IMPACT EVALUATION OF THE FIRST-TIME PARENTS ACTIVITY

Evaluation Report

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Evaluation Report

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ACRONYMS

AGYW	Adolescent girls and young women
ANCOVA	Analysis of covariance
ARM-R	Adult Resilience Measure-Revised
BL	Baseline
CHW	Community health worker
COCOBA	Community Conservation Bank
DID	Difference-in-difference
DRCHCO	District reproductive and child health coordinator
E2A	Evidence to Action
FGD	Focus group discussion
FP	Family planning
FTM	First-time mother
FTP	First-time parent
GBV	Gender-based violence
IPW	Inverse probability weights
IUD	Intrauterine device
KII	Key informant interview
LAM	Lactation amenorrhea method
LE	List experiment
MDE	Minimum Detectable Effect
MIHR	MOMENTUM Integrated Health and Resilience
MNCH	Maternal, newborn, and child health
PHE	Population health environment
PRH	Population and reproductive health
PYD	Positive youth development
RCH	Reproductive and child health
RRE	Ruaha Rungwa Ecosystem

RSES	Rosenberg Self-Esteem Scale
SDB	Social desirability bias
SRH	Sexual and reproductive health
STEP	Southern Tanzania Elephant Program
USAID	United States Agency for International Development
USD	United States Dollar
WASH	Water, sanitation, and hygiene
WWF	World Wildlife Fund
YP2LE	YouthPower2: Learning and Evaluation

ABSTRACT

In this report we analyze the impact of a multisector intervention on contraceptive use and other outcomes of first-time mothers (FTMs). The First Time Parents (FTP) component is part of a larger Population Health and Environment (PHE) Activity. FTP involves group sessions with FTMs, their partners, and other relatives where topics such as family planning (FP) and maternal health and child nutrition are covered. PHE combines conservation activities and natural resource management efforts with increased access to FP services and maternal and newborn health services and education. YouthPower2: Learning and Evaluation (YP2LE) conducted a quasi-experiment to evaluate the impact of PHE+FTP. YP2LE collected baseline data in early 2023 and endline data in early 2024 in 15 treatment villages and 26 comparison villages in Southern Tanzania. Qualitative data were also collected to provide more detailed information on how interventions were implemented, how participants perceived and interacted with them, and contextual factors.

The results indicate that the program's impact on contraceptive use was modest (4-10 percentage points) and may have been influenced by social desirability bias (SDB). However, there was substantial qualitative evidence that FTMs were more likely to visit clinics to receive education, contraceptives, and health-related services due to the program reducing stigma, encouraging visits, and working with male partners to foster their support.

The program had a limited impact on sexual and reproductive health (SRH) knowledge, with only small improvements in specific areas. In terms of decision-making, qualitative data showed improvements, but survey data indicated no significant changes, likely because many FTMs already reported significant autonomy in contraceptive decisions at baseline. There were small increases in awareness and participation in some environmental activities. Lastly, while qualitative data findings suggested improved women's empowerment within relationships, survey data did not show significant changes in decision-making, self-esteem, or resilience. A cost-efficiency analysis shows that treating one FTM with FTP+PHE costs USD 283.

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Most importantly, we would like to recognize the invaluable contributions of our Tanzania-based researchers to this research. The hard work, positive attitude, and dedication of our six youth researchers—Elizabeth Oscar Kadinda, Prisila Daniel Konga, Subira Criss Michael, Tony Gideon Muhandiki, Edina Alex Rwechungura, and Frank Simon Zulu—at various stages of this evaluation is largely responsible for the rich and high-quality data that informed this report. We also want to extend our sincere thanks to our co-Principal Investigator, Gerald Usika, for his invaluable contribution to instrument development, his critical support ahead and during baseline and endline data collection trainings, and his oversight and facilitation of fieldwork. Our Tanzania-based data collection partner, DataVision, should also be recognized for conducting smooth, timely, and high-quality survey data collection at both baseline and endline and their collaborative spirit throughout the process.

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EXECUTIVE SUMMARY

PURPOSE AND PROJECT BACKGROUND

The United States Agency for International Development (USAID) tasked YouthPower2: Learning and Evaluation (YP2LE) with conducting an impact evaluation of the First-Time Parents (FTP) activity in Tanzania. FTP conducts group sessions with first-time mothers (FTMs) that cover topics such as the importance of antenatal and postnatal health visits, breastfeeding, maternal mental health, family planning (FP) and contraception, gender relations within couples, and natural resource management and the relationship between the environment and human health. These group sessions are paired with routine home visits to participating households. FTP also holds a smaller number of group sessions with the partners of FTMs and their older female relatives (e.g., mothers, mothers-in-law, aunts).

FTP is one component of the broader Population Health and Environment (PHE) Activity implemented by MOMENTUM Integrated Health and Resilience (MIHR). The PHE activity is an integrated, multi-sectoral approach that combines conservation activities and natural resource management efforts, such as microfinance and climate-smart agriculture groups, with increased access to FP services and maternal and newborn health services and education. Several PHE components (e.g., FTP, youth clubs, model household and village) incorporate elements from these sectors. FTP also has elements related to the empowerment of adolescent girls and young women (AGYW) and gender dynamics in relationships. MIHR selected 15 villages in the Ruaha Rungwa Ecosystem (districts of Iringa and Mufindi) to implement the PHE Activity; these same 15 villages also host the FTP component.

This report documents the impact of PHE+FTP on a range of youth outcomes affecting participating FTMs, compared to FTMs who did not participate in any PHE+FTP interventions. The objective of this evaluation is to provide USAID and other stakeholders, as well as the youth development community in general, with evidence on the impact of cross-sectoral interventions on the target youth outcomes, which include modern contraceptive use, knowledge and attitudes related to sexual and reproductive health and empowerment of AGYW. The evaluation also informs the continued implementation of FTP groups in the RRE and elsewhere by identifying implementation challenges and lessons learned, and by documenting participants' views on program content to suggest improvements.

EVALUATION METHODOLOGY AND DESIGN

YP2LE designed and implemented a mixed-methods quasi-experimental evaluation based on survey data with a qualitative component consisting of 59 focus group discussions (FGDs) with different intervention participant types (or individuals similar to them in comparison communities) and 67 individual interviews of key FP and MIHR activity implementation actors. For this evaluation, two waves of survey and qualitative data were collected: (1) a baseline in February-March 2023 and (2) an endline in February-March 2024. YP2LE also conducted a cost analysis of the intervention.

The quasi-experimental methodology relied on the creation of a comparison group, which consisted of 26 villages in the neighboring, and untreated, districts of Makete and Njombe. These 26 villages were selected to be similar in size and other characteristics (e.g., proximity to natural parks) to the 15 villages where FTP is implemented.

At baseline, the evaluation team relied on lists created by MIHR through the work of community health workers (CHWs) of FTMs, their partners, and older female relatives in treatment villages. In comparison villages, the evaluation team worked with CHWs to replicate the FTP eligibility screening to identify

AGYWs who would be eligible for FTP, were it to be implemented in these villages. At baseline, the team surveyed 457 FTMs from MIHR's lists in treatment villages (an 86% response rate) and completed 536 surveys with FTP-eligible AGYWs across the 26 comparison villages. At endline, these same AGYWs were re-surveyed, yielding a panel dataset of 327 AGYWs in treatment communities and 332 in comparison communities.

Qualitative data collection relied on a random sample of villages from both the treatment and comparison groups. The evaluation team randomly selected a total of six villages that were set to receive FTP (out of 15) and three comparison villages (out of 26). In the six treatment villages selected, the team organized group discussions based on MIHR's lists and conducted interviews with CHWs involved in FTP programming, and other implementation stakeholders active in these communities (e.g., FP doctors, District Reproductive and Child Health Coordinators (DRCHCOs)). In the three selected comparison villages, the team conducted group discussions with AGYWs identified as FTP-eligible for the survey, along with young men and older women selected with the help of CHWs and community leaders. In comparison villages YP2LE conducted interviews with CHWs, and the same set of stakeholders targeted in treatment villages. At endline, qualitative data collection proceeded similarly, although an additional five treatment communities were selected randomly to increase the representativeness of the data and better capture cross-community variations. The number of comparison communities in the qualitative component at endline remained as three.

FINDINGS

Contraceptive Use

We employed regression analysis across various specifications to estimate the impact of the PHE+FTP activity on both overall contraceptive use and modern contraceptive use. The results indicate a positive, though relatively weak, correlation between PHE+FTP and contraceptive use. The estimated effects are modest, ranging from 4 to 10 percentage points, and are statistically significant only in certain model specifications.

To account for potential overreporting of contraceptive use due to social desirability bias (SDB), we conducted a list experiment (LE). LEs are a survey technique that provides an extra level of confidentiality to respondents by masking their answer to sensitive questions to enumerators, thus reducing the likelihood of biased responses due to social desirability. The LE results showed no significant increase in reported contraceptive use under this survey method, suggesting that direct self-reports of contraceptive use may indeed be influenced by SDB.

When non-users were asked why they did not use contraception, the most common reason cited was that they were single and did not perceive a need for contraceptives. Other factors, such as concerns about side effects or disapproval from their husbands, were mentioned but with much lower frequency. In terms of contraceptive methods, the analysis indicates that PHE+FTP led to an 18-percentage point increase in the use of implants, accompanied by a corresponding reduction in the use of injectables.

These modest findings are consistent with previous research on post-partum contraceptive counseling in Tanzania (Rohr and colleagues 2023; Keogh and colleagues 2015). Our study's baseline qualitative data showed that a wide range of contraceptive methods was available in both treatment and comparison communities, with government health facilities serving as the primary source for these services. This could explain the small impacts of PHE+FTP on contraceptive use.

Overall, qualitative data did not indicate a clear change in availability of contraceptives that could be attributed to PHE+FTP, since CHWs, DRCHCOs, and Reproductive Child Health (RCH) medical professionals in comparison communities indicated that their supplies of contraceptives were already adequate. However, there was substantial evidence that FTMs were more likely to visit clinics to receive education, contraceptives, and health-related services due to the intervention reducing stigma, encouraging visits, and working with male partners to foster their support. Among qualitative respondents, CHWs indicated that FTP programming was particularly impactful in pastoralist communities where historically, community members are reluctant to seek services.

Sexual and Reproductive Health

The FTM survey included four true/false questions to assess respondents' SRH knowledge. Participation in the PHE+FTP program was associated with improvements in two of the four questions, while there was no significant correlation for the other two. This suggests that the program had some positive, though limited, impact on SRH knowledge.

In terms of fertility preferences, we found a positive correlation between PHE+FTP and desired fertility. This somewhat unexpected result might be explained by the fact that increased knowledge of antenatal care, delivery, and childbearing could contribute to FTMs feeling more in control of their health-related decisions and confident in their relationships, potentially leading to a desire for more children.

Qualitative data indicate that PHE+FTP had a positive impact on attitudes towards contraception and FP. These changes in attitude are reflected in the survey data on contraceptive use, albeit somewhat modestly. Attitudinal changes were present not only for AGYW that participated in the FTP sessions, but also older women and importantly, male partners.

According to the perspectives of qualitative respondents, the most effective activities for increasing modern contraceptive use were education provided to young people from CHWs, and FTP groups. Young people learned about their contraception options and how to access services. Moreover, they learned about contraceptive decision making and how to have discussions about contraception with their partners. Respondents highlighted this as particularly helpful, as the skills learned in FTP groups surrounding contraceptive decision making have lessened conflict over FP within relationships and have destigmatized contraceptive use. Women feel more comfortable using contraceptives and including their partners in their decisions rather than taking contraceptives in secret.

The evidence regarding changes in decision-making around contraceptive use was mixed. While qualitative data pointed to improvements, survey data revealed minimal differences between the treatment and comparison groups. SDB likely influenced the responses of FGD participants, particularly first-time fathers, when discussing gender equality.

It's important to note that, at baseline, most survey respondents already reported making contraceptive decisions either independently or jointly with their partners, leaving limited room for significant improvement in this area.

Livelihoods and Participation in Environmental Conservation Activities

Qualitative data show that participation in livelihoods-related interventions varied by sex. While FTMs faced a wide range of difficulties in participation, first time fathers had few difficulties. FTMs described physical, mental, and social barriers to participation. Some FTMs stated they faced social stigma for working.

Regression analysis shows that there is no correlation between PHE+FTP and employment. It is important to note that livelihoods activities in treatment communities were just starting at the time of the evaluation, which limited the impacts that could be captured.

Respondent views on the impacts of PHE+FTP's livelihood activities on outcomes were mixed. Some participants in treatment communities said that PHE livelihoods activities did not have any discernible impact on their earnings. However, qualitative data show that there may be spillover effects on livelihoods from conservation and FP activities. The livelihood outcomes that emerged from PHE activities are more related to incremental increases in earnings from small additional activities and reduced social stigma that FTMs face when engaging in livelihood activities, rather than change in employment that pays a daily wage or regular salary or other forms of income generation.

At endline, awareness of conservation activities increased substantially, especially Model Boma households and beekeeping in the treatment group, and youth clubs, climate-smart agriculture, forest scouts, and crop protection in both treatment and comparison groups. Regarding participation, regression results indicate that FTP increased participation in two of the eight analyzed activities, namely Model Boma households and community conservation microfinance groups (CCMGs).

Qualitative data show that, in treatment communities, there was high participation in conservation activities at endline, especially among youth. MIHR staff respondents stated that first time parents (particularly first-time fathers) participated extensively in conservation and livelihoods activities. They specifically mentioned microfinance, climate-smart agriculture, and beekeeping as the most popular activities for first-time parents.

Comparison communities described environmental activities being implemented in their villages, but uniformly stated that these activities did not lead to increased revenues for those who participated in them. In contrast, respondents from treatment communities stated that participating in conservation activities did lead to increased incomes, especially for beekeeping activities.

Young Women's Empowerment

To assess empowerment among FTMs, the survey included items asking FTMs who primarily made budget-related decisions for the family: the respondent, her partner, both together, the respondent's family, or her partner's family. We used regression analysis to evaluate whether participation in PHE+FTP was associated with a higher likelihood of the respondent alone or her and her partner making these decisions. However, we found no significant correlation between PHE+FTP and financial decision-making outcomes.

Additionally, we examined the impact of PHE+FTP on agency (measured by two questions about the respondent's freedom to spend time outside the home), self-esteem (using the Rosenberg Self-Esteem Scale (RSES)), and resilience (using the Adult Resilience Measure-Revised (ARM-R)). No meaningful correlations were found between PHE+FTP and these empowerment indicators.

Most FTMs, older women, and fathers in treatment communities believe there has been a positive change in young women feeling empowered within relationships since the PHE+FTP activity began. Through this initiative, young people learned how to have conversations within relationships about household management and female autonomy within relationships. Young couples have seen an improvement in resolving disagreements and making decisions around important subjects that come up in relationships, such as money and childcare. There have been positive changes in conflict resolution among couples due to better communication skills, developed through FTP and FTM groups.

CONCLUSIONS

Participation in FTP sessions was high, with 78 percent of women surveyed (and therefore identified as FTP-eligible by MIHR) attending at least one session. Out of these respondents, 70 percent participated in 10 or more of the 14 sessions. Both qualitative and quantitative data suggest that the sessions were viewed as useful and had positive impacts on attitudes towards contraception and FP, including among male partners. However, the activity's impact on contraceptive use was modest (4-10 percentage points) and may have been influenced by social desirability bias (SDB). Changes in contraceptive methods used were also observed, particularly a shift from injectables to implants, likely due to the increased number of CHWs who were trained on these methods and how to counsel FTMs to obtain and use them.

PHE+FTP had limited impact on SRH knowledge, with only small improvements in specific areas where knowledge was already high at baseline. Interestingly, the program was associated with an increase in desired fertility, possibly due to increased confidence in women's ability to manage childbearing.

In terms of decision-making, qualitative data showed improvements, but survey data indicated no significant changes, likely because many women already reported significant autonomy in contraceptive decisions at baseline. Employment outcomes were also unaffected by the activity, though qualitative respondents noted the need for more startup capital and tools to complement livelihood education. Awareness and participation in some environmental activities saw small increases. The data collection team observed improvements to the local environment, such as better water sources and modern toilets.

Lastly, while qualitative data suggested enhanced women's empowerment within relationships, survey data did not show significant changes in decision-making, self-esteem, or resilience. This discrepancy may be due to qualitative data capturing attitudinal changes, while behavioral changes, measured quantitatively, take longer to materialize. Additionally, SDB may have influenced respondents in qualitative interviews.

RECOMMENDATIONS

Recommendations are organized under two themes: those related to programming changes as MIHR continues PHE+FTP implementation in the RRE and elsewhere, and those related to future evaluations of similar activities.

Recommendations for programming

1. **Content relevance.** Qualitative data suggest reasonably good availability of contraceptives at baseline, and baseline survey data indicate that FTMs or FTMs and their partners were already the primary decision makers regarding contraceptive use. Thus, it is not clear whether and to what extent interventions addressing these determinants of contraceptive use – availability and individual agency – can make a substantial difference in this context. Factors such as social norms may prove important, however. It will be important for MIHR and USAID to monitor longer-term impacts that this evaluation could not measure and the extent to which the PHE+FTP theory of change remains relevant or whether revisions should be made.
2. **Conservation and livelihoods:** Based on feedback from various types of respondents in treatment communities, the evaluation team recommends that future programming provide more startup capital and more tangible inputs, such as tools and improved seeds, for livelihoods activities. CCMGs will hopefully address these gaps as the activity grows under MIHR leadership.

3. **Population focus.** FTP focuses on AGYW who are already pregnant or recently had their first child, which makes sense because much of the program content is related to pregnancy, giving birth, and caring for young children. However, programs like FTP should consider targeting AGYW in general. At least some of these AGYW will face FP-related decisions and pregnancies during program implementation, which means they can also benefit from the content of many sessions, including those on contraceptive use, gender roles, and decision making. Those who do become pregnant would also already have knowledge of maternal newborn and child health (MNCH) best practices, which could be further reinforced through ongoing participation and support.
4. **CHW training.** Health system actors often noted the value of training provided by MIHR and how it has helped CHWs to do their work better. However, these same stakeholders recommended regular refresher and add-on trainings. MIHR should encourage health system actors to deliver these trainings more often. MIHR could hold joint trainings with other health system actors to benefit CHWs in the short-term and create an ongoing practice of regular knowledge maintenance among RCH doctors and nurses and opportunities to reinforce their training and coaching skills.
5. **CHW support.** The robust implementation of PHE+FTP relies to an extraordinary degree on the work of volunteer CHWs, who usually are women with family obligations and full-time occupations. Health system actors who were interviewed highlighted that activities like PHE+FTP should provide CHWs with a small financial remuneration to help motivate them and for the sake of fairness. Providing improved equipment (e.g., smartphones, means of transportation) to CHWs for conducting activities would also help them to deliver services more effectively, efficiently, and equitably. Existing travel stipends are not always sufficient and do not necessarily resolve the lack of transportation options available to CHWs in rural areas.

Recommendations for future evaluations

6. **Evaluation timeframe.** The timeframe of this evaluation did not allow for observation of key long-term outcomes of PHE+FTP, including maternal and child mortality during and after pregnancy, child stunting, and fertility or birth spacing. Self-reported contraceptive use was employed as a proxy variable to measure fertility or birth spacing, but this measure has significant limitations (SDB). As a result, the degree to which PHE+FTP influenced contraceptive use remains somewhat uncertain, even if FTP program content may still affect fertility and birth spacing in the long term. This underscores the need for a longer evaluation period for these types of interventions to better understand longer-term impacts.
7. **Possible saturation:** The evaluation suggests that numerous environmental conservation activities exist in comparison communities (and to a lesser extent in treatment communities), making it difficult to evaluate the impact of the activity, as the comparison group seems to be receiving similar types of interventions from different stakeholders.

