



Formative Research for the Introduction of  
Multiple Micronutrient Supplements in

# MADAGASCAR



May, 2021

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## Introduction

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This report presents formative findings in support of the government of Madagascar and in-country partners to introduce multiple-micronutrient supplements (MMS) during a pilot trial to be implemented in Itasy and Vatovavy Fitovinany, Madagascar. MMS is an efficacious and cost-effective prenatal supplement with the potential to improve maternal nutrition and birth outcomes in settings where local diets are not sufficient for meeting nutrient needs during pregnancy. Despite its potential for optimizing health and nutrition, MMS is a novel product in Madagascar and thus careful introduction is needed. Therefore, Pennsylvania State University, in partnership with UNICEF, Sight and Life, and GRET conducted mixed methods formative research to inform tailored programming design with the objective of increasing the likelihood of MMS acceptability and compliance among pregnant women in rural Madagascar.

## Methodology

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**Design.** This formative study utilized a Rapid Assessment Procedures approach over two iterative phases in Itasy and Vatovavy Fitovinany, Madagascar from October 2020 – March 2021.

**Data collection and sampling.** Phase 1 utilized community workshops, focus group discussions, and market observations to generate community inputs for developing culturally appropriate and tailored MMS programming. Phase 2 included free lists and semi-structured interviews among pregnant women and health workers for an ethnographic understanding of pregnancy-related practices in this setting.

**Analysis.** Textual data from focus group discussions and semi-structured interviews were thematically analyzed using Dedoose software. Numerical data from market observations and community workshops were summarized using descriptive statistics. Free list data were analyzed using Microsoft excel. Findings were grounded in a social marketing framework (price, product, placement, promotions) and triangulated across methods and participant types to enhance data credibility.

## Summary of key findings

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### Factors influencing health and nutrition during pregnancy

**Typical diets during pregnancy.** Rice is the primary staple food in the diets of pregnant women in both Itasy and Vatovavy Fitovinany. Bananas are another commonly consumed food by pregnant women in both districts. To a lesser extent, vegetables, mangos, chicken, and fish comprise typical diets during pregnancy. Study participants explained that during pregnancy they try to eat bananas, fish, and carrots, specifically, for optimal nutrition. However, limited food access is a salient challenge among most pregnant women we interviewed in Itasy and Vatovavy Fitovinany. For those families that cannot always afford to eat rice as their staple dish, cassava is a substitution food despite perceptions that it may not be as healthy for the growing fetus.

**Achieving optimal nutrition during pregnancy.** In both Itasy and Vatovavy Fitovinany, study participants explained four primary barriers and three facilitators influencing their ability to consume nutritious diets during pregnancy. Limited household finances, lack of access to diverse diets, food aversions, and side effects associated with prenatal supplements were the most salient challenges described. Pregnant women explained that achieving nutritious dietary intake was made easier when they felt adequately supported by health workers and other community members offering nutrition advice. Women who had been advised by health workers held more positive attitudes toward prenatal supplements, as well as better understood the relationship between nutritious food consumption and maternal and child health.

**Influencing factors of health behaviors during pregnancy.** Several inter-related, multi-level barriers and facilitators were found to influence the health-seeking behaviors of pregnant women during pregnancy. Notably, accessing antenatal services is an important challenge to community members who reported that competing livelihood demands, coupled with a lack of financial and physical access to health clinics, make it difficult to reliably access services offered at health facilities. Additionally, pregnancy symptoms, common illnesses, and differential perceptions toward antenatal service quality are contributing factors to care seeking in this setting. Pregnant women explained that accessing care during the pregnancy life stage is made easier when there is effective and extended outreach at community level, including strong midwife and medical doctor collaborations, as well as supportive social networks for trusted encouragement, advice, and resources needed to reliably access care when needed.

## Product-related findings

**Previous experiences with pre-natal supplements.** Overall, most study participants in both interviews and community workshops had experiences with or awareness of both the benefits and challenges associated with taking iron-folic acid (IFA) tablets. Participants discussed previous challenges taking IFA, which included stock outs at health centers and pharmacies, as well as negative side effects (e.g. nausea, dizziness) and forgetting to consume it regularly which both contributed to low compliance throughout the pregnancy life stage. Participants described some positive perceptions toward IFA and prenatal supplementation, in general, including their ability to help prevent hemorrhaging, anemia, and dizziness, as well as aid in healthy fetal growth, improved maternal energy, and enhanced cognitive fetal development. Lessons learned from in-country programs that distributed IFA and other vitamin and mineral supplements in Madagascar (e.g. micronutrient powders) should be considered during MMS program programming to pre-empt possible coverage, acceptability, and compliance-related challenges.

**Preferred MMS color schemes.** Orange was the top voted color option for MMS box and packaging materials, based on workshops in Itasy and Vatovavy Fitovinany. Women explained their preference for orange during interviews by explaining that it reflects the color of locally available fruits including mangos and oranges. Red and white were the second most preferred colors in those districts, respectively.

**MMS logo options.** During participatory workshops in Itasy, community members voted for an MMS logo image depicting a, 'pregnant woman smiling and swallowing the supplement'; in Vatovavy Fitovinany, workshop participants voted for a photo of a, 'healthy and dynamic pregnant woman' to be displayed on MMS packaging and promotional materials. The majority of other logo suggestions reflected variations of those two themes: depictions of pregnant women who are healthy and consuming MMS. Suggestions were also made to use fruit-related images, perhaps in the form of a logo, to also promote MMS.

**Suggested MMS promotional slogans and names.** A variety of suggested slogans were offered by study participants for promoting MMS. Two top voted slogans included “Tena hery ho an’ny reny syn y zaza” (true energy for mothers and children) and “Tena hery ho an’ny reny syn y zaza ao am bohoka” (real energy for the mother and the child in the womb). Overall, ten Malagasy slogans were generated through community workshops and interviews for inclusion in social marketing activities that promote MMS in both districts. Further, promoting MMS in Madagascar may benefit from tailored messaging that includes Malagasy words referring to energy, strength, and health. Examples of suggested MMS brand names that community members suggested include “Fanampy hery” (energy supplement), “Tena hery” (real energy), “Avotr’aina” (saving life) and “Vitamine maro loko” (vitamins with different colors), just to name a few. Such examples of slogans and names should be included in social and behavior change materials.

## Price-related findings

In both Itasy and Vatovavy Fitovinany, the best selling prenatal supplement is Multivita, which also happens to be the most affordable, averaging 95 Ariary (Ar) per pill. Market observations revealed three other competing supplements that are sold in Itasy and nine additional options in Vatovavy Fitovinany. The supplement price point was found to be the primary driving factor behind supplement purchasing among consumers in both districts: among the twelve competing supplements to MMS, Multivita (95 Ar/pill), Fer sulfate acide folique (96 Ar/pill), Multivit-F (200 Ar/pill), and Multivitamine Comprime (200 Ar/pill) were found to be the best sellers to pregnant women across districts. When participants were asked about their willingness to pay for MMS, they indicated that paying 500–600 Ar/30-day supply of the supplement might be appropriate. However, most participants suggested that MMS should be provided free of cost, given the financial challenges that the majority of households face in both districts.

## Placement-related findings

The distribution of MMS using a combination of facility and community-based approaches may be the most effective ‘placement’ strategy for increasing program coverage and reaching the most vulnerable women in Itasy and Vatovavy Fitovinany. Currently, the majority of prenatal supplements are distributed at the depot de medicaments (medical depot) and PhaGecom du CSB II (community run pharmacy) in both districts. Participants explained that while some women do currently access supplements during antenatal care checkups at hospitals or pharmacies, they suggested MMS be distributed through a greater variety of community-based platforms including the TOBY, CSB, and Safe femme, as well as by community health agents and traditional birth attendants. Some participants explained that while a variety of distribution channels may increase coverage, antenatal care visits remain the most trusted source of pregnancy-related resources and information for most people.

## Promotions-related findings

**Audience segments.** Most proximally, community health agents, health workers, traditional birth attendants, medical staff (midwives and medical doctors), and close family members (spouses and parents) were identified as important secondary audience segments who most directly communicate with, and have the potential to influence the behavior of, pregnant women in this setting. Importantly, male heads of households hold much autonomy over health and nutrition-related decision-making and thus husbands of pregnant women are key influencers to consider during MMS promotions. Midwives and traditional birth attendants are similarly important audience segments who are trusted and influential over women’s health-related decisions. More distally, other community members including community leaders, such as elected officials at village level (e.g. president of Fokontany), may also be considered to

be tertiary audience segments that are in a unique position to promote MMS indirectly through community-wide sensitization and social mobilization activities.

**Communication channels.** To reach pregnant women using social and behavior change communications in Itasy and Vatovavy Fitovinany, a combination of interpersonal, social mobilization, and media-based approaches is suggested based on findings from this formative study. The most preferred interpersonal channels by pregnant women for health and nutrition information included peer-to-peer information sharing, door-to-door visits by Secaline, and through different types of village-level meetings (Réunion Poulair, Assemblée Dina, et Réunion Tanamaro). Several types of venues were identified for holding or incorporating social mobilization strategies to promote MMS, including monthly weighing at Toby Secaline, Mother and Child Health Weeks, and Fafy centers, just to name a few. Finally, community members suggested four types of media sources that are consumed in both districts: radio (e.g. Antsiva), television, newspaper, and Facebook. A tailored social and behavior change communications strategy should encompass a variety of channels through a combination of aforementioned audience segments.

**Tailored messaging.** Several preferred Malagasy phrases were identified through participatory community workshops to promote MMS to pregnant women: 1) Fahasalamana tonga lafatra ho an'ny reny syn y zaza (optimal health for the mother and child); 2) Hery sy tanjaka (strength and energy); 3) Fitomboanan'ny zaza am-bohoko (growth of the fetus); and 4) Miaro amin'ny fahaverezan-dra (protects against hemorrhage). Additionally, interviews with pregnant women requested clear messaging explaining how to use MMS, including appropriate dosing, benefits and side effects, and how it compares/contrasts to other available prenatal supplements. Additional local words and phrases in Malagasy are described throughout the findings section of this report for inclusion in MMS promotions.

## Conclusion

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Findings from this formative research highlighted important social marketing considerations around product, price, placement, and promotion for improving the likelihood of MMS acceptability and compliance in Itasy and Vatovavy Fitovinany, Madagascar. Incorporating the findings from this study, coupled with the lessons learned from other programs that have introduced similar specialized nutritious foods in low- and middle-income contexts, may help to ensure adequate coverage, acceptability, and compliance for better maternal nutrition and improved birth outcomes.

## Introduction

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Ce rapport présente les résultats de la recherche formative pour l'appui du gouvernement de Madagascar et de ses partenaires dans le cadre de l'introduction des suppléments de micronutriments multiples (SMM). Ces résultats seront utilisés lors d'un essai pilote qui sera mis en œuvre à Itasy et Vatovavy Fitovinany, Madagascar. Le SMM est un supplément prénatal efficace et rentable qui pourrait améliorer la nutrition maternelle et l'issue des grossesses dans les milieux où les régimes alimentaires locaux ne sont pas suffisants pour répondre aux besoins nutritionnels pendant la grossesse. Malgré son potentiel d'optimisation de la santé et de la nutrition, le SMM est un produit nouveau à Madagascar et une introduction appropriée est donc nécessaire. Par conséquent, l'Université d'État de Pennsylvanie, en partenariat avec l'UNICEF, Sight and Life, et le GRET ont mené des recherches formatives à méthodes mixtes pour informer la conception d'une programmation adaptée. Ceci dans le but d'augmenter la probabilité d'acceptation et de conformité du SMM parmi les femmes enceintes dans les zones rurales de Madagascar.

## Méthode

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**Conception de l'étude.** Cette recherche formative a utilisé une approche d'évaluation rapide sur deux phases itératives à Itasy et Vatovavy Fitovinany, Madagascar à partir d'Octobre 2020 – Mars 2021.

**Collecte des données et échantillonnage.** La phase 1 a utilisé des ateliers communautaires, des discussions de groupes et des observations de marché pour générer des apports communautaires en vue de l'élaboration de programmes de SMM culturellement approprié et adapté. La phase 2 comprenait des « free list » et des entretiens semi-structurés avec les femmes enceintes et les agents de santé pour obtenir une compréhension ethnographique des pratiques liées à la grossesse dans ce contexte.

**Analyse.** Les données textuelles provenant des groupes de discussion et d'entretiens semi-structurés ont été analysées thématiquement à partir du logiciel Dedoose. Les données numériques provenant d'observations du marché et d'ateliers communautaires ont été résumées à l'aide de statistiques descriptives. Les données des « free list » ont été analysées en utilisant l'analyse du domaine culturel du logiciel Anthropac. Les résultats ont été fondés sur un cadre de marketing social (prix, produit, placement, promotions) et triangulés entre les méthodes et les types de participants afin d'améliorer la crédibilité des données.

