped meeting. Where groups convened meetings on their own, and had implemented member-driven initiatives such as collective farming initiatives and youth SILC groups, members appeared highly motivated and confident they would continue their activities even after the project ended, and regardless of whether they were registered as an association and positioned to benefit from long-term support from the MJS.

Factors Associated with Increased Effectiveness of Fararano’s Youth Approach

- **Dynamic Youth Leaders—of any gender.**
- **Supportive parents, who encouraged their children to join Youth Groups and who sometimes even provided assistance to youth-led initiatives.**
- **High-quality life skills and youth rights training, developed and delivered by experienced trainers in close partnership with the MJS.**
- **High-quality Youth Entrepreneur coaching, implemented in partnership with the Malagasy NGO Youth First.**

Another way traditional age-related biases may have factored into the effectiveness of the project’s youth approach was by reducing access to Youth Groups for younger youth (i.e., 15-20 years) in favor of older youth. Initially, the project aimed to limit Youth Groups to 15 members aged 15-24 years. However, it proved challenging to restrict individuals age 25 and older from joining, even though these older youth were often married with families, and working, and sometimes already involved in other Fararano-supported groups (i.e., mothers’ groups, *groupes dynamiques*, and SILC). Because of the heightened vulnerabilities and risks faced by younger youth, including adolescent malnutrition, teen pregnancy, and early marriage (GOM, 2015), these youth potentially had the most to gain from Youth

Group membership. Where youth under 20 were unable to join Youth Groups, the project may have missed opportunities to interrupt the intergenerational transfer of poverty.

Any conclusions on youth-related outcomes and their sustainability must be drawn with caution, considering the gaps in M&E data. However, the qualitative endline findings suggest Fararano implemented a promising approach for youth development and youth’s community engagement. Where Youth Groups were functioning autonomously and involved in activities perceived as relevant by their members, there was evidence of sustained levels of motivation, and groups with savings functions or full SILC groups show promise as a sustained source of resources for members. Although exit strategies designed to link Youth Groups to the MJS were implemented too late to be fully operational by the end of the project, the MJS key informant expressed support of Fararano’s efforts to register youth associations and connect them to each other through existing MJS-supported youth centers at the commune and district levels, to facilitate youth access to GOM institutional resources for youth training and coaching, and sustained capacity-strengthening. However, the MJS’ district-level supervisors may need additional training and resources to provide the same level and quality of youth entrepreneur coaching that Youth First provided.

Gender and Youth Key Conclusions

On gender, project monitoring data (CRS, 2018c) and final evaluation data provide evidence of gender-equitable access to and participation in project interventions, with women integrating *Groupes Dynamiques* and POs, and SILC groups, and reached by multiple MCHN activities, both individually and together with their spouses/partners. And though Fararano faced challenges ensuring Youth Group access for the youngest target youth, the youth pilot learned lessons about improving access in future projects. Women’s and youth’s community engagement was perceived by qualitative study participants as one of the most significant changes resulting from Fararano’s gender/youth integration. Women and youth benefited from expanded roles and strengthened relationships with their peers and in their couples—and often also with community leaders and committees. Furthermore, their community participation extended well outside decision-making on local DRM and safety net activities.³⁰ The qualitative study probed but found no evidence of increased risk of GBV to Gender Champions, Youth Group members, or members of target households related to project participation, which suggests Fararano implemented its gender/youth approach with sensitivity to the context.

However, the final evaluation data show Fararano was less successful at achieving equitable distribution of project benefits across genders and generations. On the one hand, direct participant female farmers experienced significant improvements across the FFP agricultural indicators, like their male counterparts. On the other hand, direct participant female-headed households consistently fared worse than male-headed households and direct participant female-headed households on FFP’s poverty indicators. The endline data show direct participant women’s dietary diversity (MDD-W) stagnant even as HDDS values improved. Fararano was also challenged to close the gendered gaps in decision-making about MCHN and use of household revenue,³¹ and at redistributing household roles to significantly

³⁰ Fararano Results Framework Immediate Outcome 3.x.x.x. Note: CRS used Xs (instead of numbers) for these Immediate Outcomes.

³¹ Fararano Results Framework Immediate Outcomes 1.x.x. and 2.x.x.

reduce women’s time poverty. Finally, the qualitative data suggest redistributing power between old and young may be at least as challenging as between genders.

Weaknesses in project implementation (including supervision of Gender Champions) appear to have contributed to these results. However, the qualitative data also raise questions about program design. Although Fararano’s initial Gender Analysis highlighted entrenched socio-cultural gender norms as a barrier to achieving gender equity, the project focused on raising awareness of gender and rights among women and men, increasing women’s agency, improving women’s relations with their spouses, and increasing women’s proportional representation in community decision-making bodies (CRS. 2016c). This is an important start, but the endline results call into question whether such strategies are of limited effectiveness for helping women advance on FFP’s Gender Integration Framework access-control continuum, without intensified efforts to address the structural drivers of gender inequity—in other words, the social systems and cultural institutions that perpetuate gender disparities and discrimination. The same observation holds true for youth.

Important to note, gender and youth integration were neglected in the Joint Mid-Term Review, due to the absence of FFP’s Gender Specialist (JMRT, 2017). Especially considering the mixed results for Fararano’s gender performance, this underscores the importance of M&E systems that permit ongoing learning and appropriate responses to persistent and evolving barriers (such as those related to shocks) to gender and youth equity.

4.11 Environmental Considerations

At a contractual level, the project complied with the environmental requirements of the donor and the host government using various tools (e.g., Initial Environmental Examination; Environmental Screening Form; Environmental Mitigation Monitoring Plan; and Pesticide Evaluation Report and Safer Use Action Plan) at planning and implementation phases of most activities, but especially for infrastructure, farming and NRM, with annual updates and regular consultations. However, due to procurement issues (administrative and technical) and the need for detailed preparation and approvals at USAID, there were several cases of significant delays in making vegetative material available, which had a negative impact on agriculture and NRM activities (Staff KII, FGD NRMC).

During the qualitative field work, the evaluation team did not observe any additional environmental degradation due to project activities, and the project has been environmentally positive globally on a small scale, with more pronounced outcomes only in a few selected areas. The project also tried to also instill a culture of environmental awareness at community level through its GoGreen activities, whereby each *fokontany* selected locally relevant environmental performance indicators for annual community self-evaluation. However, these activities were not mentioned by project participants during FGDs.

4.12 Sustainability

4.12.1 Findings

Specific sustainability issues are addressed above under the findings for each project purpose and gender/youth and vary widely across intervention models. In this section, the evaluation team offers broader reflections on the sustainability of the outcomes of intervention models used by Fararano:

- The SILC/Voamami model is inherently sustainable for most groups if training is done well. With PSPs, the SILC model can be self-replicating post-project.
- Some Fararano approaches are potentially sustainable due to links to the private sector/markets (e.g., POs/co-ops) or local government structures (Care Groups linked to Centres de Santé de Base). Stronger *fokontany* governance structures (VDCs) and plans (i.e., Village (Fokontany) Development Plans) would enhance the sustainability of associated committees (e.g., Disaster Risk Management).
- Public-private Partnerships for WASH infrastructure also offer potential for sustainability, but had mixed results under Fararano.
- Intervention models that are almost entirely dependent on unpaid community volunteers are unlikely to be sustained at any scale post-project.

Although sustainability of interventions should always be the goal, local context determines what can be reasonably expected. For example, livelihood strategies in the project zone are overwhelmingly agricultural. Therefore, an integrated food security program like Fararano needed to incorporate a robust set of interventions related to increasing agricultural production and incomes. However, in the context where there is no public sector agricultural extension service at the community level, any volunteer-based model for promoting improved practices, including the Lead Farmer approach, will have limitations in terms of scale-up and sustainability. Similarly, public-private-partnerships, where capable and reliable partners can be found in project locations, are likely to be more sustainable than the alternatives of either public sector (e.g., commune) or community management.

4.12.2 Conclusions

In choosing intervention models to incorporate in the design of projects like Fararano, priority should be given to those with high inherent sustainability or strong linkages to either private sector actors/markets and/or established local government structures. However, where local context limits the sustainability potential of an intervention deemed essential to achieving the project's purposes, those limitations should be acknowledged and, where possible, offset by linking volunteers and participants to other more sustainable intervention models. The sustainability of the outcomes from the Lead Farmer model, for example, would have been enhanced by a closer coupling with other project interventions, such as POs and SILC Groups.

4.13 Lessons Learned

4.13.1 Overall

LLO.1: Fararano's overall design was overly ambitious in terms of both geographic coverage and activities/approaches. Implementation was further hampered by initial staffing levels that were insufficient to execute this complex design. Due to the high number of project interventions, tight deadlines, and late start for some activities, planned project outputs were often achieved, but in some cases at the expense of strong community ownership. This has likely undermined the long-term sustainability of project outcomes and increased a sense of dependence by reinforcing the idea that tangible results can only be achieved with high project involvement. Despite the best efforts of the Fararano team, the project's ambitious scope and inadequate staffing resulted in some use of overly-

standardized approaches across regions (e.g., DRM emphasis on cyclone/flooding risks, even in the Southwest, where drought is the biggest risk factor).

LLO.2 The inclusion of a significant number of very remote sites further exacerbated the logistical and management challenges for the already thinly-stretched Fararano team. In addition, extremely remote sites, in addition to requiring more staff travel time, present unique challenges and opportunities, which may necessitate tailored approaches to address distance from markets and public services.

LLO.3: Fararano used intervention models representing the full gamut of sustainability potential. SILC Groups are an example of structures with a strong sense of community ownership and requiring little external support. At the other end of the spectrum are models almost entirely dependent on unpaid community volunteers who are unlikely to sustain their activities post-project in the absence of on-going training or incentives.

LLO.4: Integration of activities within and across project Purposes was not optimal, and the timing and sequencing of some interventions could have been improved. A number of activities (some POs and infrastructure projects, social protection micro-projects) were implemented too late in the project cycle to allow sufficient time for maturation.

LLO.5: The local governance work undertaken by Fararano has laid an important foundation for future community development, but most communities still lack strong leadership and clear plans and need further capacity-building support for local governance structures.

4.13.2 Purpose 1

LL1.1: Although the Care Group approach is effective, implementation standards must be respected during scale-up, especially concerning the ratio of Lead Mothers to mothers, the distance between Lead Mothers' and mothers' homes, and the distance from Lead Mothers' homes and Care Group meetings. Implementation was challenged in sparsely populated areas, and other learning models might have been more effective there. It is important to take Lead Mothers' level of education into account, without excluding any Lead Mothers, and to adapt training and implementation to their different levels of learning and abilities.

LL1.2 Achieving Fararano's Sub-purpose 1.2 outcomes required a coordinated targeting strategy, in which Fararano created demand for health services supported under the USAID/Mikolo health program, including those provided by C-IMCI CHVs. However, gaps in Mikolo activity coverage sometimes meant Lead Mothers created demand for MCHN services that were unavailable. This primarily affected referral and treatment of suspected cases of malnutrition or illness.

LL1.3: Although the project provided high-quality and easy-to-use SBCC tools, it was unable to guarantee that Lead Mothers would always use them correctly. Frequency of project supervision of Lead Mothers influenced whether behavior change results were achieved.

LL1.4: The qualitative study found that community members wait to assess the experiences of early adopters of behavior change, before deciding to adopt such behaviors themselves. However, the existence of early adopters of behavior change in and of itself may be a poor predictor of sustained

behavior change—as in the case of latrine construction, where early adopters’ poorly built latrines may have discouraged others from building their own.

LL1.5: Although organizing awareness-raising and other SBCC activities during food distributions may enable reaching large numbers of project participants, participants are distracted by the distribution activities and quickly forget what they were taught.

LL1.6: At qualitative study sites with evidence of use of improved latrines, local authorities had been highly engaged in and supportive of the project’s approaches and processes for promoting improved sanitation behaviors.

4.13.3 Purpose 2

LL2.1: Volunteer-based approaches to the promotion of improved agricultural practices, such as the Lead Farmer model, have low sustainability potential— particularly in a context where no community-level government extension services exist— unless farmers are systematically engaged in other group-based activities, such as farmer organizations (POs, CPOs, Co-ops) or SILC groups.

LL2.2: The SILC/PSP model worked well under Fararano, but overall project performance would have been enhanced by faster and broader formation of SILC groups.

LL2.3: Organizing farmers into POs to build social capital and improve the terms of access to markets was a very relevant strategy from which many more participants might have benefited. The PO model produced promising results, but was rolled out too slowly and reached too few farmers (less than 20 percent of P2 participants) to realize its potential impact and sustainability.

LL2.4: Investments in irrigation and feeder roads infrastructure using the FFA model enhanced short-term food security in target communities during the lean season, but their long-term impact and sustainability are uncertain.

4.13.4 Purpose 3

LL3.1: The provision of relevant equipment and repeated training support over several years, combined with a high interest at household and community level, can lead to sustainable and positive outcomes. This was exemplified by the DRMCS’ success in reducing cyclone damage through early warning tools, annual training and simulation exercises, and learning through actual practice.

LL3.2: The delays in the provisioning of seed/seedlings for reforestation led to predictable failed outcomes, which: wasted FFA participants’ efforts, though they were appreciative of the food ration received; demotivated and undermined the credibility of the NRM responsible for the activity; and damaged the project’s reputation by investing project resources and participants’ time in an activity that it presented as important and where good practice (techniques and timing) should have been well understood.

LL3.3: Placing NRM activities under the disaster mitigation intermediate result, with NRM committees not officially linked to VDCs and their Village (Fokontany) Development Plans, severely limited the importance and reach of the project’s environmental protection outcomes.

LL 3.4: Bringing economic benefits to the most vulnerable households is an essential first step to increase their resilience and community inclusion, but increasing membership in groups, especially ones linked to economic activities (SILC, POs), is critical for lasting social protection outcomes

LL 3.5: Planning and preparing for slow-onset and hard-to-predict drought needs a very different approach than for fast-onset shocks and more easily predictable cyclones, and cannot be managed through the usual disaster risk management channels, especially at community (DRMC) level.

4.13.5 Gender and Youth

LLGY1: Improved household financial management capacities, and increased productivity and incomes for men and women, were critical for enabling couples discussions and joint decisions about the use of household revenue. However, *Miranjaka* were challenged to leverage these Purpose 2 outcomes to extend the impact on gender-equitable decision-making, and their activity targeting may have excluded many Purpose 2 participant households. Also, collaboration with Lead Farmers and PSPs was weak.

LLGY2: Fair, joint decision-making in couples, and equitable distribution of household responsibilities between men and women, are heavily influenced by cultural and social gender norms. However, in practice, Fararano’s approach for achieving these outcomes was largely focused on raising women’s and men’s awareness around equal rights and strengthening women’s economic independence, and less intensely on challenging cultural and social gender norms, which may have affected results.

LLGY3: Fararano Youth Groups expanded youth roles and increased youth visibility, and by doing so, started addressing the power structures that marginalize young persons and heighten their vulnerability to food and nutrition insecurity. But Youth Groups risk being instrumentalized, without additional concerted efforts to shift the balance of power between old and young.

LLGY4: Challenges respecting the project’s age limit for Youth Group members may have resulted in missed opportunities to create impact among adolescent youth—the very group with the most to benefit because of their vulnerability to food insecurity.

LLGY5: The Youth Groups that demonstrated the greatest potential for sustainability and impact are those that: claimed a degree of autonomy from Fararano; defined their own agenda; and implemented member-driven initiatives.

5. RECOMMENDATIONS

5.1 Overview

RO1.1: In the design of future integrated food security programs, take a more focused and less complex approach in terms of geographic scope and the number of different intervention models used. Allow more time during the start-up phase for contextual analysis, identification of community priorities, and local governance capacity-building. When staff-intensive activities are included in the design, ensure that adequate human and financial resources are budgeted for successful implementation.

RO1.2 In the design of future integrated food security initiatives, where a significant number of remote sites are included, additional resources should be allocated from the outset to allow for regular on-site follow-up. Adjustments should also be made to the standard intervention package or specific models to take into account the opportunities and challenges presented by such sites.

RO1.3: Prioritize community intervention models with high inherent sustainability or with strong linkages to either the private sector or established local government structures. Where less sustainable, volunteer-based intervention models (e.g., Lead Farmers) are used to achieve critical project objectives, link participants to other, more sustainable group activities (e.g., SILC, POs).

RO1.4: Maximize integration across purposes by engaging all households targeted for MCHN interventions with one or more livelihood activities to enhance the ability of those households to sustain health and nutritional outcome gains post-project. Consider the sustainability implications before initiating new activities late in the project cycle when there is too little time to provide adequate support.

RO1.5: Continue to invest in strengthening local governance structures and leadership as foundational for community development initiatives in the Malagasy context. Invest more time and resources in the identification and development of dynamic local leaders and, when necessary, delay the selection for key volunteer roles (e.g., members of VDCs) to allow for the identification/ emergence of the strongest possible candidates.

5.2 Purpose 1

R.1.1: The capacity of volunteers/Lead Mothers in their roles has a strong influence on the adoption of new MCHN behaviors. Projects should plan enough time for Lead Mother selection, and ensure women discuss and decide jointly with their husbands before accepting the Lead Mother volunteer role. Projects should carefully analyze the ratio of Lead Mothers to mothers while still respecting the Care Group criteria, in order to minimize the distance Lead Mothers must cover to do home visits, and take the geographic layout of target fokontany into account. Finally, they should also consider the ratio of field staff to Care Group, as the frequency of field staff coaching and supervision has a significant impact on the success of the approach.

R1.2: New projects should reinforce stakeholder coordination, to ensure maximum effectiveness and impact of stakeholders' different, complementary interventions (as in the case of the complementary package of community-based health services offered through Lead Mothers and CHV C-IMCI).