1. INTRODUCTION

The United States Agency for International Development (USAID) tasked YouthPower2: Learning and Evaluation (YP2LE) with conducting an impact evaluation of the First-Time Parents (FTP) program in Tanzania. FTP conducts group sessions with first-time mothers (FTMs) that cover topics such as the importance of antenatal and postnatal health visits, breastfeeding, maternal mental health, family planning (FP) and contraception, gender relations within couples, and natural resource management and the relationship between the environment and human health. These group sessions are paired with routine home visits to participating households. FTP also holds a smaller number of group sessions with the partners of FTMs and their older female relatives (e.g., mothers, mothers-in-law, aunts). FTP is one youth-focused component of the broader Population Health and Environment (PHE) activity implemented by MOMENTUM Integrated Health and Resilience (MIHR). MIHR initiated the PHE activity, including FTP, in the Ruaha Rungwa Ecosystem (RRE) of Tanzania in the 2022–2023 project year (FY23).

YP2LE selected consortium partner NORC at the University of Chicago to lead this evaluation and DataVision as the local data collection firm. The evaluation aims to enhance understanding of how FTP interventions contribute to youth outcomes, including knowledge, attitudes, and use of modern contraceptives, as well as to strengthen the resilience of adolescent girls and young women (AGYW). Additionally, through this evaluation, YP2LE seeks to contribute to our Positive Youth Development (PYD) Learning Agenda by providing evidence on two key Learning Agenda themes: (1) the impact of PYD programming in low- and middle-income countries (LMICs), and (2) the cross-sectoral impact of PYD programs.[1]

Baseline data for the evaluation was collected in February-March of 2023 and endline data was collected in February-March of 2024. This report summarizes the findings and conclusions of this impact evaluation. Additional details regarding the implementation context and initial situation in the RRE can be found in the baseline report for this evaluation.

2. PROJECT DESCRIPTION

MIHR's program in the RRE builds on the Tuungane activity—a PHE activity initially implemented by The Nature Conservancy and Pathfinder International in the Greater Mahale Ecosystem of Tanzania under the Evidence to Action (E2A) activity. One goal of Tuungane was to expand the evidence base on integrated PHE programming effectiveness in improving livelihoods, adapting to climate change, and contributing to resilience.

The PHE integrated approach combines conservation activities and natural resource management efforts with support and development of additional livelihood opportunities and increased access to FP services and maternal, newborn, and child health (MNCH) services and education.

[1] The full Learning Agenda can be accessed here: https://www.youthpower.org/pyd-learning-agenda. The inclusion of PYD-related outcomes of interest addresses key questions under the theme of PYD programming impact in LMICs. The focus on outcomes within multiple sectors will inform thematic questions under cross-sectoral impact of PYD programs.

Through an award funded jointly by USAID's Office of Population and Reproductive Health (PRH) and Office of Maternal, Child Health and Nutrition (MCHN) in collaboration with the Nature Conservancy, MIHR currently implements an integrated PHE activity in geographies and communities around Lake Tanganyika as well as in the Northern Tanzania Rangelands.

MIHR's iteration of this activity in the RRE began in the 2022-2023 project year and builds on these other PHE interventions, combining PHE interventions with additional sector components, such as livelihoods strengthening, life skills, healthy relationships, and gender-based violence (GBV) prevention.[2] Essentially, MIHR is focused on improving health and strengthening health resilience at multiple levels (individual, community, health services, and health systems). Given the importance of a multisectoral approach to fostering resilience, MIHR partners with other stakeholders and local actors in implementation contexts to provide cross-sectoral programming that seeks to improve resilience in a holistic way (e.g., integration of livelihoods and climate change programming).

Project objectives include:

- Increasing access to quality sexual and reproductive health (SRH) and FP services for women and youth, including maternal and child health and support for FTPs
- Increasing knowledge and demand of MNCH/FP/SRH services
- Increasing financial literacy, improving livelihoods, and enhancing economic opportunities
- Improving local government- and community-level institutional capacity in PHE, including water, sanitation, and hygiene (WASH)
- Increasing women's and youth's participation in community platforms for decision-making and management of natural resources that integrate health and non-health interventions

MIHR implements PHE interventions in 15 villages within the Iringa and Mufindi districts in RRE, in partnership with Southern Tanzania Elephant Program (STEP) and local government authorities. MIHR leads the MNCH/FP/SRH activities while STEP leads conservation activities.

As noted in the Introduction, the FTP intervention is one of several activities that MIHR implements in the RRE to achieve overall project objectives. It is an add-on component to the PHE intervention package; FTP is not implemented in all ecosystems where MIHR delivers the PHE intervention.[3] However, FTP was added to PHE activities in all 15 villages within the Iringa and Mufindi districts of the RRE, enabling this evaluation.

The FTP intervention includes three types of group sessions facilitated by Peer Leaders—FTMs from the community selected and trained on the FTP curriculum for this purpose—with the as-needed support of Community Health Workers (CHWs). The first and most comprehensive set of sessions is for FTMs

[2] The specific sectors addressed in the context of MIHR's integrated programming are dependent on the needs of the community of focus, local partnerships, resources, and capacity.

[3] In other words, the PHE intervention package can and does exist with and without the FTP add-on component, but FTP is not provided on its own, outside of a PHE intervention.

(aged 15–24)[4] and covers topics such as the importance of antenatal and postnatal health visits, breastfeeding, maternal mental health, FP and contraception, gender relations within couples, and natural resource management and the relationship between the environment and human health. FTP also holds a smaller number of group sessions with the partners (of any age) of FTMs to cover safe pregnancies and birth, gender relationships, and fatherhood. Lastly, there are sessions with older female relatives (e.g., mothers, mothers-in-law, aunts) to cover safe pregnancies and birth, PHE, and infant health and nutrition.

These group sessions are paired with routine home visits conducted by Peer Leaders and CHWs to participating households to reinforce topics covered in groups and encourage continued participation, provide individual advice and monitor progress, and deliver services such as the provision of certain contraceptives and referrals to health facilities.

Besides the FTP intervention, MIHR also provides other community-based activities in RRE as a part of the PHE Activity, and FTP participants receive information about these PHE initiatives taking place in their communities to encourage their participation. These other community-based activities include:[5]

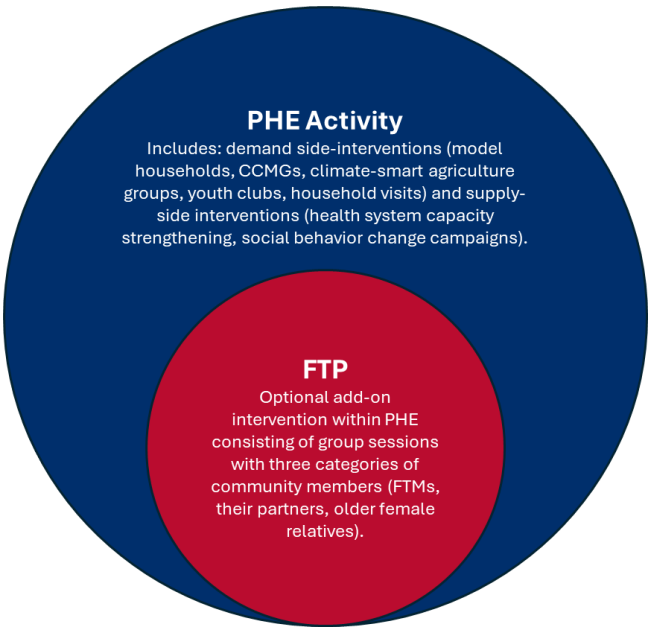
- **Model households/*bomas* and villages:** Households volunteer to model healthy and sustainable behaviors for others in the community based on a checklist of 22 PHE criteria.
- **Community conservation microfinance groups:** Micro-credit groups are established to provide participants with opportunities to save money and access loans to potentially start sustainable businesses and diversify income.
- **Climate-smart agriculture groups:** Groups provide training on agriculture practices that reduce run-off into lakes and produce higher yields for farmers.
- **Youth clubs:** Clubs are held in primary and secondary schools with a focus on creating awareness about teen pregnancy and encouraging students to engage with their environment (e.g., plant trees).

These broader PHE activities contribute to building awareness and adoption of WASH behaviors, positive attitudes toward environmental protection, adoption of climate-smart agricultural practices, and positive and inclusive decision-making within families (between women and men) with regards to livelihoods and financial planning. These specific outcomes will contribute to improved livelihoods and greater participation in environmental conservation activities. See Figure 1 below.

[4] The definition of FTM adopted by this evaluation is the same as that crafted by MIHR and used as an eligibility criterion for FTP participation: AGYW between the ages of 15 and 24 who are either pregnant for the first time or have only one child below the age of 24 months.

[5] Final activities are based on MIHR's approved work plan for project year 3.

Figure 1. Visual illustration of PHE+FTP

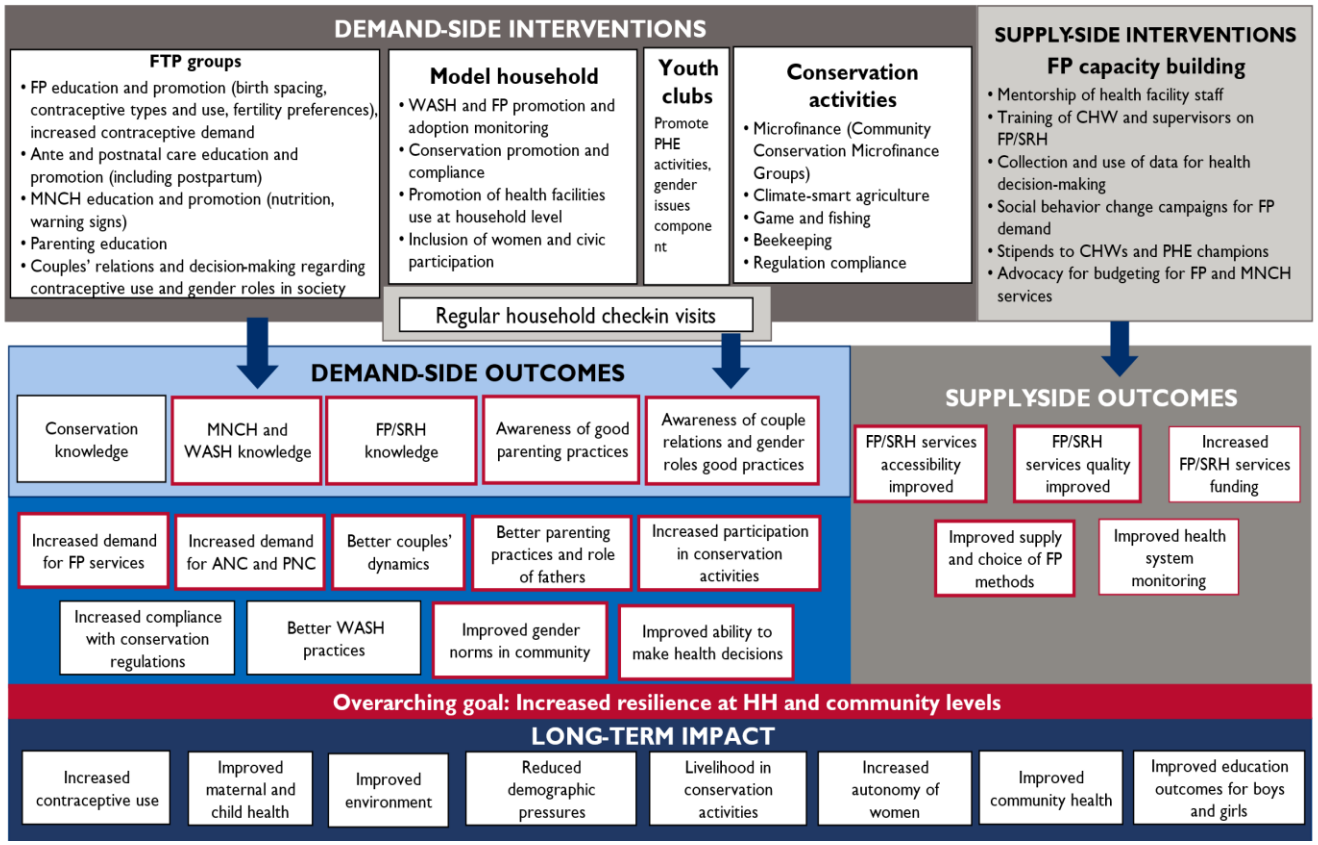


Note that FTP and the other PHE activities discussed so far only cover the demand side of MIHR's intervention in RRE. PHE+FTP also includes a series of supply-side interventions that focus on capacity strengthening of the health system and health system actors, all with an emphasis on improving the delivery of FP/SRH and MNCH services. These capacity strengthening activities primarily involve training and mentoring, promoting better data collection and use, and advocacy for appropriate budgeting for FP and MNCH services.

To provide a specific and tailored view of PHE+FTP in the RRE, as outlined in MIHR's work plans and other design and implementation documents, the evaluation team created a theory of change of the program (Figure 2).

The two top boxes of this theory of change reflect demand- and supply-side interventions MIHR is undertaking as part of the PHE activity (including FTP) in the RRE. Regular household visits by CHWs and PHE champions mediate and reinforce many of these interventions. The more immediate demand-side outcomes are shown in the box shaded in light blue. These immediate outcomes, in turn, drive the intermediate outcomes shown in the medium blue box below it. The gray box to the right of the immediate and intermediate demand-side outcomes represents the supply-side outcomes MIHR strives to produce. The text boxes with a red border within the immediate and intermediate program outcomes boxes are outcomes of interest for this evaluation. The red box represents the ultimate program goal MIHR seeks, which is out of scope for this evaluation. Finally, the dark blue box shows the long-term outcomes, which are driven by both demand- and supply-side outcomes above it and are also outside the scope for this evaluation.

Figure 2. Evaluation team's theory of change for the PHE+FTP activity in RRE



FTP programming is anticipated to influence contraceptive use and SRH knowledge and attitudes among participants, as well as MNCH knowledge and behaviors and gender relations within couples. FTM groups especially support AGYW's capacity by increasing their knowledge and agency when it comes to health-related decisions and FP. Overall, the outcomes of interest for the evaluation sit within the individual and household health resilience sphere, where MIHR seeks to have influence. Improvements in these outcomes at the individual and household level can then contribute to community health resilience.

CHWs play a significant role in programming success. They are members of the community and can use their local knowledge and connections to facilitate identification and selection of FTP participants, according to program selection criteria. They also conduct home visits and provide additional information, resources, and referrals for FTP program participants. CHW supervisors provide technical support to CHWs and peer leaders and participate in monthly review meetings.

General PHE activities are implemented with the support of PHE Champions and other relevant staff. Based on information MIHR reported for the Greater Mahale Ecosystem and Northern Tanzania Rangeland regions, where the activity has already been implemented, PHE Champions visit households in communities to promote adoption of PHE behaviors, provide referrals to other services, and track services provided. They also play a role in administering the Model Boma approach at the community level.

3. EVALUATION OBJECTIVES AND QUESTIONS

YP2LE evaluated the impact of PHE+FTP on target youth outcomes, specifically for FTMs who participated in PHE+FTP compared to FTMs who did not participate in any PHE+FTP interventions. The objective of this evaluation is to provide USAID and other stakeholders, as well as the youth development community in general, with evidence on the impact of cross-sectoral interventions on target youth outcomes.

The evaluation also informs the continued implementation of FTP groups in the RRE and elsewhere by identifying implementation challenges and lessons learned and by gaining participants' views on program content to suggest improvements and identify implementation barriers.

The evaluation questions are:

1. Does integrated health programming improve the outcomes of participating youth compared to youth who do not participate? How and why?
    a. Does PHE+FTP have a significant positive impact on participating adolescent girls' and young women's use of modern contraceptives?
    b. What is the relationship between PHE+FTP participation and the following outcomes:
        i. Improved knowledge and attitudes related to SRH?
        ii. Improved livelihoods and participation in environmental conservation activities (e.g., climate smart agriculture, forest game scouts, beekeeping)?
        iii. Empowerment of young women, specifically decision-making within relationships, gender dynamics, and self-advocacy for health services?
2. According to beneficiaries, which PHE+FTP activity or selected few activities are most responsible for any change observed in the outcomes of interest noted under question 1 and why?
3. What was the cost for USAID to treat one FTM with (1) FTP only and (2) with FTP and PHE activities, as implemented by MIHR in the RRE? If the evaluation finds a statistically significant impact on modern contraceptive use, what was the average cost for (3) FTP only and (4) FTP and PHE, per FTM associated with such impact?

4. METHODOLOGY

YP2LE implemented a mixed-methods evaluation to study the impact and costs of PHE+FTP. The mixed-methods approach allowed for triangulation of findings across data sources and leverages the strengths of each data collection method. For this evaluation, two waves of data were collected: (1) a baseline in February-March 2023 and (2) an endline in February-March 2024.

Quantitative survey data were supplemented by qualitative data from key informant interviews (KIIs) and focus group discussions (FGDs). Qualitative data provide insight on questions that cannot be captured through survey data, such as more detailed information on how interventions were implemented, how participants perceived and interacted with them, and contextual factors (i.e., why and how events occurred) that may have affected implementation of the activity.

5. EVALUATION DESIGN

5.1 QUANTITATIVE DESIGN

We implemented a difference-in-differences (DID) approach to estimate the impact of PHE+FTP. The key assumption required by a DID model is that, in the absence of the program, the treatment group would observe the same change in the outcome(s) of interest as the comparison group.

We surveyed the same respondents at baseline and at endline in treatment and comparison villages. To evaluate the program's impact on the outcomes of interest, we compared results between the treatment and comparison groups, following:

$$y_{it} = \alpha + \beta D_i + \gamma E_t + \delta D_i E_t + u_{it} \quad (1)$$

Where y_{it} measures the outcome of interest (e.g., contraceptive use) for participant *i* in period *t*; D_i is a dummy variable for treatment status; E_t is a dummy variable for the endline, u_{it} is an error term and α, $\beta, and\ \gamma$ are parameters to be estimated. The parameter of interest is δ, which captures the impact of the intervention.

We will also include an ANCOVA specification following:

$$\boldsymbol{y_{i1} = \alpha + \beta D_i + \gamma y_{i0} + \delta x_{i0} + u_{i1}} \quad (2)$$

Where y_{i1} and y_{i0} are the outcome of interest at endline and baseline, respectively, and x_{i0} is a vector of covariates that include age, education level, marital status, and asset and livestock ownership. While we use these models to analyze multiple outcomes, the main indicators we consider are contraceptive use and modern contraceptive use.[6]

The underlying assumption of DID is that time trends affect treatment and comparison groups similarly, while for ANCOVA the assumption is that controlling for baseline characteristics is sufficient to isolate any confounding variables. Both models rely on using baseline data, in particular the outcome of interest at baseline, to isolate any differences between treatment and comparison at baseline.

Both approaches identify the impact of offering the services, sometimes called intent-to-treat parameter. Hence the results inform the impact of offering both FTP and PHE. We also explore the marginal impact of attending FTP meetings by including a binary variable for attending five or more FTP sessions.

5.2 QUALITATIVE DESIGN

Qualitative data were generated through a mix of FGDs and KIIs with FTP participants as well as key PHE+FTP stakeholders. The qualitative component provides important context for the DID design discussed above. At baseline, qualitative data served to provide a better understanding of the implementation context (e.g., types of existing peer groups in the community, initial perspective on SRH and health services more broadly, and initial maternal and infant health and nutrition knowledge and practices), and to gain insight into the challenges treatment and comparison communities face regarding

[6] Modern contraceptive methods include intrauterine devices (IUD), injectables, implants, contraceptive pills, condoms, diaphragms, standard days method, and lactational amenorrhea method (LAM). Contraceptive use generally defined includes modern methods and traditional methods, like the rhythm method.

the outcomes of interest (e.g., contraception and health services more generally, gender norms, maternal and infant health and nutrition, etc.). At endline, qualitative data examined changes over time regarding attitudes and behaviors related to these topics and provide an in-depth understanding of the perceived impacts of PHE+FTP activities from different perspectives. Thus, questions exploring the "why" and the "how" of changes observed, as well as challenges, lessons learned, and recommendations from implementers, partners, and participants comprised a significant portion of the interview guides. Qualitative data also played an important role in measuring key outcomes other than contraceptive use (e.g., gender dynamics and decreases in stigma related to pursuing SRH services).