## Résumé des résultats clés

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### Facteurs influençant la santé et la nutrition pendant la grossesse

**Régimes typiques pendant la grossesse.** Le riz est le principal aliment de base dans l'alimentation des femmes enceintes à Itasy et Vatovavy Fitovinany. Les bananes sont un autre aliment fréquemment consommé par les femmes enceintes dans les deux districts. Dans une moindre mesure, les légumes, les mangues, le poulet et



le poisson font partie du régime alimentaire typique des femmes enceintes. Les participants dans cette étude ont expliqué qu'au cours de la grossesse, ils essaient de manger des bananes, du poisson et des carottes, en particulier, pour une nutrition optimale. Cependant, l'accès limité à la nourriture est un défi majeur pour la plupart des femmes enceintes que nous avons interviewées à Itasy et Vatovavy Fitovinany. Pour les familles qui ne peuvent pas toujours se permettre de manger du riz comme plat de base, le manioc est un aliment de substitution malgré la perception que cet aliment pourrait ne pas être aussi sain pour le fœtus en croissance.

**Atteindre une nutrition optimale pendant la grossesse.** Dans le district d'Itasy et de Vatovavy Fitovinany, les participants de l'étude ont énuméré quatre obstacles primaires et trois facilitateurs influençant leur capacité à consommer des aliments nutritifs pendant la grossesse. Les finances limitées des ménages, le manque d'accès à des régimes alimentaires diversifiés, les aversions alimentaires et les effets secondaires associés aux suppléments prénatals ont été les défis les plus saillants. Les femmes enceintes ont expliqué que l'apport alimentaire nutritif était facilité lorsqu'elles se sentaient adéquatement soutenues par les agents de santé et d'autres membres de la communauté qui offraient des conseils nutritionnels. Les femmes qui ont reçu des conseils de la part des agents de santé avaient une attitude plus positive à l'égard des suppléments prénatals et comprenaient mieux la relation entre la consommation d'aliments nutritifs et la santé maternelle et infantile.

**Influencer les facteurs des comportements de santé pendant la grossesse.** Plusieurs barrières et facilitateurs interdépendants et à divers niveaux ont été identifiés comme influençant les comportements de recherche de santé des femmes enceintes pendant la grossesse. En particulier, l'accès aux services prénatals est un défi majeur pour les membres de la communauté qui ont signalé que les demandes concurrentes de moyens de subsistance, associées à un manque d'accès financier et physique aux centres de santé, rendent difficile l'accès aux services offerts dans les établissements de santé. De plus, les symptômes de la grossesse, les maladies courantes et les perceptions différentes de la qualité des services prénatals sont des facteurs qui influencent la recherche de soins dans ce contexte. Les femmes enceintes ont expliqué que l'accès aux soins pendant la phase de grossesse est plus facile lorsqu'il y a une sensibilisation efficace et étendue au niveau de la communauté et une solide collaboration entre les sages-femmes et les médecins. Selon elles, les sensibilisations au niveau communautaire devraient favoriser la création de liens sociaux de soutien pour des encouragements, des conseils fiables, nécessaires pour accéder aux soins en cas de besoin.

## Résultats liés au produit

**Expériences antérieures avec des suppléments prénatals.** Dans l'ensemble, la plupart des participants lors des entretiens et des ateliers communautaires, ont déjà eu des expériences ou étaient conscients des avantages et des difficultés liés à la prise de comprimés de fer et acide folique (FAF). Les participants ont discuté des défis antérieurs liés à la prise du FAF, qui comprenait des ruptures de stock dans les centres de santé et les pharmacies, ainsi que des effets secondaires négatifs (p. ex. nausées, étourdissements) et de l'oubli de le consommer régulièrement, ce qui a contribué à une faible observance tout au long de la grossesse. Les participants ont décrit certaines perceptions positives à l'égard du FAF et de la supplémentation prénatale, en général, y compris leur capacité à prévenir l'hémorragie, l'anémie et les étourdissements, ainsi que l'aide à la croissance fœtale, l'amélioration de l'énergie maternelle et le développement cognitif fœtal. Les leçons tirées des programmes nationaux qui distribuent le FAF et d'autres suppléments vitaminiques et minéraux à Madagascar (p. ex. poudres de micronutriments) devraient être prises en considération au cours de la programmation du programme SMM afin d'éviter les éventuels problèmes de couverture, d'acceptabilité et d'observance.

**Schémas de couleurs SMM préférés.** L'orange a été la couleur la plus votée pour les boîtes et les matériaux d'emballage du SMM, d'après les ateliers organisés à Itasy et Vatovavy Fitovinany. Les femmes ont exprimé leur préférence pour l'orange lors des entretiens en expliquant qu'elle reflète la couleur des fruits disponibles localement, comme les mangues et les oranges. Le rouge et le blanc étaient les deuxièmes couleurs préférées respectivement à Itasy et Vatovavy Fitovinany.

**Options de logo SMM.** Lors des ateliers participatifs à Itasy, les membres de la communauté ont voté pour une image de logo du SMM représentant une « femme enceinte souriant et avalant le supplément » ; à Vatovavy Fitovinany, les participants à l'atelier ont voté pour qu'une photo d'une femme enceinte « en bonne santé et dynamique » soit affichée sur des emballages SMM et du matériel promotionnel. La majorité des autres suggestions de logo reflétaient des variations de ces deux thèmes : les représentations de femmes enceintes qui sont en bonne santé et consomment les SMM. Des suggestions ont également été faites pour utiliser des images liées aux fruits, peut-être sous la forme d'un logo, pour promouvoir les SMM.

**Suggéré SMM slogans promotionnels et les noms.** Divers slogans ont été suggérés par les participants de l'étude pour promouvoir la SMM. Les deux slogans les plus votés sont « Tena hery ho an'ny reny sy ny zaza » (véritable énergie pour les mères et les enfants) et « Tena hery ho an'ny reny sy ny zaza ao ambohoka » (énergie réelle pour la mère et l'enfant dans l'utérus). Au total, dix slogans malgaches ont été générés par des ateliers communautaires et des entretiens pour l'inclusion dans les activités de marketing social du SMM dans les deux districts. En outre, la promotion du SMM à Madagascar peut bénéficier de messages sur mesure qui comprennent des mots malgaches se référant à l'énergie, la force et la santé. Parmi les exemples de noms SMM suggérés par les membres de la communauté, figuraient « Fanampy hery » (supplément énergétique), « Tena hery » (énergie réelle), « Avotr'aina » (sauver des vies) et « Vitamine maro loko » (vitamines de différentes couleurs), pour ne citer que quelques-uns. De tels exemples de slogans et de noms devraient être inclus dans les matériaux de communication pour le changement social et comportemental.

## Résultats liés aux prix

Dans les deux districts, le supplément prénatal le plus vendu est Multivita, qui se trouve également être le plus abordable, en moyenne 95 Ariary (Ar) par pilule. Les observations de marché ont révélé trois autres suppléments concurrents qui sont vendus à Itasy et neuf options supplémentaires à Vatovavy. Le prix du supplément s'est révélé être le principal facteur moteur de l'achat de suppléments parmi les consommateurs des deux districts : parmi les douze suppléments concurrents au SMM, multivita (95 Ar/pilule), fer sulfate acide folique (96 Ar/pilule), Multivit-F (200 Ar/pilule) et Multivitamine Comprime (200 Ar/pilule) se sont révélés être les meilleurs vendeurs pour les femmes enceintes à travers les deux districts. Lorsque les participants ont été interrogés sur leur volonté de payer pour le SMM, ils ont indiqué que le paiement de 500 à 600 Ar/30 jours d'approvisionnement du supplément pourrait être approprié. Toutefois, la plupart des participants ont suggéré que le SMM soit fourni gratuitement, étant donné les défis financiers auxquels la majorité des ménages sont confrontés dans les deux districts.

## Résultats liés aux placements

La distribution de SMM en combinant des approches au niveau des établissements et des communautés pourrait être la stratégie de « placement » la plus efficace pour accroître la couverture du programme et atteindre les femmes les plus vulnérables d'Itasy et de Vatovavy Fitovinany. Actuellement, la majorité des suppléments prénatals sont distribués au dépôt de médicaments et phaGecom du CSB II (pharmacie communautaire) dans les deux districts. Les participants ont expliqué que, même si certaines femmes

ont actuellement accès à des suppléments lors des examens prénatals dans les hôpitaux ou les pharmacies, elles préfèrent que le SMM soit distribué par l'entremise d'une plus grande variété de plateformes communautaires, y compris le TOBY, le CSB (centre de santé de base) et les sages-femmes, ainsi que par des agents de santé communautaires et les matrones. Certains participants ont expliqué que, même si les divers canaux de distribution peuvent accroître la couverture, les visites de soins prénatals restent la source la plus fiable de ressources et d'informations liées à la grossesse pour la plupart des femmes.

## Résultats liés aux promotions

**Segments d'audience.** Les agents de santé communautaire, les matrones, le personnel médical (sages-femmes et médecins) et les membres de la famille proche (conjointes et parents) ont été identifiés comme d'importants segments d'audience secondaire. Ces derniers communiquent directement avec les femmes et ont le potentiel d'influencer le comportement des femmes enceintes dans ce contexte. Il est important de noter que les hommes, chefs de famille ont une grande autonomie sur la prise de décisions liées à la santé et à la nutrition. Par conséquent, les maris des femmes enceintes sont des influenceurs clés à prendre en considération lors des promotions du SMM. Les sages-femmes et les matrones sont des segments d'audience tout aussi importants qui sont dignes de confiance et influents sur les décisions des femmes en matière de santé. Plus généralement, d'autres membres de la communauté, y compris des dirigeants communautaires, comme les élus au niveau des villages (par exemple président de Fokontany), peuvent également être considérés comme des segments d'audience tertiaires. Ces derniers sont dans une position unique pour promouvoir indirectement le SMM par le biais d'activités communautaires de sensibilisation et de mobilisation sociale.

**Canaux de communication.** Les résultats de cette étude formative montrent que, pour informer les femmes enceintes en utilisant des communications pour le changement social et de comportement à Itasy et Vatovavy, une combinaison d'approches interpersonnelles, de mobilisation sociale et d'approches basées sur les médias est nécessaire. Les canaux interpersonnels les plus préférés par les femmes enceintes pour l'information sur la santé et la nutrition comprenaient l'échange d'informations entre pairs, les visites porte-à-porte de Secaline et les différents types de réunions au niveau du village (Réunion Populaire, Assemblée Dina, et Réunion Tanamaro). Plusieurs types de lieux ont été identifiés pour la tenue ou l'intégration de stratégies de mobilisation sociale visant à promouvoir le SMM, y compris la pesée mensuelle au niveau du Toby Secaline, les semaines de la santé de mère et de l'enfant, et les centres Fafy. Enfin, les membres de la communauté ont suggéré quatre types de sources de médias qui sont utilisés dans les deux districts : la radio (p. ex. Antsiva), la télévision, les journaux et Facebook. Une stratégie de communication sur mesure de changement de comportement devrait englober une variété de canaux à travers une combinaison de segments d'audience susmentionnés.

**Des messages personnalisés.** Plusieurs phrases malgaches, visant à promouvoir le SMM aux femmes enceintes ont été identifiées par les participants des ateliers communautaires participatifs : 1) Fahasalamana tonga lafatra ho an'ny reny syn y zaza (santé optimale pour la mère et l'enfant); 2) Hery's tanjaka (force et énergie); 3) Fitomboanan'ny zaza am-bohoko (croissance du fœtus); et 4) Miaro amin'ny fahaver-zan-dra (protège contre l'hémorragie). En outre, les résultats des entrevues avec les femmes enceintes montrent qu'elles préfèrent des messages clairs expliquant comment utiliser le SMM, y compris le dosage approprié, les avantages et les effets secondaires, et comment le démarquer/comparer avec d'autres suppléments prénatals disponibles. D'autres mots et expressions locaux en malgache sont décrits tout au long de la section des résultats de ce rapport pour inclusion dans les promotions SMM.

## Conclusion

Les résultats de cette recherche formatrice ont mis en évidence d'importantes considérations de marketing social au tour du produit, du prix, du placement et de la promotion pour améliorer la probabilité d'acceptabilité et de conformité du SMM à Itasy et Vatovavy Fitovinany, Madagascar. L'intégration des résultats de cette étude, conjuguée aux leçons tirées d'autres programmes qui ont introduit des aliments nutritifs spécialisés similaires dans des contextes à revenu faible ou intermédiaire, peut aider à assurer une couverture adéquate, l'acceptabilité et la conformité pour une meilleure nutrition maternelle et l'amélioration de l'issue des grossesses.





In Madagascar, at least 37% of girls aged 15 to 19 have had at least one child or are pregnant and will have on average 5 children during their lifetime. This early and high fertility facilitates the intergenerational transmission of chronic malnutrition (stunting) which affects 47% of children under five (AFDB et al., 2021). Despite government policies to support the high-impact nutrition interventions, efforts to date have resulted in a suboptimal coverage and quality of antenatal care. In particular, the low coverage and limited compliance with iron-folic acid (IFA) supplements has limited the impact of these interventions aimed at improving maternal nutrition and birth outcomes. While 87% of pregnant women have accessed antenatal care at least once in Madagascar, only 51% have made four or more visits (INSTAT, 2016). Nationally, 55% of pregnant women receive and take IFA, but only 7.1% has used this supplement for longer than one trimester of pregnancy (INSTAT, 2016).