R1.3: New projects should provide sufficient levels of supervision and coaching for Lead Mothers, as a crucial element for ensuring the success and results of the Care Group approach.

R1.4: Beyond the adoption of new behaviors, project planning should consider the time required to achieve sustained behavior change, taking into account relevant contextual factors and the necessary accompanying measures for supporting sustained behavior change. This is especially critical for latrine use behaviors, to avoid relapse.

R1.5: At sites where food assistance is used, it is necessary to design and implement measures to avoid dependence and minimize any negative impact. Projects should avoid relying on food distributions for attaining their awareness-raising/SBCC coverage targets. They should carefully analyze which activities can be combined with food distributions and how, in such a way that ensures the quality of results obtained through food distributions and awareness-raising.

R1.6: Local authorities should be engaged in implementing sanitation activities: not only do they understand the local context; but they can also contribute to monitoring and promoting sustained behavior change. Future interventions should focus on the development and promotion of latrines that are durable, odorless, easy to clean, and affordable, created by and for project participants.

5.3 Purpose 2

R2.1: Future use of the Lead Farmer model should take into account the lessons learned during Fararano, including the JMTR recommendation of integrating a systematic outreach mechanism to promote broader adoption. Lead Farmers and those they train should be systematically integrated into group activities such as POs and SILC groups that produce lasting economic benefits for their members.

R2.2: CRS should continue to implement the SILC/PSP model, but measures should be taken to achieve the highest possible levels of group formation early in the project cycle. Since SILC groups can lay an important foundation for other food security interventions, they should be considered as an entry point and rolled out during the start-up phase of future integrated food security initiatives.

R2.3: Involve a higher percentage of trained farmers in POs and co-ops to realize the benefits of collective purchasing and marketing. Form such groups early enough in the project cycle to allow enough time for capacity-building and market linkages.

R2.4: Take a more rigorous approach to ensuring the long-term impact and sustainability of any infrastructure assets put in place using the FFA approach.

5.4 Purpose 3

R3.1: Continue the approach that led to the excellent results for cyclone risk management with the DRMCs. Three improvements to consider: add easy-to-use reference material for members' use and to train others; include DRMC leadership in the VDC; and include DRM as part of the Village (Fokontany) Development Plan.

R3.2: Implement a Do No Harm strategy that considers the main known internal and external risks and develops contingency plans to: avoid wasting effort (staff and beneficiaries); minimize negative outcomes and behaviors; and reduce demotivation. This is especially the case for agriculture and NRM, where the quality, quantity and timeliness of planting material are essential.

R3.3: For food security projects like Fararano, NRM/environmental approaches and activities should be implemented primarily through the farming and livelihood component and integrated in the Village (Fokontany) Development Plan, rather than being organized under a separate committee of the VDC.

R 3.4: Continue to include the MVH in the work of the VDC, including keeping lists of who the MVHs are, specifically involving them in short-term economic activities, ensuring their safety during disaster management activities, and promoting their inclusion in other beneficial group activities.

R 3.5: Drought considerations should be a much more explicit and central focus of project resilience-building efforts and integrated into both agriculture/livelihoods and MCHN/WASH activities, in areas where drought is a recurring phenomenon. Project-level initiatives should be linked up and coordinated with other actors and wider drought management strategies;

R 3.6: Although the promotion of improved cook stoves as an income-generating activity tried to involve youth, it could have been used more effectively to link mothers (less cooking time, less fuel, less smoke), youth (income generating activities, community help), NRM (reduced demand for firewood), and SILC (loans for production and purchase).

5.5 Gender and Youth

RGY1: Consider waiting until SILC groups are operational before implementing SBCC on gender-equitable decision-making about the use of household revenue. Support *Miranjaka* to strategically target their SBCC activities to focus on POs and SILC group member households to ensure maximum relevance of *Miranjaka* messaging and greater impact.

RGY2: Make it a priority to mobilize traditional leaders as allies and Gender Champions, as a means to positively influence the social and cultural norms that restrict men's and women's social roles and identities. Place greater emphasis on men's, women's, and mixed-gender dialogue groups, and engagement of model fathers.

RGY3: To draw on the full potential of youth, target local and traditional leaders, parents, and even project staff with SBCC designed to lift social and cultural barriers to youth empowerment. Where SILC groups, Care Groups, or farmers groups exist with young and older members, take advantage of the opportunities created for strengthening intergenerational social capital.

RGY4: Create separate groups for older and younger youth, tailoring approaches to members' age- and gender-specific priorities and needs, to increase equitable access to and relevance of Youth Groups, Consider implementing group-based mentoring, to build bonds between older and younger youth, and especially older and younger female youth.

RGY5: Recognizing that youth's needs for long-term guidance and support vary, consider approaches that promote youth-driven problem solving, experimentation and learning, and enable incremental progress from youth mobilization to true youth engagement.³² Develop and measure indicators of Youth Group maturity, to inform tailored assistance to groups. Create opportunities for youth participation in M&E, as one way of involving them meaningfully in implementation of the youth approach.

³² YouthPower, a USAID project, defines youth engagement as: "an inclusive, intentional, mutually-respectful partnership between youth and adults whereby power is shared, respective contributions are valued, and young people's ideas, perspectives, skills and strengths are integrated into the design and delivery of programs, strategies, policies, funding mechanisms and organizations that affect their lives and their communities, countries and globally." <https://www.youthpower.org/youth-engagement-cop>

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ANNEX B: EVALUATION STATEMENT OF WORK

Statement of Work

Population-Based Final Evaluations of ASOTRY and Fararano Development Food Assistance Projects in Madagascar

INTRODUCTION

The final evaluation of the 2014 Madagascar Title II Development Food Assistance Projects (DFAPs) is the second and final phase of a pre-post evaluation strategy. The baseline study was conducted in May, 2014 and employed a mixed-method approach. It was designed to provide information on all four aspects of food security—availability, access, utilization and stability. The study investigated household food access, sanitation and hygiene, agriculture, household expenditures and assets, dietary diversity, and anthropometry among women and children. The Madagascar final evaluations will use a mixed-method approach and integrate secondary data and project monitoring data. Methods will be chosen to generate the highest quality and the most credible and robust evidence possible to answer evaluation questions.

BACKGROUND

In FY 2014, the U.S. Agency for International Development’s (USAID) Office of Food for Peace (FFP) entered into two new cooperative agreements for Title II DFAPs in Madagascar, (1) the ASOTRY project implemented by ADRA and its partners: Land O’Lakes (LOL), and Association Inter-cooperation Madagascar (AIM), and (2) the Fararano project implemented by Catholic Relief Services (CRS) and its partners: ODDIT, CDD, the Development Office of Ecar Mananjary, and Caritas.

The goal of the ASOTRY project is to reduce food insecurity and chronic malnutrition, as well as build resilience among chronically food insecure households in the most vulnerable regions of Madagascar. The project has three objectives: (1) Reduce chronic malnutrition and improve the nutritional status of pregnant and lactating women and CU5; (2) Increase household and microenterprise productivity and income through appropriate market-oriented approaches, and (3) Build household resilience to withstand and mitigate the effects of shocks and natural resource degradation. ADRA utilizes nutrition and childcare best practices training, care groups, and community-led total sanitation to address the challenges of child malnutrition and illness. ADRA also aims to increase profitability of diversified agriculture products, the engagement of both women and men in diversified viable micro-enterprises, and the contribution of livestock production to household revenue and food consumption. Additionally, ADRA prioritizes the construction and maintenance of disaster mitigation infrastructure, the improvement of disaster preparedness and response systems, and the development of community-based environmental and natural resource management. The total estimated award amount is \$38.1 million.

The Fararano Project goal is to reduce food insecurity and chronic undernutrition and increase resilience in three of the six USAID/FFP priority regions: Atsinanana, Vatovavy Fitovinany, and Atsimo Andrefana. The program has three objectives (1) to prevent undernutrition (for children under 1,000 days) and improve nutritional status (for CU5); (2) to increase and diversify household agricultural production and

sustainable economic wellbeing (3) to enhance communities’ resilience to shocks and reduce natural resource degradation. Fararano implements several activities to increase overall knowledge of optimal nutrition behaviors at a household and community level—including care groups, trainings, and community-led complementary feeding and learning sessions. CRS is also providing diverse seeds and promoting household gardens to improve household access to diverse and quality foods. Other interventions include WASH behavior change interventions, irrigation development, Lead Farmer training, gender-equity programming, land tenure services, value chain development, market infrastructure and information improvement, natural resource management, and disaster risk reduction. The total estimated award amount is \$43 million.

EVALUATION PURPOSE & QUESTIONS

The overarching purpose of the final evaluation is to measure the development outcomes of the ASOTRY and Fararano projects. The statement of work provides a list of illustrative evaluation questions below and the fundamental elements that should shape the Evaluation Teams (ET) research. It is anticipated that the EY will address these, but it is not limited to working solely within this guidance.

Q1: To what extent have the projects met their defined goals, purposes and outcomes?

The ET will evaluate the contribution of ASOTRY and Fararano to USAID’s efforts to reduce food insecurity among chronically food insecure households. The ET will support its determination using both quantitative and qualitative methods when discussing the following: (1) project performance on indicators against targets set by both the partners for the key FFP indicators³³ of Depth of Poverty, Stunting, and Undernutrition. The evaluation will analyze the performance based on the theories of change of the projects. Using empirical evidence, the evaluation will describe the progress or non-progress along the hypothesized pathways of change to tell stories. The evaluation will review the key assumptions and adaptations to accommodate contextual changes over the past five years; (2) factors that promoted or inhibited the achievement of the project objectives, including, but not limited to the effectiveness of food-for-asset and/or cash-for-asset interventions; (3) plausibility of pathways and the determinants of achieving the key outcomes; (4) targeting strategies and their contributions to achieving project goals (especially with regard to gender and reaching the most vulnerable); and (5) the appropriateness and effectiveness of interventions on the poorest individuals.

Q2: Based on the evidence, which project outcomes are likely to be sustained

The ET will evaluate the functionality of the institutions and systems established or strengthened by the projects independently or in collaboration with the private sector, Government of Zimbabwe, community organizations, NGOs, and research organizations to achieve project outcomes and sustainability. It will support its evaluation using both quantitative and qualitative methods that explore the following: (1) the functionality and effectiveness of the systems, and institutional arrangements developed and/or strengthened to sustain the necessary and critical services; (2) coverage of project promoted practices and secondary adoption, (3) communities’ perceptions on the quality, frequency, effectiveness, and sustainability of the services provided by the project; (4) progress towards

³³ FFP’s established targets are: a minimum of 2 to 2.5 percentage point annual reduction of prevalence of stunting, a minimum of 3 to 4 percentage point annual reduction of prevalence of underweight, and a minimum of 4 percentage point annual reduction of depth-of-poverty.

sustainability of the service provisioning; (5) the motivation of the community and beneficiaries to demand and pay (or invest time) for the services; (6) whether the necessary resources and capacity strengthening will exist to sustain service providers; (6) the extent to which the projects leveraged other USG and non USG investments to achieve sustained outcomes as identified in the theories of change; and (7) evidence of enhanced linkages with other service providers

Q3: In each technical sector, what are the strengths of and challenges to the efficiency and effectiveness of the interventions' implementation and their acceptance in the target communities?

The ET will evaluate the effectiveness and relevance of the technical interventions, including food-for-asset and/or cash-for-asset interventions, to achieve project outcomes, and discuss those findings in relation to the projects' theories of change. It will support its determination using both quantitative and qualitative methods when discussing the following: (1) factors in the implementation and context associated with greater or lesser efficiency and effectiveness in producing Outputs of higher or lower quality; (2) the interventions and implementation processes deemed more/less acceptable to members of the target communities.

Q4: What key lessons learned and best practices should inform future projects in the country?

During the evaluation data gathering, the ET should identify best practices, strengths, and challenges in the design (including theories of change) of ASOTRY and Fararano, adaptation of design and implementation based on monitoring and evaluation findings, strategies to promote secondary adaptation, and approaches that could be considered in designing future food and nutrition security projects. The ET will use both quantitative and qualitative methods to answer the questions and discuss the following: (1) the unintended positive and/or negative consequences of the projects, and (2) ways to minimize potential unintended negative consequences and systematically capture positive consequences.

AUDIENCE & INTENDED USES

The primary audiences of the evaluation reports are ADRA and CRS (and their sub partners). USAID (FFP/Washington, USAID/Madagascar) will also learn from the evaluations. The reports will also be shared with the relevant departments of the Government of Madagascar. Findings from the final evaluation will be used to determine the performance of the two DFAPs; and inform and shape future food security projects. It is expected that all stakeholders will make extensive use of findings from the evaluations to make different presentations and bulletins as part of a wider dissemination of best practices and lessons learned. The evaluation recommendations may be used by the future applicants to design projects, to USAID to refine proposal guidelines, project policy.

FINAL EVALUATION METHODOLOGY

The final evaluation will use a mixed-methods approach and the recommendations developed should be utilization focused. The ET will begin with a desk review of project documents, validate its understanding of the projects via consultations with ADRA, CRS, their partners and FFP, conduct a population-based household survey using all implementation villages as the sampling frame, and conduct qualitative research in villages selected via non-probability sampling method. It is preferred that, if possible, the

firm conducts quantitative and qualitative components sequentially to allow the quantitative data to inform the qualitative research.

a) Desk Review

The ET should review the following documents to contextualize and refine the evaluation questions, as well as to gain an in-depth understanding about the project design, implementation, and the food security situation in the area. The ET is expected to review ASOTRY and Fararano’s annual monitoring data, midterm evaluation reports, assessments conducted by the projects, and field visit reports when preparing for qualitative research. While FFP recommends the below documents for pre-evaluation learning, the literature review should not be limited to the following:

- a) Project proposals
- b) Pipeline Resource Estimate Proposals (PREPs)
- c) Annual results reports, including Indicator Performance Tracking Tables for final against targets
- d) Midterm evaluation reports and corresponding action plans developed by the two projects
- e) Baseline Study of the Title II Development Food Assistance Programs in Madagascar, 2016
- f) Partner formative research and barrier analyses to better understand the context and if/how the studies influenced programming
- g) Monitoring data and reports

b) Consultations

As a supplement to the desk review, consultations with ADRA, CRS, their partners, FFP staff in Washington, DC and USAID Madagascar Mission staff will allow the ET to corroborate its understanding of the design, approaches and interventions employed by each DFAP and acquired through the desk review. It is recommended that the ET engage with the staff at each organization prior to beginning fieldwork. Equally important to engaging pre-data collection is to reconnect post-data collection to “ground truth” findings with FFP/Madagascar and the partner staff. In the case of major disagreements, the program staff should provide evidence in support of the argument, and pending time constraints, the ET may revisit the field.

c) Quantitative Endline Survey

The 2019 PBS will collect data on the same population-level impact and outcome indicators³⁴ that were collected during the 2014 baseline survey. DFAP baseline data were collected in May, and the endline data collection should match this season. The 2019 PBS should use the same data collection instruments for the endline indicators, level of statistical precision (95 percent confidence intervals), and statistical power (80 percent) as the baseline study. The 2019 PBS design does not need to be identical to the baseline; if the projects reduced their target areas, for example, the sampling frame of households used for the baseline may need to be adjusted.

For the list of indicators, please consult with the [Baseline Study of Food for Peace Development Food Assistance Projects in Madagascar](#).

³⁴ Baseline Study of Food for Peace Development Food Assistance Projects in Madagascar
https://pdf.usaid.gov/pdf_docs/PA00MGDH.pdf

Note: A few additional questions may be incorporated into the household questionnaire (and any corresponding indicators added) based on the interest from the implementing agencies. All quantitative data must be made available to the public barring rare exceptions.

d) Qualitative Research

Qualitative methods will be used to collect information to answer evaluation questions and to support the interpretation of the quantitative data. The ET will design the overall qualitative study approach and should consider a variety of primary data collection methods, such as semi-structured in-depth interviews, group discussions, key informant interviews, direct observations, and case studies (the ET may choose to use the most significant change method to identify a selective set of case studies). These methods - to the maximum extent possible - will ensure that if a different, well-qualified evaluator were to undertake the same evaluation, he or she would arrive at the same or similar findings and conclusions. The ET should decide on specific methods before traveling to Madagascar, and include them in the evaluation protocol with the number of interviews, FGDs, etc., per project, in the inception report. Following discussion and agreement, the ET will finalize the methods during the team meeting in-country. The evaluation team leader and members will be responsible for interviewing the direct, indirect and non-participants in their households and communities, as well as look for evidence of ongoing learning and activities (such as home gardens, etc.). The ET will also be responsible for interviewing relevant stakeholders for the evaluation and analyzing the qualitative data. Should the ET decide to hire additional researchers to complement the data collection effort, they cannot replace the evaluation team members' role of collecting primary data using qualitative methods.

The ET will contribute to the interpretation of the quantitative results using qualitative findings. In addition to the factors specifically identified earlier as essential to responding to the evaluation questions, during its qualitative study, the ET should also consider the efficacy of the following cross-cutting interests: project management; performance monitoring; strategies to improve gender equality at the participant and project management levels; environmental considerations; and conflict sensitivity. Lastly, it is expected that the evaluation will speak to lessons learned and best practices.

The ET may find it useful to apply non-probability sampling methods to select a sub set of enumeration areas from the PBS. In selecting interview sites, the evaluation team should strategically select large-enough-yet-manageable interview sites that generally represent the target area.