5.3 COST ANALYSIS

YP2LE used cost data from MIHR to estimate the cost of implementing PHE+FTP for USAID. We adapted templates from USAID's Cost Reporting Guidance (Walls, 2021).[7] These guidelines are designed to price education interventions, but we adapted them to PHE+FTP. YP2LE drafted a customized cost reporting manual that included templates for MIHR to report cost data to facilitate cost analysis. USAID provided guidance and feedback on these tools and the evaluation team and USAID also offered various opportunities for MIHR to ask questions and provide suggestions or identify potential problems.

MIHR provided data separately for PHE and FTP for the following categories[8,9]:

1. General Operations, Management, and Reporting

2. Assessments and Evaluations

3. Capacity strengthening of government systems

6. In-service educator training

7. Teaching and learning materials

9. Parents and community engagement

Because most of the materials used in the intervention (e.g., FTP discussions materials) had been developed for a previous iteration of the intervention, the cost of developing such materials for the intervention in the RRE is not included in the analysis. Only costs paid by USAID are included. We produced two cost estimates: one of FTP only and one of PHE+FTP.

The FTP-only results inform the cost of treating one FTM with FTP; because this activity targets primarily FTMs, it is straightforward to attribute its cost to this population. The problem with this

[7] Note that USAID's cost analysis guidance was updated in 2024: USAID Cost Analysis Guidance_2024

[8] As noted, these categories were initially created for education interventions, thus their names in the reporting manual and templates. For each of the categories considered relevant for this exercise by USAID and the evaluation team, the logic that underpins it was re-purposed for the PHE+FTP intervention. For example, the category "In-service Educator Training" was redefined to cover costs related to initial and ongoing training and coaching of volunteers, including MIHR staff labor to prepare and deliver training and coaching, venue rentals and related costs, and any travel reimbursement and stipends during training.

[9] Numbering aligns with the numbers assigned to cost categories in USAID Cost Analysis Guidance_2024.

approach is that by considering the cost of FTP only, we would be underestimating the cost of treating one FTM, as PHE is needed for FTP to be fielded. For this reason, we also produce a cost analysis of PHE+FTP. However, pricing PHE is difficult because PHE is intended to serve a larger population than FTMs. For the purpose of providing an estimate of the cost attributable to FTMs, we divided the cost of PHE by the total population of the target villages.

5.4 DATA COLLECTION

At baseline, the initial plan was to survey women in 15 treatment villages in the districts of Iringa and Mufindi, both located in the Iringa region; and 18 comparison villages in the districts of Njombe and Makete, both located in the Njombe region. The Njombe region is located south of the Iringa region, and it was part of Iringa until 2012. To attain the appropriate sample size for the evaluation, the initial objective was to survey 30 women in each village at baseline. During baseline data collection, YP2LE and USAID decided to expand data collection to eight additional comparison villages in the same two comparison districts, because the number of eligible respondents in the original comparison villages were lower than expected. In Annex I, we compare the added eight comparison villages with the original 18 comparison villages. Notably, this increase in the number of comparison clusters, and the fact that the intracluster correlation (ICC) was much lower than expected, substantially reduced the Minimum Detectable Effect (MDE) the sample could identify with acceptable precision. As Table 1 shows, the estimated MDE was 23 percent, while the observed one was MDE 12 percent.

Table 1. Revised power estimates for the impact on contraceptive use

		Number of clusters		Cluster size		
	ICC	Comparison	Treatment	Comparison	Treatment	MDE
Estimated	0.2	18	15	30	30	0.23
Observed	0.04	26	15	13	22	0.12

Note: All power estimates use 80 percent of power and 5 percent alpha. The original estimate for contraceptive use rate for the comparison group was 35 percent while the observed was 68 percent.

Nine hundred and seven adolescent girls and young women (AGYW) eligible for participation in FTP were surveyed across both treatment and comparison communities during baseline.[10] Out of these, we surveyed 659 FTMs at endline, for a completion rate of 73 percent.

Table 2 shows sociodemographic characteristics of the surveyed FTMs by wave of data collection and treatment status. At baseline, the differences between the treatment and comparison communities were relatively minor, except for asset ownership. For both treatment and comparison groups, fewer women were pregnant at endline than at baseline. There were also fewer single women at endline than at baseline, primarily because women got married or started cohabitating after giving birth. Other sociodemographic characteristics like school enrollment numbers (which were negligible at both waves of data collection), education level, and asset ownership changed very little between baseline and endline

[10]An additional 84 FTMs from two villages (one treatment, one comparison) were surveyed at baseline, this subset of the sample served as pilot at endline and were not included in the final analysis.

for both study groups.[11] At endline, the differences on asset ownership observed at baseline are no longer statistically significant but have the same direction and are similar in size. This suggests that attrition did not fundamentally affect the comparability of treatment and comparison groups, relative to the situation at baseline. In Annex II we show attrition was negatively correlated with being in the treatment group, being married, education level, and owning livestock. The most common reasons for attrition were permanent relocation to other communities or temporary travel (e.g., family events, trips to nearby towns or cities to attend market days).

Table 2. Sociodemographic characteristics by wave of data collection and treatment status *(T=Treatment, C=Comparison)*

	Baseline			Endline		
	Treatment	**Comparison**	**Difference**	**Treatment**	**Comparison**	**Difference**
Pregnant	0.17	0.20	-0.03	0.05	0.03	0.02
Age	20.62	20.51	0.11	21.72	21.58	0.14
Marital status						
-Single	0.52	0.44	0.07	0.40	0.36	0.04
-Married	0.48	0.54	-0.07	0.57	0.61	-0.05
-Divorced	0.00	0.01	-0.01	0.03	0.02	0.00
Club participation	0.02	0.00	0.02***			
Asset index	3.75	4.22	-0.47*	3.82	4.29	-0.48
Currently enrolled	0.00	0.00	0.00	0.00	0.00	.n
Education level						
-Never schooled	0.04	0.03	0.01	0.04	0.02	0.02
-Primary (some or completed)	0.47	0.46	0.01	0.44	0.45	-0.01
-More than primary	0.49	0.51	-0.02	0.52	0.53	-0.01
Current contraception	0.50	0.47	0.02	0.00	0.00	.n
N	**428**	**479**		**327**	**332**	

[(a)]Includes some or completed primary
[(b)] No respondents were enrolled at endline
* p<.05 ** p<.01 *** p<.001

Recruitment of individuals for the qualitative component relied primarily on lists provided by MIHR (for eligible FTP participants and CHWs) or on lists prepared by the survey teams using the same criteria. Participants in comparison villages were identified through CHWs or village leaders to identify people that fit into the categories of FTMs, first time fathers, and older women.

[11] The asset index summarizes household assets ownership. More specifically, the survey included items asking whether households own a chair, a bed, a clock, a radio, a television, a computer, a bicycle, a motorcycle, a car/truck/boat, a refrigerator, a stove, and a plot of land.

At baseline, the study team used the list of treatment (T) and comparison (C) villages[12] and randomly selected six treatment and three comparison villages to be included in the qualitative data collection. This imbalance was intentional, as we prioritized gaining an in-depth understanding of the context in treatment villages ahead of any intervention. Random selection of villages for qualitative data collection was conducted by district to ensure that the proportion of villages selected reflects approximately the proportion of villages in each district in the overall study. The result of this selection process is shown in the third column of Table 3. The sampling decisions made at baseline were retained at endline to assess change over time in the same communities visited at baseline, although additional treatment communities were also added for qualitative data collection at endline to gather input more broadly.[13]

Table 3. Villages in the larger study and in the qualitative component, by treatment status and data collection round

Group and district	Number in overall study and by group	Number in qualitative component - Baseline	Number in qualitative component - Endline
Treatment	***15***	***6***	***11***
Iringa	9	4	7
Mufindi	6	2	4
Comparison	***26***	***3***	***3***
Njombe	16	2	3
Makete	10	1	0
Overall	**41**	**9**	**14**

At endline, the village selection approach shifted to reflect the evolving goals of qualitative data collection in that phase. A larger number of KIIs and FGDs were budgeted for in endline (see Table 4 below), enabling the data collection teams to cover most (11) of the 15 treatment communities, as shown in the last column of Table 4. Among these 11 were the same six treatment communities visited at baseline, plus five new ones randomly selected (while maintaining the distribution of communities across districts) from the master list of communities selected by MIHR for its programming in the RRE. This approach offered a better chance to observe significant differences in PHE+FTP implementation and in outcomes of interest across treatment communities. Table 4 below shows the numbers of interview and focus group participants per category.

[12] Only the original 18 comparison villages were part of the sample frame for the baseline qualitative data collection, as the decision to add comparison villages to the quantitative data collection occurred after a significant portion of the qualitative data collection had taken place.

[13] The only exception relates to a comparison village in the Makete district visited at baseline, but which was mistakenly not revisited by the field team at endline. Instead, that field team visited another village never visited before in the Njombe district, as reflected in Table 3.

Table 4. KIIs and FGDs conducted by type of stakeholder and treatment/comparison group

Participant Category	Number of FGDs and KIIs in Treatment Communities		Number of FGDs and KIIs in Comparison Communities		Total
	Baseline	Endline	Baseline	Endline	
FGDs	*14*	*27*	*8*	*10*	*59*
First-time fathers	5	8	3	4	20
FTMs	6	8	3	3	20
Older women	3	5	2	3	13
Model Boma participants	N/A	3	N/A	N/A	3
Conservation group members	N/A	3	N/A	N/A	3
KIIs	*21*	*24*	*10*	*12*	*67*
CHWs	11	15	3	8	37
Other stakeholders (DRCHCOs, RCHs, and teachers)	10	6	7	4	27
STEP staff	N/A	1	N/A	N/A	1
Implementing partner staff	N/A	2	N/A	NA	2

As shown in Table 4, the study team conducted 22 FGDs at baseline and 37 at endline, for a total of 59 FGDs across both rounds. These FGDs primarily targeted 1) FTMs; 2) male partners; and 3) older women in the communities at both baseline and endline and in both treatment and comparison communities. Most FGDs across both rounds focused on these groups, as they are the core target participants of FTP. However, a small number of FGDs targeting Model Boma participants and members of community conservation microfinance groups (CCMGs) were added at endline in treatment communities to understand how these activities affected outcomes of interest to this evaluation.

The selection process for FGD participants evolved between baseline and endline. At baseline, data collection teams recruited FGD participants in treatment communities based on MIHR-provided lists of individuals found eligible for the upcoming PHE+FTP activity. In comparison communities, the data collection teams leveraged the work completed by the survey teams to identify FTMs who would be eligible for the FTP groups (were they to be implemented in these communities). Data collection teams then worked with CHWs and local leaders to identify FTMs' male partners and older women who would also be eligible for FTP programming if MIHR was to implement its programming in comparison communities. At endline, data collection teams used FTP participant rosters and the support of CHWs involved in FTP groups to recruit participants for the FGDs in treatment communities. In comparison communities, the FGD recruitment process at endline remained very similar to that employed at baseline, as the same FTMs found eligible and surveyed at baseline were surveyed again. These FTMs could also be involved in FGDs, along with their male partners and older women in comparison communities.

The KIIs complemented the FGDs by providing perspectives from individuals serving communities participating in the evaluation, such as CHWs, teachers, and doctors, and the research team conducted them with a range of key PHE+FTP stakeholders at both baseline and endline. As shown in Table 4, a total of 31 KIIs were conducted at baseline and 36 at endline, for a total of 67 KIIs. Across both rounds and in both comparison and treatment communities, CHWs were the most interviewed as they play an important role in promoting and providing access to FP in communities, know the population well through their regular interactions with them, and have been extensively involved in PHE+FTP in treatment communities. Both rounds also included Reproductive and Child Health (RCH) doctors in charge and District Reproductive and Child Health Coordinators (DRCHCOs) across treatment and comparison communities to triangulate the information provided by the CHWs and to share expert perspectives. The team also conducted KIIs with a small number of head teachers to better understand the context in schools, including how FP is treated in the curriculum and at school, how teachers view their role and support students, and the challenges facing youth and the resources available to them. Teachers are also involved in the youth group component of PHE+FTP in treatment communities, although this component was only partially rolled out at the time of endline data collection. Finally, the team interviewed local STEP staff and MIHR staff at both the local and headquarters level at endline.[14]

The study team used several approaches to select KII participants. In treatment communities, MIHR produced lists of CHWs that the data collection team used at both baseline and endline. In comparison communities, the data collection team worked with local leaders (e.g., Village Executive Officers) to identify the CHWs serving each selected community for interviews in both rounds. In all communities at baseline and endline, the data collection teams similarly worked with local leaders to identify RCH doctors, DRCHCOs, and teachers serving the selected communities for interviews. MIHR recommendations served as the basis for the selection of locally based STEP staff and MIHR staff at local and headquarters offices.

Interviews and FGDs were held in either English or Swahili according to the participants' preferences. Each FGD had between 5 and 10 participants, with most having 8. KIIs lasted between 30 minutes and one hour, while FGDs lasted 90 minutes on average. FGD and KII participants were given a small incentive – consisting of sugar, oil, or flour - for their time and participation. Interviews and FGDs were audio-recorded with participants' consent, then transcribed and translated to English for analysis. Although the consent scripts and training included a backup approach in case KII or FGD participants refused to allow a recording—relying on field notes enriched by the facilitator and note-taker of the interview—no refusals to record occurred at baseline or endline.

5.5 LIMITATIONS

EVALUATION TIMELINE AND SOCIAL DESIRABILITY: One of the ultimate goals of PHE+FTP is to improve maternal and child health. Spacing between pregnancies is a key strategy to attain this objective. Given the limited timeframe available for the evaluation, the objective was to measure short-term outcomes (between 3-6 months after the intervention), hence the emphasis on contraceptive use as an instrument to approximate future fertility and birth spacing. The challenge with this outcome, which is measured through self-reports, is that respondents may be inclined to overstate their use of contraceptives due to social desirability bias (SDB). This challenge was expected by the

[14] MIHR and STEP staff were only included at endline.

evaluation team, who chose to add a list experiment to both the baseline and endline surveys to assess SDB. Results from the list experiment at baseline suggested that respondents tended to overstate whether they use contraceptives and, as we show below, there is evidence that SDB may also be affecting the results at endline. A longer evaluation timeframe for programs like this, or a follow-up of this evaluation, could document impacts directly on birth spacing and fertility, which are less subject to SDB.

In addition, the timing of the evaluation was such that the livelihoods activities were just getting started when data collection was happening for endline. It must also be noted that FTP does not address livelihoods as a key mandate. While the activity has been able to target FTMs with specific livelihoods interventions in other landscapes, this was not rolled out in the RRE at the time of endline data collection. Therefore, our results around livelihoods are limited and should be interpreted with the timing in mind.

SDB was also likely a significant factor in the qualitative data. Specifically, SDB can influence how participants in interviews and FGDs talk about their attitudes around contraceptive use, decision making, and women's agency. Participants can feel social pressure to report views that they think are more acceptable to the interviewers and moderators or feel pressure to give the "correct" opinion in front of their peers in FGDs. It is also important to note that transformation consists of changes in knowledge, then changes in attitudes, then changes in behaviors. Therefore, especially given the short duration of implementation, indications of changes in attitudes are not always indicative of changes in behavior.

SAMPLE SIZE: The original design included 15 treatment villages and 18 comparison villages. The number of comparison villages was increased to 26 during data collection, because fewer than expected FTMs were found in the original 18 comparison villages. As was discussed in section 4.4, this increase in the number of comparison villages combined with a lower-than-expected ICC improved the power of the design substantially. As a result, the small sample size ended up being a minor limitation for this evaluation.

COST ANALYSIS: It is difficult to determine whether distributing the cost of PHE among the village's population at large is an appropriate approximation of the cost of PHE per FTM. The underlying assumption is that it costs the same to treat everyone with PHE regardless of their characteristics. In the case of a program like PHE this is problematic because: 1) multiple interventions were offered; and 2) not everyone was targeted with the same programming. For example, according to some of this evaluation's qualitative results, young men participated the most in certain conservation and livelihood activities. If this is the case, the costs of these activities should be distributed predominantly among these individuals. At the same time, MNCH interventions at health clinics likely benefited children and mothers (including FTMs) more than the rest of the population, which would imply that the cost of such interventions should be attributed predominantly to those population segments. Dividing the cost equally among the total villages' population is a feasible approximation given the data at hand, but it is important to keep in mind these limitations.

SELF-SELECTION OF QUALITATIVE DATA COLLECTION PARTICIPANTS: In each community selected for qualitative data collection, the field teams selected FGD participants who met FTP group eligibility criteria. Similarly, individuals who held specific positions in each selected community or district were selected for KIIs either through data from MIHR (CHWs in treatment communities, MIHR staff, and STEP staff) or through the field teams working closely with local leaders (for the rest of

the KIIs conducted in-country). In all cases, these individuals needed to consent to participating in the study and to be available during the window of time when the qualitative field teams organized and held KIIs and FGDs in each community. This creates the risk for self-selection and selection biases. The evaluation team considered these issues at the design stage and field teams were trained to employ a few approaches to minimize these biases. First, field teams had the authority to decide the timing and order of each KII and FGD they organized in a given community, and the flexibility to change the order in which they visited communities based on pre-arrival contact with CHWs and local leaders (e.g., Village Executive Officers).[15] The small incentive provided to FGD participants (small bags of sugar, oil or flour) is also expected to help mitigate both biases. For example, an individual who may not have had a good experience with FTP may hesitate to participate in an FGD but might reconsider due the small incentive. The incentive may also help eligible community members forego their occupation or chores for a few hours, increasing the chance for them to participate.

6. FINDINGS

6.1 IMPLEMENTATION OF PHE+FTP IN THE RRE

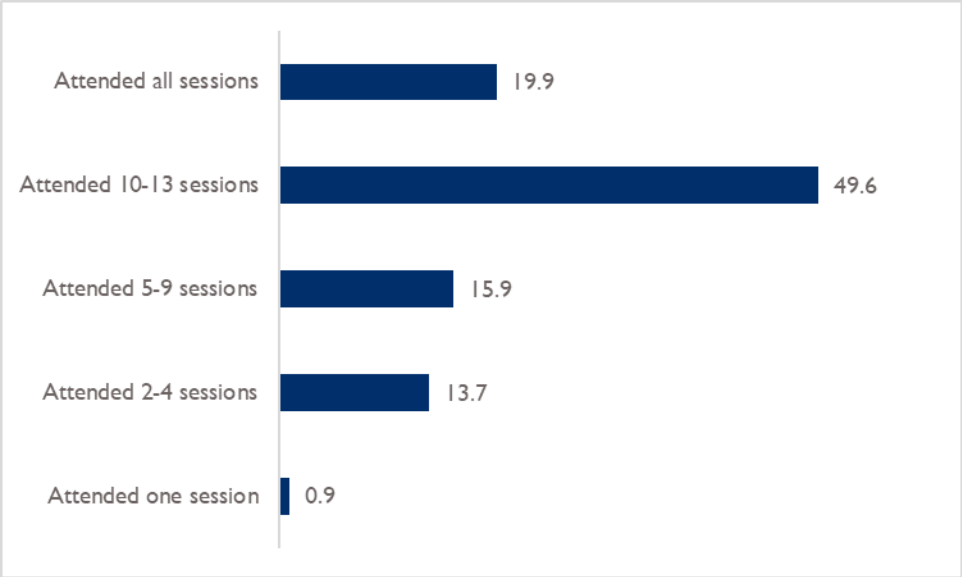
This subsection examines how PHE+FTP was implemented in the RRE during the evaluation period, against the structure/implementation plan MIHR outlined in its workplan. How PHE+FTP was implemented and any implementation challenges that may have emerged are important to understand to better interpret the evaluation results.