Improving the delivery of maternal nutrition interventions can not only improve maternal nutrition outcomes, but also yield better birth outcomes. Folic acid has long played an important role in preventing neural tube defects while iron supplementation has been important for reducing a mother's risk of maternal anemia as well as low birthweight or small-for-gestational-age infants. Children who are born with low birth weight have an elevated risk for stunting and adult onset of chronic disease (Christian et al., 2013). Multiple Micronutrient Supplements (MMS), containing 15 micronutrients formulated to the nutrient needs of pregnant women, has been shown to reduce risk for small-for-gestational-age births, low birth weight, and stillbirths (Keats, 2019). Yet, the delivery and implementation of maternal nutrition interventions has been a persistently limiting factor of programming aimed at reducing the high burden of maternal and child undernutrition and mortality (Bhutta et al., 2013).

The Madagascar Ministry of Public Health (MSANP) took the opportunity to participate in a pilot project in Madagascar, to facilitate the careful and appropriate introduction of MMS for pregnant women as an alternative to IFA, which had previously been the standard of prenatal supplementation. This pilot project aims to enhance antenatal care coverage with provision of MMS for pregnant women in Itasy and Vatovavy regions of Madagascar. It is being led by a technical working group bringing together different departments / directions of the MSANP, the National Office of Nutrition and other key players at national, regional and district levels. With support from UNICEF-Madagascar, MMS will be introduced in two health districts of the "Nutritional Outcomes Improvement Project Using the Multi-Phase Program Approach 2018–2022" (PARN-APPM).

Globally, programs that have introduced vitamin and mineral supplements, whether for young children or pregnant and lactating women, have faced challenges related to coverage, acceptability, and compliance. Therefore, partners from The Bill and Melinda Gates Foundation, UNICEF, Sight & Life, The Pennsylvania State University, GRET-Madagascar, and the Ministry of Public Health collaborated to conduct formative research aimed at informing tailored nutrition programming where MMS may have a higher likelihood of improving maternal nutrition and better birth outcomes in two regions of Madagascar.

## Study objectives and aims

To inform the context-specific design and successful implementation of nutrition programming using prenatal MMS to address maternal and child undernutrition in Madagascar this formative study had the following specific aims:

**Aim 1:** To understand the typical diets of pregnant women including foods they eat/do not eat, care-seeking practices, and the cultural context shaping the health and nutrition of the mother and child

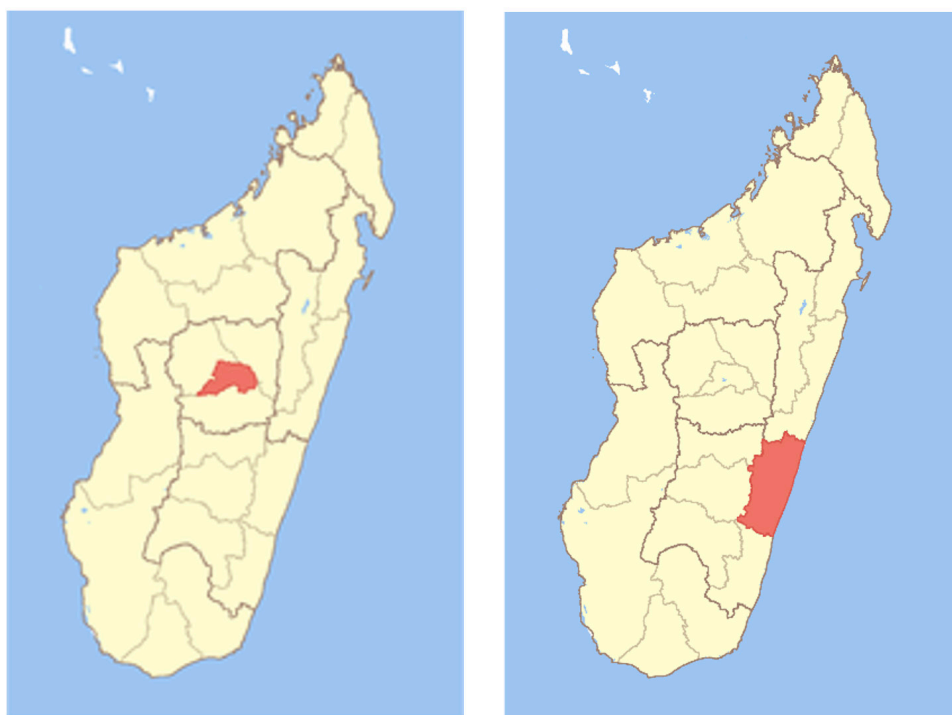
**Aim 2:** To describe the context-specific barriers and facilitating factors important for optimal maternal nutrition and birth outcomes in this setting

**Aim 3:** To generate social marketing-related recommendations (product, price, promotion, placement) to inform culturally appropriate MMS programming for optimal acceptability and compliance



## Study setting

Madagascar is an island nation off the eastern coast of Mozambique, Africa. The country is divided into 22 regions and inclusive of 119 districts nationally (INSTAT, 2016). In 2020, the population of Madagascar was 27 million people, most of whom are either under 15 (42%) or 5 years old (18%). At that time, approximately 4.5% of the population was pregnant. While Madagascar is home to more than 20 distinct cultural groups, most people are culturally Malagasy (>90% of population) and living in rural areas (70%) (INSTAT, 2016). This formative study was conducted in two districts of Madagascar: Ifanadiana and Soavinandriana. Ifanadiana is located within Vatovavy Fitovinany, the southeastern part of the country, and comprised of 215,000 people. Soavinandriana is in Itasy, the central highland part of the country, with a population of about 264,000 (**Figure 1**).



**Figure 1** *Itasy (central highland region) and Vatovavy Fitovinany (eastern, coastal region), Madagascar*

## Study design

This formative study was designed to have two iterative phases using mixed methods in a Focused Ethnographic Study approach (Pelto, 2020). Phase 1 included methods to understand women's preferences toward MMS characteristics for informing a tailored social marketing approach considering MMS price, product, placement, and promotions. Phase 2 provided an understanding of the socio-cultural drivers of health and nutrition-seeking behaviors during pregnancy.

**Table 1** Summary of data collection methods conducted across formative study phases 1–2

Phase 1-Generating social marketing inputs for improving MMS acceptability and compliance	Phase 2- understanding drivers of health and nutrition behaviors during pregnancy
Focus group discussions	Semi-structured interviews
Participatory community workshops	Free listing
Market observations	

## Phase 1 Data Collection and Sampling

Phase 1 data collection methods included focus group discussions, participatory community workshops, and market observations. Each method is described in more detail below.

**Focus group discussions.** We conducted focus group discussions ( $n = 6$ ) among pregnant and lactating women living in both districts. They were conducted specifically during this first phase to 1) build consensus around preferred MMS characteristics for social marketing, and 2) To understand social norms around health- and nutrition-seeking behavior during pregnancy and lactation (Kitzinger, 1995). In each focus group, 8–14 women were purposively sampled with the help of local health workers and community members familiar with the populations of each commune area. Efforts were made to sample participants who were similar to one another on characteristics deemed important to ensure open discussions where everyone had an equal voice. In this setting, age, social status, and cultural group were sampling considerations to ensure group homogeneity. All discussions were moderated in Malagasy and digitally recorded thanks to an assigned moderator and notetaker for group facilitation. Community health workers and government representatives also attended some focus groups to hear firsthand accounts provided by participants.

**Participatory Community Workshops.** We conducted participatory community workshops ( $n = 6$ ) among pregnant and lactating women living in Itasy and Vatovavy. Each workshop included, on average, 15 participants who were purposively sampled using recommendations from community authorities and community health workers who were familiar with the local communities. Each workshop allowed for brainstorming, voting, and consensus building on selected topics pertinent intervention design (Vastine et al. 2005). In this formative study, we specifically utilized the workshops to 1) Identify anticipated barriers to and preferred solutions to help ensure optimal MMS acceptability and utilization in this setting, 2) Gain consumer insights on MMS product characteristics including colors, logos, and slogans, and 3) Build community consensus around preferred promotional strategies for introducing MMS including inputs for culturally appropriate programming.

Each workshop was facilitated in Malagasy with the help of a moderator, a note-taker, and an observer who recorded field notes reflective of important discussion points. Most workshops were also attended by community health workers and government officials who observed the sessions, a standard practice in this Madagascar setting. If women had trouble interpreting workshop questions to generate ideas about possible MMS slogans or brand names, the moderator offered examples of locally available products for inspiration. In some workshops, when participants were shy to express their ideas in front of others, they were offered papers to write down their ideas for silent sharing. Answers to workshop questions and individual votes were recorded in writing on flip charts.



**Market observations.** Direct observations (n = 10) of both formal and informal markets selling prenatal supplements were conducted in Itasy and Vatovavy. Examples of these markets in Madagascar included drug depots, community pharmacies (i.e. Phagecom) within both private and public health centers and hospitals, and drug sellers in large weekly markets and grocery stores. Observations are a method used to understand observable phenomena of interest. In this study, we observed formal and informal markets where women reported accessing pre-natal supplements to 1) Understand the range of options where pre-natal supplements are currently being sold/distributed to pregnant women in this setting, and 2) To inform social marketing inputs related to preferred MMS product, price, placement, and promotional characteristics. Each observation included a market walk-through and discussion with the drug seller about the available prenatal supplements and their characteristics. Each observation was conducted by a trained data collector, in collaboration with the pharmacist, shop manager, or business owner, using a semi-structured observation. When possible, government officials joined the market observations during fieldwork.

## Phase 2 Data Collection Methods and Sampling

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Phase 2 data collection methods included free listing and semi-structured interviewing.

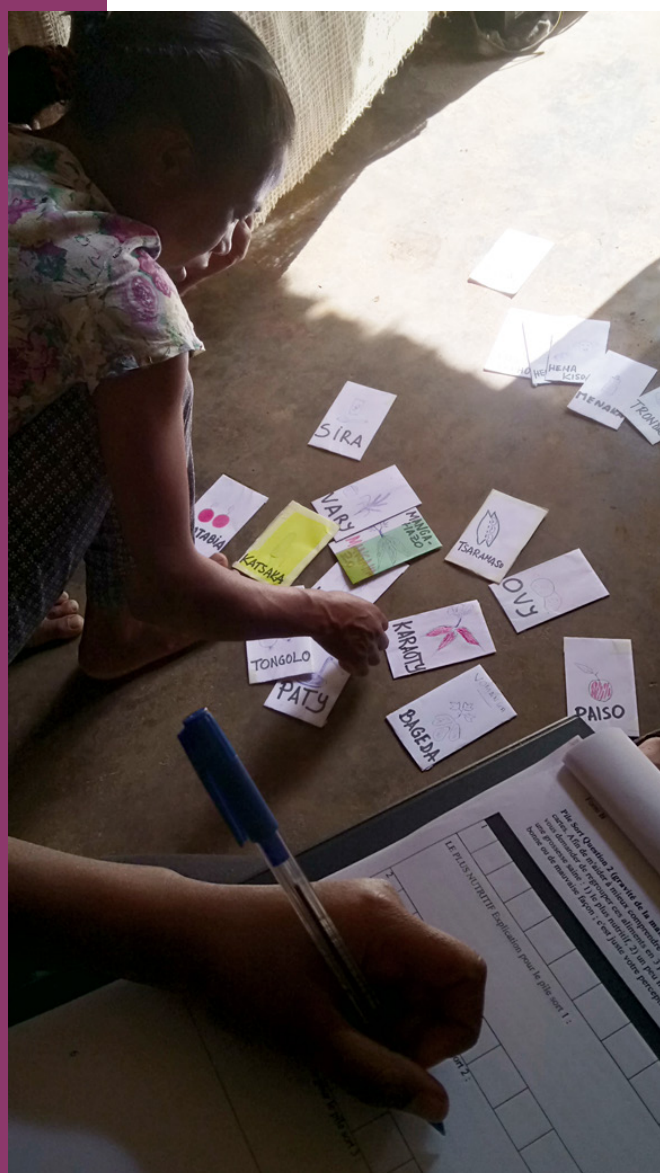
**Free lists.** We conducted free lists among 60 women of pregnant women in both Itasy (n = 30) and Vatovavy (n = 30). Free listing is a method from cognitive anthropology that allows for an understanding of a cognitive domain (Hough and Ferraris, 2010). In this formative study, free lists were conducted to 1) Identify local food and illness terms to use in tailored messaging to promote MMS and 2) Elucidate food prescriptions and food proscriptions (i.e. taboos) that may exist during pregnancy. Participants were purposively sampled with the help of community health workers familiar with the communities. The first free list question asked participants to list all of the commonly consumed foods in their community. The second question asked participants to list all of the illnesses that women may be at risk of during pregnancy. After listing, interviewers probed for local definitions and explanations of selected foods and illnesses. In line with standard practice in this setting, each respondent received two pieces of soap for their participation.