As with the PBS, qualitative sampling should include both individuals who directly participated in the DFAP (participants) and those not specifically targeted with any intervention (indirect/non-participants). (The latter should be included to allow learning on spillover, triangulate the information provided by the direct participants, and to understand their perspectives on the achievements or limitations of the interventions offered by ASOTRY and Fararano. In addition, the qualitative team should interview USAID personnel, project staff, knowledgeable people from the community, local government staff, community leaders, host Government officials, and other agencies and individuals as appropriate.

e) Data Analysis and Interpretation

The ET will use inferential statistics to compare the endline data for each of the two strata with that of the baseline for that stratum, and also for the overall country level, in order to detect changes (if any) for all key indicators. The ET will conduct descriptive and inferential analyses to describe the results, as

well as various econometric analyses to identify the determinants of key outcomes and the magnitude and direction of changes. In advance of fieldwork, the evaluation team needs to develop a data analysis plan. When analyzing the data, however, the ET should not limit itself to the data analysis plan; rather, the evaluation team should keep an open and curious mind to look for correlations between variables.

In presenting the analysis, the ET needs to be cognizant about the readers' familiarity with the statistical presentation. It is preferable to describe the statistical terms in a common language and avoid jargons.

Interpreting the results is as critical as the analysis. Oftentimes, it can be difficult for a reader to fully understand the key points and utility of the findings conveyed in a report. The analysis and interpretation should be presented in a "story telling format" so that the readers can understand how the interventions influenced the anticipated outcomes through a series of intermediate level changes. While it is important for the reader to understand whether level of stunting is reduced in the area, it is equally important to understand the pathway; for example, how learning derived from project participation influenced people's practices, which in turn resulted in positive changes in food security outcomes at the household and/or community level. Similarly, it is equally important for the readers to know some of the challenges participants faced that might have prevented them from reaping the full benefits of the projects.

REPORT

The ET will produce two reports in English, not to exceed 50-pages, for each DFAP. The draft reports will be shared with the stakeholders (i.e., ADRA, CRS, FFP, and USAID/Madagascar) for review and comment over a two-week period.

The final report should include a Table of Contents, Table of Figures (as appropriate), acronyms, executive summary, introduction, purpose of the evaluation, research design and methodology, limitations, findings, conclusions, lessons learned, and recommendations.

All evaluation questions should be answered, and the evaluation methodology should be explained in detail. To ensure a high-quality deliverable, the reports should reflect a thoughtful, well-researched and well-organized effort to objectively evaluate what worked in the project, what did not, and why. Where noteworthy, the discussion should highlight and discuss the outcomes and impacts on males versus females. The report must integrate the quantitative analysis from the PBS with the findings from the qualitative inquiry. While the quantitative data will be used to evaluate the theory of change of the projects, learning from the qualitative research will help to contextualize and interpret the quantitative data. The report should be drafted based on the theory of change to tell the stories. The ET can use test of difference of the relevant indicators in combination with multivariate regression results and qualitative inquiries to tell the story. The report should discuss the major assumptions made by ASOTRY and Fararano at the beginning of the project and how they changed (if at all) overtime. How the project design and or implementation were adapted to the change in context. The ET should also draw from partners' annual monitoring data, where appropriate, to substantiate findings. The report should include a section on resilience capacities.

Findings should be specific, concise, and supported by strong quantitative and/or qualitative evidence, and presented as analyzed facts/evidence/data, and not be based on anecdotes, hearsay or a compilation of people's opinions. It should include analytical methods to include appropriate tests of

differences to detect change; econometric analysis to evaluate the theories of change and to predict the determinants of key food and nutrition security outcomes based on the theoretical models; it is expected that the contractor will interpret the analytical findings.

The report should disclose limitations to the evaluation, with particular attention to the limitations associated with the evaluation methodology, e.g., selection bias, recall bias, unobservable differences between comparator groups, etc. Recommendations should be supported by a specific set of findings, and be action-oriented, practical, and specific.

It is expected that the final reports will address and incorporate feedback, as appropriate, from the reviewers. Should the ET disagree with any of the comments, it should raise this with the AOR immediately for discussion.

EVALUATION TEAM

The Evaluation Team Leaders will be responsible for designing and managing the evaluations and overseeing the work of the evaluation team members; coordinating with CRS and ADRA and their sub partners, FFP and the USAID Mission and other stakeholders; coordinating with the endline PBS team; analyzing the findings and ensuring the quality of the report. As this is a mixed-method final evaluation, in addition to the ET members, the endline survey will require extensive participation of the following personnel: Survey Method Specialist, Data Analyst, Survey Coordinator, Anthropometry Specialist, and Survey Monitors. The PBS data collection team should be hired locally. The evaluation team members will collect primary data by themselves using qualitative methods and tools. As the two projects are multi-sectoral, the ET must possess expertise and field experience with food security and multi-sectoral nutrition programming, and demonstrate an in-depth knowledge of the following technical sectors and cross-cutting areas: agriculture and off farm livelihoods, nutrition; water, sanitation, and hygiene (WASH); gender, youth, resilience, and disaster risk management.

The subject matter specialists must also possess experience and knowledge about the specific processes used by the projects (e.g., Care Groups, Farmer Field Schools, etc.)

FIELD LOGISTICS

The ET is responsible to arrange and pay for all logistics, and transportation. ADRA, CRS and the USAID Madagascar Mission may be consulted on identifying interpretation services and transportation services. The ET should request assistance from ADRA, CRS and their sub partners on making introductions, as necessary, to local ministry representatives and community leaders.

DELIVERABLES

The ET shall produce the following deliverables during the evaluation and submit to the Agreement Officer's Representative (AOR) for the associate award for review. All draft documents should be submitted in Microsoft Word or Microsoft Excel, or in the rare occasion both PDF and Word/Excel. The AOR must approve all deliverables.

List of Deliverables
<p>Work Plan</p> <p>includes a brief synthesis and timeline for the Madagascar final evaluations, with the timeline including major activities throughout the study, including dates by which field guides and training materials will be completed. <i>Only one work plan detailing both baseline study and final evaluation activities is required</i></p>
<p>Monitoring Plan</p> <p>includes strategies and methods that the awardee will use to monitor the field work. It should provide the timeline, benchmarks, and strategies. It should also offer the feedback loop. <i>Only one monitoring plan detailing both baseline study and final evaluation activities is required</i></p>
<p>PBS Enumerator Guide, Supervisor Manual, and Anthropometry Guide*</p> <p>provide revised detailed instructions on supervisor, enumerator and anthropometry trainings. Note that the PBS should use the supervisor, enumerator and anthropometry training guides developed for the baseline. Minor adjustments will be needed to accommodate the new indicators. <i>Only one set of guides that serves both the baseline and endline surveys is required</i></p>
<p>PBS Data Treatment and Analysis Plan</p> <p>details how the data will be cleaned, weighted, and analyzed and must include: programming specifications and editing rules for cleaning data, data dictionary codebook, SPSS syntax or Stata do files and output for all analyses and variable transformations into indicators; and includes a descriptive, inferential, and econometric analyses plan. <i>Only one DTAP that serves both the baseline study and final evaluation is required, but it must clearly differentiate between the different analytical approaches used for each.</i></p>
<p>PE Inception Report and Protocol (~20 pages for each)</p> <p>briefly synthesizes the literature review; describes the qualitative evaluation methods (including evaluation questions <i>contextualized based on the literature review</i>, sample site selection strategy and number of sites to be selected, number of interviews/discussions per project, types of interviewees) introduces the evaluation team members and their roles; and details how the qualitative information will be analyzed and integrated with quantitative. present specific data collection methods by evaluation question; identifies indicators to be collected; discusses the quantitative and qualitative analysis methods and plan; presents PBS sample size, design and plan, survey design, questionnaire design, site selection plan for qualitative research; and presents the fieldwork plan (including trainings and field support/supervision, data management, quality control, recording, analysis and reporting).</p>
<p>Pertinent Permissions and approvals</p> <p>demonstrate official approval from all relevant institutional review boards and from host country institutions to collect data, conduct the evaluation, and release data and reports, as required, as well as a statement affirming adherence to all requirements specified in USAID’s Scientific Research Policy.</p>
<p>PBS Quantitative Survey and Qualitative Instruments</p>

<p>include both English, and Malagasy versions of the household survey (note: if any new questions are added to the instrument the awardee must back-translate the questions to English via a second translator to ensure accurate translation. The newly added question should be highlighted for ease of reference. Following the pilot of the survey, any modifications based on field experience will again require translation and back translation to ensure accuracy). describe site selection methodology and factors used to select</p>
<p>In-country briefings to CRS and ADRA and their partners, USAID/Madagascar and other stakeholders</p> <p>Two 60-minute presentations of the major findings of the evaluation to provide an opportunity for immediate stakeholder feedback that can be considered for the revision (as appropriate and without compromising the validity or independence of the evaluation). One presentation to USAID/Madagascar; One presentation to stakeholders in Madagascar, including the DFAP partners, donors, and Government of Madagascar,</p>
<p>Final Evaluation Reports</p> <p>include items identified in the draft report as well as a three- to five-page executive summary of the purpose, background of the project, methods, findings, conclusions and recommendations, and the following annexes: the scope of work, tools used in conducting the evaluation (questionnaires, checklists, and discussion guides), and any substantially dissenting views by any Team member, USAID or the PVOs on any of the findings or recommendations; and must be 508 compliant and uploaded to the Development Clearinghouse following AOR approval.</p>
<p>Briefer (~ 5 page each)</p> <p>The ET will produce a 5-page briefer—one for ASOTRY and one for Fararano that provides the highlights of the key findings, lessons learned and key recommendations.</p>
<p>(to be submitted at the time of the final report*)</p> <p>include a separate electronic file of all quantitative data in an easily readable format that is organized and fully documented so as to facilitate use by those not fully familiar with the project or the evaluation; provides cleaned data, sampling weights at each stage, final sampling weights, and all derived indicators; includes a second final data set in CSV format that has been anonymized to protect individual confidentiality for use as a public data file in the USAID Open Data; and include a separate file detailing GPS coordinates of households that participated in the PBS. <i>*the contractor may have to submit data sets earlier for internal use only</i></p>

ANNEX C: TRAINING, DATA COLLECTION, AND QUALITY ASSURANCE

Training

TANGO organized an enumerator training in preparation for the ASOTRY and Fararano endline quantitative survey. The training took place from 13-24 May 2019. It was led by two TANGO consultants with assistance from Agence CAPSULE. The CAPSULE team included a Survey Director, Survey Coordinator, and two PBS Specialists. An independent Anthropometric Specialist led the anthropometric training and an Independent Survey Monitor provided support to the TANGO team and to all supervisors.

Household survey and listing enumerators

A team of more than 100 enumerators and field team leaders was trained over the course of the 11-day period. The training covered the following: i) study objectives and sampling methodology; ii) human subjects research training, interview norms, and survey implementation guidance; iii) introduction to the household survey and listing exercise; and iv) introduction to using tablets and data collection through Open Data Kit (ODK). During the course of the training, enumerators and field team leaders practiced the household survey both on paper (using the paper-based baseline survey) and on tablets in order to familiarize themselves with different scenarios they could encounter in the field. Throughout the course of the training, a running list of questions and possible issues to review with TANGO was kept to clarify any doubts on the questionnaire, interview process, fieldwork procedures, or data management.

Since the listing exercise and the survey were to be done concurrently (i.e., list an EA, send the results to TANGO for sampling, and return to conduct the survey) all enumerators received training on the listing survey and on developing sketch maps for use by the household survey enumerators. An exercise was developed to encourage listers and household enumerators to develop and interpret sketch maps, using the local venue as an example. This ensured enumerators and listers had a good understanding of how the data collected by the household and listing surveys were interlinked and how the two enumerator roles contributed to each other.

The supervisors were also trained on processing listing surveys, overseeing the listing exercise data collection, and quality control checks. They also received instructions to guide their introductions to the local leadership, as the listing team was the first group of enumerators that would meet households and communities during quantitative data collection.

Anthropometric enumerators

A team of 40 anthropometric enumerators participated in the first two days of the training (13-15 May 2019) alongside the household and listing enumerators. The anthropometric enumerators met in a separate space during the rest of the training period to receive a training focused on the anthropometry survey. This included sessions on i) measurement procedures for women and children on stunting and underweight indicators; ii) introduction to using tablets and data collection using ODK; and iii) anthropometry quality control measures to be covered with field team leaders. Following the training,

those who were retained as part of the team were assigned to the role of either Measurer or Measure's Assistant.

The assistant's role mainly required holding children two to five years of age in the correct position for feet and knees to get a standing height, and holding children under two years of age to correctly position the head for recumbent length measurement. The Anthropometry Specialist instructed enumerators on how to avoid recording errors. During the training, the Anthropometry Specialist conducted anthropometry standardization with volunteers Agence CAPSULE invited to the training. This included taking measurements for maternal height and weight, and children's standing and recumbent height and weight.

Supervisor training

In addition to the 11-day training, field team leaders participated in a one-day supervisor training that covered the roles and responsibilities of supervisors and the fieldwork workplan. The training was led by the TANGO team; participants were the Agence CAPSULE personnel (Survey Director, Study Coordinator, and PBS Quality Controllers), Independent Survey Monitor, and Anthropometric Specialist. The TANGO team discussed responsibilities for supervisor during each part of the survey to ensure role clarity and optimal quality control over the data collection process and data management. This was necessary given the layered approach to supervision that was established for data collection: Agence CAPSULE team members, independent consultants, and field team leaders each had specific roles to play. The team of 20 field team leaders (Supervisors), responsible for directly managing survey and anthropometric enumerators, was trained on the necessary procedures to follow when arriving at a cluster (EA), including communication with local leadership, the identification of households, and the assigning of households to enumerators.

All supervisors were instructed on procedures for data quality control and troubleshooting through the use of control sheets, spot checks, and recheck processes. Field team leaders were instructed on monitoring household survey and anthropometry enumerators' data collection closely, verifying questionnaire completeness, and data management. This included creating backup copies of data, data archiving, and transferring complete and verified questionnaires to the TANGO server.

Training location and pre-testing

All trainings took place in Antananarivo. During the course of the training, the household survey enumerators, anthropometric enumerators, and field team leaders had the opportunity to role-play data collection with volunteer members of the public who Agence CAPSULE invited to the training. This was done so they could practice introductions, gather practice survey data and enter it into tablets, and ensure coordination among data collectors.

A field pre-test was organized on 23 May, near the end of the training. It was conducted in a rural community not far from Antananarivo, so teams could have the opportunity to gather information in an environment that closely resembled the area where actual data collection would take place. It was not possible to do the pretest within the boundaries of either project due to the distance from the training site. The pre-test allowed the enumerators and field team leaders to practice the procedures to follow when arriving in each EA. Household enumerators were asked to complete one household survey, and anthropometry enumerators were asked to measure at least one child and one woman. Field team

leaders supervised each enumerator during a portion of their interview and provided feedback on the conduct of the interview. In addition to serving as a practice for the enumerators and a test of the survey tool, the pre-test allowed enumerators to practice coordinating the logistics of household interviews and anthropometric measurements. It also served as a test of the anthropometric equipment, and was helpful to understand the time needed to complete the survey, measurements, and data quality procedures.

The last day of training for household survey and anthropometric enumerators in Antananarivo was reserved for reviewing obstacles faced during the pre-test, reviewing definitions and terms in local languages, and discussing issues that needed further clarity.

Translation and back-translation

Following baseline survey procedure, the household survey questions were translated and entered into ODK in Malagasy. However, the procedure was much simpler than for the baseline since most of the Malagasy and English text was simply copied from the paper-based baseline survey and entered into the ODK code “as is.” Some minor wording changes were needed to accommodate the requirements of the tablet-based format. These changes were checked via back-translation of the household survey questionnaire. Since the training was to be done primarily in French, it was also useful to have a French version of the survey in ODK. The TANGO team prepared a French version of the text for including with the ODK code—checking it internally for consistency with the English version, and working with Agence CAPSULE to make sure it corresponded to the Malagasy version. Since the French survey was not going to be used for survey administration, it was not back-translated in the same way as was done for English to Malagasy and vice versa. The process of using multiple languages is simplified in ODK since the format of the tool allows all languages for each question and each set of responses to be listed side-by-side in a table, with one column for each language. The survey itself can be switched from one language to another at any point during administration or testing. The anthropometric and listing surveys were also prepared in the three languages using the same process. The translation process was monitored by the TANGO team and closely verified by the Independent Survey Monitor to ensure accuracy.

Household survey enumerators spent a total of seven days role-playing in Malagasy with other enumerators and with the invited volunteers. Anthropometric enumerators also practiced in Malagasy with women and child volunteers throughout their training.

Field procedure manuals for enumerators and supervisors

TANGO produced a series of manuals to guide and support the teams throughout the data collection process. The manual for field team leaders includes:

- information on household and anthropometry surveys, including explanations for every question and instructions;
- terminology on agriculture, WASH practices, and food security;
- description of the anthropometry survey and measurement that was covered during training;
- instructions for operating tablets, understanding ODK, and uploading data to the TANGO server; and
- quality control sheets for leaders to conduct checks on enumerators’ work.

The household survey manual and anthropometry manual focus on detailed explanations of questions from each survey and on working with ODK.

The anthropometry manual describes procedures adapted from the DHS biomarker manual for all DHS surveys worldwide. Reinforcing information from the training, it also includes enumerator instructions for cases where a child is suffering from wasting or exhibiting bilateral pitted edema.

Since the endline survey was intended to replicate the baseline survey (with the exception of some additional questions on program participation), the manuals developed for the baseline survey were used as a starting point for the manuals prepared by TANGO. This ensured that survey procedures and the understanding of terminology followed that of the baseline as closely as possible.

Data Collection

Survey programming

TANGO staff converted the baseline survey questionnaire to an Excel version that was readable by ODK software. This included typing out more than 900 rows in Excel and adding columns for three languages (English, French, and Malagasy), with codes for skip patterns and constraints that would allow the survey logic to run appropriately. Prior to the team's departure for fieldwork, TANGO performed a final check and the Independent Survey Monitor did a quality control check to verify the ODK logic in all three languages before finalizing the household survey the first week of June. The programming of the listing survey and the anthropometric survey were also done using the questions from the baseline surveys; a similar process was followed for ODK programming.