Endline qualitative and survey data indicate that PHE+FTP in the RRE was largely implemented in compliance with the structure outlined in MIHR's workplan, which was previously discussed in Section 2 – Project Description. One exception to this is that the rollout of school-based activities was delayed. In addition, not every treatment community received all conservation activities, such as beekeeping. Individuals in treatment communities were widely familiar with the activities that were designed for them, such as FTP groups, the Model Boma "challenge", and community conservation microfinance groups.

Out of the 327 women surveyed at endline in the treatment group, 255 (78 percent) said they had participated in FTP meetings. We asked these women how many sessions they attended. As Figure 3 shows, 20 percent attended all 14 sessions, 50 percent attended between 10 and 13 sessions, 16 percent attended between 5 and 9 sessions, 14 percent attended between 2 and 4 sessions, and 1 percent attended 1 session.

[15] However, there are limits to these shifts, because the qualitative field teams had to balance a range of constraints, including broadly following the fieldwork calendar in terms of total days in the field, meeting the number of KIIs and FGDs assigned to each team (goals were not set per day or week but for the entire duration of baseline/endline), and complying with security protocols.

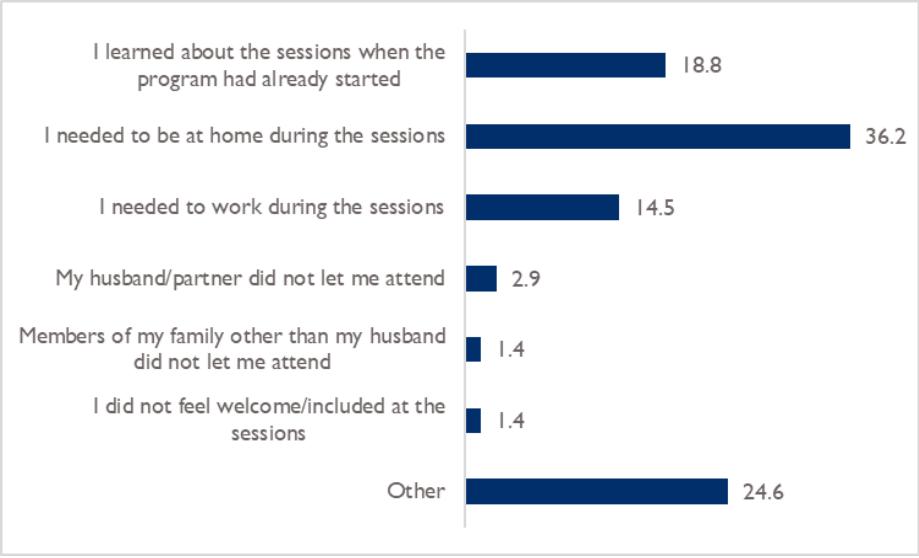
Figure 3. Participation in FTP sessions: Percent (N = 226*)



*Sample size for this question is 29 less than the number of women that participated in meetings, because they either could not remember the name of the club, so this question was not asked, or could not remember how many sessions they attended.

Women who attended fewer than 10 sessions were asked why this was the case. As Figure 4 shows, the most common reason was home duties (36 percent). Few women mentioned that the reason was their husband or family did not let them. The most cited reasons under the write-in "other" answer choice (25 percent) were travel and giving birth.

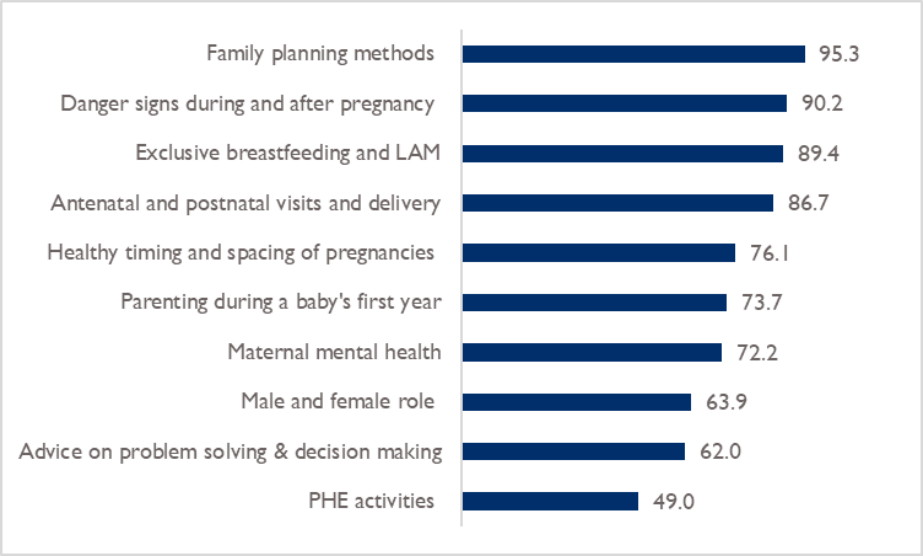
Figure 4. Reasons for low participation (fewer than 10 sessions): Percent (N=69)



The topic that most respondents remembered discussing in the meetings was FP methods (95 percent), followed by danger signs during pregnancy and after pregnancy (90 percent), and exclusive breastfeeding

(89 percent). As Figure 5 shows, an overwhelming majority of FTMs who participated remembered many of the key topics that are core to FTP curriculum.

Figure 5. Topics discussed during FTP meetings: Percent (N=255)



The survey asked respondents how useful they found the meetings on each topic. Across topics, between 98 and 100 percent of respondents said the meetings were "very useful", and no one said they were "not very useful" or "not useful at all".

Qualitative data from FTMs and first-time fathers corroborates this general appreciation for the program. FTMs and male partners liked learning about FP and about other skills they could utilize for the health of their family, such as birth spacing. They especially appreciated the education around antenatal and postnatal care as well as maternal and child nutrition.

Other aspects of PHE+FTP implementation were also examined. Although evidence of PHE supply-side activities (training and mentoring, promoting better data collection and use, and advocacy for appropriate budgeting for FP and MNCH services) emerged relatively rarely during KIIs, the training and support provided by MIHR to CHWs, key health actors, and teachers was another widely praised.

The training provided by MIHR to CHWs was lauded by several RCH doctors who are responsible for supervising them. One RCH doctor in Tungamalenga (T) noted that the trainings were "received positively" and that this education helped the CHWs based on the changes that they (RCHs) observed, while another in Ihanzutwa (T) felt that the success of the trainings was visible through the successful implementation and ongoing monitoring of the Model Boma activity by CHWs in the community. These positive perspectives emerged consistently across sites, sometimes alongside relatively minor recommendations for future improvements in CHW training methods discussed a few paragraphs below.

In KIIs, CHWs also overwhelmingly reported their satisfaction with the training they received from MIHR, frequently describing it as "very useful" and "efficient". Many provided specific examples of what they learned and how that knowledge has enabled them to better serve their community and conduct PHE+FTP activities. It was common for CHWs interviewed to note that the content did not just repeat

things they already knew but delivered new and important information. For example, a CHW in Idodi (T) noted "I learned a lot of things which I didn't know before, especially on family planning, maternal health and childcare, dangerous signs to a pregnant woman, the importance of being involved in groups, pastoralism and so on." Several other CHWs (in Utosi and Ikangamwani,) explained that their appraisal of the training is based on having the necessary knowledge to answer the questions and meet the needs of the community, and on not facing major challenges in their work. For example, one CHW said "there is no challenge when we teach the community." Many also pointed to the results and changes they observed in the community, which they associated with their work with MIHR, to support the suitability and usefulness of the training.

> "In the beginning I had no training regarding family planning or danger signs for a pregnant mother. We did not know what to do and sometimes we failed to even bring pregnant mothers to health centers. But after those trainings we got to know what to do when those situations happen."
>
> **CHW, Ugenza (T)**

Nonetheless, CHWs and the RCH doctors who supervise them did have recommendations relating to training. Several RCH doctors and CHWs noted that refresher trainings must be held regularly to ensure knowledge is maintained and updated. One RCH doctor in Tungamalenga (T) specifically highlighted that these refresher trainings also provide an important forum for sharing experiences and lessons. Several CHWs also suggested topics they would like to see included or covered in more detail in future trainings. New topics include, in order of frequency, livelihoods (specifically entrepreneurship, livestock keeping, irrigated agriculture) and sexual violence prevention and response.

These testimonials of widespread satisfaction contrast somewhat with the perspectives of CHWs in comparison communities. Although CHWs are meant to receive training from nurses and RCH doctors, this may not always happen. One CHW in Ukwama (C) reported their last training took place five years prior to the interview. CHWs in comparison communities also consistently and frequently listed topics that MIHR covers in their training as priority training areas. These include, in order of frequency: breastfeeding and nutrition, contraceptive methods, danger signs for pregnant women and Basic Emergency Obstetric and Neonatal Care (BEmONC), pediatric illnesses and warning signs, and couples' relationships.

Although rarely discussed in KIIs, a DRCHCO also praised the support MIHR provided to him and his peers, noting it was of "high quality" and that trainings were "inclusive" and provided the tools to collect statistical data on what is being implemented. This contrasts with a comment from a DRCHCO in a comparison community who noted a training need related to supportive supervision and leadership and expressed concerns about the level of qualified human resources available to him.

Coordination and cooperation between MIHR and individuals operating in program communities to plan, implement, and monitor activities was another area discussed during KIIs. Again, every respondent type (CHWs, RCH, DRCHCO, as well as teachers and STEP staff) had overarchingly positive impressions. With a few exceptions, CHWs, RCH doctors, and teachers involved in youth groups all reported being in communication with MIHR every 2-3 months to provide updates on the implementation of activities. Field-based actors also noted that they knew how to reach MIHR in case something needed to be reported or decided in between these check-ins.

The STEP staff working in Iringa noted that they operate from the same office as MIHR staff, which facilitates coordination and the development and implementation of STEP activities in lockstep with

those for which MIHR is responsible. Coordination and collaboration between MIHR and local government as well as the health system was rarely discussed, but a DRCHCO in Iringa praised MIHR for implementing the project in accordance with national policy and guidelines, for providing timely updates to the district council about the availability of supplies, and for providing support and advice through a staff member with statistical expertise on entering correct data into the DHIS system.

> "Seeing how water spread through the watering can makes students happy and they are motivated to use those materials to do irrigation even if they are not told to do so!"
> **Teacher, Makifu (T)**

Another important implementation aspect of PHE+FTP is the provision of resources and equipment that local actors use to conduct activities. Respondents in comparison communities did not feel that they had reliable access to general supplies for their work. A CHW in Ukwama (C) stated that they do not have health registers or other work tools, not even pens, and are not given any allowance for materials. Respondents in comparison communities also spoke about the challenge of contacting pregnant women and mothers, making it difficult for volunteers to monitor mothers who did not come to clinics or conduct home visits for pregnant women.

In contrast, almost all respondents in treatment villages praised the quality and availability of PHE materials such as watering cans, wheelbarrows, hoes, rakes, brooms, raincoats, and boots. A teacher in Makifu (T) explained that the equipment is helping them recruit more community members for environmental clean ups:

> "The supports we received were of the high-quality starting with wheelbarrows, hoes, rakes, brooms, etc. We didn't have those materials before. It was a nice experience – we informed and invited the community members to come and see those materials, even students are now happy to do [clean ups] because they enjoy using wheelbarrows to collect trash, so it was a motivation of high level!" (Teacher, Makifu (T))

CHWs in treatment communities also appreciated the equipment that PHE+FTP gave to clinics; the DRCHCO in Iringa, when asked which aspects of the project were working well, pointed to equipping CHWs and creating an "enabling environment for the provider." This being said, two CHWs and an RCH doctor in different communities asked for the provision of smartphones to help them communicate more effectively and take pictures and send them as part of their work. The RCH doctor in Tungamalenga (T) echoed this, noting that an electronic system to share information would free CHWs from printing papers with their own money.

Transportation support, including reliable access to motorbikes or bikes, was the most requested form of support. This call emerged from CHWs in nine treatment communities, as well as two RCH doctors and a DRCHCO. They all noted that a significant share of community members served by PHE+FTP live far from the center of the community or the health facility, which makes it very difficult for CHWs and health staff to conduct home visits, promote positive behaviors and participation in activities or respond to calls for assistance. Mountainous terrain, especially in Kinyamande, was reported to be particularly challenging to traverse and would require motorcycles specifically. CHWs in Ihanzutwa (T), Kimande (T), and Ndulamo (C) said that they sometimes spend their own money to reach their clients, usually through renting motorcycles. Some FTMs also stated that transportation is a challenge hindering the

participation of community members in PHE+FTP activities. In particular, it is difficult for them to get to clinics.

> "You find out of the 15 people you deal with, three out of five are here in Ugenza, but the rest are in other distant villages. Therefore, it becomes difficult to reach them!" **CHW, Ugenza (T)**

Finally, a DRCHCO, two RCH doctors and a CHW also called for the provision of monthly incentives to volunteers, and particularly CHWs who face the tradeoff between their volunteering work and their income-generating activity. They noted this would compensate volunteers for the revenue lost from not doing their livelihood activities and motivate them to engage more fully in their volunteering. A few CHWs also noted that they have faced delays in receiving their stipends from the project, which created some challenges and frustrations.

6.2 DOES PHE+FTP HAVE A SIGNIFICANT POSITIVE IMPACT ON THE USE OF MODERN CONTRACEPTIVES BY PARTICIPATING AGYW?

At both baseline and endline, the survey asked respondents who were not pregnant if they were currently using contraception. Specifically, the question was "Are you or your partner currently doing something or using any method to delay or avoid getting pregnant?". Table 5 shows contraceptive use by wave of data collection and treatment status. At baseline about half of respondents said they were using contraception at the time of interview and, at endline, these percentages increased between 20 and 25 percentage points. As the difference-in-difference estimate shows, PHE+FTP is correlated with an increase of contraceptive use of four percentage points, but this difference is not statistically significant.

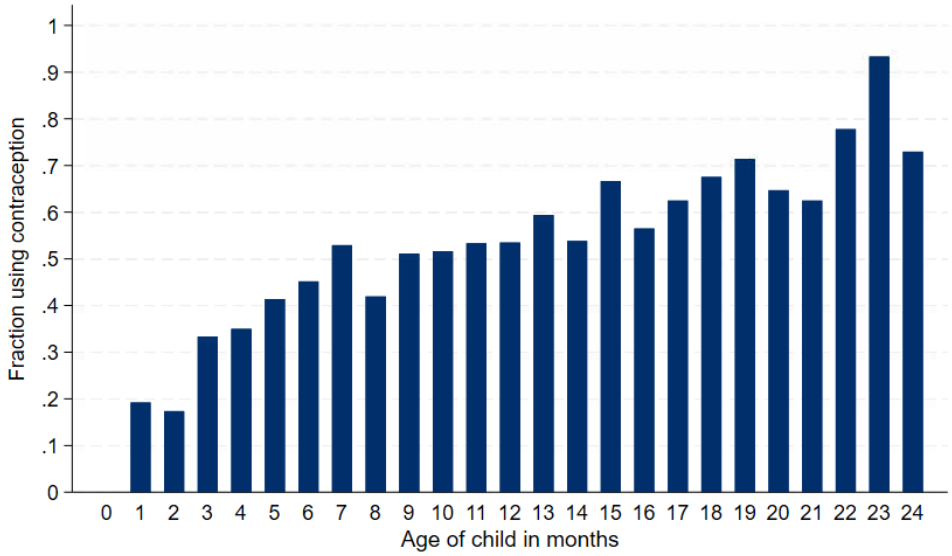
Table 5. Current use of contraception

	Baseline			Endline			
	T	C	Diff	T	C	Diff	DiD Parameter
Currently using contraception	0.53	0.51	0.03	0.76	0.68	0.07	0.04
N	**273**	**263**		**311**	**321**		

Note: Only respondents surveyed both at baseline and endline are included.
* p<.05 ** p<.01 *** p<.001

Table 5 shows a major increase in contraceptive use between baseline and endline in both treatment and comparison groups. Further analysis suggests this is because the children of many respondents were very young at baseline, many younger than 6 months, and women tend to not use contraceptives right after giving birth. Figure 6 shows the rate of contraceptive use among non-pregnant women at baseline by child's age. The figure includes both treatment and comparison groups. It shows that there is a strong positive relationship between the rate of contraceptive use and child's age. As children aged between baseline and endline, contraceptive use increased. In other words, the increase in contraceptive use between baseline and endline was largely an artifact of the timing of the baseline and endline surveys relative to the children's age.

Figure 6. Contraceptive use at baseline by children's age (N=801)



We also produce ANCOVA regressions ($yi1 = \alpha + \beta D_i + \gamma y_{i0} + \delta x_{i0} + u_{i1}$) to analyze the impact of FTP+PHE. The baseline characteristics that are included in the regression as controls are contraceptive use at baseline, age, education level, marital status, and asset and livestock ownership. Age, education level, socioeconomic status, and marital status are all found to be correlated with contraceptive use in the empirical literature (Dev et al. 2019). Table 6 shows regression results for different specifications of Equation (1). The first column only includes women who were not pregnant at baseline nor at endline. The results indicate that PHE+FTP increased contraceptive use by 10 percentage points for this group. In column (2), we included women pregnant at baseline in the analysis. Because pregnant women were not asked whether they use contraception, we recoded them as not using contraception and added a binary variable for being pregnant at baseline as a covariate. In this case, PHE+FTP increased contraceptive use by 9.3 percentage points. In column (3) we include women pregnant at endline who are coded as not using contraception. In this case, the results indicate an increase of 8.2 percentage points. These results indicate a, positive impact on contraceptive use of between 8 and 10 percentage points. They are marginally larger than the DID result in Table 5. Note that these results compare women in treatment and comparison villages regardless of their participation in FTP meetings. To explore estimating the impact of attending the meetings, in column (4) we add as covariate a binary variable for attending 5 or more FTP sessions. In this case the PHE+FTP indicator is not correlated with contraceptive use and attending 5 or more FTP sessions increases the likelihood of using contraception by 11 percentage points. Notably, all results in Table 6 are also robust to correct for sample attrition, as shown in Annex II. Annex II also shows Table 6 results displaying the coefficients for all included covariates. The results indicate that contraceptive use at endline is correlated with being married, education level, and contraceptive use at baseline.

Table 6. Regression results on contraceptive use

	(1)	(2)	(3)	(4)
	Non-pregnant women	Women pregnant at BL and not pregnant at endline	All women	

PHE+FTP Program	0.100*	0.093*	0.082+	0.025
	(0.044)	(0.038)	(0.041)	(0.044)
Participation (5+ sessions)	-	-	-	0.109*
	-	-	-	(0.045)
Observations	512	631	658	628

Note: ANCOVA regressions include age, education level (categorized as no education, incomplete or completed primary school, and more than primary education), a binary variable for being married or cohabiting, the asset index, and a binary variable for livestock ownership. Indicator variables to control for item-specific missing data are included in the regressions but not displayed. Standard errors are clustered at the village level.
+p<.1 * p<.05 ** p<.01 *** p<.001

When asked what contraceptive methods respondents use, a small number mentioned traditional methods, in particular the rhythm method. Table 7 shows regression results when the dependent variable is 1 only if the method mentioned is modern, while traditional methods (and non-users) are coded as 0. The results are very similar to those in Table 6, although marginally smaller and, in the case of the specification in column (3), not statistically significant at standard levels of confidence.