**Semi structured interviews.** Qualitative interviews were conducted among pregnant women (n = 24) and healthcare providers (n = 17) using semi-structured interview guides that covered topics related to antenatal care-seeking behaviors, diets during pregnancy, factors influencing optimal maternal nutrition, etc. The guides used in this study are provided in the report appendices and were developed with open-ended questions and probes to elicit rich answers from participants (Bernard and Bernard, 2013). Specifically, these interviews were conducted to 1) Understand the lived experiences of women during pregnancy and lactation in Itasy and Vatovavy; 2) To describe the barriers and facilitating factors important for optimal maternal health and nutrition in this setting; and 3) To generate women's recommendations to inform culturally-appropriate MMS programming in Madagascar. The health workers included facility staff who care for women during antenatal consultations and delivery, as well as matrons and community health workers. Interviews were conducted in private either at women's homes or in the health centers depending on each person's preference. All interviews were conducted in Malagasy either at participant homes or health centers across 8 different Fokotany. Interviews were digitally recorded and respondents received two pieces of soap for their participation.

## Data analysis

**Textual data** from focus group discussions and semi-structured interviews were first translated from Malagasy into French verbatim in Microsoft Word. Second, the French transcripts were uploaded to Dedoose software (Sociocultural Research Consultants, 2018). for thematic analysis more closely in line with content analysis than Grounded Theory, although ample room was built into coding for emergent themes (Fairclough, 2003). Third, all transcripts were coded using a structured codebook among multiple analysts. Fourth, excerpts were extracted and stratified by data collection site, participant type, and research question using Dedoose. Finally, findings were presented by study aim using quotations, tables, and figures to illustrate salient themes and sub-themes.

**Cultural domain data** generated by free lists were analyzed using Excel software. All food and illness items were summed across participants to create a list of terms based on their frequency of mention. Field notes describing frequently mentioned foods and illnesses were thematically reviewed and included in interpretation of the data set.



**Numerical data** from community workshops and market observations were analyzed using simple descriptive statistics in SPSS software. Variables were categorized as either continuous (e.g. supplement price) or categorical (e.g. primary purchaser, selling location, type of package and display type). Price per pill was determined by dividing the number of pills sold in each packet by the total price of this packet to best compare costs of different units of the supplement. The average price per pill was determined using the frequency distribution analysis in SPSS. Categorical variables were analyzed using frequency distribution to determine primary purchaser, primary selling location and most common type of display per supplement identified. Field notes from workshops and observations were reviewed during textual analysis and incorporated during interpretation of findings, which are presented in table format.

Textual data, cultural domain data, and numerical data were analyzed separately but interpreted together in a form of analytic triangulation that together provided answers to the guiding research questions from various perspectives.

## Understanding typical maternal diets during pregnancy

**Aim 1:** To understand the typical diets of pregnant women including foods they eat/ do not eat, care-seeking practices, and the cultural context shaping the health and nutrition of the mother and child.

### Typical diets

Throughout both Itasy and Vatovavy Fitovinany, pregnant and lactating women expressed the importance of adequate dietary intake during pregnancy. In doing so, many of these women discussed specific food items that are typically consumed by women in the community, along with the positive health outcomes they perceived as resulting from consuming these foods. Some of the typical food items frequently mentioned by pregnant women in Itasy included mangoes, bananas, cassava, potatoes, beans, and rice. For example, one pregnant woman in Itasy elaborated on how women often associate these foods with easier deliveries during childbirth.

*“A friend of mine tells me that I must eat properly so that I can have energy at the time of the delivery and also there is [positive] impact to the baby.”*

*- Itasy, interview, pregnant woman*

Another woman mentioned eating “poids de terre et le soja” (peas and soybeans), as it gives strength to the baby in the womb, while someone else noted that she consumed “yaourt” (yogurt) because she perceived it to be good for her health.

Similar to Itasy, in Vatovavy Fitovinany, pregnant and lactating women explained that foods typically consumed by women in the community included rice and carrots. Certain food items were specifically highlighted by these participants as being perceived as good for the health of either the mom or fetus. A participant stated the following to illustrate this perception:

*“Humm, if you want to have a well grown child, you should eat cassava leaves, or if you want the opposite, you should eat “tsipolotra” brèdes [leafy vegetable] just before its birth!”*

*- Vatovavy Fitovinany, interview, pregnant woman*

In both districts, most pregnant and lactating women described typically consuming rice and bananas during pregnancy. Rice was the most consumed food which, during a community workshop in Masindray, Itasy, participants described as one of the only sources of food to which women have access (**Table 2**). It is important to note that a few participants suggested that bananas should be consumed in moderation, as excessive intake could make children grow too quickly. To a lesser extent, some pregnant and lactating women in Itasy described beans and dairy products, such as soy milk (lait de soja) and yogurt (yaourt), to be good for the health of pregnant women. The table below further summarizes the main types of foods constituting typical diets of pregnant women in both districts.

**Table 2** Typical foods consumed by women during pregnancy in Itasy and Vatovay, Madagascar

Foods	Most preferred strategies for the supplement promotion
<b>Food commonly eaten*</b>	
Rice (Riz)	<i>"For me, in terms of food...if I have half a capulet of rice I cook it for myself...my children and their father just eat the energetic foods. I [am] force to stay healthy."</i> -Itasy, interview, pregnant woman
<b>Foods sometimes eaten†</b>	
Banana (Banane)	<i>"I need to eat bananas... I need to eat something with a calcium diet, because I have deficiencies"</i> -Itasy, interview, pregnant woman
<b>Foods occasionally eaten‡</b>	
Vegetables (Légumes)	<i>"For example, vegetables, meat, are foods that are good for pregnant women"</i> -Vatovavy Fitovinany, interview, pregnant woman
Mango (Mangue)	
Chicken (Poulet)	
Fish (Poisson)	

\*Foods mentioned by at least 12 participants. †Foods mentioned by 8 participants. ‡Foods mentioned by 3-5 participants.

## Food prescriptions and proscriptions (food taboos)

Food prescriptions are culturally bound food rules that are generally recommended by the community for other community members to follow. These food prescriptions are often attributed to the experiences community members have with the consumption of a specific food leading to a positive outcome during a specific life stage. For example, in this context, food prescriptions surrounding pregnancy relate to the consumption of certain foods leading to positive health outcomes for a pregnant woman during her pregnancy and delivery. Within the scope of the project, interview and free list data were generated to identify the top food prescriptions relevant to communities in Itasy and Vatovavy Fitovinany. As illustrated below, interview and free list participants explained that they consumed certain foods during pregnancy because of their perceptions that those foods were healthful.

**Table 3** Food prescriptions during pregnancy

Name and description of food	Explanation for why it should be consumed during pregnancy
Banana (Banane)	<i>"A banana a day brings vitamins and health if consumed in moderation."</i> -Itasy, free list field note, pregnant woman
Fish (Poisson)	<i>"Fresh fish bought at the market. This food provides vitamins for the pregnant woman and for the fetus."</i> -Itasy, free list field note, pregnant woman
Carrot	<i>"Eaten as raw or cooked, it is a good food for pregnant women. They eat it because it is rich in vitamin A which is good for the eyes."</i> -Itasy, free list field note, pregnant woman  <i>"This food gives the fetus vitamins and nutrients."</i> -Itasy, free list field note, pregnant woman



Overall, participants listed the aforementioned food prescriptions that are generally consumed by pregnant women because they provide vitamins and other beneficial outcomes to the woman during her pregnancy. Therefore, it is likely that banana, fish, and carrots might be food symbols that can be utilized for MMS product promotion, since they likely would have a positive reception within the community.

## Food proscriptions during pregnancy

Food proscriptions during pregnancy, specifically, are food items that are generally not recommended by the community for pregnant women to consume. In contrast to food prescriptions, food proscriptions are attributed to a food having negative health outcomes during specific life stages. Within the scope of the project, participants did not identify food proscriptions. However, during interviews, some women in Itasy described cassava as a food that women should not consume during pregnancy because, as one participant noted, excessive consumption could lead to rapid fetus growth. Another pregnant woman cited that cassava lacked vitamins and caused indigestion, leading this participant to also perceive cassava as a food that pregnant women should not consume.

It is important to note that in both Itasy and Vatovavy Fitovinany, however, women did describe cassava as filling upon consumption. Women also emphasized that cassava was consumed as a complement with rice, or separately during lunch, often due to the high cost of rice.

***“The pregnant woman eats cassava every day at noon and after eating it she takes some rice. Fresh cassava or dried cassava from the family’s agriculture. Pregnant women eat it because they don’t have much money to buy rice.” -Itasy, free list field note, pregnant woman***

Overall, cassava is commonly consumed by pregnant women as a supplementary food item due to the expensive cost of rice. That said, pregnant women noted excessive consumption can have negative impacts on the fetus, so it is consumed with some caution.

# Factors influencing optimal maternal nutrition during pregnancy

**Aim 2:** To describe the context-specific barriers and facilitating factors important for optimal maternal nutrition and birth outcomes in this setting

The following two sections focus on identifying and explaining factors that impact the nutrition and health-care-seeking behaviors of pregnant women. In each section, factors that both facilitate good nutritional and health practices, as well as factors that act as barriers to optimal nutritional and health practices, are described. In both sections, the impact of social support, or lack thereof, is described, highlighting how a social network can act as both a facilitator of, as well as a barrier to, achieving optimal nutritional and health status in pregnant women in Itasy and Vatovavy Fitovinany.

## Factors influencing optimal nutrition

### Barriers influencing optimal nutrition during pregnancy

In both Itasy and Vatovavy Fitovinany, participants discussed multiple barriers to optimal maternal nutrition during pregnancy including barriers related to prenatal supplementations, financial barriers, lack of prenatal supplement adherence, food access, lack of dietary diversity, and food dislike as displayed in **Table 4**.

**Table 4** List of barriers and facilitating factors to optimal nutrition during pregnancy

	Barriers	Facilitating Factors
Nutrition	<ul style="list-style-type: none"><li>Limited household finances</li><li>Lack of dietary diversity</li><li>Food aversion</li><li>Challenges with prenatal supplementation</li></ul>	<ul style="list-style-type: none"><li>Access to nutritional advice from health workers and other community members</li><li>Positive perception of prenatal supplementation</li><li>Positive perception of healthful eating</li></ul>

### Limited household finances

During interviews, in both Itasy and Vatovavy Fitovinany, many participants expressed that limited household finances posed a significant barrier to their achieving optimal nutritional status. Pregnant women explained that these financial barriers are related to multiple negative outcomes relating to nutrition, including the threat of malnutrition.

*“We don’t have money to buy [healthy foods] and follow these diets, we just buy rice with side dishes that are cheap and that’s it!” -Itasy, interview, pregnant woman*

*“They are all motivating [healthy eating], but the one and only problem is the purchasing power, problem of financial means.” -Vatovavy Fitovinany, interview, health worker*

Similarly, during community workshops in both Itasy and Vatovavy Fitovinany, pregnant and lactating women cited a lack of financial means to buy certain foods as a primary barrier to achieving an optimal nutritional status. In Itasy, the most frequently cited barrier to nutrition was related to finances. Specifically, women noted having low purchasing power to buy certain healthful foods (fruits, vegetables, cheese, and other dairy products) as a key barrier. The table below describes community workshop findings from the Masindray commune, Itasy, demonstrating the most frequently cited nutritional challenges among participants.

**Table 5** Community workshop findings from Masindray, Itasy

Top nutritional challenges	Number of votes	Explanation of why this challenge was mentioned
<b>Lack of financial means to purchase certain foods</b>	25	Low income and purchasing power to buy food they want to eat; food production is not sufficient to meet needs
<b>The diet is not varied, consumption of available food (rice only)</b>	18	Lack of local food; products are quickly converted into money; most of the time women only eat rice or other energy foods (cassava) with just a little bit of vegetables, no meat or fish
<b>Distance from markets (20 km from home)</b>	12	Market a few hours from home and sometimes unavailability of certain foods in the community (meat, fish, dairy products)
<b>Lack of knowledge about healthy food preparation</b>	6	
<b>The stomach cannot tolerate certain foods (e.g. peanuts)</b>	4	
<b>Problem of availability of food (some fruits)</b>	3	
<b>Does not like all foods, pregnant woman vomits all (example: chicken meat, pork meat)</b>	2	

In addition, at times, husbands' behavior also hindered a woman's access to food by reducing financial resources and/or being the reason why financial resources ran out quickly, as a health worker in Vatovavy Fitovinany alludes to:

***“For those who have no money, they wait for their husbands to sell bananas, when they come to sell the bananas, they waste the money, so they have no food.”***

***-Vatovavy Fitovinany, interview, health worker***

Lack of financial resources seemed to be very common in the community and represents a major barrier to giving any financial support. This lack of financial resources can lead to families not having enough food to eat, even if both the husband and the wife are working. The lack of food access stemming from a distinct lack of financial resources was apparent in both districts.

***“The real problem is money, it means lack of money. I have seen that here, there are many people who have financial problems. Even if her husband works. I talk to the mother of the family, and she says that her family has money problems, and they don't have the time or even the strength to bring their children here sometimes.”*** -Itasy, interview, pregnant women

Although participants listed financial barriers as the top frequently faced nutritional challenge during pregnancy, lack of dietary diversity was also among the top challenges, primarily due to these financial challenges.