Listing exercise

The listing exercise began on the 5th or 6th of June for each of the 20 teams. Agence CAPSULE obtained detailed boundary maps for each sampled EA from the *Institut National de la Statistique de Madagascar* (INSTAT), which included household counts from the 2019 census.

Listing enumerators used these maps to develop sketch maps, which included the official EA borders and sketches of infrastructure, forests, bridges, and any other natural and physical key points that would help the household and anthropometric teams locate sampled households. The entire team worked together to collect listing data and develop the maps. The supervisors traveled with the teams, introduced teams to village leaders, and followed all procedures, including quality control checks.

Each team recorded the GPS coordinates at the center of the EA they listed. Each listing team gathered household-identifying information from each dwelling in the EA, including the name of the head of household. The teams worked closely with their supervisors to avoid duplications and missing households.

The listing data for each completed EA were uploaded to the TANGO server, where the TANGO team verified them for completeness and accuracy. The Survey Director at TANGO conducted the sampling of households.³⁵ The selected households were provided to Agence CAPSULE in Antananarivo, who

³⁵ This is described in Section 3.1 of the main report.

distributed lists of households by EA to field team leaders. The field team leaders used these lists to assign households to individual household survey and anthropometry enumerators.

Household survey and anthropometric data collection

After completing the listing for an EA and receiving a list of households from TANGO, the household survey enumerators collected data from their assigned households and worked in coordination with the anthropometry enumerators to ensure that the criteria for measuring children and women were applied. In the rare cases where household survey enumerators finished their interview and moved to another household before the anthropometry enumerators arrived (sometimes they were delayed at the previous household because they had to measure multiple individuals), the teams communicated with each other regarding which children and women that needed to be measured.

The households in which no survey was conducted due to refusals or absence (after three attempts to contact the household) were not replaced; therefore, the target of 30 households per cluster was not always achieved. However, the sample size was selected to allow for non-responses. The field team leader, anthropometry enumerators, and household survey enumerators debriefed at the end of each data collection day to plan the logistics for the next day and allow the leader to perform quality control checks.

Quality Assurance

The field team leaders provided the first level of quality control by implementing spot checks and directly observing enumerators. The Survey Director, Survey Coordinator, PBS Quality Controllers, and two independent consultants provided quality oversight to the teams in the field. The TANGO team monitored data uploaded to the TANGO secure server and provided feedback to the teams. This process ensured questionnaires were reviewed daily for completeness and accuracy. In the analysis stage, data were cleaned using STATA statistical software; identifying information was removed from the final dataset.

ANNEX D: PROJECT INDICATORS

TABLE A 1: Project indicators

Food security indicators (Module C)
Prevalence of households with moderate or severe hunger (HHS), overall and by gendered household type
Average Household Dietary Diversity Score (HDDS)
Average Coping Strategies Index (CSI)
Poverty indicators (Module H)
Per capita expenditures (USD 2010), overall and by gendered household type
Percent of people living on less than \$1.90/day, overall and by gendered household type
Mean depth of poverty, overall and by gendered household type
Sanitation and Hygiene (WASH) indicators (Module F)
% of households using an improved source of drinking water
% of households practicing correct use of recommended household water treatment technologies
% of households that can obtain drinking water in less than 30 minutes (round trip)
% of households using improved sanitation facilities
% of households in target areas practicing open defecation
% of households with soap and water at a handwashing station commonly used by family members
Agricultural indicators (Module G)
% of farmers who used financial services in the past 12 months, overall and by sex
% of farmers who practiced value chain activities promoted by the project in the past 12 months, overall and by sex
% of farmers who used at least three sustainable agriculture (crop, livestock, NRM) practices and/or technologies in the past 12 months, overall and by sex
% of farmers who used at least two sustainable crop practices and/or technologies in the past 12 months, overall and by sex
% of farmers who used at least two sustainable livestock practices and/or technologies in the past 12 months, overall and by sex
% of farmers who used at least two sustainable NRM practices in the past 12 months, overall and by sex
% farmers who used improved storage practices in the past 12 months, overall and by sex
% of farmers who used agricultural or livestock services in the past 12 months
Women's health and nutrition indicators (Module E and Anthropometry)
Prevalence of underweight women
Minimum Dietary Diversity - Women (MDD-W)
Women's Dietary Diversity Score (WDDS)
Percent of births receiving at least 4 antenatal care (ANC) visits
Contraceptive Prevalence Rate

Children’s health and nutrition indicators (Module D and Anthropometry)
Prevalence of underweight CU5 years of age, overall and by sex
Prevalence of stunted CU5, overall and by sex
Prevalence of wasted CU5, overall and by sex
% of CU5 with diarrhea in the last two weeks, overall and by sex
% of CU5 with diarrhea treated with oral rehydration therapy (ORT), overall and by sex
Prevalence of exclusive breast-feeding of children under six months of age, overall and by sex
Prevalence of children 6-23 months of age receiving a minimum acceptable diet (MAD), overall and by sex
Gender indicators (Module J)
% of men and women who earned cash in the past 12 months, overall and by sex
% of men and women in union and earning cash who make decisions alone about the use of self-earned cash, by sex
% of men and women in union and earning cash who make decisions jointly with spouse/partner about the use of self-earned cash, by sex
% of men and women with CU2 who have knowledge of maternal and child health and nutrition (MCHN) practices, overall and by sex
% of men and women in union with CU2 who make maternal health and nutrition decisions alone, by sex
% of men and women in union with CU2 who make maternal health and nutrition decisions jointly with spouse/partner, by sex
% of men and women in union with CU2 who make child health and nutrition decisions alone, by sex
% of men and women in union with CU2 who make child health and nutrition decisions jointly with spouse/partner, by sex

ANNEX E: DATA SOURCES: INTERVIEWS, FOCUS GROUPS, AND ASSET OBSERVATIONS

Key Informant Interviews

Organization	Name	Male	Female	Stakeholder type/title
CRS				
CRS	James Hazen	1		Fararano Chief of Party
CRS	Lanto Rafanomazantsoa	1		Deputy Chief of Party
CRS	Mahefa Ravalison	1		Fararano Leader Purpose 2
CRS	Noro Hasina Ratsimbazafy		1	Community Team Leader (P3)
CRS	Roland	1		DRM specialist
CRS	Andry	1		Social Protection Specialist
CRS	Olivier	1		MEAL Officer SW
CRS	Rakotoaribako, Dr. Ony		1	Care Group Specialist/Fararano
CRS	Ramananjohany, Vero		1	Gender-Youth Specialist/Fararano
CRS	Soleman, Francis Hary	1		SBCC Specialist/Fararano
CRS	Raherinandrasana, Gilbertus	1		Former Fararano Promoter and Coordinator for BDEM
USAID				
USAID	Carrie Antal		1	USAID Madagascar
Local partners				
ODDIT	Marie-Ange Rasoamanantena		1	Local Implementing Partner, Program Coordinator
ODDIT	Dieudonné	1		Responsable Ag et Elevage
ODDIT	Jean-Paul	1		Responsable MEAL
CDD	Hanta Eliane Eugenie Rasoamananjara		1	Local Implementing Partner, Program Coordinator

Organization	Name	Male	Female	Stakeholder type/title
Caritas Morombe	Berthin Tainandrainy Tsiatengy	1		Local Implementing Partner, Program Coordinator
Caritas Morombe	Manpionne (sp?)	1		Former Food Distribution Monitor (2 years) and Field Officer Agriculture (9 months)
BDEM	Valin'Aina	1		Former staff of Implementing Partner (now closed)
GoM				
Ministry of Water	--		3	National Government Counterparts
Office National de la Nutrition	--		1	Head of Technical Coordination Unit
Ministère de la Jeunesse et des Sports	--		1	<i>Responsable de la Planification des Activités de la Direction de la Formation Accès sur les Résultats</i>
ONCD	--		1	Government Partner (<i>Office National de Concertation sur la Decentralization</i>)
Private sector				
	--	1		Private Service Provider for SILC Groups
	--		1	Private Service Provider for SILC Groups
	--	1		Private Service Provider for SILC Groups
	--	1		Private Service Provider for SILC Groups & Chef Fokontany (Mongotroko)
Mickael company	--	1	1	Mickael private water supplier (Fokontany Antsenavolo+ Kianjavato)
	--	1		Miranjaka (Gender Champion), Antananambo Fokontany
	--		1	Youth Group member, Antananambo Fokontany

Organization	Name	Male	Female	Stakeholder type/title
	--	1		Miranjaka/Chef Fokontany, Hoavimameratra Fokontany
	--	1		Youth Group member, Hoavimameratra Fokontany
	--	1		Youth Group member
Ambatobe Fokontany	--	1		Miranjaka, Hoavimameratra Fokontany
	--	1		Miranjaka/Tangalamena (traditional leader), Ambodibonara Fokontany
	--		1	Lead Mother Reny Mpitarika, Ambodipaiso Sud Fokontany
	--	1		Miranjaka, Ambodipaiso Sud Fokontany
	--	1		Miranjaka, Ambodipaiso Sud Fokontany
	--	1		Miranjaka, Ankaboka Fokontany
	--	1		Miranjaka, Ankaboka Fokontany
	--	1		Miranjaka, Ambohimahavelona Fokontany
	--	1		President, Miranjaka Association of Mitsinjo commune, Ampasinabo Fokontany
	--		1	Miranjaka, Ampasinabo Fokontany
	--		1	Miranjaka, Ampasilava Fokontany
	--		1	Miranjaka, Mangotroke Fokontany
	Total	29	19	

Summary Data, Focus Group Discussions

Location	# of male participants	# of female participants	Type of FGD
District Toamasina II, Commune Fanandrana, Fokontany Tananambo	2	4	Community Leaders
District Toamasina II, Commune Fanandrana, Fokontany Tananambo	4	16	Farmers
District Toamasina II, Commune Fanandrana, Fokontany Tananambo	3	3	SILC Members
District Toamasina II, Commune Fanandrana, Fokontany Tananambo	1	3	NRM Committee
District Toamasina II, Commune Fanandrana, Fokontany Tananambo	1	3	DRM Committee
District Toamasina II, Commune Fanandrana, Fokontany Tananambo		12	Mothers of CU2 Femmes de Voisinage
District Toamasina II, Commune Fanandrana, Fokontany Tananambo		6	Lead Mothers Reny Mpitarika
District: Brickaville, Commune: Vohitravivona, Fokontany: Hoavimamaratra	6	4	Community Leaders
District: Brickaville, Commune: Vohitravivona, Fokontany: Hoavimamaratra	0	11	SILC Members
District: Brickaville, Commune: Vohitravivona, Fokontany: Hoavimamaratra	2	0	DRM Committee
District: Brickaville, Commune: Vohitravivona, Fokontany: Hoavimamaratra		12	Mothers of CU2 Femmes de Voisinage
District: Brickaville, Commune: Vohitravivona, Fokontany: Hoavimamaratra		4	Lead Mothers Reny Mpitarika
District: Brickaville, Commune: Andovoranto, Fokontany: Ambatobe	4	1	Community Leaders
District: Brickaville, Commune: Andovoranto, Fokontany: Ambatobe	4	0	Lead Farmers
District: Brickaville, Commune: Andovoranto, Fokontany: Ambatobe	2	11	SILC Members and PSP

Location	# of male participants	# of female participants	Type of FGD
District: Brickaville, Commune: Andovoranto, Fokontany: Ambatobe	5	0	DRM Committe
District: Brickaville, Commune: Andovoranto, Fokontany: Ambatobe	12	1	COOP
District: Brickaville, Commune: Andovoranto, Fokontany: Ambatobe	2	2	NRM Committee
District: Brickaville, Commune: Andovoranto, Fokontany: Ambatobe		11	Mothers of CU2 Femmes de Voisinage
District: Brickaville, Commune: Andovoranto, Fokontany: Ambatobe		3	Lead Mothers Reny Mpitarika
District: Mananjary; Commune Antsenavolo; Fokontany: Ambodibonary	5	1	Community Leaders
District: Mananjary; Commune Antsenavolo; Fokontany: Ambodibonary	2	0	Lead Farmers
District: Mananjary; Commune Antsenavolo; Fokontany: Ambodibonary	5	2	DRM Committee
District: Mananjary; Commune Antsenavolo; Fokontany: Ambodibonary	4	2	NRM Committee
District: Mananjary; Commune Antsenavolo; Fokontany: Ambodibonary		12	Mothers of CU2 Femmes de Voisinage
District: Mananjary; Commune Antsenavolo; Fokontany: Ambodibonary		2	Lead Mothers Reny Mpitarika
District: Mananjary; Commune Antsenavolo; Fokontany: Ambodibonary	2	6	Youth (including both Youth Group members and non-members)
District: Ifanadiana; Commune Kelilalina; Fokontany: Ambodipaiso Sud	1	1	Lead Farmers
District: Ifanadiana; Commune Kelilalina; Fokontany: Ambodipaiso Sud	6	2	Community Leaders
District: Ifanadiana; Commune Kelilalina; Fokontany: Ambodipaiso Sud	1	3	DRM Committee
District: Ifanadiana; Commune Kelilalina; Fokontany: Ambodipaiso Sud	4	8	NRM Committee
District: Ifanadiana; Commune Kelilalina; Fokontany: Ambodipaiso Sud		4	Mothers of CU2 Femmes de Voisinage
District: Ifanadiana; Commune Kelilalina; Fokontany: Ambodipaiso Sud	2	10	Youth Club members

Location	# of male participants	# of female participants	Type of FGD
District: Ifanadiana, Commune Ambiabe; Fokontony: Ankaboka	4	2	Community Leaders
District: Ifanadiana, Commune Ambiabe; Fokontony: Ankaboka	2	2	Lead Farmers
District: Ifanadiana, Commune Ambiabe; Fokontony: Ankaboka	5	5	SILC Group Members
District: Ifanadiana, Commune Ambiabe; Fokontony: Ankaboka	7	4	Producer Org.
District: Ifanadiana, Commune Ambiabe; Fokontony: Ankaboka	4	5	DRM Committee
District: Ifanadiana, Commune Ambiabe; Fokontony: Ankaboka	4	0	NRM Committe
District: Ifanadiana, Commune Ambiabe; Fokontony: Ankaboka		12	Mothers of CU2 Femmes de Voisinage
District: Ifanadiana, Commune Ambiabe; Fokontony: Ankaboka		4	Lead Mothers Reny Mpitarika
District: Ifanadiana, Commune Ambiabe; Fokontony: Ankaboka	8	4	Youth Group/ Youth VOAMAMI members
District: Toliara II; Commune: Ambohimahavelona; Fokontony: Ambohimahavelona	2	2	Community Leaders
District: Toliara II; Commune: Ambohimahavelona; Fokontony: Ambohimahavelona	3	0	Lead Farmers
District: Toliara II; Commune: Ambohimahavelona; Fokontony: Ambohimahavelona	2	11	SILC Group Members
District: Toliara II; Commune: Ambohimahavelona; Fokontony: Ambohimahavelona	3	0	Producer Org.
District: Toliara II; Commune: Ambohimahavelona; Fokontony: Ambohimahavelona	3	1	AUE (Irrigation Committee)
District: Toliara II; Commune: Ambohimahavelona; Fokontony: Ambohimahavelona	5	0	NRM Committee

Location	# of male participants	# of female participants	Type of FGD
District: Toliara II; Commune: Ambohimahavelona; Fokontany: Ambohimahavelona	7	3	DRM Committee
District: Toliara II; Commune: Ambohimahavelona; Fokontany: Ambohimahavelona		17	Mothers of CU2 Femmes de Voisinage
District: Toliara II; Commune: Ambohimahavelona; Fokontany: Ambohimahavelona		7	Lead Mothers Reny Mpitarika
District: Toliara II; Commune: Ambohimahavelona; Fokontany: Ambohimahavelona	8	1	Youth Group members
District: Toliara II; Commune: Mitsinjo Betanimena; Fokontany: Ampasinabo	5	3	Community Leaders
District: Toliara II; Commune: Mitsinjo Betanimena; Fokontany: Ampasinabo	2	3	Lead Farmers
District: Toliara II; Commune: Mitsinjo Betanimena; Fokontany: Ampasinabo	1	6	DRM Committee
District: Toliara II; Commune: Mitsinjo Betanimena; Fokontany: Ampasinabo	1	6	NRM Committee
District: Toliara II; Commune: Mitsinjo Betanimena; Fokontany: Ampasinabo		13	Mothers of CU2 Femmes de Voisinage
District: Toliara II; Commune: Mitsinjo Betanimena; Fokontany: Ampasinabo		8	Lead Mothers Reny Mpitarika
District: Toliara II; Commune: Mitsinjo Betanimena; Fokontany: Ampasinabo	3	5	Youth Group members
District: Morombe; Commune: Basibasy; Fokontany: Ampasilava	6	1	Community Leaders
District: Morombe; Commune: Basibasy; Fokontany: Ampasilava	4	0	Lead Farmers
District: Morombe; Commune: Basibasy; Fokontany: Ampasilava	2	5	SILC Group Members
District: Morombe; Commune: Basibasy; Fokontany: Ampasilava	9	1	DRM/NRM Committees
District: Morombe; Commune: Basibasy; Fokontany: Ampasilava	2	5	SILC "PO"
District: Morombe; Commune: Basibasy; Fokontany: Ampasilava	2	5	AUP (Feeder Road Committee)