Table 7. Regression results on modern contraceptive use

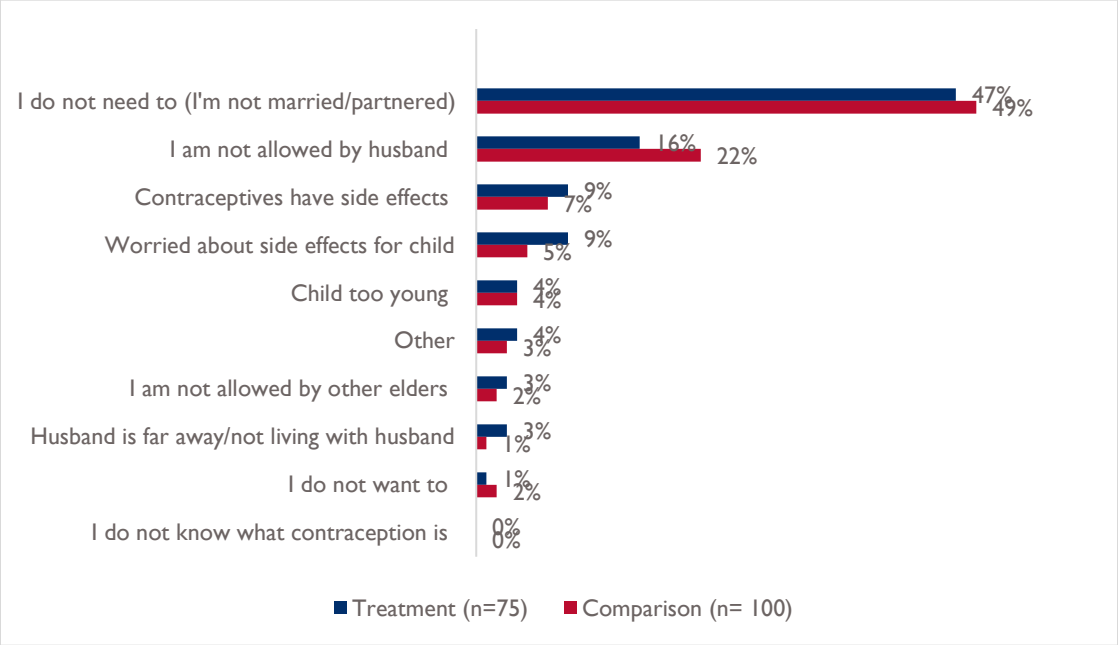
	(1) Non-pregnant women	(2) Women pregnant at BL and not pregnant at endline	(3) All women	(4) All women
PHE+FTP Program	0.081+	0.069+	0.060	0.020
	(0.045)	(0.040)	(0.043)	(0.044)
Participation (5+ sessions)				0.081+
				(0.043)
Observations	512	631	658	628

Note: ANCOVA regressions include age, education level (categorized as no education, incomplete or completed primary school, and more than primary education), a binary variable for being married or cohabiting, the asset index, and a binary variable for livestock ownership. Indicator variables to control for item-specific missing data are included in the regressions but not displayed. Contraceptive methods coded as modern are female sterilization, male sterilization, intrauterine device (IUD), injectables, implant, contraceptive pill, male condom, female condom or diaphragm, emergency contraceptive pill, standard days method, and lactational amenorrhea method (LAM)Standard errors are clustered at the village level.
+p<.1 * p<.05 ** p<.01 *** p<.001

In sum, the results indicate that FTP+PHE is positively but weakly correlated with contraceptive use. The estimated coefficients are small, and statistically significant only for certain specifications.

At endline, respondents who were not using contraception and were not pregnant were asked about their reasons for not using contraception. As Figure 7 shows, the most prevalent reason was that they were single and did not think they needed to use contraceptives. They also mentioned other factors, such as concerns about side effects or that their husbands did not permit use, but at a relatively low frequency. The differences between treatment and comparison groups are small and not statistically significant.

Figure 7. Reasons for not using contraception at endline, by treatment status (n=175)



* p<.05 ** p<.01 *** p<.001

At both baseline and endline, the survey asked FTMs currently using contraception what type they use. As Table 8 shows, the DiD parameters suggest that PHE+FTP increased the use of implants by 18 percentage points, but it also reduced the use of injectables by 18 percent points. Changes in other methods are negligible. It is important to keep in mind that results in Table 8 do not refer to the same women over time, because only women using contraception answered the question at each wave of data collection. This implies that all the women who were pregnant at baseline did not answer this question at baseline, but most of them did answer the question at endline, as very few of them were pregnant again.

Table 8. Contraception methods used by respondents

	Baseline			Endline			
	T	C	Diff	T	C	Diff	DiD Parameter
IUD	0.08	0.07	0.01	0.06	0.08	-0.01	-0.03
Injectables	0.32	0.19	0.13	0.17	0.22	-0.05	-0.18*
Implants	0.45	0.55	-0.1	0.65	0.58	0.07	0.18*
Pill	0.03	0.10	-0.06	0.02	0.05	-0.03	0.03
Male condom	0.06	0.05	0.01	0.03	0.03	0	-0.01
Rhythm	0.05	0.07	-0.01	0.06	0.04	0.02	0.04
N	**146**	**133**		**235**	**219**		

Note: Standard days, LAM and traditional methods are seldom mentioned so they are not shown.
Standard errors are clustered at the village level
* p<.05 ** p<.01 *** p<.001

The qualitative data indicate that in both treatment and control communities, people tend to prefer long-acting reversible contraceptive methods such as implants and discrete methods such as injections. These methods are favored for their convenience and reliability over extended periods. Several FTMs, CHWs, and DRCHCOs highlighted the appeal of implants due to their longevity and ease of removal: "I prefer the implant because it lasts a long time, and you can get it removed whenever you want" (FTM Mapogolo (T)). This sentiment underscores the appeal of implants in reducing the need for regular visits and ensuring consistent contraception without daily adherence. Although injections are simple and their use is discreet, with partners potentially unaware of their usage, they have a much shorter duration (typically around 3 months).

> "Implants are the most preferable methods nowadays because it doesn't need them [women] to return frequently to the reproductive health centers."
>
> **DRCHCO, Ikonda (C)**

In contrast, contraceptive pills encounter more resistance within communities. Concerns about side effects, such as nausea and headaches, often deter potential users. Moreover, the strict daily regimen required for pills to be effective raises fears of unintended pregnancies if not adhered to consistently, which further influences attitudes towards this method. CHWs in Tungamalenga (T) and Mapogolo (T) also spoke of the persistent misconception that using hormonal contraception (such as oral contraceptives, injectables, implants, or hormonal IUDs) would cause infertility. These same misconceptions were identified at baseline and their persistence at endline indicates that sensitization and information work under PHE+FTP must continue.

Intrauterine Devices (IUDs) also evoke mixed sentiments. While some appreciate their long-term benefits in preventing pregnancies without daily attention, others express apprehension. Misconceptions regarding IUDs causing infertility or discomfort during intercourse persist, even among treatment communities. CHWs in treatment communities noted that although some FTMs have received education on IUDs, young women are still resistant to their use, indicating that perceptions of certain types of contraception may be more ingrained than others. This supports the previously mentioned need for continued education on the actual benefits and functioning of specific types of contraception to dispel misconceptions.

The accessibility and availability of contraceptive methods also significantly influence preferences. Methods like condoms, readily available and offering dual protection against pregnancies and sexually transmitted infections, remain a popular choice within communities: "We use condoms because they're easy to get for us" (FTM Igolowa (C)). Conversely, methods perceived as less accessible or requiring specific conditions, such as sterilization or calendar-based methods, face challenges due to logistical constraints or misconceptions about their effectiveness.

Certain supply-side PHE activities focused on helping to improve the sourcing and availability of contraceptive methods. However, stocks of contraceptives, particularly condoms, were already found to be high in most comparison and treatment communities at baseline, and services and supplies are, in principle, provided for free through government policy. Nonetheless, particularly for implants and condoms, the training provided to CHWs and the support for sourcing helped expand access for communities. This is corroborated by the quantitative result showing the increase in implant use (Table 5).

A CHW in Mahuninga (T) said that Pathfinder has helped with the costs of sourcing contraceptives through technical assistance to facilities, helping them forecast supplies and connect with the government or other projects for supplies, and noted that condoms, contraceptive pills, implants, and injectables are now more available in their community. MIHR staff mentioned that they had made the most progress with helping health facilities stock condoms, through better coordination with other facilities and distribution points as well as better forecasting and estimating of stock. A CHW in Mafuluto (T) said they were able to expand the services available locally: "Services used to be available far away and it was expensive to get them, but now they are available here and are free." They specifically cited implants as more available in their community due to PHE programming.

As confirmed by the DRCHCO in Makete, there is a government policy of providing free reproductive health services and contraceptives in Tanzania. A first-time father in Idodi (T) noted that some people in the community were not aware of this policy and had the misconception that contraceptives would be expensive.

Some communities already had good supplies of contraceptives. A CHW in Idodi (T) said they had not seen any changes in the availability of contraceptives in their community but noted they do not face any issues with availability or stock disruptions. Similarly, a CHW in Ihanzutwa (T) stated, "Before the project arrived, contraception was free, and its availability was good, so there was no change" (CHW Ihanzutwa (T)).

6.2.1 LIST EXPERIMENT RESULTS

To assess the extent to which respondents may overstate their use of contraceptives, we conducted a list experiment (LE). Respondents were randomly divided into two groups (A/B). Both groups were presented with the same set of three statements of fact or opinion on innocuous topics.[16] Group A also received a statement on the use of contraceptives, specifically "I usually use a family planning method to delay or avoid getting pregnant." Respondents from both groups were asked to indicate the number of statements they believed to be true for them. Because respondents did not answer each item but indicated the total number of statements that they believed to be true, they benefited from an extra level of confidentiality. Enumerators themselves could not tell whether respondents in Group A agreed to the sensitive item or not. The difference between the mean counts of groups A and B approximates the respondents' contraceptive use rate.

Table 9 summarizes the results of the LE. The first three columns correspond to the baseline results. The rate of contraceptive use implied by the LE was 57.4 percent for the treatment group and 53.6 percent for the comparison group, and the difference between the two groups was small and not statistically significant. At endline, the results were very similar, and the DID in column (7) is small and not statistically significant. These findings suggest that the results documented before on contraceptive use (Table 6) may be driven, at least in part, by SDB.

Table 9. List experiments results

Baseline	Endline

[16] For example: "I usually follow what is happening in the news."

T	C	Diff	T	C	Diff	DiD Parameter
(1)	(2)	(3)=(1)-(2)	(4)	(5)	(6)=(4)-(5)	(7)=(6)-(3)
0.574	0.536	0.039	0.525	0.508	0.017	-0.022

Standard errors are clustered at the village level
* p<.05 ** p<.01 *** p<.001

6.3 WHAT IS THE RELATIONSHIP BETWEEN PHE+FTP PARTICIPATION AND IMPROVED KNOWLEDGE AND ATTITUDES RELATED TO SRH?

The FTM survey asked a series of true/false questions to assess the level of knowledge respondents have about SRH. The questions include whether a woman can get pregnant the first time she has sex, if modern FP methods are safe and effective, if a woman can become pregnant before menses return, and if respondents think it is important to wait at least two years between having children. The correct response for all four statements is "True." The results, summarized in Table 10, indicate that PHE+FTP had a positive impact on two of the four items, suggesting that the program improved SRH knowledge among participants. We use linear probability models so the parameters can be directly interpreted as changes in percentages. For example, the results for question 2, below, on whether modern FP methods are safe and effective, indicate that FTMs were 7.5 percent more likely to answer correctly.

Table 10. Impact of FTP on SRH knowledge

	(1) A woman can get pregnant the very first time she has sex	(2) Modern family planning methods are safe and effective	(3) After the birth of a child, a woman can become pregnant before menses	(4) It is important to space at least 2 years between having children
PHE+FTP Program	-0.014	0.075*	-0.058	0.080**
	(0.038)	(0.030)	(0.038)	(0.026)
N	**659**	**659**	**659**	**656**

Note: ANCOVA regressions include the value of the dependent variable at baseline, age, education level (categorized as no education, incomplete or completed primary school, and more than primary education), a binary variable for being married or cohabiting, the asset index and a binary variable for livestock ownership. Sample sizes are marginally different amongst questions due to item-specific missing data in the dependent variable. Indicator variables to control for item-specific missing data are included in the regressions but not displayed. Standard errors are clustered at the village level.
* p<.05 ** p<.01 *** p<.001

Interestingly, the two questions for which the evaluation found a statistically significant increase in Table 10 are also those which had a high share of correct answers at baseline.[17] Conversely, the two questions for which no statistically significant gain was observed had low rates of correct answers at baseline.[18]

The survey asked questions on fertility preferences. A review of the FTP group curriculum suggests that the activity is careful to avoid being too prescriptive about family size, although the additional stress on the environment by large families is briefly discussed in one session.[19] That aside, key messages from FTP may have mixed effects on fertility preference. While raising awareness about birth spacing might reduce expected fertility, having more knowledge about antenatal care, delivery, and childbearing may increase it if this makes women feel more in control about having more children.

The survey results indicate that program participation is associated with an increase in expected or preferred fertility. The results in Table 11 show that PHE+FTP is associated with an increase of 12 percentage points in the likelihood that a woman wants to have three or more children, as opposed to having fewer than three children. This suggests that, on balance, greater control, knowledge, and confidence with childbearing among FTMs dominates incentives that would lead to a preference for a smaller family size. Withers and others (2010) found a similar result in Indonesia. Ibitoye and others (2022) analyzed survey data in 59 LMICs and found that increases in contraceptive use cannot be attributed to changes in fertility preferences.

Table 11. Fertility preferences of mothers

	Fertility preferences of mothers
PHE+FTP Program	0.12***
	(0.04)
N	**616**

Note: Linear probability model on wanting to have three or more children. Regressions include the value of the dependent variable at baseline, age, education level (categorized as no education, incomplete or completed primary school, and more than primary education), a binary variable for being married or cohabiting, the asset index and a binary variable for livestock ownership. Indicator variables to control for item-specific missing data are included in the regressions but not displayed. Sample size is smaller than 659 due to missing data in the dependent variable. Standard errors are clustered at the village level.
* p<.05 ** p<.01 *** p<.001

[17] For Question 2 - Modern FP methods are safe and effective, a correct answer was provided by 85 percent of FTMs in treatment communities and 71 percent in comparison communities at baseline. For Question 4 - It is important to space at least 2 years between having children, the percentages were 91 and 82, respectively. In both instances, the difference between treatment and comparison groups was found to be highly statistically significant.

[18] For Question 1 - A woman can get pregnant the very first time she has sex, a correct answer was provided by 55% of FTMs in treatment communities and 51% in comparison communities at baseline. For Question 3 - After the birth of a child, a woman can become pregnant before menses, the percentages were 48 and 41, respectively. In both instances, the difference between treatment and comparison groups was not found to be statistically significant.

[19] FTP activity card for FTM Session 7, "What is PHE?".

6.3.1 ATTITUDES AND PERCEPTIONS OF MODERN CONTRACEPTIVES AMONG KEY GROUPS

In both comparison and treatment communities, young men and FTMs showed significant shifts in their perspectives on FP since the intervention was implemented. They reported embracing FP methods following education and peer influence, and even sometimes becoming advocates within treatment communities. Young people have increasingly accepted FP as a means to delay childbirth and focus on personal development. A father in Mafuluto (T) highlighted:

"Youths are the ones that use contraceptives more than other groups because youths are the ones that got education on how to use contraceptive methods." (First-time father Mafuluto (T))

Young people, young men in particular, had more negative attitudes towards contraception in the baseline study as compared to other groups interviewed. They were principally concerned about side-effects of contraception, a topic that was discussed in detail in FTP groups. Compared to baseline, young people reported being more knowledgeable about FP use, and attitudes about contraceptive use shifted towards acceptance as young people learned how to use contraception, where to access it, and the reasons why one would want to use contraception. This shift is particularly pronounced among young men, as FTMs and young men in the baseline report shared that some young men in their community viewed contraception as a means to commit infidelity and that contraception results in infertility.

In comparison communities, respondents noted that attitudes have also shifted due to educational interventions, implying that other actors in the region provide FP education to young people aside from Pathfinder and MIHR. The baseline study uncovered that although campaigns orchestrated by external actors (e.g., government of Tanzania, international NGOs) to promote FP and contraceptive use were rare[20], a small number of respondents in treatment and comparison communities at baseline were reached by radio-based programming touching on FP and hosts to community-based education and awareness-raising efforts. In comparison communities, these efforts consisted primarily of community meetings[21], public outreach[22], and school-based outreach.[23]

Some respondents, such as a CHW in Idodi (T), feel that attitudes have not changed among certain tribal groups such as the Sukuma, Mbulu, and Maasai. Many in tribal communities believe in traditional FP methods. The Maasai community remains largely resistant to modern FP methods, preferring traditional practices and expressing concerns over potential health risks. Despite some individuals within the community starting to adopt modern FP methods, respondents such as CHWs in Mafuluto (T) and Idodi

[20] One treatment and one comparison community reported hosting such campaigns, and they took place years before the baseline.

[21] Community events consisted of using events held for other purposes (e.g., celebrations, local government meetings) to speak briefly about FP or organizing community events specifically about the topic.

[22] Public outreach included reaching out to people at high-risk venues and public messages done by driving a car or motorbike with visual advertisements or a speaker system playing sensitization messages. Not included here are the door-to-door visits of CHWs, which in principle occur in every community.

[23] School-based efforts included visits by CHWs or FP professionals at the request of school staff or education efforts done by schools or teachers themselves that go beyond teaching the biology curriculum.

> "We visit them and some of their members are in [FTM] groups. However, they tell us that they have their own ways of family planning; there are some beads if a woman wears, they cannot be pregnant, and there are some herbs if given to a woman, she cannot be pregnant. They say that modern family planning should be taught to other tribes. They have been saying that modern family planning may cause infertility to them!"
>
> **CHW, Idodi (T)**

(T) believe that a significant number still hold onto traditional beliefs. Moreover, according to multiple CHWs and teachers, older adults - particularly men - have been slower to adopt FP methods or change their perception towards them, citing cultural norms and beliefs around contraception affecting fertility or social roles. As a teacher in Ikonda (C) observed, "Older people used more natural methods but at this time they see the modern methods are harmful," reflecting a generational divide in perceptions and practices.

Nonetheless, education emerges as a consistent, if not always rapid, catalyst for positive change across all demographic groups. Respondents universally acknowledged the transformative impact of educational initiatives in dispelling myths, raising awareness about FP benefits, and fostering informed decision-making. The emphasis on education underscores its critical role in empowering communities to overcome barriers and embrace modern contraceptive practices. This education includes the PHE+FTP activity, as well as other interventions and sources of education, such as education in schools and public awareness campaigns by local governments.

In treatment communities, older women (i.e., older female relatives of FTMs) showed relatively modest changes in attitudes about contraceptive use towards acceptance. This demographic, while acknowledging some shifts, appears to have not experienced the same degree of transformation in their views toward contraception as younger women, especially the FTMs who went through FTP programming. In comparison communities, older women's attitudes towards contraception changed even less than in treatment communities, suggesting both that the program may have contributed to slight changes in treatment communities and that there is a potential need for targeted educational efforts toward older adults' concerns and preferences. However, it is difficult to assess the scale of this difference between treatment and comparison communities, given that there have been FP education programs in comparison communities as well, unrelated to PHE+FTP.