## Lack of dietary diversity

Lack of dietary diversity was noted as a common nutritional challenge among participants during interviews in both Itasy and Vatovavy Fitovinany. This barrier was primarily attributed to lack of financial resources. In addition to participants in interviews, women and health workers participating in community workshops also noted this lack of dietary diversity as a common barrier to achieving optimal nutritional status. Some women mentioned that because they did not work, and thus relied on their husband's income, their household income was often not sufficient to meet the dietary intake needs of the entire family. The quote below highlights this connection between limited finances and insufficient dietary intake.

*"It depends, because, for example, here in our village, we earn 3,000 ariary a day, and for 5 days of work, we don't have any savings and every day we can't spend much, we just eat rice and bread, and we buy oil for 200 ariary, so it's not possible to eat varied food."*

*-Itasy, interview, health worker*

Participants also noted that **insufficient dietary intake** could be attributed to a lack of food of availability of food, in addition to a lack of financial resources to purchase the food that is available. This lack of food availability leads to many families not having enough food to eat, causing this insufficient dietary intake. That being said, of the food consumed, pregnant women perceived a lack of diversity in their diet. The table below describes community workshop findings from the Ambiabé commune, Vatovavy Fitovinany, highlighting this lack of dietary diversity as a key barrier to optimal nutrition.

**Table 6** Community workshop findings from Ambiabé, Vatovavy Fitovinany

Top nutritional challenges	Number of votes	Explanation of why this challenge was mentioned
<b>Food consumed is not varied, lacks vitamins</b>	25	Women become weak when they are pregnant
<b>Financial problem</b>	9	Cannot consume foods they want to consume. Cannot follow care
<b>Women have no appetite</b>	8	Vomiting and lack of appetite have negative impacts on the fetus
<b>Distance from the health center</b>	5	They cannot benefit from the necessary care and cannot do ANC
<b>Lack or insufficiency of food</b>	3	The fetus does not develop well

Studies conducted in Madagascar assessing the determinants of food choice and barriers to dietary diversity equally highlighted food cost and lack of financial resources to afford such cost as a major contributor to lack of dietary diversity (Farris, 2019). Participants in both Itasy and Vatovavy Fitovinany continuously mentioned dietary diversity as a nutritional challenge, as a result of lack of financial resources and food availability.

## Food aversion

An additional challenge discussed by women during pregnancy was their pregnancy-related food aversions. During pregnancy, it was commonly noted that certain foods caused nausea and vomiting. As such, these aversions led to various outcomes including lack of appetite.

*"...sometimes there are also pregnant women who don't like rice when they are pregnant, I experienced this when I was pregnant, every time I smelled the smell of rice I threw up."*

*-Vatovavy Fitovinany, focus group, PLW*



Pregnant women frequently explained that their aversion to certain foods was partly due to the negative side effects caused by consuming those foods. As such, identifying foods pregnant women like to consume is essential to ensuring women are meeting necessary dietary requirements during pregnancy.

## Challenges with prenatal supplementation

In both Itasy and Vatovavy Fitovinany, participants also discussed that challenges associated with prenatal supplementation (i.e. IFA) included **physiological side effects** including feeling weak, nauseous, dizzy, and having a low tolerance for IFA, as well as a general **dislike for IFA**, which often makes it difficult for women to consume the supplement. Other IFA related challenges included women **forgetting to consume IFA** and **not finishing prescribed IFA**. Some participants stated:

*“No, we didn’t take all [IFA] all, there are always those [that] we forget.”*

*-Vatovavy Fitovinany, focus group, PLW*

### Key barriers related to prenatal supplements

- Limited household finances
- Lack of dietary diversity
- Food aversion
- Challenges with prenatal supplementation

**The shortage of prenatal supplements** available during antenatal care (ANC) visits often leads to women going to pharmacies for supplement related purchases. However, it is important to note that even at the pharmacy, supplement stock-outs are common. Supplement supplies are often not found during visits to the traditional birth attendants, at the Toby or CSB, as described in **Table 7**. Although supplements are generally free for women during ANC visits, participants noted that the inadequate stocks often cause health workers to refer women to the pharmacy for supplement purchase.

**Table 7** Definition of health facilities and personnel

Health facilities and personnel	Definition	Context
<b>Centre de santé de Base (i.e., CSB, CSB I, CSB II)</b>	Basic Health Center.	Normally, there is one CSB per commune and this is the very criterion for acceptance as a commune
<b>TOBY (i.e., Toby FAFY, Toby Seecaline)</b>	CSBI: if there is no doctor in the CSB	Centers that are located at the level of the districts or Fokontany (a Fokontany is the administrative subdivision after the commune)
<b>Matrons</b>	CSBII: if there is a doctor	
<b>Community health agents</b>	These are nutritional sites. There is one nutritional site per fokontany that is built by the community	At the TOBY level, tasks are carried out by the community health workers
<b>Sage femme</b>	Traditional birth attendants	
<b>Problem of availability of food (some fruits)</b>	Provide health services to community basis, especially for women and children under five	
<b>Does not like all foods, pregnant woman vomits all (example: chicken meat, pork meat)</b>	Midwife; assist with newborn delivery	

Unfortunately, in both Itasy and Vatovavy Fitovinany, women highlighted financial barriers as a primary reason for not consuming necessary supplements. In fact, a participant in Itasy emphasized the point that, as a health worker, she often forces women to purchase supplements, therefore making it difficult for women to attend ANC visits. As stated by the participant:

*“For people who don’t have financial problems, the price is not expensive at all. People who have money can buy it directly, but there are some people that I have to force her to buy, and she buys in small details. And when we force her like that, afterwards she doesn’t come back to the prenatal consultation because she is afraid that I will force her to buy other things.”*  
-Itasy, interview, health worker

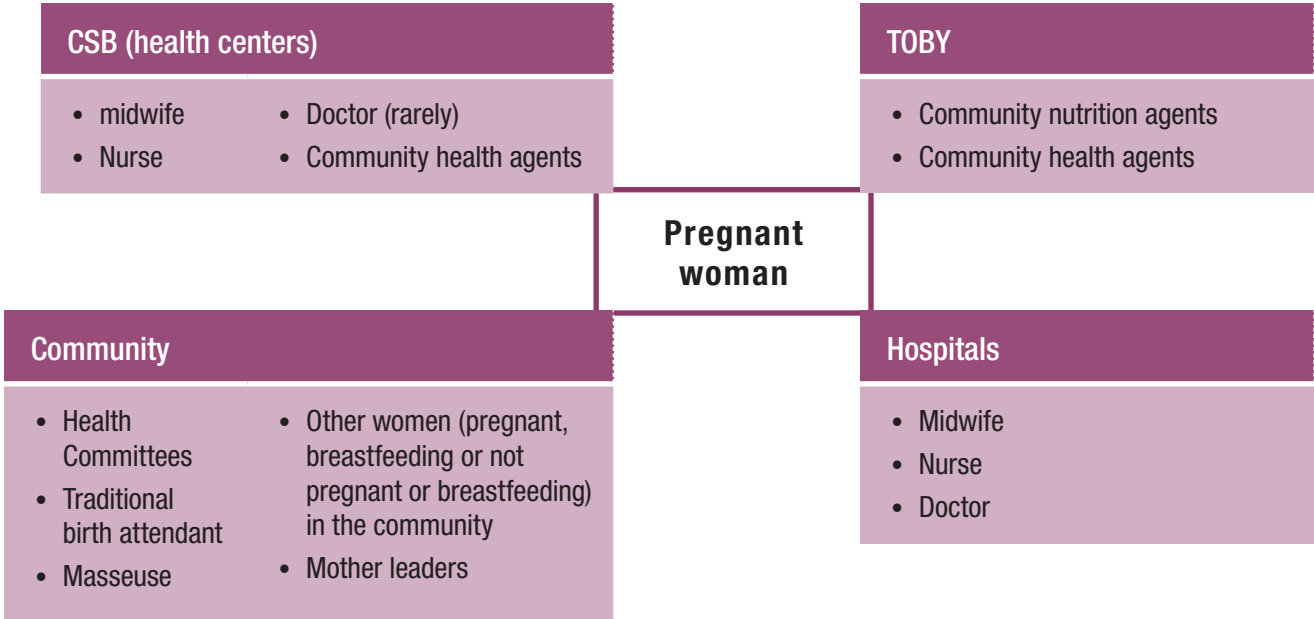
In both Itasy and Vatovavy Fitovinany, participants highlighted multiple barriers related to IFA and other prenatal supplementations, ranging from negative physiological side effects to supplements shortage. Even though these barriers are numerous, it is important to discuss the many factors that also facilitate optimal nutrition practices during pregnancy for women in Itasy and Vitovavy Fitovinany.

### Facilitating factors influencing optimal nutrition during pregnancy

While participants discussed various nutrition-related challenges faced by pregnant women in the community, some factors that facilitate good nutritional intake during pregnancy were equally discussed by participants. Two primary facilitating factors were identified during interviews: accessible nutrition advice from health workers and members of the community, and positive perception of IFA and healthful eating.

### Access to nutritional advice from health workers and community members

In both Itasy and Vatovavy Fitovinany, nutritional advice was primarily given by different types of health workers to pregnant women. Participants also highlighted the importance of receiving nutritional advice from friends and other pregnant women in their communities. The figure below illustrates the process of providing nutritional advice to pregnant women across both regions.



**Figure 2** Range of trusted information sources for pregnant women in Itasy and Vatovavy, Madagascar

Participants discussed receiving nutritional advice related to the importance of IFA consumption, dietary diversity of foods, the reduction of salt consumption, and consumption of foods for illness prevention (i.e., stomachache), and food demonstration. This finding was highlighted by a health worker below:

***“We know the diet of pregnant and breastfeeding women. We give advice on healthy food such as: hot food, food must be clean, food that gives strength to the fetus, and I also encourage the mother to take iron folic acid and go to the hospital.”***

***-Itasy, interview, health worker***

Health workers, specifically traditional birth attendants, described advising pregnant women to consume specific types of local leaves to help treat illnesses. In addition, some traditional birth attendants who perform massages prescribed leaves to pregnant women to perform “hevoka” (powerful antiviral, but also an immunostimulant and a decongestant). This process facilitates the movement of the fetus, stops blood flow, and opens the cervix. The table below provides further information about many of the leaves recommended by health workers to pregnant women for treatment.

**Table 8** *Types of traditional medicine suggested by traditional birth attendants for pregnant women to use for good health*

Types of leaves used for treatment	Supporting quotes
Red flower (fleures rouges)	<p><i>“As we live in the countryside, we use leaves including orange leaves, "solaitra" it has red flowers, avocado leaf, they are boiled together and drank after, they [pregnant women] feel better after that.”</i></p> <p><b><i>-Vatovavy Fitovinany, Interview, health worker</i></b></p>
Orange leaves (feuilles d'orange)	
Avocado leaves (feuille d'avocat)	
Air plant (feuilles de sodifafana)	<p><i>“And I gave her leaves to treat her at home and asked her to make "hevoka" when she is home. She did not lose her baby. And she is expecting her second child now”</i></p> <p><b><i>-Itasy, Interview, health worker</i></b></p>

Additionally, interviews conducted in both Itasy and Vatovavy Fitovinany indicated that in both districts, pregnant women primarily received advice from community members and healthcare workers regarding their pregnancies. This advice ranged from advice about proper nutrition and healthy diet during pregnancy to the amount of rest a pregnant mother should get during pregnancy. In Itasy, there was a distinct focus on going to a doctor, rather than a midwife, to receive this advice.

***“Every time I go to the AC to weigh myself, she gives me advice. If, for example, your child has a height or weight problem, [she gives] advice on what food to eat...”***

***-Itasy, interview, pregnant woman***

Overall, it is evident that ensuring pregnant women have adequate access to nutritional advice is a critical factor in improving optimal nutrition practices among these same women. Of particular importance, participants identified the importance of seeking nutritional advice from various health agents and locations including Toby, during ANC visits, and at the midwife. These findings will be beneficial in understanding how to best target MMS promotion.

## Positive perception of prenatal supplementation

In addition to receiving nutrition advice from multiple individuals from the community, another factor that facilitates optimal nutrition seeking practices was related to women's positive perception of IFA. A woman's positive perception of IFA supplementation helps promote IFA consumption and adherence despite aforementioned challenges related to IFA supplementation. In Itasy and Vatovavy Fitovinany, interview data and workshop data highlighted the importance of IFA consumption because pregnant and lactating women commonly associate it with **hemorrhage prevention** during delivery, **fetus improvement and growth**, **energy gain**, and **prevention of anemia** and **dizziness**.

### Key boosters related to prenatal supplements

- Prevents hemorrhage
- Aids with fetus growth
- Prevents anemia
- Prevents dizziness
- Provide energy gain
- Intellectual development of the fetus

*"A pregnant woman has just given birth with a huge hemorrhage, that's why all pregnant women must take the iron battery to fight against this hemorrhage, to give energy to the mother during her pregnancy, and not to lose a lot of blood during the delivery."*

*-Vatovavy Fitovinany, interview, pregnant woman*

*"For the headache, we know that it is because of anemia. And we encourage her to eat foods rich in iron, or to take iron folic acid. And when she takes it afterwards she is relieved for a while."* -Itasy, interview, health worker

To a lesser extent, community workshop data in Itasy indicated that women consumed IFA in order to improve the **intellectual development** of the fetus. The table below describes community workshop findings from Ampefy, commune, Itasy.