Location	# of male participants	# of female participants	Type of FGD
District: Morombe; Commune: Basibasy; Fokotany: Ampasilava	1	6	DRM Committee
District: Morombe; Commune: Basibasy; Fokotany: Ampasilava		18	Mothers of CU2 Femmes de Voisinage
District: Morombe; Commune: Basibasy; Fokotany: Ampasilava	1	2	Lead Mothers Reny Mpitrika and community health volunteer (AC)
District: Morombe; Commune: Basibasy; Fokotany: Ampasilava	3		Youth Group members
District: Morombe; Commune: Antanimieva; Fokontany: Mangotroka	2	5	SILC "Producer Org."
District: Morombe; Commune: Antanimieva; Fokontany: Mangotroka	2	5	AUP (Feeder Road Committee)
District: Morombe; Commune: Antanimieva; Fokontany: Mangotroka	6	4	SILC Group Members
District: Morombe; Commune: Antanimieva; Fokontany: Mangotroka	3	2	NRM/Nursery
District: Morombe; Commune: Antanimieva; Fokontany: Mangotroka	8	2	DRM Committee
District: Morombe; Commune: Antanimieva; Fokontany: Mangotroka	1	3	AUE (Village Water Supply committee)
District: Morombe; Commune: Antanimieva; Fokontany: Mangotroka	0	10	PO/COOP
District: Morombe; Commune: Antanimieva; Fokontany: Mangotroka		32	Mothers of CU2 Femmes de Voisinage
District: Morombe; Commune: Antanimieva; Fokontany: Mangotroka		4	Lead Mothers Reny Mpitrika
District: Morombe; Commune: Antanimieva; Fokontany: Mangotroka	7	4	Youth Group/Youth VOAMAMI members
District: Morombe; Commune: Antanimieva; Fokontany: Ankilikasy	8	1	AUE (Irrigation Committee)
Total	226	399	

Summary Asset Observations

Location	Type of asset	Description and observations
Fokontany Tananambo	Sanitation (monobloc)	Limited Operationality since 2015. 6 toilets, 2 showers, laundry place with solar pumped water. Disabled access. About 75 uses/week for toilets/showers. Unusable for drinking water or laundry as water is iron-rich. Earns no more than 10,000Ar/week. AUE only 3 members. Run jointly by Commune and AUE. Functional but will not survive first major technical hurdle. Now part of RanoWASH project.
Commune Ambinaninony	Sanitation (monobloc)	Operational since 2017. In good condition, looks used and cared for. Active woman manager—part of public-private partnerships with water supply company with 60 private users—She pays only water bill (40kAr/m or 1kAr/m ³), no rent and company does the repairs—earns 4-5k/day, 6 days/week—gets 300ar for phone charged—solar panels for lighting only—charges 100/200 for toilet, 300 shower, 25 for 20l of water, laundry 100ar/tank—more demand in summer and slow increase of client base—60 percent women—her child takes care if she not here—water supply is spring box 4km away. Sometimes not have water for 3-4 days.
Fokontany Manarantsandry	Irrigation (Périmetre Autonome)	Operational since 2018. Up to 5km of channel and backfill—40ha now out of 85ha possible—no drainage channels—needs more irrigation channels—2 crops/year, now higher yield with irrigation but no new techniques used yet but shown in demo plot. Will do line planting. 57 members in AUE but 10 users are non-members and non-contributors (2kAr/month)—thinking of doing potatoes and vegetables also. OK for now to do maintenance but flood damage hard to repair. Project gave them a technical plan and await other project to assist with more work.
Fokontany Antsenavolo	Pumped water system	Not operational. Only dam from previous project—Built settling tanks, machine house (12 solar panels+24 batteries), 45m ³ tank, 3-5km piping and 9 borne fontaines and 25 ind. connections - water with iron and colored, untreated. Does tank chlorination. Solar system only functional for a few days. Then supplied with diesel genset and system operational for 6 months. Part of the public-private partnerships with Mickael that manages 8 other sites.
Fokontany Kianjavato	Monobloc	Operational: 40-60 users/day, more women, prices posted—no laundry as too expensive—busy day is Sunday market—usually 50Ar/20l but now paying up to 600/20l with transport with water shortage. No testing for coliforms.

Location	Type of asset	Description and observations
Fokontany Ambohimahavelona	Irrigation	5 members for 180 users, unsure of area—users pay 1000Ar at harvest—supervise canal maintenance, their decision to improve it with FFA (thinks AT made narrow canal to get depth pressure) - Satisfied but issue of watercress, want split system higher up—cress was in rivers, now transplanted to paddies, get income 1/m—complained at commune/district but no reply—supposed to be only between Jan-May when no rice growing but rule not enforced, since 2012—same 10 cress growers but now more rice growers—don't want conflict, so now use “water police” to shut water to cress growers at 3PM each day—they do constant maintenance and is all OK.
Fokontany Ankilikasy	Irrigation	Operational. Project built concrete structure to contain artesian spring feeding 6 branches—640 ha and about 150 users—All do rice, up to 3 crops/yr. Committee: 12 members (2W), mostly large landowners (up to 80ha) now complaining of receiving less water—They organise irregular maintenance and do not collect any money—They have arguments about the water distribution system and they are looking for other projects to assist them with more infrastructure. They claim to have no links to the Direction régionale.
Commune Antanimieva	Solar drinking water + 2 monoblocs	2 monoblocs unused as completed at end of project—Visited 1 of 17 village solar water systems managed privately by Mr. George. Delivers water for up to 50 bidons/day (50Ar/u). Thus collects 2,500Ar/day and pays 1,500Ar for water. Tank capacity is 3 m ³ but occasionally runs of water. Did not talk with users or manager.

ANNEX F: COMPARISON OF BASELINE–ENDLINE INDICATORS

TABLE A 2: Comparison of Baseline and Endline Indicators – Fararano Project

	2015 Baseline	2019 Endline	Raw Difference (Endline - Baseline)	Significance Level ¹	Number of Observations Baseline Endline	
FOOD SECURITY INDICATORS						
Prevalence of households with moderate or severe hunger (HHS)	33.8	39.0	5.1	ns	2,412	1,088
Male and female adults	31.8	36.6	4.9	ns	1,821	804
Adult female, no adult male	41.7	47.6	5.9	ns	409	182
Adult male, no adult female	36.6	39.3	2.7	ns	169	91
Child, no adults	NA	NA	NA	ns	13	11
Average Household Dietary Diversity Score (HDDS)	3.7	4.2	0.5	+	2,412	915
Coping Strategies Index	48.9	51.9	3.0	ns	2,412	1,065
POVERTY INDICATORS						
Per capita expenditures (as a proxy for income) of USG targeted beneficiaries ²	\$1.40	\$2.26	0.9	***	2,411	1,089
Male and Female Adults	\$1.40	\$2.11	0.7	***	1,820	805
Adult Female no Adult Male	\$1.28	\$2.16	0.9	***	409	181
Adult Male no Adult Female	\$1.92	\$3.43	1.5	**	169	92
Child No Adults	NA	NA	NA	ns	13	11
Prevalence of poverty: Percent of people living on less than \$1.90/day	77.4	60.0	-17.3	***	2,411	1,093
Male and Female Adults	77.6	62.5	-15.1	**	1,820	808
Adult Female no Adult Male	82.4	60.5	-22.0	***	409	182
Adult Male no Adult Female	55.8	40.7	-15.0	+	169	92
Child No Adults	NA	NA	NA	ns	13	11
Mean depth of poverty	35.9	28.2	-7.7	*	2,411	1,093
Male and Female Adults	36.0	28.6	-7.4	*	1,820	808
Adult Female no Adult Male	39.6	32.8	-6.8	+	409	182

	2015 Baseline	2019 Endline	Raw Difference (Endline - Baseline)	Significance Level ¹	Number of Observations Baseline Endline	
Adult Male no Adult Female	22.2	17.5	-4.8	ns	169	92
Child No Adults	NA	NA	NA	ns	13	11
WASH INDICATORS						
Percentage of households using an improved source of drinking water	15.2	21.4	6.2	ns	2,412	1,090
Percent of households in target areas practicing correct use of recommend household water treatment technologies	29.1	34.2	5.1	ns	2,412	1,084
Percent of households in target areas practicing boiling	26.9	33.3	6.4	ns	2,412	1,090
Percent of households in target areas practicing bleaching	3.5	8.5	5.0	**	2,412	1,090
Percent of households in target areas practicing filtering	0.5	1.2	0.6	ns	2,412	1,090
Percent of households in target areas practicing solar disinfecting	0.6	0.3	-0.3	ns	2,412	1,090
Percentage of households that can obtain drinking water in less than 30 minutes (round trip)	77.4	72.6	-4.8	ns	2,412	1,090
Percent of households using improved sanitation facilities	2.1	2.8	0.7	ns	2,412	1,090
Percent of households in target areas practicing open defecation	71.3	55.1	-16.2	*	2,412	1,090
Percent of households with soap and water at a handwashing station commonly used by family members	4.9	9.9	5.0	*	2,412	1,090
AGRICULTURAL INDICATORS						
Percentage of farmers who used financial services in the past 12 months	16.0	23.5	7.5	*	2,705	1,209
Male farmers	17.6	25.2	7.6	+	1,792	708
Female farmers	13.0	21.2	8.1	*	913	501
Percentage of farmers who practiced value chain activities promoted by the project in the past 12 months	54.3	32.6	-21.7	***	2,705	1,254
Male farmers	59.0	35.9	-23.1	***	1,792	728
Female farmers	45.3	28.2	-17.1	*	913	526

	2015 Baseline	2019 Endline	Raw Difference (Endline - Baseline)	Significance Level ¹	Number of Observations	
					Baseline	Endline
Percentage of farmers who used at least three sustainable agriculture (crop, livestock, NRM) practices and/or technologies in the past 12 months	37.2	45.3	8.1	+	2,705	777
Male farmers	42.6	49.3	6.6	ns	1,792	469
Female farmers	26.7	39.4	12.7	*	913	308
Percentage of farmers who used at least two sustainable crop practices and/or technologies in the past 12 months	46.2	34.7	-11.5	**	2,705	1,271
Male farmers	50.6	37.2	-13.4	**	1,792	739
Female farmers	37.6	31.1	-6.5	ns	913	532
Percentage of farmers who used at least two sustainable livestock practices and/or technologies in the past 12 months	14.9	17.6	2.7	ns	2,705	1,271
Male farmers	18.1	21.2	3.1	ns	1,792	739
Female farmers	8.6	12.7	4.0	ns	913	532
Percentage of farmers who used at least two sustainable NRM practices in the past 12 months	1.1	5.7	4.6	***	2,705	777
Male farmers	1.3	6.4	5.0	***	1,792	469
Female farmers	0.7	4.7	4.0	**	913	308
Percentage of farmers who used improved storage practices in the past 12 months	79.0	72.1	-6.9	*	2,662	1,159
Male farmers	79.9	71.5	-8.4	*	1,764	682
Female farmers	77.2	73.0	-4.2	ns	898	477
Percentage of farmers who used agricultural or livestock services in the past 12 months	7.1	15.6	8.5	***	2,662	1,159
Male farmers	8.3	17.4	9.1	***	1,764	682
Female farmers	4.7	13.0	8.3	***	898	477
WOMEN'S HEALTH AND NUTRITION INDICATORS						
Prevalence of underweight women	22.9	16.9	-5.9	*	2,048	1,000
Minimum Dietary Diversity - Women (MDD-W)	12.1	18.9	6.9	+	2,322	1,077
Women's Dietary Diversity Score (WDDS)	2.9	3.0	0.1	ns	2,322	1,077

	2015 Baseline	2019 Endline	Raw Difference (Endline - Baseline)	Significance Level ¹	Number of Observations Baseline Endline	
Percent of births receiving at least 4 antenatal care (ANC) visits ³	49.9	53.9	4.0	ns	1,259	567
Contraceptive Prevalence Rate	47.3	34.9	-12.5	***	1,233	595
CHILDREN'S HEALTH AND NUTRITION INDICATORS						
Prevalence of underweight children under 5 years of age (Total)	24.0	16.2	-7.8	**	1,809	794
Male	25.0	15.2	-9.8	***	903	396
Female	23.0	17.4	-5.7	ns	906	398
Prevalence of stunted children under 5 years of age (Total)	39.6	32.4	-7.1	*	1,809	794
Male	43.2	31.7	-11.5	***	903	396
Female	36.0	33.2	-2.8	ns	906	398
Prevalence of wasted children under 5 years of age (Total)	6.4	3.2	-3.2	**	1,809	794
Male	6.3	3.4	-2.8	*	903	396
Female	6.5	2.9	-3.6	**	906	398
Percentage of children under age 5 with diarrhea in the last two weeks (Total)	34.2	30.4	-3.8	ns	1,880	826
Male	35.0	29.3	-5.8	ns	943	406
Female	33.3	31.5	-1.8	ns	937	420
Percentage of children under age 5 with diarrhea treated with ORT (Total)	45.2	48.7	3.5	ns	605	232
Male	43.0	53.2	10.2	ns	307	113
Female	47.6	44.6	-3.0	ns	298	119
Prevalence of exclusive breast-feeding of children under six months of age	39.6	31.1	-8.5	ns	187	68
Male	35.3	29.7	-5.6	ns	95	35
Female	44.1	32.6	-11.6	ns	92	33
Prevalence of children 6-23 months of age receiving a minimum acceptable diet (MAD)	4.6	9.0	4.4	ns	558	242
Male	2.4	9.8	7.4	*	266	128

	2015 Baseline	2019 Endline	Raw Difference (Endline - Baseline)	Significance Level ¹	Number of Observations Baseline Endline	
Female	6.5	8.1	1.6	ns	292	114
GENDER INDICATORS						
Percentage of men and women who earned cash in the past 12 months	59.6	58.1	-1.5	ns	3,554	1,633
Percentage of men who earned cash in the past 12 months	83.2	74.7	-8.5	*	1,776	816
Percentage of women who earned cash in the past 12 months	35.9	41.5	5.6	ns	1,778	817
Percentage of men in union and earning cash who make decisions alone about the use of self-earned cash	10.5	11.2	0.8	ns	1,420	548
Percentage of women in union and earning cash who make decisions alone about the use of self-earned cash	21.0	40.3	19.3	**	592	272
Percentage of men in union and earning cash who make decisions jointly with spouse/partner about the use of self-earned cash	63.1	50.7	-12.3	*	1,420	548
Percentage of women in union and earning cash who make decisions jointly with spouse/partner about the use of self-earned cash	61.0	46.5	-14.6	*	592	272
Percentage of men and women with children under two who have knowledge of maternal and child health and nutrition (MCHN) practices	62.3	55.1	-7.2	ns	1,186	380
Percentage of men with children under two who have knowledge of maternal and child health and nutrition (MCHN) practices	60.6	51.0	-9.6	ns	494	213
Percentage of women with children under two who have knowledge of maternal and child health and nutrition (MCHN) practices	63.5	59.7	-3.8	ns	692	167
Percentage of men in union with children under two who make maternal health and nutrition decisions alone	18.0	28.8	10.8	*	485	183
Percentage of women in union with children under two who make maternal health and nutrition decisions alone	36.1	38.3	2.2	ns	489	138

	2015 Baseline	2019 Endline	Raw Difference (Endline - Baseline)	Significance Level ¹	Number of Observations	
					Baseline	Endline
Percentage of men in union with children under two who make maternal health and nutrition decisions jointly with spouse/partner	37.1	29.4	-7.6	ns	485	183
Percentage of women in union with children under two who make maternal health and nutrition decisions jointly with spouse/partner	31.4	34.0	2.7	ns	489	138
Percentage of men in union with children under two who make child health and nutrition decisions alone	11.1	33.4	22.3	***	485	183
Percentage of women in union with children under two who make child health and nutrition decisions alone	34.5	30.9	-3.7	ns	489	138
Percentage of men in union with children under two who make child health and nutrition decisions jointly with spouse/partner	42.6	32.6	-10.0	ns	485	183
Percentage of women in union with children under two who make child health and nutrition decisions jointly with spouse/partner	40.4	42.8	2.3	ns	489	138

¹ ns = not significant, † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

² Expressed in constant 2010 USD

³ Women age 15-49 with pregnancy in the past 5 years

NA : Not available, cell has less than 30 observations

ANNEX G: COMPARISON OF BASELINE AND ENDLINE INDICATORS BY PROJECT PARTICIPATION STATUS AND BY GEOGRAPHICAL ZONE – FARARANO PROJECT

TABLE A 3: Comparison of baseline and endline indicators by project participation status and by geographic zone – Fararano

Indicator	Baseline 2015 (BL)			Endline 2019 (EL)					BL-EL Comparison (Sig.)			Endline Comparison by Participation Status (Sig.)	BL-EL Comparison by Geographic Zone (Sig.)	
	All HHs (I)	East (II)	South (III)	All HHs (IV)	Direct Participants (V)	Indirect participants (VI)	East (VII)	South (VIII)	All HHs (IX)	Direct Participants (X)	Indirect participants (XI)	Direct vs. Indirect Participation (XII)	East (XIII)	South (XIV)
FOOD SECURITY INDICATORS														
Prevalence of households with moderate or severe hunger (HHS)	33.8	20.4	49.0	39.0	37.7	39.6	10.8	61.8	ns	ns	ns	ns	**	**
Male and female adults	31.8	18.8	47.6	36.6	37.8	36.0	10.5	59.0	ns	ns	ns	ns	*	**
Adult female, no adult male	41.7	27.6	55.3	47.6	44.8	48.8	11.8	75.3	ns	ns	ns	ns	**	*
Adult male, no adult female	36.6	20.4	47.9	39.3	14.3	45.9	12.8	56.8	ns	**	ns	**	ns	ns
Child, no adults	NA	NA	NA	NA	NA	NA	NA	NA	ns	ns	ns	ns	NA	NA
Average Household Dietary Diversity Score (HDDS)	3.7	4.2	3.1	4.2	4.3	4.1	4.9	3.7	+	*	ns	ns	*	+
Coping Strategies Index	48.9	31.7	68.4	51.9	55.5	50.2	21.7	76.8	ns	ns	ns	ns	**	ns
POVERTY INDICATORS														
Per capita expenditures (as a proxy for income) of USG targeted beneficiaries ²	\$1.40	\$1.52	\$1.30	\$2.26	\$2.20	\$2.29	\$2.57	\$2.01	***	***	***	ns	***	***
Male and Female Adults	\$1.40	\$1.50	\$1.29	\$2.11	\$2.19	\$2.07	\$2.34	\$1.91	***	***	***	ns	**	**
Adult Female no Adult Male	\$1.28	\$1.44	\$1.17	\$2.16	\$1.60	\$2.41	\$2.61	\$1.83	***	ns	**	*	**	*
Adult Male no Adult Female	\$1.92	\$2.28	\$1.72	\$3.43	\$3.91	\$3.31	\$4.86	\$2.50	**	***	*	ns	**	*
Child No Adults	NA	NA	NA	NA	NA	NA	NA	NA	ns	ns	+	ns	NA	NA
Prevalence of poverty: Percent of people living on less than \$1.90/day	77.4	73.5	80.9	60.0	60.2	59.9	53.6	65.3	***	***	***	ns	**	**