The qualitative data showed that participants in treatment and comparison communities seemed to have similar knowledge of SRH and MNCH, with treatment communities showing slightly more consistent knowledge. This is consistent with survey results shown in Table 7. When asked what key services pregnant women should get, respondents emphasized that clinic visits were the first necessary step. Knowledge of important aspects of health care for pregnant women seemed to be high for FTMs in both comparison and in treatment communities. For example, an FTM in a comparison community (Igolwa) said that pregnant women should have access to mosquito nets and clinic cards, and another woman in the same FGD spoke of the importance of breastfeeding only for the first six months and then feeding a nutritious diet.

Older women in Kimande (T) spoke of the importance of women not doing heavy labor after giving birth, and about symptoms of illness like a baby having a red navel or red or yellow eyes that would prompt a trip to the hospital. Fathers in Mafuluto (T) spoke of the importance of clinic visits and folic acid as well as other prenatal supplements for pregnant women. In contrast, fathers in Ikonda (C) spoke in generalities when asked about which services pregnant women should receive. One father stated, "She should know about maternal health in general." (First-time father Ikonda (C))

6.3.2 EDUCATION AND RESOURCES FOR FAMILY PLANNING

PHE+FTP worked with FTMs and fathers to encourage them to visit clinics, which led them to seek more education and resources for FP. Participants spoke most about the increased clinic visits resulting from FTP as the catalyst for increased use of contraceptives and related services; while CHWs were trained to provide improved FP education and resources, it was their work providing referrals, counseling, and encouraging FTMs to visit clinics that made the most difference. In comparison communities, CHWs indicated that FTMs sometimes avoid clinic visits, especially FTMs in pastoralist communities. They noted several misconceptions about contraceptive use, such as the misconception that hormonal birth control causes infertility. In addition, contraceptives at clinics are free in both treatment and comparison communities (due to government policy), but community members in comparison communities often did not realize this.

FTMs in Makifu (T) explained that prior to receiving education from the PHE+FTP activity, people (community members in general, including FTMs and their partners) did not know that contraceptives at clinics are free. After receiving this education, they are seeking contraceptives and related services more often. FTMs in Kimande (T) said that before being educated on FP, they were not using injections, and they were not available, but since both they and their CHWs received training, injections are now available for use and FTMs are open to using them.

FP education is particularly important for first time fathers. First time fathers in Mafuluto (T) described first how they have changed their views on the trustworthiness of clinics, and how they changed their practices thanks to the FP education they received:

> "#6: There is a change because before this awareness, if your partner comes back from the clinic and tells you something that she was told at the clinic, you think it's a lie. But now after awareness the situation is different because we even escort our partners to the clinic.
>
> Moderator: What changes did you notice on the services that you and your partner received?
>
> #6: Awareness on family planning. Because before when my partner tell me that am in my danger days and I can't get sex with you, I thought that she is lying to me and she don't want to have sex with me. But after visiting clinics and being given education I realized that what I was doing was wrong because it could have resulted to have many babies which of course I cannot afford to take care of." (First-time fathers Mafuluto (T))

"The reason why the education is not spread well out there, it's because we have few health workers and it's a challenge for one health worker to provide all the needed information."

MIHR Staff

While there were positive impacts of PHE+FTP programming on peoples' access to and use of education and resources for FP, important challenges remain. MIHR staff also spoke of persistent challenges related to lack of health care staff.

Health Services Quality

Respondents spoke very positively about the quality of health services in their communities, whether in comparison or treatment communities. However, some comparison community respondents stated that they had not seen any changes in the last year. In contrast, treatment community respondents pointed to specific improvements in services due to PHE+FTP programming.

A FTM in Mapogolo (T) stated that "when she goes to the clinic, she is well served and cared for. A mother who is going to give birth, is well served and provided with everything and is assisted by the service provider." (FTM Mapogolo (T))

A FTM in Ugenza (T) stated they were now receiving more seminars during and after pregnancy to educate them on their health. A father in Idodi (T) said that, while they did not perceive a change in the quality of services offered, there were more services available than before, such as the availability of long-term contraceptives like implants. This was an overall improvement in services offered, even if the experience of the services is the same.

An older woman in Kimande (T) stated there are no longer shortages of medications for pregnant women such as blood thinners and malaria medications. She also mentioned that rates of malaria have gone down, which could be a spillover effect from the PHE conservation interventions, which educated community members on how to reduce mosquito breeding grounds. This could also be related to increased provision of mosquito nets, which are now available for free. A Model Boma member in Tungamalenga (T) remarked on this change, specifically commenting that mosquito nets are now being provided for free in clinics to pregnant women.

6.3.3 DECISION-MAKING RELATING TO CONTRACEPTIVE USE

Evidence of changes in decision making related to contraceptive use was mixed. While qualitative data indicated improvements, survey data show very little differences between treatment and comparison groups. It is likely that SDB influenced how FGD participants, particularly first-time fathers, respond to interview questions around gender equality. Statements of changes in attitudes do not mean that behaviors have changed, especially in a timeframe of less than two years. However, the qualitative evidence shows a positive trend, even if there has not been enough time for the program to change behaviors enough to show in the quantitative data.

Regarding quantitative results, the survey asked FTMs if using contraception was mainly the respondent's decision or someone else's; who they thought should decide whether they should use contraception; and who they thought should decide which method to use. To analyze the impact of PHE+FTP, we used $y_{i1} = \alpha + \beta D_i + \gamma y_{i0} + \delta x_{i0} + u_{i1}$ and ran regressions on a binary variable that is 1 if the answer was the respondent or the respondent and the respondent's partner, or 0 if the answer was the respondent's partner only or the respondent's parents or mothers-in-law. We found no association between these outcomes and PHE+FTP participation, as Table 12 shows. It is important to clarify that at baseline, the majority of respondents said that these decisions were taken by them or them and their partners, so there was not much room for improvement in this domain.

Table 12. Contraception use decision-making process at endline

	(1) Who decides whether you should use contraception?	(2) Who should decide whether you should use contraception?	(3) Who should decide which method to use?
PHE+FTP Program	-0.009	0.034	0.007
	(0.022)	(0.025)	(0.016)

Observations	658	658	657
Mean at baseline	0.931	0.898	0.930

Note: Sample sizes are marginally different between questions due to item-specific missing information in the dependent variable. ANCOVA regressions include the value of the dependent variable at baseline, age, education level (categorized as no education, incomplete or completed primary school, and more than primary education), a binary variable for being married or cohabiting, the asset index and a binary variable for livestock ownership. Indicator variables to control for item-specific missing data are included in the regressions but not displayed. Mean at baseline pools treatment and comparison groups. Standard errors are clustered at the village level.
* p<.05 ** p<.01 *** p<.001

Qualitative data show that, in comparison communities, there has not been much change in how couples decide to use contraception. However, in treatment communities, respondents have generally noted a change in the way couples decide to use contraception. It's important to note here that qualitative data can reflect changes in knowledge, and some beginnings of changes in attitudes, but it is too soon to see changes in behaviors that would be reflected in the quantitative data. DRCHCOs and CHWs have provided education on contraception and the importance of making decisions together, which has resulted in more open dialogue among couples, as illustrated by the comment below.

> "There have been changes because, before education was given, you may find that sometimes decisions are made by one person and later conflict occurs because the decisions were made by only one person. For example, a wife uses contraception without involving her husband and, in the end, the husband argues with his wife thinking that maybe she is sterile. But when education was given, it has come to reveal to us that this matter should be discussed and decided by both." (First-time father Ilolo (T))

Before PHE+FTP, respondents believed that there was a lack of understanding about FP and shame around discussing contraception. Some women would take contraception in secret; however, an improved understanding of FP has resulted in a more forthcoming decision-making process among couples. Moreover, older women, FTM, and male partners in treatment communities attribute changes in contraceptive decision making to MIHR and Pathfinder's efforts in their communities.

> "Pathfinder has given us the education to address patriarchy, and now people consult each other, and that is why in matters of pregnancy, [couples] must sit and consult each other on the use of contraception."
>
> **First-time father, Tungamalenga (T)**

Healthcare During and After Pregnancy

While qualitative data indicated improvements in healthcare utilization due to PHE+FTP programming, there were also improvements reported in comparison communities, so we cannot attribute all changes to the program. In both comparison and treatment communities, respondents remarked on a general trend of women seeking more and earlier health care services while pregnant than in years past.

According to qualitative participants, education provided through PHE+FTP, and the work that MIHR is doing to reduce stigma - especially among male partners who previously discouraged FTMs from visiting clinics to receive MNCH services as they did not see it as important - is making a difference in treatment communities. A CHW in Mapogoro (T) described more participation from fathers: "Even their husbands, they go together to the health center while before it was not like that. But now, both partners come after the education they received." In contrast, in Igolwa (C), a first-time father

explained, "Men are lazy to attend to the clinic, so we lack understanding of the importance of women using these services." An RCH in Utosi (T) stated, "the number of mothers visiting the clinic has increased. This is due to this awareness from Pathfinder."

Respondents across categories and in both treatment and comparison communities cited costs of transport and medicines as well as distance from health centers as the primary challenges for first-time mothers seeking health services.

CHWs in Mafuluto (T) and Utosi (T) said that they are seeing more visits from first-time pregnant mothers in clinics. CHWs in Makifu (T) and Kimande (T) said that before women came when they were six months pregnant, but now they are coming in the first three months of pregnancy. A CHW in Mahuninga (T) stated that "in the beginning, people were not seeing the importance of going to the antenatal clinics. But after getting education, there has been a major change. People come early for their first visit" (CHW Mahuninga (T)). However, it should be noted that CHWs in comparison communities such as Ukwama (C) also stated that there is a trend of FTMs coming in sooner for visits, so this could be a broader phenomenon that is not totally attributable to PHE+FTP activities.

A CHW in Mahuninga (T) stated that they saw the greatest impacts on people in the pastoralist communities, stating, "These are the ones who have changed. When we reached them with education from Pathfinder, they started to change." CHWs in Mafuluto (T) and Idodi (T) specifically pointed to the Maasai, Bena, and Kinga communities as being most impacted by PHE+FTP education on antenatal, natal, and post-natal services. This is interesting to note in contrast to how pastoralist communities seemed to respond to other elements of the PHE+FTP program. According to a CHW in Idodi (T), The PHE+FTP program did not seem to have an impact on perceptions of contraception, indicating that communities were more receptive to information on healthcare during and after pregnancy than on family planning.

> "Another thing that has changed is that the men don't prohibit their wives to visit clinics. In the past men would normally presume it was a way women tried to escape from other duties and so women didn't have the freedom of attending. Even though the cultural norms are there, there is an increase in them coming to seek for knowledge."
>
> **MIHR staff**

A MIHR staff member explained that AGYW are visiting clinics earlier, both because of increased education on the importance of the visits, but also reduced stigma from their partners. Before the PHE+FTP program, there was stigma from male partners discouraging FTMs from visiting clinics as they did not see the importance, and thanks to FTP programming men now encourage their partners to visit clinics. An older woman in Idodi (T) echoed this accounting of reduced stigma, explaining that before, AGYW hid their pregnancies, but now they tell their families and go to clinics right away.

Fathers in Mapogoro (T) also mentioned that women are getting counseling after birth on their diets and proper birth spacing. First time mothers in Tungamalenga (T) stated that previously, women stayed at home for over 40 days after giving birth, but now, CHWs are visiting them after birth and taking them to clinics. Model Boma members in Mapogolo (T) stated that CHWs now visit women post-birth to do a check-up after three days.

Another mother in the same focus group explained that now, women bring their babies to health centers more quickly:

> "Previously pregnant women were ignoring danger signs but since we started getting these trainings, now women are very active if they see anything unusual, they go to the health center. Also, in taking care of the child, there was a belief that if a baby cries a lot within six months, [s/he] wants to be named after a particular person from a family or should be given food…might be hungry, but since we get these educations if a child cries, we don't do that we go to the health center!" (FTM Tungamalenga (T))

A DRHCO in Mahuninga (T) also mentioned that mothers are going for follow-up visits after birth more. An RCH in Ihanzutwa (T) also noted that mothers are now participating in all post-delivery attendances.

6.4 WHAT IS THE RELATIONSHIP BETWEEN PHE+FTP PARTICIPATION AND IMPROVED LIVELIHOODS AND PARTICIPATION IN ENVIRONMENTAL CONSERVATION ACTIVITIES?

6.4.1 PARTICIPATION IN LIVELIHOODS-RELATED INTERVENTIONS

Qualitative data show that participation in livelihoods-related interventions varied by sex. While FTMs faced a wide range of difficulties in participation, first time fathers had few difficulties. One Model Boma member in Tungamalenga (T), when asked how being a first-time father impacts how he earns money, responded that there was no challenge.

> "When our wives give birth or are pregnant that is when we stop to participate in income generating activities and start to take care of our partners, apart from that there is no challenge."
> **Model Boma Tungamalenga (T)**

An older woman in Ikonda (C) stated that first time fathers are "not affected by anything, the problem [with earning money] is with first-time mothers" (Older women Ikonda (C)). Fathers themselves described lack of capital as their main challenge in earning money, and some fathers also mentioned paying medical fees for their partners or children.

In contrast, FTMs described physical, mental, and social barriers to participation. Some FTMs stated they face social stigma for working. A FTM in Igolwa (C) noted that women cannot do difficult physical work while pregnant. Older women in Kimande (T) brought up that it can be harmful to children to go long periods of time without breastfeeding in the first 6 months of the baby's life, which is a valid barrier for FTMs to work far from home or in inflexible professions. Some mothers—as described by a FTM in Mapogolo (T)—fear that working long hours with their babies on their back will be hazardous to both mother and child.

"You want to go to earn some income, you find that maybe the work you are going to do is difficult, you should not go with the child, but your parent tells you, you gave birth, did I send you to give birth, go with the child. So, when you go with a child, you find yourself working, while you are hurting and the child is hurting."
FTM Mapologo (T)

Others cite limitations such as professions where one cannot take their child. For example, a mother in Ugenza (T) said she could not bring her child with her for restaurant work and a Model Boma member in Mapogolo (T) noted that one cannot bring their child to work in camps.

MIHR staff mentioned one challenge with providing livelihood activities to FTMs is that their gender constrains them from entering certain occupations. However, the occupations that PHE+FTP programming focused on such as beekeeping, chicken raising, or soap making are more socially acceptable for women to do in Tanzania.

6.4.2 EFFECT OF LIVELIHOOD ACTIVITIES ON LIVELIHOOD OUTCOMES

Respondent views on the impacts of PHE's livelihood activities on outcomes were mixed. It is important to note that livelihoods activities in the treatment communities were just starting at the time of the evaluation, which limited the impacts that could be captured. Some participants in treatment communities said that PHE livelihoods activities did not have any discernible impact on their earnings. For example, older women in Idodi (T) said that first time parents still do not have the capital to start their own businesses in her community. A FTM in Makifu (T) stated, "They have received education, but they are still there, they have not been employed". Similarly, a first-time father in Mafuluto (T) stated, "To me, I think we only got education, but in terms of our livelihood, there are no changes because as mentioned earlier we were not given tools to practice what we were being taught."

This is corroborated by the survey data. The questionnaire asked if respondents had a job that paid a daily wage or regular salary. We use $y_{i1} = \alpha + \beta D_i + \gamma y_{i0} + \delta x_{i0} + u_{i1}$ to estimate the impact of PHE+FTP participation on FTMs' employment. As Table 13 shows, the correlation between treatment status and employment is very small and not statistically significant.

Table 13. Impact of PHE+FTP on employment

	Employment Status
PHE+FTP Program	-0.038
	(0.040)
Observations	**659**

NOTE: ANCOVA regressions include the value of the dependent variable at baseline, age, education level (categorized as no education, incomplete or completed primary school, and more than primary education), a binary variable for being married or cohabiting, the asset index and a binary variable for livestock ownership. Sample sizes are marginally different amongst questions due to item-specific missing data in the dependent variable. Indicator variables to control for item-specific missing data are included in the regressions but not displayed.

Standard errors are clustered at the village level.
* p<.05 ** p<.01 *** p<.001

However, qualitative data show that there may be spillover effects on livelihoods from conservation and FP activities. A father who participated in a FGD in Mafuluto (T) mentioned that PHE activities around sustainable agriculture helped increase incomes from selling vegetables. In addition, a father in Makifu (T)

stated that increased education around FP has helped with his earnings, because he was able to plan for future children and spend more time earning before having more children.

FTMs in Ihatunzwa (T) stated that the PHE+FTP project helped them earn more income through reducing social stigma. One mother said,

> "The challenges have decreased because now we can do something else to earn an income and the community is learning that even if you are a mother for the first time you can engage in earning income […] Pathfinder taught us that you can be self-employed even with a small capital." (FTM Ihatunzwa (T))

A FTM in Kimande (T) brought up that the PHE+FTP project has reduced stigma around working. She stated that FTMs' partners are more accepting of them working now. Similarly, FTMs in Ikangamwani (T) said that there is progress because PHE+FTP helped them to engage in small livelihood activities, and they "learned how to be independent" (FTM Ikangamwani (T)).

Thus, the livelihood outcomes that emerged from PHE activities are more related to incremental increases in earnings from small additional activities and reduced social stigma that FTMs face when engaging in livelihood activities, rather than change in employment that pays a daily wage or regular salary or other forms of income generation.

6.4.3 PARTICIPATION IN ENVIRONMENTAL CONSERVATION ACTIVITIES

The FTM survey asked if respondents were aware of the type of activities MIHR fielded in the context of PHE+FTP programming. At baseline, the study team found very different levels of awareness by activity. For example, very few people knew about Model Boma, but most knew about CCMGs, as the first two columns of Table 13. show. This is not surprising as Model Boma was not yet implemented by MIHR, whereas CCMG has existed in the Iringa region for some time and even longer when considering village savings and loans groups.

At endline, awareness increased for several activities, especially Model Boma and beekeeping in the treatment group; and youth clubs, climate smart agriculture, forest scouts, and crop protection in both treatment and comparison groups. In treatment communities, the FTP groups dedicated at least one session to presenting these PHE activities and encouraging participation. The DID parameters show a positive correlation between PHE+FTP and awareness of Model Boma, youth clubs, and beekeeping. It is somewhat puzzling that awareness increased in both treatment and comparison groups in five out of eight activities. One possibility is that as children grew up, mothers started to gain awareness of the livelihood opportunities around them, including environmental conservation activities like the ones supported by MIHR's PHE+FTP activity, but offered by other organizations. Indeed, the qualitative data also indicates numerous environmental conservation activities in comparison communities in the past five years, usually run by the Government of Tanzania or by other NGOs.

Table 14. Awareness of environmental conservation and other activities

	Awareness - BL			Awareness - EL			
	T	C	Diff	T	C	Diff	DiD Parameter
Model Boma	0.05	0.02	0.03	0.26	0.03	0.23	0.20***
CCMG	0.81	0.67	0.14	0.79	0.67	0.12	-0.01
Village savings clubs	0.55	0.54	0.01	0.54	0.53	0.01	-0.01
Youth clubs	0.22	0.15	0.07	0.42	0.25	0.17	0.10
Climate Smart Agriculture	0.27	0.25	0.02	0.46	0.43	0.03	-
Forest Scout	0.32	0.28	0.04	0.52	0.44	0.08	0.04
Beekeeping group	0.32	0.24	0.08	0.44	0.26	0.18	0.10*
Crop protection team	0.12	0.06	0.06	0.21	0.15	0.06	0.01
N	**327**	**332**		**327**	**332**		

Standard errors are clustered at the village level.
* p<.05 ** p<.01 *** p<.001

To analyze whether PHE+FTP increased participation in PHE activities, Table 15 shows regressions results for $\boldsymbol{yi1} = \alpha + \beta D_i + \gamma y_{i0} + \delta x_{i0} + u_{i1}$ on each of the surveyed PHE activities. The first eight columns correspond to results where the outcome of interest is a binary variable for whether respondents participated in the indicated activity; and the outcome in the ninth and last column is a binary variable for having participated in at least one of the eight activities. The results indicate that PHE+FTP increased participation in Model Boma by 6.5 percentage points, and in CCMGs by 7.4 percentage points. The last column indicates that the PHE+FTP increased participation in at least one activity by 13 percentage points. Obviously, this result is mostly driven by participation in Model Boma and CCMGs.