**Table 9** Community workshop findings from Ampefy, Itasy

Advantages of IFA supplements	Number of votes
Intellectual development of the fetus)	14
Prevents hemorrhage	20
Gives strength to the fetus	13
Gives strength to the pregnant woman)	18
Prevent dizziness	15

Overall, in both Itasy and Vatovavy Fitovinany, participants commented on several positive perceptions of prenatal supplements during pregnancy and how these perceptions improve supplement adherence which contributes to reaching an optimal level of nutrition.



## Positive perception of healthful eating

Despite the challenges related to dietary diversity and food aversions, participants were aware of the benefits of healthful eating. Healthy eating was advised to pregnant women by health workers during health visits or sensitization programs. In doing so, there was a distinct emphasis on eating a diverse variety of food. Healthy eating was perceived by participants to ensure good health. For example, one participant mentioned:

***“...pregnant women must eat healthy foods if they want to stay healthy!***

***-Itasy, interview, pregnant woman***

Additionally, many pregnant women commented on their perceived importance of good diet and nutrition, and the positive effect this good diet will have on their birth and their baby.

***“Nutritional advice is to have a healthy diet. The goal is to have a healthy baby and a healthy mother who gives birth normally and that the baby can breastfeed at birth. That is the question of nutrition.” -Itasy, interview, pregnant woman***

Despite the various nutritional challenges faced by pregnant women, participants in both Itasy and Vatovavy Fitovinany have generally positive perceptions about the importance of healthful eating during pregnancy.

# Factors influencing pregnancy-related health-seeking behaviors

## Factors influencing health

In both Itasy and Vatovavy Fitovinany, participants discussed numerous barriers and facilitating factors for optimal maternal health and healthcare-seeking behaviors during pregnancy.

Participants cited lack of access to health care, workload, experienced symptoms, common illness, pregnancy and childbirth complications, psychosocial factors, a lack of medical advice provided during prenatal consultations, lack of family and community support, and problems at home and domestic violence as barriers to optimal health and healthcare seeking behaviors. Participants cited perceptions of the importance of healthy pregnancy, availability of prenatal consultations, and effective collaboration of healthcare workers as facilitating their practice of optimal health seeking behaviors. Social support, or lack thereof, was cited as both a facilitator and barrier, respectively, to pregnant and lactating women in both Itasy and Vitovavy Fitovinany.

**Table 10** Overview of barriers and facilitating factors that influence pregnant women’s health and health seeking behaviors

	Barriers	Facilitating Factors
Health	<ul style="list-style-type: none"><li>• Access to health care</li><li>• Workload</li><li>• Pregnancy related symptoms</li><li>• Common illnesses limiting care seeking behaviors</li><li>• Pregnancy and childbirth complications</li><li>• Psychosocial factors</li><li>• Lack of medical advice provided during prenatal consultations</li><li>• Lack of family and community support</li><li>• Problems at home and domestic violence</li></ul>	<ul style="list-style-type: none"><li>• Positive perception about the importance of healthy pregnancy</li><li>• Positive perception of prenatal care</li><li>• Effective collaboration between midwives and medical doctors throughout pregnancy and childbirth</li><li>• Supportive social network</li></ul>

The following paragraphs will further explain how each of these factors either inhibit or promote the practice of optimal health seeking behaviors, ultimately impacting a pregnant woman’s overall health outcomes.

## Barriers influencing optimal health and health seeking during pregnancy

### Access to health care

The lack of access to health care was expressed across both districts on numerous occasions and could be further divided into financial access, physical access and psychosocial barriers. Financial barriers included consultation and medication costs, travel costs, as well as the fear of not having enough money to buy food during the consultation in case women went hungry. Physical barriers to health care consisted of bad weather conditions and long distances to the hospital and health centers. Psychosocial barriers included fear of medical staff and/or medical environment.

*“To my understanding, the main obstacle is the issue of money. There is also the distance to the health center or the traditional birth attendants for massages. Because there are women who wanted to be treated but who have no money, they ended up having to stay.”*

*- Itasy, interview, health worker*

*“Medicines are very expensive, but their purchasing power is very low in the countryside. Third, there are fokontany located very far from this health center. There are fokontany 18km or 25km from here, so it is very difficult for them to go to the CSB.”*

*-Vatovavy Fitovinany, interview, health worker*

## Workload

In both Itasy and Vatovavy Fitovinany, participants also discussed health challenges associated with workload. Workload in the form of household chores and heavy work in the fields was carried out on a regular basis and commonly associated with fatigue, hip pain and miscarriages. Some participants stated:

*“The instability of my blood pressure is due to the charcoal that I use every day when I bake bread and because of the sun.” -Itasy, interview, pregnant woman*

*“There are also pregnant women who live alone, so they do all the hard work, then all of them suffer from the disease.” -Vatovavy Fitovinany, interview, health worker*

Workload was a commonly mentioned barrier to optimal health among mothers in both districts, and mothers and health workers often associated workload with negative health outcomes.

## Pregnancy related symptoms

Pregnant women experienced a range of symptoms throughout their pregnancy such as: hip pain, fatigue, dizziness, upset stomach, vomiting, swelling, weakness, headaches, toothache, pelvic pain, convulsions, fainting, cramps, unstable blood pressure, fever, back pain, joint pain, coughing, nausea and itching. These symptoms were commonly mentioned across both districts.

*“Pregnant women make me sad because at the time of the 3rd month of pregnancy, they have pain everywhere. Today their head hurts, tomorrow their teeth hurt, the day after tomorrow their stomach, their hips. The woman is always sick, she has no strength, she does not eat.” -Itasy, interview, health worker*

*“The most difficult thing for me was the pain in my belly, I could feel the pain all the way to my back! And then I received an injection that gave me some relief!”*

*-Vatovavy Fitovinany, interview, pregnant woman*

Pregnant women complained about a wide range of symptoms they felt throughout their pregnancy. These symptoms were mostly similar across both districts.

## Common illnesses limiting care seeking behaviors

Illness and disease were an important barrier to optimal health and nutrition behaviors in both districts. These illnesses and diseases included hemorrhage, malnutrition, malaria, anemia, vaginal infections/ discharge, and syphilis.

*“There may be a day that the woman is very tired. So, the pregnant woman hemorrhaged because she is tired. That’s most of the illnesses of pregnant women here.”*

*-Itasy, interview, health worker*

*“The frequent diseases affecting pregnant women, to my knowledge, are coughs, colds, malaria, if during her pregnancy she is affected by malaria, this could cause a miscarriage.”*

*-Vatovavy Fitovinany, interview, health worker*

## **Pregnancy and childbirth complications**

Pregnancy and childbirth complications were not uncommon and were reflected in both districts. Stillbirths, miscarriages, and other complications such as the position of the baby during labor were mentioned by the participants.

*“There are many women who have complications during childbirth ... For example, she lost a little blood and then there is hemorrhage and finally the baby is stillborn.”*

*-Itasy, interview, health worker*

*“What is more serious? Since then, I have never seen a woman seriously ill, it is already several times that I deliver women who give birth to twins, without risk, but the most serious is that if the placenta of the woman is blocked, it may be that the difficulty (error) during the delivery! sometimes, for others, the health of the mother, depends on the location of the child in the womb”. -Vatovavy Fitovinany, interview, health worker*

Pregnant women complained about pregnancy and childbirth complications across both districts.

## **Psychosocial factors**

In terms of psychosocial barriers to healthcare access, although participants expressed similar fears across both districts, the fears differed according to type of participant (health worker or pregnant and lactating woman). Indeed, health workers referred to pregnant and lactating women's fear of strict midwives, whereas the pregnant and lactating women themselves did not. Instead, pregnant and lactating women mostly feared being judged by the community.

*“For the care for pregnant women. There were people who tell women that the midwife is very strict, or she is afraid also that he needed money to come here, but now for pregnant women everything is almost free.” -Itasy, interview, health worker*

In both Itasy and Vatovavy Fitovinany, midwives have a direct influence on the health behavior and practices of pregnant women through prenatal consultations and serve as a key target audience to encourage, explain the need, and use of essential health behaviors and practices that are required during the pregnancy period. The behavior of the midwife, however, was described as being “strict” and her mood as being “angry”.

*“When I was pregnant with my second child, the midwife told me to bathe, etc., etc. She was angry at another pregnant woman who was very dirty, and then she told me “you don't encourage your friends to bathe. So, we don't know how clean we are, it's hard to look inside our clothes.” -Vatovavy Fitovinany, focus group, PLW*

In addition to the midwife, pregnant mothers are also fearful of formal environments. Although different kinds of fears emerged across the interviews and focus group discussions, this particular fear of formal environments and offices was only mentioned by a health worker in Vatovavy Fitovinany.

*“One of the obstacles too; some of them have never been in an office. So, they are afraid to go to the office, that's one of the obstacles too.” -Vatovavy Fitovinany, interview, health worker*



Finally, participants feared to be revealed as being pregnant. It appears that the perception of the community is important as they are able to exert judgement on women's behavior. This judgement seems strong enough to discourage women to access health care (both CSB and hospital) and to feel stressed.

***“Sometimes, someone thinks or judges that all women who go to the CSB on Tuesday and Wednesday are pregnant. And they are stressed because of that.”***

***-Vatovavy Fitovinany, focus group, PLW***

As conveyed by the quotes, financial, physical access to health care and psychosocial aspects were an important barrier to optimal health and nutrition across both districts.

## **Lack of medical advice provided during prenatal consultation**

Pregnant women shared that they felt they did not receive adequate advice from medical staff during prenatal consultations. They complained that there was a lack of explanation during prenatal consultations on specific medication. In addition, participants noted that the reason why they were not applying medical advice was due to the lack of sensitization. This perception came across strongly in Itasy:

***“At first there was no explanation at the hospital but the first thing they gave was a deworming tablet...you have to take this medicine...every day every night for half of the rice...there was no explanation or what it does, but I only heard people say that it prevents bleeding. But the doctor didn't explain it to me.”*** -Itasy, interview, pregnant woman

Women referred to the high volume of patients needing care during consultations and assumed that this was a reason why medical staff had limited time to provide them with any explanation on how or why to consume IFA. In Itasy, specifically, multiple women noted a lack of advice provided by medical staff, in particular the medical doctor and the midwife. In addition, seeking advice is not a common nor a promoted behavior, nor a priority. Women mentioned that no advice was given on how or why supplements should be consumed. Instead, they were only instructed to consume them.

***“No..... the doctor.... if you go to the doctor, he does not give advice.”***

***-Itasy, interview, pregnant women***

***“When the midwife explains to me the iron-folic acid tablet, she only explains that it must be taken, there is no other improvement.”*** -Itasy, interview, pregnant women

Ultimately, this lack of advice provided in medical settings by many different healthcare workers is a strong factor that reduces a woman's healthcare-seeking behaviors and ultimately, their health outcomes.

## **Lack of family and community support**

Lack of social support in the form of a distinct lack of family support was mentioned by participants in both districts. Women expressed that their spouse's behavior could serve as a barrier for them to access health services and that family support was equally not available. In general, women felt they had to take care of their own and expressed that seeking support was not common, nor was it a priority for them. Referring to the lack of family support and the spouse more specifically, one pregnant woman in Itasy said:

***“For example, if the wife wants to go to counseling, her spouse won't let her. You don't have the right to go, and she can't go either because of financial worries. But it is free!”***

***-Itasy, interview, pregnant women***

The lack of family support is not solely characterized by the behavior of husbands but also of the family in general, whereby family support seems to be lacking and not only due to financial reasons as conveyed below:

***“The family does not support me, once I was afraid of heights, nobody brought me, and nobody followed me to the hospital. As the hospital is close by, I had to go there because I am sick.” -Itasy, interview, pregnant women***

Additionally, a lack of reliance on the community was solely expressed in Itasy. Women expressed that their neighbors and/or the community were not available to provide mothers advice and could also not be trusted.

***“The obstacle at the community level is the lack of solidarity. It is only this that causes women to get sick. Because there are malicious people in the community who pretend to be.” -Itasy, interview, health worker***

As described above, lack of social support in the form of lack of family support, as well as a lack of community support, was a key barrier for optimal health and health seeking practices.

## **Problems at home and domestic violence**

Women shared their experiences at home and indicated family issues and domestic violence (e.g., alcoholic spouse, regular fights, infidelity in the couple were all mentioned as possible causes pregnant women may experience in general) as causes for negative health outcomes in general, particularly miscarriage, worry, and stress. This was reflected in both Itasy and Vatovavy Fitovinany as shown below:

***“The causes of this disease are for example her husband beats her or the woman under lift something heavy!” -Itasy, interview, pregnant woman***

***“There is also the man who puts the strength in the pregnant woman to direct his wife to work strong despite her pregnancy.” -Vatovavy Fitovinany, interview, health worker***

Aside from domestic violence, household issues included having an alcoholic spouse and/or continuous disagreements:

***“For example, worries at home can already cause her health to deteriorate (an alcoholic husband or continuous disagreements).” -Itasy, interview, pregnant woman***

In summary, in both districts, problems at home and domestic violence were barriers which influenced women’s health during pregnancy, as they led to negative health outcomes including miscarriage, worry, and stress.