Indicator	Baseline 2015 (BL)			Endline 2019 (EL)					BL-EL Comparison (Sig.)			Endline Comparison by Participation Status (Sig.)	BL-EL Comparison by Geographic Zone (Sig.)	
	All HHs (I)	East (II)	South (III)	All HHs (IV)	Direct Participants (V)	Indirect participants (VI)	East (VII)	South (VIII)	All HHs (IX)	Direct Participants (X)	Indirect participants (XI)	Direct vs. Indirect Participation (XII)	East (XIII)	South (XIV)
Male and Female Adults	77.6	74.1	81.0	62.5	61.1	63.3	57.6	66.8	**	**	**	ns	*	*
Adult Female no Adult Male	82.4	75.9	86.9	60.5	71.3	55.7	49.9	68.6	***	ns	***	*	**	***
Adult Male no Adult Female	55.8	45.7	61.4	40.7	14.5	47.6	19.7	54.4	+	***	ns	**	**	ns
Child No Adults	NA	NA	NA	NA	NA	NA	NA	NA	ns	ns	ns	ns	NA	NA
Mean depth of poverty	35.9	31.1	40.2	28.2	28.2	28.1	23.1	32.3	*	*	*	ns	+	*
Male and Female Adults	36.0	31.3	40.4	28.6	27.4	29.2	24.3	32.2	*	*	*	ns	ns	*
Adult Female no Adult Male	39.6	34.1	43.3	32.8	40.1	29.5	25.1	38.7	+	ns	*	*	ns	ns
Adult Male no Adult Female	22.2	14.9	26.3	17.5	5.8	20.5	6.2	24.8	ns	***	ns	*	*	ns
Child No Adults	NA	NA	NA	NA	NA	NA	NA	NA	ns	ns	ns	ns	NA	NA
WASH INDICATORS														
Percentage of households using an improved source of drinking water	15.2	16.7	13.6	21.4	21.5	21.4	28.5	15.7	ns	ns	ns	ns	*	ns
Percent of households in target areas practicing correct use of recommend household water treatment technologies	29.1	44.7	11.6	34.2	36.5	33.1	53.6	18.6	ns	ns	ns	ns	+	+
Percent of households in target areas practicing boiling	26.9	42.2	9.5	33.3	37.6	31.1	48.2	21.1	ns	+	ns	ns	ns	*
Percent of households in target areas practicing bleaching	3.5	4.7	2.2	8.5	12.4	6.6	13.6	4.4	**	**	+	*	***	ns
Percent of households in target areas practicing filtering	0.5	0.3	0.8	1.2	1.5	1.0	1.8	0.6	ns	ns	ns	ns	+	ns
Percent of households in target areas practicing solar disinfecting	0.6	1.0	0.1	0.3	0.0	0.4	0.2	0.4	ns	+	ns	+	ns	ns

Indicator	Baseline 2015 (BL)			Endline 2019 (EL)					BL-EL Comparison (Sig.)			Endline Comparison by Participation Status (Sig.)	BL-EL Comparison by Geographic Zone (Sig.)	
	All HHs (I)	East (II)	South (III)	All HHs (IV)	Direct Participants (V)	Indirect participants (VI)	East (VII)	South (VIII)	All HHs (IX)	Direct Participants (X)	Indirect participants (XI)	Direct vs. Indirect Participation (XII)	East (XIII)	South (XIV)
Percentage of households that can obtain drinking water in less than 30 minutes (round trip)	77.4	88.3	65.2	72.6	73.1	72.4	82.1	64.9	ns	ns	ns	ns	+	ns
Percent of households using improved sanitation facilities	2.1	2.5	1.5	2.8	4.5	2.0	5.3	0.8	ns	ns	ns	*	+	ns
Percent of households in target areas practicing open defecation	71.3	57.7	86.6	55.1	59.8	52.7	29.8	75.6	*	ns	*	ns	***	ns
Percent of households with soap and water at a handwashing station commonly used by family members	4.9	5.3	4.5	9.9	12.7	8.5	14.0	6.6	*	*	*	+	**	ns
AGRICULTURAL INDICATORS														
Percentage of farmers who used financial services in the past 12 months	16.0	12.3	20.9	23.5	29.3	20.3	29.8	19.1	*	**	ns	*	***	ns
Male farmers	17.6	12.7	23.7	25.2	31.2	21.9	31.4	19.9	+	**	ns	*	***	ns
Female farmers	13.0	11.5	15.1	21.2	26.5	18.2	26.9	18.1	*	**	ns	*	***	ns
Percentage of farmers who practiced value chain activities promoted by the project in the past 12 months	54.3	54.3	54.3	32.6	41.3	27.8	31.8	33.2	***	*	***	**	**	*
Male farmers	59.0	59.2	58.7	35.9	46.1	30.3	35.8	36.0	***	*	***	**	**	**
Female farmers	45.3	45.1	45.5	28.2	34.9	24.3	24.5	30.0	*	ns	**	+	*	+
Percentage of farmers who used at least three sustainable agriculture (crop, livestock, NRM) practices and/or technologies in the past 12 months	37.2	41.4	31.9	45.3	53.6	39.6	42.8	47.5	+	**	ns	**	ns	*

Indicator	Baseline 2015 (BL)			Endline 2019 (EL)					BL-EL Comparison (Sig.)			Endline Comparison by Participation Status (Sig.)	BL-EL Comparison by Geographic Zone (Sig.)	
	All HHS (I)	East (II)	South (III)	All HHS (IV)	Direct Participants (V)	Indirect participants (VI)	East (VII)	South (VIII)	All HHS (IX)	Direct Participants (X)	Indirect participants (XI)	Direct vs. Indirect Participation (XII)	East (XIII)	South (XIV)
Male farmers	42.6	46.3	38.0	49.3	58.9	42.6	48.6	50.1	ns	**	ns	**	ns	ns
Female farmers	26.7	32.1	19.5	39.4	45.5	35.2	30.7	44.6	*	*	ns	ns	ns	**
Percentage of farmers who used at least two sustainable crop practices and/or technologies in the past 12 months									**	ns	***	*	***	ns
Male farmers	50.6	53.9	46.6	37.2	46.3	32.2	36.2	38.0	**	ns	***	**	***	ns
Female farmers	37.6	43.9	29.2	31.1	39.9	26.0	21.0	36.4	ns	ns	*	*	***	ns
Percentage of farmers who used at least two sustainable livestock practices and/or technologies in the past 12 months									ns	*	ns	**	ns	+
Male farmers	18.1	22.9	12.1	21.2	29.4	16.6	23.8	19.0	ns	*	ns	**	ns	ns
Female farmers	8.6	10.9	5.5	12.7	15.4	11.1	8.6	14.7	ns	*	ns	ns	ns	*
Percentage of farmers who used at least two sustainable NRM practices in the past 12 months									***	***	*	ns	**	*
Male farmers	1.3	1.9	0.7	6.4	8.6	4.9	7.9	4.7	***	***	*	*	**	*
Female farmers	0.7	1.3	0.0	4.7	4.8	4.6	6.2	3.8	**	*	+	ns	*	*
Percentage of farmers who used improved storage practices in the past 12 months									*	ns	*	+	ns	*
Male farmers	79.9	81.3	78.1	71.5	78.1	67.6	75.5	68.2	*	ns	**	*	ns	*
Female farmers	77.2	74.2	81.4	73.0	74.5	72.2	76.3	71.4	ns	ns	ns	ns	ns	+
Percentage of farmers who used agricultural or livestock services in the past 12 months									***	***	ns	***	***	ns

Indicator	Baseline 2015 (BL)			Endline 2019 (EL)					BL-EL Comparison (Sig.)			Endline Comparison by Participation Status (Sig.)	BL-EL Comparison by Geographic Zone (Sig.)	
	All HHs (I)	East (II)	South (III)	All HHs (IV)	Direct Participants (V)	Indirect participants (VI)	East (VII)	South (VIII)	All HHs (IX)	Direct Participants (X)	Indirect participants (XI)	Direct vs. Indirect Participation (XII)	East (XIII)	South (XIV)
Male farmers	8.3	4.3	13.3	17.4	30.0	10.0	18.5	16.5	***	***	ns	***	**	ns
Female farmers	4.7	3.3	6.7	13.0	20.4	8.5	9.6	14.7	***	***	ns	**	*	**
WOMEN'S HEALTH AND NUTRITION INDICATORS														
Prevalence of underweight women	22.9	19.9	26.2	16.9	20.6	14.8	11.5	21.2	*	ns	**	+	**	ns
Minimum Dietary Diversity - Women (MDD-W)	12.1	14.5	9.4	18.9	18.3	19.3	27.9	12.2	+	ns	+	ns	*	ns
Women's Dietary Diversity Score (WDDS)	2.9	3.0	2.7	3.0	3.0	3.0	3.4	2.8	ns	ns	ns	ns	ns	ns
Percent of births receiving at least 4 antenatal care (ANC) visits ³	49.9	56.8	43.9	53.9	62.8	48.9	70.3	43.1	ns	+	ns	*	**	ns
Contraceptive Prevalence Rate	47.3	53.5	39.8	34.9	40.8	31.7	37.2	33.0	***	ns	***	*	**	ns
CHILDREN'S HEALTH AND NUTRITION INDICATORS														
Prevalence of underweight children under 5 years of age (Total)	24.0	26.3	22.2	16.2	15.5	16.7	11.5	18.6	**	**	**	ns	***	ns
Male	25.0	27.6	23.2	15.2	13.2	16.3	11.2	17.1	***	**	**	ns	***	+
Female	23.0	25.1	21.3	17.4	17.8	17.1	11.7	20.2	ns	ns	ns	ns	**	ns
Prevalence of stunted children under 5 years of age (Total)	39.6	41.2	38.3	32.4	29.5	34.1	32.1	32.6	*	**	+	ns	+	ns
Male	43.2	45.8	41.2	31.7	26.8	34.4	33.2	31.0	***	***	*	ns	*	**
Female	36.0	36.9	35.2	33.2	32.2	33.8	31.1	34.3	ns	ns	ns	ns	ns	ns
Prevalence of wasted children under 5 years of age (Total)	6.4	7.1	5.8	3.2	2.6	3.5	3.4	3.0	**	**	*	ns	*	+
Male	6.3	7.2	5.6	3.4	2.8	3.8	4.1	3.1	*	*	ns	ns	ns	ns
Female	6.5	6.9	6.1	2.9	2.4	3.1	2.6	3.0	**	**	*	ns	*	+

Indicator	Baseline 2015 (BL)			Endline 2019 (EL)					BL-EL Comparison (Sig.)			Endline Comparison by Participation Status (Sig.)	BL-EL Comparison by Geographic Zone (Sig.)	
	All HHs (I)	East (II)	South (III)	All HHs (IV)	Direct Participants (V)	Indirect participants (VI)	East (VII)	South (VIII)	All HHs (IX)	Direct Participants (X)	Indirect participants (XI)	Direct vs. Indirect Participation (XII)	East (XIII)	South (XIV)
Percentage of children under age 5 with diarrhea in the last two weeks (Total)	34.2	25.7	40.7	30.4	28.0	31.7	19.0	35.8	ns	+	ns	ns	+	ns
Male	35.0	25.1	42.3	29.3	30.2	28.7	17.4	35.1	ns	ns	ns	ns	+	ns
Female	33.3	26.2	38.9	31.5	25.7	34.6	20.7	36.6	ns	ns	ns	ns	ns	ns
Percentage of children under age 5 with diarrhea treated with Oral Rehydration Therapy (Total)	45.2	60.2	37.9	48.7	55.2	45.6	44.1	49.9	ns	+	ns	+	*	*
Male	43.0	61.9	34.7	53.2	63.3	47.3	50.3	53.9	ns	**	ns	*	ns	*
Female	47.6	58.7	41.6	44.6	45.5	44.3	38.7	46.2	ns	ns	ns	ns	*	ns
Prevalence of exclusive breast-feeding of children under six months of age	39.6	63.6	22.0	31.1	25.2	33.8	51.2	16.7	ns	ns	ns	ns	ns	ns
Male	35.3	62.9	14.2	29.7	28.1	30.3	55.7	11.1	ns	ns	ns	ns	ns	ns
Female	44.1	64.4	29.9	32.6	22.7	38.0	46.2	22.8	ns	ns	ns	ns	ns	ns
Prevalence of children 6-23 months of age receiving a minimum acceptable diet (MAD)	4.6	8.0	1.9	9.0	14.6	5.7	20.5	2.9	ns	*	ns	*	*	ns
Male	2.4	4.7	0.8	9.8	12.3	8.1	20.7	4.4	*	*	ns	ns	*	ns
Female	6.5	10.3	3.0	8.1	18.0	3.2	20.3	1.0	ns	ns	ns	+	ns	ns
GENDER INDICATORS														
Percentage of men and women who earned cash in the past 12 months	59.6	60.3	58.7	58.1	58.9	57.7	51.5	63.7	ns	ns	ns	ns	*	ns
Percentage of men who earned cash in the past 12 months	83.2	85.9	80.1	74.7	72.4	75.8	72.2	76.9	*	*	*	ns	**	ns

Indicator	Baseline 2015 (BL)			Endline 2019 (EL)					BL-EL Comparison (Sig.)			Endline Comparison by Participation Status (Sig.)	BL-EL Comparison by Geographic Zone (Sig.)	
	All HHs (I)	East (II)	South (III)	All HHs (IV)	Direct Participants (V)	Indirect participants (VI)	East (VII)	South (VIII)	All HHs (IX)	Direct Participants (X)	Indirect participants (XI)	Direct vs. Indirect Participation (XII)	East (XIII)	South (XIV)
Percentage of women who earned cash in the past 12 months	35.9	34.7	37.3	41.5	45.4	39.6	30.8	50.8	ns	*	ns	ns	ns	*
Percentage of men in union and earning cash who make decisions alone about the use of self-earned cash	10.5	7.5	14.2	11.2	10.5	11.6	8.0	13.7	ns	ns	ns	ns	ns	ns
Percentage of women in union and earning cash who make decisions alone about the use of self-earned cash	21.0	20.6	21.5	40.3	29.1	46.9	26.5	46.8	**	ns	***	**	ns	**
Percentage of men in union and earning cash who make decisions jointly with spouse/partner about the use of self-earned cash	63.1	61.9	64.6	50.7	58.3	47.2	66.1	38.9	*	ns	**	+	ns	***
Percentage of women in union and earning cash who make decisions jointly with spouse/partner about the use of self-earned cash	61.0	58.3	64.1	46.5	62.6	37.1	63.2	38.8	*	ns	***	***	ns	**
Percentage of men and women with children under two who have knowledge of maternal and child health and nutrition (MCHN) practices	62.3	78.3	49.4	55.1	59.1	52.8	81.6	40.1	ns	ns	ns	ns	ns	ns
Percentage of men with children under two who have knowledge of maternal and child health and nutrition (MCHN) practices	60.6	78.1	45.0	51.0	57.3	46.8	83.8	35.0	ns	ns	ns	ns	ns	ns

Indicator	Baseline 2015 (BL)			Endline 2019 (EL)					BL-EL Comparison (Sig.)			Endline Comparison by Participation Status (Sig.)	BL-EL Comparison by Geographic Zone (Sig.)	
	All HHs (I)	East (II)	South (III)	All HHs (IV)	Direct Participants (V)	Indirect participants (VI)	East (VII)	South (VIII)	All HHs (IX)	Direct Participants (X)	Indirect participants (XI)	Direct vs. Indirect Participation (XII)	East (XIII)	South (XIV)
Percentage of women with children under two who have knowledge of maternal and child health and nutrition (MCHN) practices	63.5	78.4	52.2	59.7	60.6	59.3	78.7	46.9	ns	ns	ns	ns	ns	ns
Percentage of men in union with children under two who make maternal health and nutrition decisions alone	18.0	14.0	21.6	28.8	28.1	29.3	19.8	33.4	*	ns	*	ns	ns	*
Percentage of women in union with children under two who make maternal health and nutrition decisions alone	36.1	41.0	31.5	38.3	42.5	36.7	32.3	42.4	ns	ns	ns	ns	ns	ns
Percentage of men in union with children under two who make maternal health and nutrition decisions jointly with spouse/partner	37.1	34.1	39.7	29.4	28.3	30.3	49.4	19.0	ns	ns	ns	ns	ns	**
Percentage of women in union with children under two who make maternal health and nutrition decisions jointly with spouse/partner	31.4	32.2	30.6	34.0	37.2	32.9	43.9	27.1	ns	ns	ns	ns	ns	ns
Percentage of men in union with children under two who make child health and nutrition decisions alone	11.1	8.2	13.7	33.4	25.2	39.6	32.7	33.8	***	**	***	+	***	**

Indicator	Baseline 2015 (BL)			Endline 2019 (EL)					BL-EL Comparison (Sig.)			Endline Comparison by Participation Status (Sig.)	BL-EL Comparison by Geographic Zone (Sig.)	
	All HHs (I)	East (II)	South (III)	All HHs (IV)	Direct Participants (V)	Indirect participants (VI)	East (VII)	South (VIII)	All HHs (IX)	Direct Participants (X)	Indirect participants (XI)	Direct vs. Indirect Participation (XII)	East (XIII)	South (XIV)
Percentage of women in union with children under two who make child health and nutrition decisions alone	34.5	41.0	28.6	30.9	36.2	28.9	32.2	29.9	ns	ns	ns	ns	ns	ns
Percentage of men in union with children under two who make child health and nutrition decisions jointly with spouse/partner	42.6	37.5	47.1	32.6	34.3	31.3	47.3	24.9	ns	ns	ns	ns	ns	**
Percentage of women in union with children under two who make child health and nutrition decisions jointly with spouse/partner	40.4	39.3	41.6	42.8	43.4	42.5	49.4	38.2	ns	ns	ns	ns	ns	ns
¹ ns = not significant, † p<0.1,* p<0.05, ** p<0.01, *** p<0.001 ² Expressed in constant 2010 USD ³ Women age 15-49 with pregnancy in the past 5 years NA : Not available, cell has less than 30 observations														
NOTE: The household survey asked respondents whether they participated regularly in any of the project activities. Respondents who answered "Yes" are considered direct participants. Respondents who answered "No" or "Don't know" are considered indirect participants. Households with missing information on project participation are not included in the BL-EL comparison by participation status (Columns X and XI) nor in the endline comparison by participation status (Column XII).														