Table 15. Participation in environmental conservation and other activities of first-time mothers

	Model Boma	CCMG	Village savings	Youth clubs	Climate Smart	Forest Scout	Beekeeping group	Crop protection	At least one
PHE+FTP Program	0.065**	0.074**	0.037	0.010	-0.017	0.011	-0.001	-0.003	0.130**
	(0.021)	(0.023)	(0.022)	(0.017)	(0.032)	(0.008)	(0.012)	(0.003)	(0.046)
Observations	**659**	**658**	**658**	**659**	**658**	**658**	**659**	**659**	**659**

NOTE: ANCOVA regressions include the value of the dependent variable at baseline, age, education level (categorized as no education, incomplete or completed primary school, and more than primary education), a binary variable for being married or cohabiting, the asset index and a binary variable for livestock ownership. Sample sizes are marginally different amongst questions due to item-specific missing data in the dependent variable. Indicator variables to control for item-specific missing data are included in the regressions but not displayed.

Standard errors are clustered at the village level.
* p<.05 ** p<.01 *** p<.001

In sum, the survey results indicate that PHE+FTP increased awareness of three out of eight PHE activities (i.e. Model Boma, youth clubs and beekeeping), and it caused small increases in participation in two of them (i.e. Model Boma and CCMGs).

Qualitative data show that, in treatment communities, there was high participation in conservation activities at endline, especially among youth. Many respondents, including fathers in Idodi (T) and Model Boma members in Mapogolo (T), specifically noted that youth in general participated most in the PHE activities while older people and those living with disabilities participated less.

MIHR staff respondents stated that first time parents (particularly first-time fathers) participated extensively in conservation and livelihoods activities. They specifically mentioned microfinance, climate-smart agriculture, and beekeeping as the most popular activities for first-time parents. However, it must be noted that focus group respondents had mixed views on the participation of FTMs in conservation activities. In Ugenza (T), FTMs stated that their own demographic is the least likely to participate out of various groups in the community, while older women in Kimande (T) said that mothers (although they did not specify FTMs) participated most.

There were numerous environmental conservation activities happening in comparison communities as well. MIHR staff mentioned that their conservation partners such as WWF, STEP, and Ruaha National Park had already been to many comparison communities to advocate for environmental conservation and many schools have existing tree planting programs. Teachers in both comparison and treatment communities mentioned school tree planting programs. In comparison communities, respondents noted that men participate in conservation activities more than women.

In comparison communities such as Ikonda (C), participants spoke of government initiatives to improve the environment, such as monthly clean up days. Some community members also spoke of fines for littering and decreases in deforestation, thanks to past environmental campaigns in their areas. Older women and FTMs in the comparison communities of Igolwa (C) and Ndulamo (C) mentioned reductions in deforestation and tree planting campaigns. They spoke of village leaders providing environmental education on these topics.

6.4.4 EFFECT OF ENVIRONMENTAL CONSERVATION ACTIVITIES ON LIVELIHOODS

Comparison communities described environmental programs, but uniformly stated that they did not lead to increased revenues for those who participated in them. In contrast, respondents from treatment communities such as Mapogoro (T) stated that participating in conservation activities did lead to increased incomes, especially for beekeeping activities. A STEP KII respondent also pointed to beekeeping as a way for participants to increase revenues. In particular, these activities supported first-time fathers to earn more incomes. A father in Mapogoro (T) stated, "we don't cut trees because we put hives and at the end of the day, we get honey, sell, and get money!"

Fathers in Mafuluto (T) spoke of PHE activities pushing them towards environmentally-friendly businesses:

"They told people to join microfinance groups. They said through people joining microfinance groups, they can take loans and do other business to earn income instead of cutting trees to go sell the wood which, of course, causes environmental pollution." (First-time father Ihatunzwa (T))

"If a father becomes sick in a family the income will not be the same instead all the money will be used to buy medicines. But if we clean our environment, we will not be sick."
FTM Kimande (T)

Some respondents also pointed to the link between reductions in disease and increases in revenue. A first-time father from Makifu noted that PHE activities had brought about reductions in malaria and cholera and being sick less often allowed community members to earn more money.

6.4.5 EFFECT OF ENVIRONMENTAL CONSERVATION ACTIVITIES ON ENVIRONMENT

When asked how PHE activities impacted their environments, most respondents in treatment communities strongly emphasized positive changes, while some indicated that insufficient time had passed to see impacts. For example, a FTM in Makifu (T) stated, "Change is there. Because in the past, people used to burn forests carelessly, dump them, that is, leave sewage carelessly, but now they monitor, they follow the rules and regulations."

Focus group respondents in treatment communities spoke the most about cleaning up water sources and building modern toilets. FTMs in Mapogolo (T), Kimande (T) and Ugenza (T) as well as first-time fathers in Utosi (T) and Makifu (T) cited the benefits of modern toilets as their most valued change from the project, as did older women in Kimande (T).

"The changes are big, in the past [we had] outbreaks of diseases such as malaria, cholera, because we did not have education but now people care about the environment by improving it and this has helped to reduce the outbreak of diseases."
First-time father Tungamalenga (T)

Some respondents said that, thanks to the combination of PHE activities which both improve sanitation and reduce mosquito populations (through education on how to keep living spaces clean to avoid mosquito breeding grounds), there have been reductions in disease. Model Boma participants in Tungamalenga (T) also noted reductions in malaria and cholera since the project came to their community, as did FTMs in Makifu (T).

Respondents in Idodi (T) also spoke of reducing deforestation and planting more trees; instead of felling healthy trees for firewood, they now look for trees that are dry and replant after they harvest. One older woman in Idodi (T) said, "now we see greenish everywhere but previously people were cutting trees our environment looked like desert!" (Older Women Idodi (T))

Views from conservation groups were mixed. While community members in general said that they saw impacts from the PHE conservation programming, conservation group members in Ugenza (T) said that they saw no changes since the start of the project simply because there has not been enough time to see impacts. One member of this group also noted that activities are not being sustained past the end of the project; "we […] tried to grow a lemongrass garden but the stakeholders failed to come back, and we failed to continue because the project died." (Conservation Group Ugenza (T))

It should be noted that this group did not participate in beekeeping activities, and the conservation groups in Mapogoro (T) and Mahununga (T) spoke of impacts related to beekeeping. They highly valued beekeeping and chicken vaccination activities and said they were impactful on their environments. However, they pointed to improved sanitation (modern toilets and better management of garbage) as the most impactful changes brought about by the PHE+FTP project.

6.5 WHAT IS THE RELATIONSHIP BETWEEN PHE+FTP PARTICIPATION AND EMPOWERMENT OF AGYW?

Most FTM, older women, and fathers in treatment communities believe there has been a positive change in young women feeling empowered within relationships since the PHE+FTP program began. Through the program, young people learned how to have conversations within relationships about household management and female autonomy within relationships. Young couples have seen an improvement in resolving disagreements and making decisions around important subjects that come up in relationships, such as money and childcare. There have been positive changes in conflict resolution among couples due to better communication skills, developed through FTP and FTM groups. For example, a father in Mafuluto (T) said,

> "[Before], after harvesting the crops with my partner, all the money decisions were made by me. And the bad thing is that I was misusing that money. But now after gaining that awareness, there have been significant changes." (First-time father Mafuluto (T))

According to FTMs and young fathers interviewed, in many couples, before PHE+FTP, the man was solely responsible for all financial decisions and had to approve of any purchases the woman wanted to make. In other couples, young men and women would not disclose their personal financial information to one another, resulting in conflict over money. Fathers in treatment communities praise Pathfinder for educating them on how to discuss family finances and teaching them to provide their female partners with more financial autonomy. Fathers allowed their partners to have money that they could spend at their discretion, and they had more honest conversations with their female partners about the income they earned.

The survey asked FTMs how their households make decisions about different topics. First, the survey asked who decides how the household budget is spent. Specifically, if budget-related decisions were mainly made by the respondent, her partner, the respondent and her partner, the respondent's parents/family, or her partner's parents/family. To analyze the impact of PHE+FTP on these responses, the study team used equation (2) and ran regressions on a binary variable that is 1 if the answer was the respondent or her and her partner, and 0 if otherwise. Similar questions and analyses were conducted for healthcare-related decisions and major purchases decisions. As Table 16 shows, we found no statistically significant correlation between PHE+FTP and how households make decisions.

Table 16. Household decisions

	Who usually decides how the household budget will be spent?	Who usually makes decisions about healthcare for the household?	Who makes decisions about making major household purchases?
PHE+FTP Program	-0.068	0.012	0.065
	(0.038)	(0.038)	(0.039)
Observations	659	658	659

NOTE: ANCOVA regressions include the value of the dependent variable at baseline, age, education level (categorized as no education, incomplete or completed primary school, and more than primary education), a binary variable for being married or cohabiting, the asset index and a binary variable for livestock ownership.

Sample sizes are marginally different amongst questions due to item-specific missing data in the dependent variable. Indicator variables to control for item-specific missing data are included in the regressions but not displayed.

Standard errors are clustered at the village level.
* p<.05 ** p<.01 *** p<.001

Although qualitative data suggest that some participants reported improvements on how decisions are made, the quantitative results show that, on average, there are no statistically significant differences between treatment and comparison groups in this domain. Survey respondents were asked two questions about agency. Specifically, the survey asked respondents to indicate, on a scale of 1 to 10, how much control they have when it comes to who they spend time with outside the house, where 1 means their partner or another household member has full control and 10 means the respondent does. A similar question was asked about the extent to which respondents have control over leaving the house to get health care. Table 17 shows results for $y_{i1} = \alpha + \beta D_i + \gamma y_{i0} + \delta x_{i0} + u_{i1}$ on these two outcomes. Both coefficients are positive but not statistically significant. The results indicate that PHE+FTP had no impact on agency as measured by these two indicators.

Table 17. Agency

	People they can spend time with outside the house	How much control when leaving house for health services
PHE+FTP Program	0.124	0.394
	(0.354)	(0.226)
Observations	659	658

NOTE: ANCOVA regressions include the value of the dependent variable at baseline, age, education level (categorized as no education, incomplete or completed primary school, and more than primary education), a binary variable for being married or cohabiting, the asset index and a binary variable for livestock ownership. Sample sizes are marginally different amongst questions due to item-specific missing data in the dependent variable. Indicator variables to control for item-specific missing data are included in the regressions but not displayed. At baseline, the second construct was worded "how much control would you say you have when it comes to leaving your house to visit family members".

Standard errors are clustered at the village level.
* p<.05 ** p<.01 *** p<.001

The survey recorded data on two protective assets, self-esteem and resilience. Protective assets are skills or competencies that individuals can employ to overcome an obstacle or challenge. As PHE+FTP aims to improve FTM empowerment and decision-making skills, we collected data on self-esteem using the Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 1965)[24], and resilience using the Adult Resilience Measure-Revised (ARM-R) (Resilience Research Centre 2018; and Jefferies, McGarrigle and Ungar, 2018).

The RSES has 10 items about respondents' feelings and attitudes toward themselves, e.g. "I feel that I have good qualities." It uses a 4-point Likert scale: Strongly agree, Agree, Disagree, or Strongly disagree.

[24] RSES has been implemented in several countries including Tanzania (Schmitt and Allik 2005).

Each item is scored on a 0-3 scale, and some items are reverse scored. An index is calculated as the sum of the ten items, so the minimum is 0 and the maximum is 30. The score is constructed so that higher scores reflect more self-esteem.

The ARM-R has 17 items about respondents' capacity for resilience and resources, e.g. "I feel that I belong in my community." It uses a 5-point Likert scale: A lot, Quite a bit, Somewhat, A little, and Not at all. Each item is scored on a 1-5 scale and no items are reversed scored. An index is calculated as the sum of the 17 items, so the minimum score is 17 and the maximum is 85. The score is constructed so higher scores reflect more resilience. Table 18 shows means for the two calculated scores, by treatment status and wave of data collection. The last column shows the DID estimate. At baseline, the treatment group had a slightly higher mean score than the comparison group, a pattern that is still shown at endline. Notable, scores at baseline were high relative to the maximum possible, especially in the case of resilience. The DID parameters do not suggest a correlation between PHE+FTP and self-esteem or resilience.

Table 18. Protective assets

	Baseline			Endline			
	T	C	Diff	T	C	Diff	DiD Parameter
Self-Esteem	25.40	24.01	1.39**	24.92	23.85	1.07**	-0.32
Resilience	79.13	76.85	2.28*	79.31	78.14	1.17	-1.11
N	**327**	**332**		**327**	**332**		

Standard errors are clustered at the village level.
* p<.05 ** p<.01 *** p<.001

Fatherhood Support to Female Partners

In treatment communities, respondents such as CHWs and FTMs have noted positive changes in how male partners support and care for their female partners during and after pregnancy. Based on KIIs and FGDs with CHWs, fathers, and older women, it seems that male partners attend medical appointments and attend to the medical needs of their partners more than before implementation of PHE+FTP. A CHW In Idodi (T) said that, before the Activity,

> "It was hard for men in this community to take their partner or children [to the health appointments], but since [education] has been put in place, we have seen many men bring their partners to health centers so that they can get different services, including family planning." (CHW Idodi (T))

The PHE+FTP Activity included education for male partners on how to care for their pregnant partners. Respondents in treatment communities believe that this education has resulted in more engaged male partners in healthcare, childcare, and household tasks. Speaking on their own experiences, FTMs noted there has been a more equitable division of household labor and that male partners will fetch water and clean clothes, as examples. Men report that their perspectives on household and childcare tasks have changed. When asked about how fathers care for mothers, a father in Idodi (T) said,

> "Before getting this education, we were living in a patriarchal system, for example, the mother is cooking and then the child cries, but the father thinks that pampering the child is not his job, or

it happens that the child has soiled himself, and the father does not want to clean him because of the patriarchal system and wrong traditions, thinking that it is work of mother and father do not concern him." (First-time father Idodi (T))

In addition to MIHR, other stakeholders in treatment communities have contributed to positive changes in how male partners care for their female partners. MIHR partners - such as local governments - have helped to educate men on available services. Moreover, men influence one another.

> "In the beginning, there was shame when my colleague would see me drying or lifting clothes or fetching water. He might laugh at me, but we are grateful to get such an education, so that even if he finds me at home doing those things, he can't mock me because they are things that we are learning, he will see that I am doing my duties."
> **First-time father Idodi (T)**

Men are less likely to feel embarrassed or emasculated by household chores if they know that others are doing the same. Men can also be role models for other men on how to care for a family, resulting in more equitable household labor division between more couples.

Abandonment

The baseline study revealed the existence of abandonment by male partners in treatment and comparison communities. As a result, questions related to abandonment were developed for the endline study to better understand why male partners abandon their pregnant female partners and how common it is.

In both treatment and comparison communities, most FGD participants believe that abandonment is less common than a year ago. In treatment communities, respondents largely attributed education as the main contributor to this change. Moreover, fathers and older women in treatment communities mentioned the education provided by Pathfinder explicitly. For example, one father in Tungamalenga (T) said that Pathfinder taught him and his wife how to better communicate and collaborate on raising a child.

In addition to education, respondents attributed reductions in abandonment to law enforcement interventions. Older women in Igolwa (C) stated that men do not abandon their partners because they know police will arrest them. Additionally, a FTM in Ukwama (C) said they have seen fewer children born outside of wedlock in their community, which has decreased the rate of male partner abandonment.

Although most respondents believe that abandonment by male partners has decreased in their communities, some participants in both treatment and comparison communities have seen no change. FTMs and older women in Ikonda (C), Mahuninga (T), Kimande (T), and Tungamalenga (T) reported similar rates of abandonment in their communities as compared to a year ago. When asked why, they responded that some people have not been educated on the topic and rates of out-of-wedlock pregnancy rates have not decreased.

6.6 PHE+FTP ACTIVITIES PERCEIVED BY PARTICIPANTS AS MOST RESPONSIBLE FOR OUTCOMES OBSERVED

6.6.1 MOST EFFECTIVE ACTIVITIES FOR MODERN CONTRACEPTIVE USE

The evaluation found only small impacts on contraceptive use due to PHE+FTP programming. Both comparison and treatment communities have received education on modern contraceptive use, making it difficult to ascertain the effect that this specific activity had on contraceptive use. Other stakeholders, such as local governments, have provided education to young people on modern contraceptives and respondents in comparison communities noted that these interventions have had a positive impact on contraceptive use and perceptions in their communities.

According to the perspectives of qualitative respondents, the most effective activities for modern contraceptive use were education provided to young people from CHWs and FTP groups. Young people learned about their contraception options and how to access services. Moreover, they learned about contraceptive decision making and how to have discussions about contraception with their partners. Respondents highlighted this as particularly helpful, as the skills learned in FTP groups surrounding contraceptive decision making have lessened conflict over FP and have destigmatized use. Women feel more comfortable using contraceptives and including their partners in their decisions rather than taking contraceptives in secret.

6.6.2 MOST EFFECTIVE ACTIVITIES FOR MATERNAL AND CHILD NUTRITION AND HEALTH

The most effective activity around MNCH was encouraging FTMs and their partners to go to health centers and clinics more frequently and earlier on in their pregnancies. In particular, the push for clinic visits made a significant impact on pastoralist communities in the treatment zone that historically have been most reluctant to visit health centers. Additionally, reducing stigma from male partners was highly effective; findings indicate that, in some cases, men used to prohibit their partners from visiting clinics, but now encourage them to visit and even accompany them to their appointments.

In the qualitative data, there were no strong differences described in the content of MNCH education or services between treatment and comparison groups; CHWs seemed to be skilled and well trained in both treatment and comparison communities. Therefore, according to participants' perspectives, the PHE programming feature of bringing FTMs to clinics or encouraging CHWs to visit FTMs after birth led to improved outcomes in treatment communities. Due to these increased interactions, FTMs reported improved knowledge of MNCH practices and increased use of mosquito nets, prenatal supplements like folic acid, and other important treatments.

6.6.3 MOST EFFECTIVE ACTIVITIES FOR LIVELIHOODS AND CONSERVATION

Livelihoods-related Activities

Overall, the livelihoods activities had limited impacts, especially in the survey results. It is important to note that livelihoods activities were just getting started at the time of the evaluation. The most effective livelihoods activities, according to participants, were those that targeted FTMs, who face many more barriers to income generation than their male partners. In particular, participation in non-livelihoods activities that worked with first time fathers reduced stigma for working mothers. The combination of

male partners becoming more accepting of their partners working, training for entrepreneurship, and microfinance for startup capital allowed some FTMs to pursue income when they had not been able to before. In contrast, a majority of first time fathers stated that the livelihoods activities were not enough to improve their opportunities for income generation; they still lacked sufficient start-up capital despite microfinance opportunities and stated the education they received was not enough without sufficient tools (capital) to use it.

Conservation-related Activities

There were several conservation activities that were clearly mentioned and praised more frequently in the data than others. Based on participant perspectives, beekeeping stood out as an effective conservation activity within PHE programming. Respondents in the qualitative data stated they appreciated the chance to earn more income, as well as the ecosystem services that bees provide and the incentive to not cut down trees (in order to place hives). Respondents also highly appreciated the activities around cleaning up water sources and building modern toilets. Respondents in treatment communities stated they are seeing lower rates of disease (malaria and cholera) thanks to both improved sanitation and reduced mosquito populations. Finally, the third most mentioned aspect of PHE's conservation programming was its focus on deforestation; not cutting down trees and using stoves that do not burn firewood for cooking. Other activities, such as climate smart agriculture education, were mentioned but did not seem to be as popular as beekeeping, cleaning up water sources, building modern toilets, and anti-deforestation initiatives.