## Facilitating factors influencing health-seeking behaviors

In both Itasy and Vatovavy Fitovinany, participants discussed multiple factors that facilitate optimal maternal health seeking behaviors during pregnancy. These factors include positive belief systems held by participants about what constitutes a healthy pregnancy and why healthy pregnancy is important, positive perception of prenatal consultations, the impact of effective collaboration between midwives and medical doctors throughout pregnancy and childbirth, as well as the impact of having a supportive social network.

### Positive perceptions about the importance of healthy pregnancy

During interviews in both Itasy and Vatovavy Fitovinany, participants discussed the belief systems which influence their positive health seeking behaviors. In particular, many pregnant women explained that they practice good health seeking behaviors, such as attending prenatal consultations and focusing on a healthy diet, because of the ways in which they perceive, or have been advised by others, that these behaviors will influence the health of their baby.

In addition to having positive perceptions about the impact of good nutrition and following health advice, many pregnant women also discussed that their worry about having birth complications led to their perception of the importance of following advice to practice good health behaviors.

***“The reason that women follow health advice is that they want to be healthy and that they fear complications during birth. It is also the matter of thinking about the future of their baby, that the baby will be healthy at birth.” -Itasy, interview, pregnant woman***

In addition to having a positive perception of the importance of having a healthy pregnancy, women also cited having a positive perception of prenatal care and consultations as an additional factor that influenced their healthcare-seeking behaviors.

### Positive perception of prenatal care

In addition to practicing good nutrition by having a healthy diet, a lot of pregnant women commented on the importance of prenatal consultations during pregnancy in interviews conducted in both Itasy and Vatovavy Fitovinany.

***“It is better to go to the centre de santé (health center), to never abstain from a CPN (prenatal) consultation, and to maintain healthy food preparation.”***

***-Vatovavy Fitovinany, interview, pregnant woman***

Not only did pregnant women discuss the importance of these prenatal consultations, but healthcare workers in both Itasy and Vatovavy Fitovinany also discussed their importance.

***“[A pregnant woman] must do prenatal consultations, so I send her for prenatal consultations.” -Itasy, interview, health worker***

It is important to note that in both districts, both pregnant women and healthcare workers emphasized and understood the importance of these prenatal consultations to ensuring the health of the pregnant women and her child.

## Effective collaboration between midwives and medical doctors during pregnancy and childbirth

Many healthcare workers in both Itasy and Vatovavy Fitovinany discussed the importance of effective collaboration between midwives and medical doctors in providing care to pregnant women in order to ensure their optimum level of care during pregnancy and childbirth. Many pregnant women and healthcare workers alike discussed the cooperation between midwives and medical doctors at larger hospital centers over the course of a woman's pregnancy. In many cases, healthcare workers discussed how a pregnant woman will first go to a midwife ahead of giving birth and then she will then be transported to a larger hospital center to give birth.

***“The responsibility of the midwife is to, if there is a person giving birth, first consult a midwife when the pregnant woman’s labor begins, and it is at that moment that I tell them that we must go to the hospital. That’s my responsibility!” -Itasy, interview, health worker***

***“If there is a woman in a village who is going to give birth, she goes first to the midwife, and it is the midwife who then takes her to the hospital.”***  
-Vatovavy Fitovinany, interview, pregnant woman

This collaboration not only ensures pregnant women have a safe place to give birth at a hospital, but it also provides a sense of comfort to pregnant women to be cared for by a midwife who she trusts, because of their shared background.

***“We collaborate with the midwives to convince pregnant women to give birth at the centre de santé (health center), because people pay attention to what midwives say, because they live in the same society... so the midwives tell [the pregnant women] that they will join them at the CSB II, you have a fever or illness so you should go to the hospital. It’s also the midwives who bring the pregnant women back to do the fourth CPN (prenatal consultation).”***  
-Vatovavy Fitovinany, interview, health worker

Comments made by pregnant women and healthcare workers, alike, during interviews elucidate the ways in which midwives are valuable assets to the healthcare team that takes care of and provides advice to pregnant women. Not only do they advise pregnant women to attend their prenatal consultations, but they also ensure pregnant women give birth in hospitals, rather than in their home village. Their trusted opinion and capacity to persuade pregnant women to practice optimal health-seeking behaviors in both Itasy and Vatovavy Fitovinany is vital to ensuring the health of the pregnant woman.

## Supportive Social Network

In Vatovavy Fitovinany, pregnant women specifically mentioned the importance of the role of the midwife in advising the mother about the health of herself and her unborn child during pregnancy. Comments made by pregnant women during these interviews in Vatovavy Fitovinany demonstrate the trust that the pregnant woman has in her midwife to counsel and advise her about the best actions to take to ensure her health.

***“When we are with the midwife, we tell her what is wrong, she looks and observes why the baby does not move in the womb, and then she recommends that we go to the hospital.”***  
-Vatovavy Fitovinany, interview, pregnant woman

In addition to receiving advice from healthcare workers, a majority of pregnant women also mentioned the importance of her community in providing advice about pregnancy and childbirth. The women in these interviews explain the importance of the community members acting as other trusted individuals, outside of healthcare workers, to whom she can rely on for advice if needed.



*“Sometimes I go to the doctor, but when I need advice I talk to people a little older than me, and they give me advice... and I ask the same question to another person and then I decide what to do.” -Itasy, interview, pregnant woman*

In addition to receiving advice from community members, these trusted individuals also provide help to pregnant women who are often responsible for many daily household chores and tasks.

*“Sometimes there are family helpers like a child or other family member, and the community also helps.” -Itasy, interview, pregnant woman*

In some cases, this help offered was financial in nature, ensuring that the pregnant women, and oftentimes her spouse and family, had the resources necessary to have a consistent source of food. This financial support can also be useful in helping to ensure that the woman and her family have access to a diverse diet, which, as aforementioned, is important to ensuring the health of the pregnant woman and her child.

*“When we didn’t have any money, we talked to a friend to borrow money so my husband could eat.” -Vatovavy Fitovinany, interview, pregnant woman*

Not only do community members offer help to pregnant women, but so do the pregnant women’s partners and extended family members. In many cases, the workload of caring for the home and family is shared by a woman’s husband during pregnancy.

*“My husband takes care of paying for rent, food, electricity, and all of our needs.” -Itasy, interview, pregnant woman*

*“[My husband] realizes when I am tired and he cooks and does the housework.” -Itasy, interview, pregnant woman*

In both districts, Itasy and Vatovavy Fitovinany, women in interviews offered valuable insight into the ways that they receive valuable help from their community during pregnancy. One noted difference was the emphasis that pregnant mothers in Vatovavy Fitovinany placed on the importance of receiving advice from trusted midwives, whereas many women in Itasy mentioned receiving advice about pregnancy from a medical doctor. In both districts, though, women discussed the commonality of receiving advice and help from their community and family networks, suggesting that the pregnant women interviewed in these two districts are part of diverse supportive social networks.

### **To what extent do pregnant and lactating women believe pre-natal supplementation is important for optimal maternal nutrition and healthy birth outcomes in this setting?**

In both Itasy and Vatovavy Fitovinany, pregnant and lactating women believe that prenatal supplementation is important for optimal maternal nutrition and healthy birth outcomes. Participants perceive prenatal supplements to be positively related to various outcomes including hemorrhage prevention, aiding with fetus growth, anemia and dizziness prevention, providing energy to the pregnant woman, and intellectual development for the fetus. The table below describes community workshop findings from Antanetible, commune, Itasy.

**Table 11** *Community workshop findings from Antanetible, Itasy*

Advantages of IFA supplements	Number of votes
no bleeding during delivery	21
gives strength to the child (strong child)	12
it encourages you to drink a lot of water	18
the mother has strength and the fetus grows	6
the pregnant woman's belly grows	18

Despite the positive perception women have of prenatal supplementations, it is important to highlight the challenges that women face with prenatal supplementation. Participants cited nausea, vomiting, shortage of prenatal supplements, and financial barriers as primary barriers to prenatal supplementation consumption and adherence. The table below describes community workshop findings from Masindray, commune, Itasy, highlighting some of the top barriers to prenatal supplementation.

**Table 12** *Community workshop findings from Masindray, Itasy*

Disadvantages of IFA supplements	Number of votes
Bad smell	36
malaise and vomiting	21
bad taste	2
unbearable for the stomach	1

Overall, pregnant women in both Itasy and Vatovavy Fitovinany believe prenatal supplementation is critical for optimal maternal nutrition and healthy birth outcomes. However, participants in both districts underscored the important challenges that, in this setting, may make it difficult to accept and comply with the prenatal supplement regimen.

# Considerations for social marketing MMS to pregnant women

**Aim 3:** To generate social marketing-related recommendations (product, price, promotion, placement) to inform culturally appropriate MMS programming for optimal acceptability and compliance.

## Product-related inputs from community members

In order to determine the most appropriate packaging for MMS supplementation, pregnant and lactating women participated in interviews and workshops to provide advice about what color, logo, slogan, brand name, packaging style, and price would be most appropriate and tailored to the target audience of pregnant and lactating women in both Itasy and Vatovavy Fitovinany. Overall, these results demonstrated that orange packaging (or another color associated with a healthful behavior, such as the color orange being associated with the vitamin-rich fruit) would be most effective. These data also showed that a logo depicting a fruit or healthy and dynamic pregnant women would be most appropriate. Additionally, participants noted that slogans and brand names that relate back to giving the mother energy are useful. It was also important that the taste of the pill is benign and does not cause the woman nausea, and that the supplement should be packaged in boxes that provide the woman a monthly supply of pills, rather than just a weekly supply.

## Preferred MMS packaging

In both Itasy and Vatovavy Fitovinany, pregnant and lactating women responded favorably to an orange or red colored package during interviews, in which they were asked what would be their preferred package color. The workshop findings corroborate these interview findings, as orange and red are the most preferred color for MMS packaging in Itasy, and orange remains the most preferred color for MMS packaging in Vatovavy Fitovinany, as seen in **Table 13**.

**Table 13** Workshop votes for preferred packaging color

District	Color	Votes
Itasy	Orange	96
	Red	38
	Pink	23
	Chocolate Brown	23
Vatovavy Fitovinany	Orange	65
	White	32
	Pink	27

During interviews, pregnant women cited the common association between the color orange and the fruit as being a key factor in their preference for the color.

*“I just love orange because I love orange fruit.” -Itasy, interview, pregnant woman*

While orange and red were commonly cited as preferred colors by women in both districts during interviews and during the participatory workshop, there was some discrepancy in how women viewed the color white as a potential package color. Women in both Itasy and Vatovavy Fitovinany frequently identified white as a preferred color, but it is worth noting that some women in Vatovavy Fitovinany associated the white color with vomiting, due to their experiences with previous white supplements that caused nausea.

*“Some people have an upset stomach when they take the iron pill, but for others, when the red color dissolves, the white color is very bad, and that’s why they don’t take it all.”*

*-Vatovavy Fitovinany, interview, pregnant woman*

Finally, it is important to note that a majority of women also strongly advised against black pills in both Itasy and Vatovavy Fitovinany during interviews, deliberately mentioning how black is a color to avoid and to “not make the color too black”, as one interviewed pregnant woman mentioned..

Overall, the perceptions about pill color in both Itasy and Vatovavy Fitovinany were similar, with a majority of women strongly supporting the colors orange and red as a potential pill color in both districts. Despite the experiences of some women with white pills in Vatovavy Fitovinany, most endorsed the color white in Itasy and in Vatovavy Fitovinany and a majority of women in both districts strongly advised against the use of the color black.

## Preferred MMS Logo

During interviews and workshops conducted in Itasy and Vatovavy Fitovinany, a majority of women identified their preferred MMS packaging logo to show either fruit or a picture of a healthy woman, if not both. This is illustrated below.

**Table 14** Workshop votes for preferred MMS Logo

District	Logo	Votes
Itasy	Image of a pregnant woman smiling and swallowing the prenatal supplement.	52
	A smiling, healthy pregnant woman who shows no sign of weakness.	29
	Image of two pregnant women talking, one of them raising awareness and the other one listening.	18
	A pregnant woman who is taking the prenatal supplement.	18
Vatovavy Fitovinany	Appetizing dish	16
	Photo of a healthy and dynamic pregnant woman.	25
	Photo of a pregnant woman who consumes the supplement	15
	Fruits (Orange, Banana, Strawberry, Pineapple)	15

The pregnant women in both districts cited their positive perception of various fruits as an important factor in why they believe fruit, such as apples, oranges, bananas, and mangoes, should be utilized in a MMS logo.

*“Use fruits rich in Vitamin A.” -Vatovavy Fitovinany, interview, pregnant woman*

*“It would be best to put an image of an orange... I had the same idea as her for a logo, put a picture of an avocado or a banana, for example.” -Itasy, interview, pregnant woman*



In addition to using images of fruit, a majority of pregnant women also suggested and supported the use of an image of a healthy, pregnant woman on the packaging. In order for this logo to be successful, pregnant women described exactly how the women should appear, factors which are highlighted below in quotes from interviews with pregnant women in both Itasy and Vatovavy Fitovinany.