ANNEX H: ADDITIONAL TABLES

Table 4: Estimated population in the endline survey area, by project (Madagascar, 2019)

	Overall	ASOTRY	Fararano
Total Population	1,097,731	480,300	617,431
Male	547,184	241,200	305,984
Female	550,547	239,100	311,447
Respondent is a woman of reproductive age (15-49)	246,776	105,118	141,657
Respondent is a pregnant woman of reproductive age (15-49)	20,878	9,123	11,755
Respondent is married/in a union and a woman of reproductive age (15-49)	144,506	59,314	85,191
Respondent had a live birth within the last 5 years & is a woman of reproductive	119,798	49,526	70,271
Respondent is a child under 5	185,020	78,794	106,225
Male	93,810	40,263	53,548
Female	91,209	38,532	52,678
Respondent is a child under 6 months of age	16,056	7,770	8,287
Male	8,877	4,540	4,337
Female	7,179	3,230	3,949
Respondent is a child 6-23 months of age	53,297	21,870	31,427
Male	27,496	10,289	17,207
Female	25,801	11,582	14,220
Respondent is a farmer	298,318	129,372	168,947
Male	171,345	73,831	97,514
Female	126,974	55,541	71,433

Table 5: Household characteristics in the endline survey sample, by project (Madagascar, 2019)

	Overall	ASOTRY	Fararano
Total households	228,082	94,109	133,973
Adult Female no Adult Male	37,916	16,319	21,597
Adult Male no Adult Female	17,184	5,367	11,817
Male and Female	170,186	71,389	98,797
Child No Adults	2,796	1,034	1,762
Gendered household type (Percent of households)			
Adult Female no Adult Male	16.6	17.3	16.1
Adult Male no Adult Female	7.5	5.7	8.8
Male and Female	74.6	75.9	73.7
Child No Adults	1.2	1.1	1.3
Average household size (Number of persons)	4.8	5.1	4.6
Percent of households with children under 5 years of age	56.8	57.6	56.3
Percent of households with a child 6-23 months of age	22.9	22.5	23.1
Percent of households with a child under 6 months of age	6.6	7.6	5.9
Household headship (Percent male)	76.3	74.3	77.7
Education level of head of household (Percent of households)			
No formal education	32.5	28.8	35.2
Pre-primary	1.8	3.3	0.7
Primary	39.1	45.2	34.7
Secondary	25.1	22.0	27.4
Higher	1.5	0.7	2.1
Number of responding households	2,073	980	1,093
Adult Female no Adult Male	349	167	182
Adult Male no Adult Female	147	55	92
Male and Female Adults	1,556	748	808
Child No Adults	21	10	11
Note: Adults are defined as individuals 18 or older.			

Table 6: Household dietary diversity (Fararano)

Food group consumed	% households	
	Overall	Fararano
Cereals	83.2	85.4
Root, tubers and plantains	64.9	60.1
Vegetables	53.3	49.4
Fruits	14.0	12.6
Meats, organs, blood	17.2	18.0
Eggs	5.2	6.8
Fish and seafood	24.6	32.8
Pulses/legumes/nuts	31.3	31.0
Milk and milk products	6.8	7.7
Oil/fats	38.6	44.0
Sugar/honey	49.4	52.3
Other miscellaneous	14.4	17.0
Number of responding households	1677	915

Table 7: Household sanitation and drinking water (Fararano)

	% households	
	Overall	Fararano
Improved, not shared sanitation facility		
Flush piped to sewer system	0.1	0.1
Flush to septic tank	0.6	1.1
Flush to pit latrine	0.3	0.4
Ventilated improved pit latrine	0.1	0.1
Pit latrine with slab	0.9	1.2
Number of households	2,068	1,090
Improved, shared sanitation facility		
Flush piped sewer system	0.0	0.0
Flush to septic tank	0.5	0.8
Flush to pit latrine	0.1	0.1
Ventilated improved pit latrine	0.6	0.7
Pit latrine with slab	2.5	3.4
Number of households	2,068	1,090
Non-improved sanitation facility		
Flush to somewhere else	0.3	0.2
Flush to don't know where	0.1	0.2
Latrine without slab/open pit	45.5	35.9
No facility/bush/field	47.9	55.1
Hanging latrine (pile)	0.1	0.1
Other	0.4	0.6
Number of households	2,065	1,089
Improved source of drinking water		
Piped into home	0.0	0.0
Piped into yard or plot	0.0	0.1
Public tap/standpipe	7.3	7.4
Tube well or borehole	4.3	1.0
Protected well	7.8	10.8
Protected spring	4.4	2.2
Number of households	2,068	1,090
Non - Improved source of drinking water		
Unprotected well	21.1	31.3
Unprotected spring	25.1	15.7
Tanker truck	0.1	0.1
Surface water (River/Dam/Lake/Pond/Stream/Canal/Irrigation Channel)	12.3	12.2
Digging into a dry river bed	1.4	0.2
Number of households	2,068	1,090
Water availability		
Water is generally available from this source year-round (% 'Yes')	77.6	73.7
Water was unavailable for a day or more during the last two weeks (% 'No')	79.2	74.3
Number of households	2,064	1,088

Table 8: Financial services used by farmers (Fararano)

	Overall % HH	Fararano % HH
Type of Financial Service		
Credit	8.5	8.9
Agro-dealers	1.3	1.6
Contract farming	1.3	2.0
Village savings groups	0.6	0.7
Farmers associations/coops	0.8	1.0
MFI (Micro-finance Institution)	0.5	0.9
Middlemen	0.0	0.0
NGO (non-government organization)	3.0	1.8
Government institution	0.9	0.6
Non-cash loans	0.8	1.1
Input/cash from buyers	0.1	0.2
Other	0.8	1.0
Did not take agricultural credit	91.5	91.1
Number of farmers	2311	1207
Savings	12.8	15.0
Village savings and loan	7.2	7.3
MFI	2.4	3.3
Cooperative	0.4	0.4
Post Office	0.3	0.5
Commercial banks	0.9	1.4
Mobile banking	2.9	3.7
Other	2.7	2.3
Did not save	84.5	82.7
Number of farmers	2354	1247
Agricultural Insurance	12.9	13.9
Number of farmers	2417	1271

Table 9: Percentage of households participating in value chain activities (Fararano)

	Overall % HH	Fararano % HH
Value Chain Activities		
Purchase Inputs	1.4	1.5
Mobile financial services	0.8	1.2
Financial services other than mobile	0.3	0.1
Training and extension services	2.6	2.7
Contract Farming	3.8	5.5
Solar drying	18.6	18.4
Storage (warehousing)	9.8	10.7
Processing produce	12.0	15.3
Trading or marketing produce	6.8	8.5
None of these activities	69.7	67.4
Number of farmers	2370	1254

Table 10: Sustainable agricultural practices (Fararano)

Type of agricultural practice		
	Overall % HH	Fararano %HH
Crops		
Manure	49.4	32.0
Compost	26.9	11.2
Mulching	7.8	8.2
Weed control	32.9	32.3
Row planting	15.4	15.5
Contour planting	8.2	9.9
Terracing	6.4	2.8
Early planting or planting with first rains	16.7	15.9
Use of improved crop seeds	11.5	8.8
Crop rotations	24.6	22.6
Intercropping	27.9	27.0
Use of natural pesticides (chili, beer, etc...)	3.3	1.7
Use of chemical pesticides	8.0	9.5
Use of guano fertilizer	1.2	1.2
Irrigation management	9.5	10.6
Conservation agriculture/farming	2.6	3.0
Rice-fish farming	1.9	0.5
Use of straw	8.0	3.1
Inter-season planting	9.7	6.5
Did not use any of these practices in the past 12 months	22.4	31.8
Number of responding farmers	2,182	1,113
Livestock		
Improved animal shelters	11.6	14.9
Vaccinations	54.0	42.6
Deworming	39.1	28.9
Homemade animal feeds made of locally available products	31.3	32.8
Animal feed supplied by stock feed	3.3	4.4
Pen feeding	15.7	17.9
Fodder protection	1.2	2.1
Used the services of community animal health workers/paravets	2.7	4.2
Race selection	5.3	4.8
Building and livestock machinery	1.6	2.8
Did not practice any of these activities in the past 12 months	25.6	31.2
Number of responding farmers	1,576	761
Natural resource management		
Management or protection of watersheds	7.3	11.0
Agroforestry	9.5	12.5
Reforestation	13.1	13.0
Sustainable harvesting of forest products	3.5	4.9
Did not practice any of these activities in the past 12 months	74.7	69.2
Number of responding farmers	1,545	751

Table 11: Improved storage practices (Fararano)

	Overall % HH	Fararano % HH
Storage practice		
Improved granary	3.4	3.7
Underground storage	3.8	2.9
Warehousing	31.2	28.9
Triple bag	77.5	74.6
Minitank	3.2	3.9
Did not use any storage practices	4.5	4.7
Number of farmers	1,750	902

Table 12: Program participation by survey respondents (Fararano)

	Overall % HH	East % HH	South %HH
Participation in project activities			
Yes	33.0	31.5	34.3
No	67.0	68.5	65.7
Number of respondent households	1,093	567	526
Type of project activities in which households participated			
Received food rations	76.1	68.8	81.6
Received cash transfer	21.6	18.2	24.1
Received food rations or cash transfer	81.2	74.9	85.9
Participated in nutrition training	56.4	53.2	58.8
Participated in agr training	49.1	47.8	50.1
Participated in agr OR nutrition training	65.0	64.4	65.5
Participated in agr AND nutrition training	40.5	36.6	43.5
Participated in other activities	22.1	23.6	20.9
Participated in agr OR nutrition OR other activities	70.8	71.4	70.4
Number of respondent households	364	183	181
Number of activities respondent was involved in			
Average number	2.3	2.1	2.4
Participated in 2 or more activities	69.4	65.5	72.4
Participated in 3 or more activities	41.9	36.4	46.
Number of respondent households	364	183	181

Table 13: Assistance received and shocks experienced (Fararano)

	Overall % HH	East % HH	South % HH
Types of assistance received:			
Food	14.6	14.0	15.0
Cash	5.4	5.9	5.0
Crop inputs	3.9	4.1	3.8
Livestock inputs	0.4	0.8	0.1
Kit d'urgence	1.1	0.7	1.5
WASH inputs	0.9	0.7	1.0
Other	1.0	1.1	0.9
Mean number of types of assistance received	0.3	0.3	0.3
Received assistance from 1 or more sources in the past 6 months	20.9	20.2	21.4
Number of respondent households	1,073	552	521
Types of shock experienced:			
Drought	28.1	11.5	41.3
Flood or water logging	25.7	26.6	25.0
Strong winds or storms	38.4	24.5	49.5
Crop disease or crop pests	26.6	20.6	31.4
Livestock disease or deaths	14.3	19.0	10.5
Loss of job/non-payment	5.8	5.7	5.8
Large fall in sale price of crops	14.4	10.5	17.5
Large rise in prices of food	24.6	19.3	28.8
Death in household	5.6	3.1	7.6
Break-up of household	3.4	3.2	3.6
Illness	41.0	23.4	55.0
Theft	14.7	7.4	20.5
House damaged due to fire	1.1	1.7	0.7
End of aid	1.2	1.1	1.4
Other	0.4	0.7	0.2
Mean number of shocks experienced	2.6	1.8	3.2
Experienced 1 or more shocks in the past 12 months	82.3	70.5	91.7
Experienced 4 or more shocks in the past 12 months	28.4	16.1	38.3
Number of respondent households	1,082	556	526

Table 14: Physiological status of non-pregnant women 15-49 years of age (Fararano)

	Overall % HH	Fararano % HH
Percent less than 145 cm	6.1	6.1
Mean body mass index (BMI)	21.2	21.4
Normal		
18.5-24.9 (total normal)	72.5	69.1
Underweight		
<18.5 (total underweight)	16.4	16.9
17.0-18.4 (mildly underweight)	12.0	12.6
<17 (moderately and severely underweight)	4.4	4.4
Overweight/obese		
≥25 (total overweight or obese)	11.1	14.0
25.0-29.9 (overweight)	9.4	11.5
≥30.0 (obese)	1.7	2.4
Number of non-pregnant women of reproductive age	1,918	1,000

Table 15: Stunting, underweight and wasting by age (Fararano)

	Overall % HH	Fararano % HH
Prevalence of stunted children under 5 years of age		
<6	18.8	19.6
6-11	20.1	16.0
12-17	39.4	30.5
18-23	50.8	45.8
24-29	39.9	34.5
30-35	41.2	38.2
36-41	42.3	44.3
42-47	31.0	25.6
48-53	36.6	32.8
54-59	26.8	27.2
Prevalence of underweight children under 5 years of age		
<6	11.7	14.4
6-11	18.6	20.4
12-17	13.9	8.9
18-23	20.6	19.6
24-29	20.0	20.2
30-35	15.4	16.0
36-41	15.8	17.7
42-47	13.9	10.4
48-53	14.3	14.0
54-59	17.0	21.9
Prevalence of wasted children under 5 years of age		
<6	3.3	5.5
6-11	4.4	4.8
12-17	3.0	0.8

	Overall % HH	Fararano % HH
18-23	2.9	1.3
24-29	4.3	4.0
30-35	2.3	3.1
36-41	3.9	3.8
42-47	1.9	3.8
48-53	2.4	3.1
54-59	1.1	1.8
Number of children under 5 years of age	1,549	794

Table 16: Components of minimum acceptable diet (Fararano)

	Overall % HH	Fararano % HH
Breastfed children 6-8 months		
Minimum meal frequency (2 or more)	57.2	61.3
Minimum dietary diversity (4 or more) - 7 food groups	7.5	8.6
Grains, roots and tubers	82.4	85.9
Legumes and nuts	12.8	15.8
Dairy products (milk, yogurt, cheese)	7.3	2.4
Flesh foods (meat, fish poultry, liver/organ meat)	22.2	22.7
Eggs	0.5	0.9
Vitamin A-rich fruits and vegetables	31.7	32.6
Other fruits and vegetables	12.3	13.7
Number of children	83.0	43.0
Breastfed children 6-8 months		
Minimum meal frequency (3 or more)	42.5	43.0
Minimum dietary diversity (4 or more) - 7 food groups	16.8	20.0
Grains, roots and tubers	87.8	88.1
Legumes and nuts	14.9	14.3
Dairy products (milk, yogurt, cheese)	11.7	11.3
Flesh foods (meat, fish poultry, liver/organ meat)	33.4	40.0
Eggs	4.2	7.0
Vitamin A-rich fruits and vegetables	57.1	53.9
Other fruits and vegetables	25.4	31.4
Number of children	297.0	147.0
Non-breastfed children 6-23 months		
Minimum meal frequency (4 or more + 2 milk)	5.1	5.3
Minimum dietary diversity (4 or more) - 6 food groups	9.4	12.5
Grains, roots and tubers	82.0	75.8
Legumes and nuts	24.3	21.1
Dairy products (milk, yogurt, cheese)	14.4	16.0
Flesh foods (meat, fish poultry, liver/organ meat)	42.8	56.1
Eggs	2.5	3.6
Vitamin A-rich fruits and vegetables	47.9	47.2
Other fruits and vegetables	14.2	17.4
Number of children	92	53.0

Table 17: Breastfeeding status (Fararano)

	Overall % HH	Fararano % HH
Not breastfeeding		
<2	7.1	5.8
2-3	4.9	0.0
4-5	9.7	3.6
6-8	0.0	0.0
9-11	3.9	0.0
12-17	19.5	22.1
18-23	45.3	52.0
Exclusively breastfed		
<2	42.7	37.6
2-3	50.7	39.5
4-5	23.9	16.9
6-8	2.1	0.0
9-11	3.1	0.0
12-17	1.2	1.1
18-23	2.7	3.0
Breastfed and plain water only		
<2	21.6	19.3
2-3	10.1	4.1
4-5	9.7	6.2
6-8	4.6	1.6
9-11	3.7	0.0
12-17	1.2	1.5
18-23	0.0	0.0
Breastfed and non-milk liquids		
<2	17.4	19.7
2-3	10.9	23.0
4-5	3.6	4.1
6-8	4.9	6.8
9-11	3.8	5.9
12-17	0.0	0.0
18-23	0.0	0.0
Breastfed and other milk		
<2	1.7	3.0
2-3	2.7	0.0
4-5	4.1	8.5
6-8	1.1	0.0
9-11	0.0	0.0
12-17	0.0	0.0
18-23	0.0	0.0
Breastfed and complementary foods		
<2	9.4	14.7
2-3	20.8	33.4
4-5	49.1	60.8
6-8	87.3	91.6
9-11	85.6	94.1
12-17	78.1	75.3
18-23	52.0	45.0
Number of children	621	311
NOTE: The results for these subgroup analyses are based on small sample sizes and may be unreliable.		