6.6.2 MOST EFFECTIVE ACTIVITIES FOR WOMEN'S EMPOWERMENT

Behavior change related to gender relations and women's empowerment take time and one year is not a sufficient amount of time to observe these kinds of behavioral changes. However, the FTP groups demonstrate promising results. Men were taught how to communicate with their partners about household tasks and childcare, as well as how to resolve conflicts with their partners. They learned the importance of dividing tasks among one another and to provide their partners with more financial autonomy. Moreover, according to the FGDs with FTMs and with first time fathers, as well as interviews with older women and CHWs, male partners increased their involvement in their partners' healthcare by attending medical appointments and caring for them during and after pregnancy. CHWs provided education, but the influence of other men seems to be instrumental in changing the attitudes and behavior of FTPs. Men feel less embarrassed taking on household tasks when they see other men participating in said tasks.

6.7 COST EFFECTIVENESS ESTIMATIONS OF PHE AND FTP INTERVENTIONS

As discussed in section 5.3, we adapted USAID methodology to conduct a cost analysis of PHE+FTP. As shown in Table 19, the costs were classified in six categories. The first two columns show results for PHE and FTP separately. The total cost of PHE is almost four times the cost of FTP. The following two columns show results distributing proportionally the 'General Operations, Management, and Reporting' cost across the other five categories. The last column shows that the categories 'In-service educator training' and 'Parents and community engagement' have the largest participation in total costs. Notably,

'Parents and community engagement' corresponds to CHW, healthcare provider, and project staff allowances related to mobile outreaches and CHWs' community-based activities.

Table 19. FTP and PHE cost by category

			FULLY LOADED			
	FTP	PHE	FTP	PHE	Total	% of total
1. General Operations, Management, and Reporting	$33,313	$58,736	-	-	-	
2. Assessments and Evaluations	$17,265	$5,357	$24,577	$6,185	$30,762	5.6
3. Capacity strengthening of government systems	$0	$11,377	$0	$13,135	$13,135	2.4
6. In-service educator training	$56,492	$99,513	$80,419	$114,890	$195,309	35.5
7. Teaching and learning materials	$4,898	$0	$6,972	$0	$6,972	1.3
8. Parents and community engagement	$0	$263,847	$0	$304,619	$304,619	55.3
Total	**$111,968**	**$438,829**	**$111,968**	**$438,829**	**$550,797**	**100.0**

Source: Own calculations using data provided by MIHR.

Impact evaluation results were unstable to different specifications, and the LE results suggest that SDB could be biasing the results. For these reasons we do not report cost-effectiveness indicators and focus on cost-efficiency results.

Table 20 shows that the cost of FTP per FTM is $273 and the cost of PHE per FTM is $10, for a total cost of $283. Note that the cost of PHE is so low because we are distributing the cost of PHE among the villages' population at large. As discussed in section 5.5 it is important to keep in mind the limitations associated with these results.

Table 20. Cost per FTM in USD

	FTP	PHE	(FTP+PHE) Total
Cost per FTM	$273	$10	$283

Source: Own calculations using data provided by MIHR. We estimate a population of 43,251 in 2023 in the target villages, using data from the National Bureau of Statistics for 2017 and applying a growth rate of 3 percent. The number of FTMs is 410 and corresponds to those that attended at least one FTP meeting, according to MIHR data.

The FTP-only results provide an estimate of the cost of treating one FTM with FTP. Since this treatment is primarily aimed at FTMs, it is straightforward to attribute the associated costs directly to the target group. The FTP-only results inform the cost of treating one FTM with FTP in a context where a program like PHE is being fielded. However, focusing solely on the cost of FTP would underestimate the total cost, as PHE is also required for FTP to be deployed effectively.

To address this, albeit the challenges of attributing the cost of PHE across the different potential participants, the produced costs that include PHE and FTP provide a more realistic estimate of the total cost of treating one FTM with FTP.

7. CONCLUSIONS

Participation in FTP sessions was relatively high. Seventy-eight percent of the FTMs surveyed at endline in the treatment group participated in at least one meeting and, out of these, 70 percent participated in 10 or more of the 14 sessions conducted. Both qualitative and quantitative data show that participants found the sessions useful.

Qualitative data indicate that the program had a positive impact on attitudes towards contraception and FP. These changes in attitude are reflected in the survey data on contraceptive use, albeit somewhat modestly. Attitudinal changes were present not only for FTMs who participated in the FTP sessions, but also older women and importantly, male partners. However, it should be noted that the short duration of implementation between baseline and endline (one year) means that some changes in behavior, such as recommended birth spacing, could not be observed.

In both the treatment and comparison groups, contraceptive use increased substantially between baseline and endline. Many of the FTMs surveyed at baseline had very young children and were unlikely to use contraceptives. At endline, as all children were one year older than at baseline, contraceptive use increased naturally, although it did so more in the treatment than in the comparison group, suggesting the program had a small impact on contraceptive use of between 4 and 10 percentage points. However, list experiment results indicate that these results may be driven, at least in part, by SDB. These modest results in contraceptive use are consistent with other research in Tanzania on contraceptive counseling. Rohr and colleagues (2023) evaluated a program that provided postpartum family planning counseling and IUD services across five hospitals in Tanzania. The study found an increase in IUD uptake, primarily due to substitution from other contraceptive methods, but no significant change in the overall use of modern contraceptives. Similarly, Keogh and colleagues (2015) did not find an impact of antenatal contraceptive counseling on contraceptive use in a group of clinics in Northern Tanzania.

In terms of changes in contraceptive methods used, the evaluation did not observe a dramatic departure from baseline in terms of the percentage of FTMs using a given contraceptive method. However, a significant increase in the use of implants was observed alongside a very similar decrease in the use of injections. Qualitative data indicate that this increase in implant use could be because health facility service providers in treatment communities were trained on how to insert the implants, therefore making this service more easily available than before in treatment communities.

Overall, qualitative data did not indicate a clear change in availability of contraceptives that could be attributed to PHE+FTP, since CHWs, DRHCOs, and RCHs in comparison communities indicated that their supplies of contraceptives were already adequate. However, there was substantial evidence that FTMs were more likely to visit clinics to receive education, contraceptives, and health-related services due to the program reducing stigma, encouraging visits, and working with male partners to foster their support. Among qualitative respondents, CHWs indicated that FTP programming was particularly impactful in pastoralist communities that historically are reluctant to seek services.

Survey data indicate a small positive correlation between program participation and SRH knowledge, as reflected by the results on questions asked to FTMs related to effectiveness of contraceptives and birth spacing. However, FTMs at baseline in both treatment and comparison communities were already frequently answering these two questions correctly. The evaluation found no statistically significant change in the other two SRH knowledge questions that less than half of FTMs in treatment and comparison communities were answering correctly at baseline. The program is also positively correlated with desired fertility, which may not have been the intended goal of MIHR. This is likely a function of how the different incentives for and against having more children are rebalanced by PHE+FTP (e.g., FTMs – when equipped with more FP and MNCH knowledge and resources – may feel more able to have and care for more children).

Evidence of changes in decision making related to contraceptive use was mixed. While qualitative data indicated improvements, survey data did not find any changes on who in the household makes decisions regarding contraceptive use. It is important to highlight that, already at baseline, survey data indicate that the majority of FTMs make their own decisions about contraceptive use, which makes it more difficult to find impacts at endline. This could mean that there was no need to try to improve AGYW's agency in their contraceptive use because they were already autonomous. At the same time, qualitative data could be measuring attitudes and behaviors in a more nuanced way than the survey data can, which could explain why the two data sources seem to contradict each other in this domain.

While qualitative data show mixed evidence on respondents' views on the impact of PHE+FTP on livelihood activities, the survey results on employment show no correlation between PHE+FTP and employment. Many respondents in the qualitative data called for more startup capital and practical tools, stating that education on livelihoods is not enough on its own. The program did raise awareness on the existence of some environmental activities, in particular youth clubs and beekeeping, and participation in Model Boma and CCMGs. The impacts were relatively small (about 7 percentage points increase in both cases). With the exception of CCMGs, roughly half or more respondents were not aware of the existence of environmental activities supported by MIHR and its partners, suggesting that efforts should first focus on raising awareness before trying to increase enrollment among those who are aware. Qualitative data corroborate that participation of FTMs in environmental activities was not prevalent, while first time fathers were more likely to participate. However, qualitative data also show clear and tangible improvements to the environment within treatment communities, especially through activities such as cleaning up water sources, building modern toilets, and switching from cutting down trees for firewood to using gas stoves for cooking.

Although qualitative data indicate that PHE+FTP has improved AGYW's empowerment within relationships, survey data did not indicate any major changes associated with the program, as measured by how households make decisions about money and healthcare, as well as agency, self-esteem and resilience indicators. To reiterate, this discrepancy can be caused by the qualitative data picking up on changes in attitudes, while the quantitative data focuses more on changes in behaviors which take time to manifest. It is also the case that men interviewed in the qualitative data who did not participate in the survey could have felt obligated to respond to questions about empowerment 'correctly', due to SDB.

Finally, the cost-efficiency analysis showed that the cost of treating one woman with PHE and FTP is $10 and $273, respectively, for a total cost of PHE+FTP of $283 per woman.

8. RECOMMENDATIONS

In this section, the evaluation team provides recommendations organized under two themes: those related to programming changes as MIHR continues PHE+FTP in the RRE and elsewhere, and those related to future evaluations of similar programs.

RECOMMENDATIONS FOR PROGRAMMING

Content relevance. Although we find modest changes in self-reported contraceptive use, we also found evidence that this may be driven at least in part by SDB.[25] Furthermore, qualitative data suggest that contraceptives were available even in comparison communities and at baseline, and baseline survey data indicate that FTMs or FTMs and their partners were already the primary decision makers regarding contraceptive use. These findings suggest that AGYW already have some agency over decisions related to their own health and have access to contraceptives even in the absence of the program, so it is not clear whether and to what extent interventions addressing these determinants of contraceptive use can in fact affect it. It is too soon to assess whether the program content impacts fertility and birth spacing, but if access and agency were considered the main determinants of contraceptive use, and contraceptive use was considered a determinant of fertility and adequate birth spacing, the theory of change should be reviewed because it does not seem that these communities are lacking access to contraceptives or that FTMs do not have agency to decide whether they use them.

Conservation and livelihoods: The evaluation team recommends that future programming provide more startup capital for livelihoods activities. Respondents of various types (CHWs, older women, teachers and FTMs) in treatment communities noted a major gap in startup capital for livelihood activities that CCMGs will hopefully address as the activity grows under MIHR leadership. Another common recommendation related to conservation and livelihoods was that PHE should provide more tangible inputs such as tools and improved seeds along with its education on climate smart agriculture.

Target population. FTP targets AGYW who are already pregnant, which makes sense because a lot of the program content is related to pregnancy, giving birth and caring for young children. However, programs like FTP should consider targeting AGYW in general, as they can also benefit from some sessions, including those on contraceptive use, gender roles, decision making, and PHE. Furthermore, as some of these AGYW will get pregnant during program implementation, they will likely benefit the most from the program, as they will have already obtained the knowledge to obtain the antenatal care recommended by the program in a timely manner; and from there follow the rest of the program's recommendations on skilled delivery, postnatal visits, mothers' mental health, postpartum contraceptive use, etc. This recommendation is also supported by comments made by some community members during discussions, including some fathers.

CHW training. CHWs in treatment communities and those they work with in the local health system often noted the quality and value of training CHWs have received from MIHR and how it has helped them to do their work better. However, these same stakeholders recommended regular refresher and add-on trainings. MIHR should work closely with nurses, RCH doctors, and other regional and local

[25] Besides using a LE to try to mitigate SDB, contraceptive use is particularly challenging to accurately measure without either access to reliable but sensitive administrative data or intrusive and sustained observations (e.g., asking respondents to allow the enumerator to feel their implant or observing respondents taking their oral contraceptive pill daily).

health system actors to encourage them to deliver these trainings more often. These trainings could be held jointly by MIHR and local health authorities to not only benefit CHWs in the short-term, but to also create an ongoing practice of regular knowledge maintenance among RCH doctors and nurses and opportunities to reinforce their training and coaching skills.

CHW support. The robust implementation of PHE+FTP relies to an extraordinary degree on the work of volunteer CHWs[26]. These individuals usually have a full-time occupation in addition to their responsibility to the community. In addition, most of them are women who also have family obligations to consider. CHWs themselves as well as those supervising them highlighted that projects such as PHE+FTP should provide them with a small financial remuneration (separate from the stipend for travel expenses) to help motivate them and for the sake of fairness.[27] This would complement non-financial incentives they receive, such as training, community recognition, and tools to carry out their work. Regarding work tools, CHWs as well as their supervisors also pointed out that equipping CHWs with smartphones would make a significant difference in their ability to work, in part by reducing paperwork and enabling better documentation and better communication with MIHR and the community. It was also common to hear that CHWs faced significant difficulties reaching distant households, limiting their ability to deliver services effectively, efficiently, and equitably.[28] Travel stipends are not always sufficient and do not necessarily resolve limitations related to modes of transportation available to CHWs in rural areas. MIHR should consider how to best address this, as it might require community-specific solutions.

RECOMMENDATIONS FOR FUTURE EVALUATIONS

Evaluation timeframe. As mentioned previously, the timeframe of this evaluation did not allow for observation of whether the program will impact fertility or birth spacing—key maternal and child health-related goals of PHE+FTP. Contraceptive use was employed as a proxy variable to measure these outcomes. However, self-reported contraceptive use may be affected by SDB, access to contraceptives, as well as women's agency to use them, which was already relatively high in these communities. As a result, the degree to which the program influenced contraceptive use remains somewhat uncertain. Nonetheless, the FTP program content may still affect fertility and birth spacing in the long term, even without observable short-term changes in contraceptive use. This underscores the need for a longer evaluation period for these types of interventions. Another set of long-term outcomes of PHE+FTP related to maternal and child health, such as maternal and child mortality during and after pregnancy, and child stunting, also require a much longer evaluation timeline to examine, along with incorporation of different study methodologies and more intensive interventions.

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[26] Some CHWs receive small incentives from NGOs or as part of specific, limited duration government programs. Although the government of Tanzania has made plans to introduce a program of paid CHWs who would receive a year of training before starting, as far as the evaluation team is aware, this plan has yet to be implemented. It is also unclear whether and how this plan would incorporate existing CHWs.

[27] This is also one of the conclusions of a study published in 2021 in Msalala and Shinyanga Districts, Tanzania. This study, by Kok et al., can be found here.

[28] This is also a key finding and conclusion of a study published in 2024 that examined CHWs in the context of a project similar to PHE in Kagera and Shinyanga regions of Tanzania. This study, by Owoputi et al., can be found here.

Possible saturation: The evaluation found only minor impacts on participation in PHE activities. Qualitative data indicate there are numerous environmental conservation activities in comparison communities, usually run by the Government of Tanzania or by other NGOs. This makes it difficult to evaluate the impact of the program, as the comparison group seems to be receiving similar types of programming. It also raises questions about whether PHE activities are needed in these communities, if the government and other NGOs are already fielding them.

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ANNEX I. ORIGINAL AND ADDED COMPARISON VILLAGES

As Table 1.1 shows, the sociodemographic characteristics in these two subsets of comparison villages seem relatively similar.

Table I.1. Sociodemographic characteristics for original and added comparison villages at baseline

	Added	Original	Difference
Pregnant (fraction)	0.18	0.22	-0.03
Age (mean)	20.53	20.64	-0.11
Marital status (fraction)			
-Single	0.48	0.42	0.06
-Married	0.51	0.57	-0.06
-Divorced	0.01	0.01	0.01
Club participation (fraction)	0.00	0.00	-0.00
Asset index (mean)	4.21	4.32	-0.11
Currently enrolled in school (fraction)	0.00	0.01	-0.01
Education level (fraction)			
-Never schooled	0.01	0.03	-0.03
-Primary (some or completed)	0.53	0.39	0.13
-More than primary	0.47	0.57	-0.11
N	**146**	**390**	

ANNEX II. ADDITIONAL ANALYSES

ATTRITION

Table II.1 shows the results of a logit regression on an indicator variable that is 1 if the respondent was not surveyed at endline, and 0 if she was surveyed at endline. The results indicate that being in the treatment group, married, education and owning livestock are negatively correlated with attrition.

Table II.1. Determinants of attrition

	Attrition
PHE+FTP Program	-0.411**
	(0.152)
Age at baseline	-0.027
	(0.035)
Married	-0.725***
	(0.131)
Some primary education	-0.484
	(0.359)
More than primary education	-0.851*
	(0.359)
Livestock	-0.494**
	(0.187)
Asset	-0.024
	(0.051)
Observations	**905**

Note: Logit regression on attrition. Standard errors are clustered at the village level.
* p<.05 ** p<.01 *** p<.001

These results suggests that attrition was not random. To correct for attrition, we use the results of the model in Table 6. to estimate the probability of attrition and use inverse probability weights (IPW) to correct for attrition on the contraceptive use regressions. As Table II.2. shows, correcting for attrition changes very little in the results relative to those shown in Table 6 in the main body of the report.

Table II.2. Regression results on contraceptive use using IPW to correct for attrition

	(1)	(2)	(3)	(4)
	Non-pregnant women	Women pregnant at BL and not pregnant at endline	All women	
PHE+FTP Program	0.102*	0.096*	0.086+	0.033
	(0.046)	(0.040)	(0.043)	(0.046)
Participation (5+ sessions)	-	-	-	0.103*
	-	-	-	(0.046)
Observations	510	629	656	626

Note: ANCOVA regressions include age, education level (categorized as no education, incomplete or completed primary school, and more than primary education), a binary variable for being married or cohabiting, the asset index and a binary variable for livestock ownership. Indicator variables to control for item-specific missing data are included in the regressions but not displayed. Attrition model for the IPW use the same variables as the outcome regression. Standard errors are clustered at the village level.
* p<.05 ** p<.01 *** p<.001

REGRESSION RESULTS FOR CONTRACEPTIVE USE SHOWING ALL COVARIATES

As Table II.3 shows, contraceptive use at endline is correlated with being married, education (primary or more) and contraceptive use at baseline.

Table II.3. Regression results for contraceptive use showing all covariates

	(1)	(2)	(3)	(4)
	Non-pregnant women	Women pregnant at BL and not pregnant at endline	All women	
PHE+FTP Program	0.100*	0.093*	0.082+	0.025
	(0.044)	(0.038)	(0.041)	(0.044)
Participation (5+ sessions)	-	-	-	0.109*
	-	-	-	(0.045)
Married	0.237***	0.231***	0.217***	0.220***
	(0.042)	(0.044)	(0.042)	(0.042)
Age at baseline	0.002	0.002	-0.003	0.001
	(0.012)	(0.011)	(0.011)	(0.011)
Some primary education	0.311	0.414*	0.433**	0.456**
	(0.210)	(0.166)	(0.153)	(0.151)
More than primary education	0.338	0.426*	0.444**	0.447**
	(0.216)	(0.167)	(0.155)	(0.153)
Livestock	0.003	-0.006	-0.040	-0.037

	(0.047)	(0.042)	(0.044)	(0.043)
Asset index	-0.004	-0.002	0.001	-0.002
	(0.012)	(0.010)	(0.010)	(0.010)
Contraceptive use at baseline	0.128**	0.128**	0.105*	0.084+
	(0.042)	(0.043)	(0.044)	(0.046)
Pregnant at baseline	-	-0.083	-0.074	-0.083
	-	(0.054)	(0.051)	(0.053)
Observations	512	631	658	628

Note: ANCOVA regressions. Indicator variables to control for item-specific missing data are included in the regressions but not displayed. Standard errors are clustered at the village level.
* p<.05 ** p<.01 *** p<.001

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