ANNEX I: MULTIPLE REGRESSION ANALYSIS

Multivariate Analysis Methods

An exploratory analysis was undertaken to see if program participation was associated with better outcomes, controlling for other variables such as household assets and household size. The five estimation equations all have binomial (yes/no) dependent variables. Logit equations estimate the probability that i) households experienced moderate or severe food insecurity ii) CU5 were underweight or iii) stunted, iv) farmers adopted at least three sustainable agricultural practices and v) farmers used financial services. These outcomes represent households, children and farmers. Four of the dependent variables (underweight, stunting, use of financial services and adoption of sustainable agricultural practices) are indicators that showed significant change between baseline and endline, whereas food insecurity did not. Equations are of the form:

$$p(Y_i = 1) = \alpha + \beta X_i + \epsilon_{it}$$

Where Y_i is the outcome of interest for household or individual i and X is the set of explanatory variables.

Table 18 shows the variables included in each equation. Equations have several variables in common: a survey round variable, coded 0 for baseline and 1 for endline. This variable accounts for unmeasured factors affecting all households between surveys. In the case of Madagascar, one of these is the environmental shocks from cyclones, which have occurred fairly regularly. It also provides an estimate of the magnitude of change between survey rounds, controlling for other variables. Gender decision-making indicators were also included in all equations. More specifically, these were: joint decision-making on the use of cash income; joint decision-making regarding maternal health and nutrition, and joint decision-making regarding child health and nutrition. Decision-making indicators ranged from 0-2. Households scored 2 if at least one male and one female adult reported joint decisions, 1 if one or the other reported joint decisions and 0 otherwise. Control variables included in all equations are:

- **Household size:** A count of household members.
- **Gendered household type:** Four categories: male- and female- adult-headed households, female-adult-headed household, male-adult-headed household, and child-headed households.
- **Household education:** The percentage of adults (18 and older) with a primary level of education and another as the percentage of adults with more than a primary level of education.
- **Non-food assets:** Includes all non-food expenditures. Equations include non-food expenditures instead of total expenditures because it is considered to be less endogenous.³⁶
- **Geographic zone:**³⁷ Included to account for differences in livelihood zones, access to markets and other geographic factors.

³⁶Total expenditures (including food) and outcomes, such as adequate food consumption, are endogenous, meaning that it is difficult to determine whether food consumption causes food expenditures to change, or changes in food expenditures cause food consumption to change.

³⁷The regions Amoron'i mania and Haute Matsiatra are in the Hauts Plateaux area, which is referred to as the Central Highlands zone. The region of Atsimo Andrefana is in the south, a hotter and drier area, and is referred to as the Southern zone.

The remainder of this section describes the equations and variables in more detail.

Table 18. Multivariate equations and explanatory variables

	Households	Children under 5	Farmers	
	Moderate or severe food insecurity	Underweight/stunting	Adoption of three or more sustainable agricultural practices	Use of financial services
Project variables	Food or cash assistance	HH received food assistance	Participation in agricultural training	Participation in agricultural training
		HH received cash assistance	Value chain activities	Value chain activities
	Participation in nutrition or agricultural training or other project activities	HH participation in training	Use of improved storage practices	Use of improved storage practices
WASH	Access to safe drinking water	HH access to safe drinking water		
	Soap and water at handwashing station	HH use of soap and water at handwashing station		
Gender decision-making	Joint decisions about cash income	Joint decisions about cash income	Joint decisions about cash income	Joint decisions about cash income
	Joint decision-making about MHN	Joint decision-making about MHN	Joint decision-making about MHN	Joint decision-making about MHN
	Joint decision-making about CHN	Joint decision-making about CHN	Joint decision-making about CHN	Joint decision-making about CHN
Individual variables		Child's age		
		Child's sex	Farmer's sex	Farmer's sex
		Diarrhea in HH		
		Education level of mothers with CU2 in HH		
		Natural mother lives in household		
		Number of CU5 in household		
Control variables	Survey round (dummy)	Survey round (dummy)	Survey round (dummy)	Survey round (dummy)
	Household size	Household size	Household size	Household size
	Gendered household type	Gendered household type	Gendered household type	Gendered household type
	Household education	Household education	Household education	Household education
	Non-food expenditures	Non-food expenditures	Non-food expenditures	Non-food expenditures
	Geographic zone	Geographic zone	Geographic zone	Geographic zone

Moderate or severe food insecurity is one of the categories of the household hunger scale (HHS). The HHS indicator did not change significantly between baseline and endline across the project as a whole, whereas one would have expected it to decline. This equation includes variables measuring household participation in programming, examining whether households receiving food or cash transfers, or whether those participating in nutrition or agricultural training or other programming fared better than those who did not. Food or cash assistance are each a dummy variable, taking the value of 0 or 1 whether a household received food or cash assistance. The training/participation variables are each dummy variables, taking the value of 0 or 1 for household participation in nutrition or agriculture training programs or other project activities. WASH and gender decision-making indicators were also included in the equation. (See the main report for a description of the indicators and baseline/endline values). Two of the WASH indicators: *practicing correct use of recommended household water treatment technologies* and *use of soap and water at a handwashing station* were chosen because they increased between baseline and endline whereas *use of an improved drinking water source* was an important project outcome. Multivariate analysis explored whether these increases translate to better outcomes. All households were included in the equation.

Stunting and underweight equations include all CU5. These equations provide information about chronic and acute children's health and nutrition. Both indicators improved between baseline and endline (see main report). The equations looked at programming (child health and nutrition programming in particular) as well as other factors that influence the indicators, possibly providing recommendations for future programs. They include individual (child) level variables for the child's sex and age. They also included household level dummy variables (coded 0 or 1) measuring whether the household received food assistance, cash transfers, one or more children in the household had diarrhea in the past two weeks and whether the natural mother of one or more children resided in the household, whether one or more mothers (caregivers) had a primary education, more than a primary education. An age-squared variable allows for a non-linear relationship between age and stunting or underweight, which tend to be worse among young than older children. The equations do not include children's diet because those data were only collected for children 0-23 months. They also do not include birthweight, vaccination and other information that may affect stunting and underweight because surveys did not collect those data.

Two equations estimate agricultural outcomes. The equations include all farmers with access to land or livestock. The first is the probability that *farmers use at least three sustainable agriculture practices*, which increased from baseline to endline. Besides variables in common with other equations, the equation looks specifically at the effects of participation in agricultural training on sustainable practices as well as participation in value chain activities and the use of improved storage practices. Each of these is coded 1 for participants/adopters and 0 for those who did not.

Similarly, *use of financial services* increased from baseline to endline. This equation includes participation in value chain activities, use of improved storage practices and participation in agricultural training as explanatory variables. Although we don't link the equations, results examine the relationship between the Two.

Multivariate Analysis Results

Multiple regression analysis was undertaken to further explore the underlying factors associated with changes in several of the key project outcome and impact variables. The specific variables that were examined in this analysis are:

- Farmers' use of financial services
- Farmers' adoption of at least three sustainable agricultural practices
- Households with moderate or severe food insecurity (HHS)
- Underweight of CU5
- Stunting of CU5

The regression analysis measured the contribution of a number of variables to explain variation in these outcome and impact variables. General categories of explanatory variables were applied in all the regression analyses:

- **Survey round:** a dummy variable for survey round (0=baseline, 1 = endline) was included to measure the changes in the dependent variables independent of any of the other explanatory variables in the model
- **Program participation:** these dummy variables were included to measure the extent to which changes in the dependent variables are associated with the respondents' participation in project-supported activities.
- **Gender variables:** that measure gender characteristics of the respondents, including the reported joint participation of women and men in relevant decision-making.
- **Household characteristics:** that measure household demographic characteristics, including gendered household type, education characteristics of household members.
- **Non-food expenditures:** as a measure of household wealth.
- **Geographic zones:** a dummy variable for the Southern zone (Central Highlands is the excluded comparison zone), to account for any geographic factors not captured in the other explanatory variables.

Table 19 reports the results from the regressions estimating the probability that a farmer used financial services and the probability that a farmer adopted at least three sustainable agricultural practices. *Use of financial services* and *adoption of sustainable agricultural practices* both showed a statistically significant increase from baseline to endline, controlling for all the other explanatory variables in the equations. Participation in agricultural trainings and participation in value-chain activities are associated with greater use of financial services. On the other hand, all three program variables are associated with greater levels of adoption of sustainable agricultural practices. In both cases, value-chain activities are most strongly associated with the two dependent variables.

Female farmers are less likely to adopt sustainable practices than male farmers whereas there is no difference between females and males in the use of financial services. Households that have men and women who practice joint decision-making are not more or less likely to use financial services or adopt

sustainable agricultural practices.³⁸ Information about gendered household type provides more information about female decision-making. Households without female decision-makers (i.e., male-headed) are less likely to use financial services or adopt sustainable agricultural practices than households with both a male and female at the head. The overall education level of the household was associated with a higher likelihood of use of financial services and adoption of sustainable agricultural practices. While this was true for the percentage of adults with primary education, the effect was even stronger for adults with more than a primary education.

In these regression models, a variable measuring non-food expenditures as a proxy for household assets was included as an explanatory variable to measure the effect of wealth on use of financial services and on the adoption of sustainable practices. This wealth variable was associated with a greater likelihood of using financial services, but not with the adoption of sustainable agricultural practices. This suggests that access to savings is not a requirement to adopt these practices. It is important to note that there is no difference in the likelihood of using financial services or adopting sustainable agricultural practices between geographic zones.

Table 20 provides estimates from the regressions of child nutritional variables: underweight and stunting. The probability of stunting and that a child is underweight both decreased from baseline to endline, but the difference was not statistically significant after controlling for all other variables in the model.

With respect to program participation, the receipt of neither cash transfers nor food rations was significantly associated with malnutrition, such that children in households that received either were neither more nor less likely to be underweight or stunted. Participation in nutrition training was not associated with a higher likelihood of either underweight or stunting. However, it should be noted that nutrition training was targeted at households with children who were not well nourished. So, while nutrition training might reasonably be expected to help reduce malnutrition, those who participate in it are also more likely to be underweight or stunted—the two offsetting each other with the result that the effect is small and not statistically significant. None of the WASH variables were associated with changes in the probability of either wasting or stunting. Again, this may be understood as indicating that households who had a malnourished child were more actively involved in a Care Group and learned the importance of clean water for improved nutrition—the two offsetting each other with the result that the effect is small and not statistically significant.

Child age is strongly associated with higher likelihood of stunting (the negative coefficient on the squared-age term means that this effect is relatively less for older children than for younger). Female children were no more or less likely to be underweight or stunted than males. On the other hand, households that had children who had diarrhea in the last two weeks were more likely to be underweight.

The education level of the caregivers in the household, and whether or not the child's natural mother is in the household, were not related to either underweight or stunting. On the other hand, *overall*

³⁸ However, those who engage in joint decision-making about the use of cash are slightly less likely to use financial services ($p = 0.08$).

education level of the household (percent of adults with more than a primary education) was weakly associated with lower levels of stunting but not underweight.

In terms of household characteristics, children in households with more CU5 were not more or less likely to be stunted or underweight. On the other hand, there was a greater likelihood that children in a male-headed household were stunted. It is important to note that there was no statistically significant difference in the level of either nutritional indicator in the East compared to the South.

Table 21 presents regression results for household food security. The dependent variable is households reporting that they were moderately or severely food insecure based on the HHS. Overall, the probability that a household reported inadequate food security did not change from baseline to endline, controlling for other factors.

Adoption of two of the WASH practices (*use of an improved drinking water source and correct use of recommended household water treatment strategies*) was associated with a reduced likelihood of food insecurity.

Households in which there was joint decision-making regarding either cash, MHN or CHN were neither more nor less likely to be food insecure, all else equal. On the other hand, the likelihood of being food insecure was greater for households with more CU5. Female-headed households were more likely to be food insecure than households with both a male and female at their head. Households with a higher percentage of adults with more than a primary education were less likely to be food insecure—as were households with greater levels of non-food expenditure (i.e., slightly better off households), all else equal. And finally, households in the South were much more likely to be food insecure (however, those in the East were much less likely to be food insecure).

Table 19. Regression results for use of financial services and adoption of sustainable agricultural practices

Dependent variable	Use of Financial Services		Adoption of Sustainable Agriculture Practices	
<i>Survey round (Baseline)</i>				
Endline	0.43	*	0.84	***
<i>Program participation and adoption of practices</i>				
Practiced at least one value chain activity in the last 12 months	1.12	***	1.52	***
Farmers who used improved storage practices in the past 12 months	0.00		0.17	+
Participated in agricultural training	0.46	*	0.28	+
<i>Gender variables</i>				
Female farmer	-0.08		-0.37	**
Joint decisions on cash (0, 1 or 2)	-0.24	*	0.04	
Joint decisions about MHN (0, 1 or 2)	-0.20		-0.19	
Joint decisions about CHN (0, 1 or 2)	-0.05		0.09	
<i>Household characteristics</i>				
Household size	0.02		0.08	**
Gendered household type (Male and female headed HH)				
Male headed HH - no adult females	-0.44	+	-0.45	*
Female headed HH - no adult males	-0.27		-0.12	
Child headed HH - no adults	0.21		-1.00	
Percent of adults with primary education	0.71	*	0.62	**
Percent of adults with more than a primary education	1.55	***	0.87	***
<i>Household assets</i>				
Non-food expenditure	0.22	***	0.05	
<i>Geographic zone (Southern zone)</i>				
Eastern zone	-0.11		0.12	
Constant	-3.01	***	-2.46	***
Observations	3,754		3,317	

Symbols indicate that estimated coefficients are statistically significant at the † p<0.1, * p<0.05, ** p<0.01 and *** p<0.001 levels of confidence.

Table 20. Regression results for child nutrition variables, underweight and stunting of CU5^b

Dependent variable	Underweight (%<-2sd)	Stunting (%<-2sd)	
<i>Survey round (Baseline)</i>			
Endline	-0.29	-0.15	
<i>Program participation and adoption of practices</i>			
Received food rations	0.18	-0.30	
Received cash transfer	-0.39	0.01	
Participated in nutrition training	-0.43	0.07	
<i>WASH practices</i>			
Households using an improved drinking water source	0.10	0.17	
Cleansing agent and water at handwashing station	0.39	0.00	
Practicing correct use of recommended household water treatment technologies	0.10	0.12	
<i>Child characteristics</i>			
Child age (months)	0.02	0.08	***
Child age (months) squared	-0.00	-0.00	***
Female child	0.03	-0.12	
Child in household had diarrhea in last 2 weeks	0.34	0.06	**
At least one mother in household has primary or higher level of education	-0.10	0.01	
At least one natural mother lives in household	-0.04	-0.05	
<i>Gender variables</i>			
Joint decisions on cash (0, 1 or 2)	0.01	0.08	
Joint decisions about MHN (0, 1 or 2)	0.00	0.21	
Joint decisions about CHN (0, 1 or 2)	0.19	-0.11	+
<i>Household characteristics</i>			
Household size	0.00	0.00	
Count of children under 5 in household	0.07	0.09	
Gendered household type (Male and female headed HH)			
Male headed HH - no adult females	0.07	0.79	+
Female headed HH - no adult males	0.08	0.20	
Child headed HH - no adults	1.80	0.91	*
Percent of adults with primary education	0.31	0.07	
Percent of adults with more than a primary education	-0.21	-0.40	+
<i>Household assets</i>			
Non-food expenditure	-0.15	-0.03	
<i>Geographic zone (Southern zone)</i>			
Eastern zone	-0.10	0.09	
Constant	-1.82	-1.72	***
	2,590		
Observations		2,590	

^bSymbols indicate that estimated coefficients are statistically significant at the † p<0.1, * p<0.05, ** p<0.01 and *** p<0.001 levels of confidence.

Table 21. Regression results for household food security status (based on households of moderate to severe food insecurity)^c

Dependent variable	Moderate to severe food insecurity
<i>Survey round (Baseline)</i>	
Endline	0.21
<i>Program participation and adoption of practices</i>	
Received food rations	0.02
Received cash transfer	-0.39
Participated in nutrition training	0.06
Participated in agricultural training	-0.14
Participated in other activities	0.29
<i>WASH practices</i>	
Households using an improved drinking water source	-0.39 *
Cleansing agent and water at handwashing station	-0.28
Practicing correct use of recommended household water treatment technologies	-0.29 **
<i>Gender variables</i>	
Joint decisions on cash (0, 1 or 2)	-0.03
Joint decisions about MHN (0, 1 or 2)	0.00
Joint decisions about CHN (0, 1 or 2)	0.01
<i>Household characteristics</i>	
Household size	-0.03
Count of children under 5 in household	0.15 *
Gendered household type (Male and female headed HH)	
Male headed HH - no adult females	0.00
Female headed HH - no adult males	0.41 **
Child headed HH - no adults	0.52
Percent of adults with primary education	-0.17
Percent of adults with more than a primary education	-0.82 ***
<i>Household assets</i>	
Non-food expenditure	-0.11 *
<i>Geographic zone (Southern zone)</i>	
Eastern zone	-1.79 ***
Constant	0.53 **
Observations	3,493

^cSymbols indicate that estimated coefficients are statistically significant at the † p<0.1, * p<0.05, ** p<0.01 and *** p<0.001 levels of confidence.