***“Use a photo of a dynamic, active, and smiling woman... Her face must be visible.”***

***-Vatovavy Fitovinany, interview, pregnant woman***

***“Interviewer: What does the pregnant woman look like?”***

***Respondent: She is smiling.***

***Interviewer: Is she standing or sitting?”***

***Respondent: Standing up!”***

***-Itasy, interview, pregnant woman***

Of particular importance, women stressed that the woman in the logo must be shown in a positive manner, smiling, and showing generally positive affect.

***“If the woman in the photo is crying, people won’t buy [the product]. And if the woman in the picture is sad or bending over this may signify that the tablet causes pain.”***

***-Itasy, interview, pregnant woman***

***“Pictures of very depressed people should not be used, either.”***

***-Itasy, interview, pregnant woman***

A few women also mentioned that it could be helpful to show images of healthy babies on the packaging, too.

***“Put a photo of a newborn baby, for example.” -Vatovavy Fitovinany, interview, pregnant woman***

Regardless of whether an image of fruit or a pregnant woman is used on packaging, it is important to note that some women described why the logo on the packaging is important for successful implementation in Madagascar, as highlighted in the following quote.

***“You see, sometimes people cannot read. It’s the photo we use that helps them recognize the product.” -Vatovavy Fitovinany, interview, pregnant woman***

These results from interview data corroborate similar results from workshop data, that elucidate the importance of using images of fruit or pregnant women on MMS packaging.

## **Preferred MMS Slogan**

In both Itasy and Vatovavy Fitovinany, pregnant women discussed the importance of using slogans that convey the belief that the supplementation will support maternal and child health. Highlighted below are some examples of these proposed slogans, including an explanation from multiple pregnant women as to why this slogan could be useful.

***“‘Ilay izy tena hazaoana fahasalamana’, because it makes us healthy.”***

***-Vatovavy Fitovinany, interview, pregnant woman***

***“Le mot énergie.” -Itasy, interview, pregnant woman***

These themes are also reflected in workshop data, demonstrating the importance of using a slogan that relates to the ability of the product to augment the health of a mother and her child, as shown below in **Table 15**.

**Table 15** Workshop votes for preferred MMS slogan

District	Color	Votes
Itasy	Tena hery ho an'ny reny sy ny zaza (true energy for mothers and children)	29
	Tena hery ho an'ny reny sy ny zaza ao am - bohoka (real energy for the mother and the child in her womb)	29
	Mahasalama ny reny sy ny zaza ao am - bohoka (bringing health to mother and child in the womb)	23
	Ho an'ny fahasalaman'ny reny sy ny zaza (For the health of the mother and child)	20
	Mahasalama ny reny bevohoka (brings health for pregnant women)	17
	Tanjaka sy hery ho an'ny reny sy ny zaza (Strength and energy for mother and child)	14
Vatovavy Fitovinany	Fanombo, fahasalaman ny reny sy zaza (Fanombo, Women and fetus health)	20
	Ry vb, mihinana ilay fanombo mb ho antoky ny fahasalamao (Pregnant women, eat Fanombo for your good health)	15
	Ohano, ianao sy ny zanakao di ho salama tsara (Eat, you and your child will be healthy)	12
	Ny reny sy ny zaza ao ankibo, hahazo hery (Mother and fetus have energy)	11

These trends were also apparent when discussing preferred brand names, discussed in the following section.

## Preferred Brand Name

Most women in both interviews and workshops highlighted the importance of using words that allude to energy, strength, or health in a potential brand name, as shown below in **Table 16**.

**Table 16** Workshop votes for preferred brand name

District	Color	Votes
Itasy	Fanampy hery (energy supplement)	41
	Tena hery (Real energy)	32
	That saves life (Vonjy aina)	20
	Antibodies; protective energy (Hery fiarovana)	19
	Sakafo mahasalama (healthy food)	15
Vatovavy Fitovinany	Fanombo	15
	Herinaina (Energy)	14
	Full Supplement	13
	Vitamine Maro loko (vitamins with different colors)	13

In Vatovavy Fitovinany, among many possible brand names discussed during interviews, “avotr’aina” was one that was suggested and supported by multiple pregnant women, and one woman describes her interest in the brand name and its suggestion of “saving life” as highlighted below.

***“Because when we have our prenatal consultations, the doctor first gives us this medicine, and then he saves our life.” -Vatovavy Fitovinany, interview, pregnant woman***

One woman summarized the most popular potential brand names as follows:

***“There are six names which, between us all, we want, avotr’aina, fiarovana, fahasalamana, fahasoavana, fanombo.” -Vatovavy Fitovinany, interview, pregnant woman***

In Itasy, multiple names were discussed that were different from those discussed in Vatovavy Fitovinany. These are highlighted below along with an explanation from the interviewee about why she would choose to have this name on the packaging.

***“Interviewer: Why ‘Sakafo mahaso’?”***

***Respondent: Because it is good for pregnant women.”***

***- Pregnant Woman, interview, Itasy***

***“‘Piliko’ because it’s for me and it’s mine.” -Itasy, interview, pregnant woman***

***“What if we call it “Pilina matsiro” (a delicious pill).” -Itasy, interview, pregnant woman***

As previously shown, many of the themes reflected in these proposed brand names are also seen in the workshop data, encouraging the fact that energy, health, and strength are important concepts to be included in a potential brand name.

## Packaging

Pregnant women interviewed in both Itasy and Vatovavy Fitovinany discussed the importance of putting the “plaquette” into boxes, in order to make the product easier to use for the consumer and to protect the actual pill itself. Since it is common for ten pills to be found in a “plaquette”, many women described how creating a box of three “plaquettes”, or thirty pills in total, would be beneficial to them, giving them a monthly supply of pills.

***“Since it is in a “plaquette”, for ease of use, all three ‘plaquettes’ should be in a small box.”***

***-Itasy, interview, pregnant woman***

***“Put it in a box suitable for all three ‘plaquettes’.” -Itasy, interview, pregnant woman***

Even though many pregnant women did encourage the use of the box with thirty total pills, some women still preferred the “plaquette” over the box due to concerns about how the box potentially exposed the pills to the elements.

***“I prefer the ‘plaquette’ rather than the box, in order to keep the medicine well. I found that when I gave medicine to my child, the box no longer closed after having been opened and the tablet was exposed to air.” -Itasy, interview, pregnant woman***

In Vatovavy Fitovinany, however, some women actually thought that the box would protect the tablets in the “plaquette” from the elements, rather than expose them to the elements.

***“Interviewer: Why do we want it inside a box?”***

***Respondent: Because when it rains, it is not damaged.”***

***-Vatovavy Fitovinany, interview, pregnant woman***

In addition to the discussion about whether to package the pills in a “plaquette” or in a box, multiple pregnant women commented on the importance of having an ingredient list attached to the packaging, regardless of what type of packaging is ultimately used.

***“Yes, ingredients must be displayed.” -Itasy, interview, pregnant woman***

***“Interviewer: What is the purpose of putting pictures of all the ingredients?”***

***Respondent: In order to know the components of the pill.”***

***-Itasy, interview, pregnant woman***

Overall, it seems that most pregnant women interviewed agree that packaging the pills into boxes with ingredients listed on the box could provide a successful method to having pregnant women use the supplement as intended.

## **Taste**

In Itasy, there are a number of mothers who commented on the fact that the taste of the product should be changed from previous products, which were generally disliked by interviewed pregnant women and may have even deterred women from taking previous supplements.

***“If we change the taste, it’s already better... and people will be convinced to take it.”***

***-Itasy, interview, pregnant woman***

Multiple women compared the taste of previous supplements to mud, as highlighted below.

***“I’ve eaten mud before, and it’s like eating mud.” -Itasy, interview, pregnant woman***

Additionally, it seems that women experience symptoms of nausea and/or vomiting when tasting the inner white pill once the more favorable red coating has dissolved off the white pill. This experience has led many women to a negative perception of white pills, but not red pills, as shown in the following quote.

***“It makes you want to vomit because it’s very bad, and we think that the white color, and not the red color, causes this.” -Vatovavy Fitovinany, interview, pregnant woman***

This experience elucidates the importance of ensuring that women do not experience nausea or vomiting due to the taste of the MMS pill. While no pregnant women from Vatovavy Fitovinany commented on the taste of the supplement, the comments from those in Itasy reveal that it is likely beneficial to successful implementation of the supplement that the taste is improved.

## Price-related inputs

Price was investigated to understand the extent in which it may be an important factor to promote MMS. In this section, note that price refers to the monetary price of supplements sold in the market.

### Prices of comparative prenatal supplements in the market

In both Itasy and Vatovavy Fitovinany, the most frequently sold current supplement on the market was Multivita. In Itasy, among two other currently available supplements, Multivita was the cheapest in price, averaging 80 Ar per pill in a unit.

**Table 17** Findings regarding price of current supplements on the market in Vatovavy Fitovinany

Supplement	Average price per pill		Range of price per pill	
	Ariary	USD	Ariary	USD
Multivita	80	0.021	50-100	0.013-0.027
Fer sulfate acide folique	112.5	0.030	50-200	0.013-0.053
Multivit-F	700	0.19	700	0.19

In Vatovavy Fitovinany, Multivita was the most frequently sold supplement currently on the market. Among eight other currently available supplements, Multivita was the cheapest option with the least expensive average price per pill when compared to its competitors.

**Table 18** Findings regarding price of current supplements on the market in Itasy

Supplement	Average price per pill		Range of price per pill	
	Ariary	USD	Ariary	USD
Gestarelle G	833.33	0.22	800-866.67	0.21-0.23
Multivita	94.83	0.025	27-300	0.0072-0.080
Fer sulfate acide folique	95.63	0.026	45-200	0.012-0.053
Multivit-F	200	0.053	100-300	0.027-0.080
CAPVIT	2600	0.69	200-5000	0.053-1.33
Bioferon	950	0.17	400-1500	0.11-0.40
Vit B complexe CP	270	0.072	270	0.072
Multi calc-Vita	100	0.027	100	0.027
Multivitamine Comprimé	200	0.053	200	0.053

Additionally, it is important to note that the four most frequently purchased supplements currently available on the market in Itasy are the four least expensive supplements: Multivita (averaging 94.83 Ar per pill), Fer sulfate acide folique (averaging 95.63 Ar per pill), Multivit-F, and Multivitamine Comprimé (both averaging 200 Ar per pill).



## Willingness to pay for MMS

Price recommendations from the interviews indicated that the suggested price for an MMS supplement varied between 500 to 600 ariary (0.13-0.16 USD) for a 30-day supply. In other words, participants in both Itasy and Vatovavy Fitovinany explained that they might be willing to pay between 500 and 600 ariary for a 30-day supply of MMS.

*“For the price, it is the seller who will decide, 500 or 600 ar.” -Itasy, interview, pregnant woman*

*“For example, five hundred ariary, that’s just an idea of the price.”*

*-Vatovavy Fitovinany, interview, pregnant woman*

However, the majority of the respondents in both districts suggested that the MMS supplement should be free.

*“In my opinion .. if it is health that we prioritize, it must be distributed for free in hospitals, when we eat we can have it... like the iron pill maybe it has to be all the time available and that people are not asked to buy it”. -Itasy, interview, pregnant woman*

*“There is also the price, if it is to help it must be free. Because pregnant women cannot work. There are those who have a lot of financial difficulty, victim of unwanted pregnancy, they have no one to rely on when they cannot work. It would be nice if we gave it to them for free.” -Vatovavy Fitovinany, interview, pregnant woman*

The current pricing of supplements available in Itasy and Vatovavy Fitovinany and the fact that the most frequently purchased supplements are also the least expensive supplements highlights the fact that the price of the supplement might be a determining factor in how women choose to purchase supplements. Additionally, it is important to note that prices of the currently available supplements are still greater than the prices recommended by pregnant women during interviews as an optimal price per unit. This discrepancy should be taken into consideration when pricing future supplements to make them more accessible and increase the likelihood that women will purchase them.

**Table 19** List of audience per audience segment categories

<b>Primary</b>	Pregnant woman aged between 18-45 years living in Itasy and Vatovavy Fitovinany
<b>Secondary</b>	Community health agents, health workers, traditional birth attendants, medical staff (midwife and medical doctor), family members (spouse and parents)
<b>Tertiary</b>	Community members, community leaders, president of the Fokontany

## Promotion-related recommendations

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### Audience segments

Promotion-related recommendations for MMS require a better understanding of the key audience segments to reach pregnant women with messaging, as well as preferred communication channels for MMS promotion. Regarding the former, the audience segments for MMS promotion can be viewed across three categories, namely (1) the primary audience segment (2) the secondary audience segment and (3) the tertiary audience segment.

### Primary audience segment

The archetype (**Figure 2**) below lays out a primary key audience to prenatal supplementation in Itasy and Vatovavy Fitovinany. The archetype highlights the profile of a typical pregnant woman in this setting. She is characterized as a farmer who harvest crops including rice and cassava, a mother of 1–6 children, and speaks Malagasy. It describes a pregnant woman's typical diet, her health care seeking practices, her previous experience with IFA and other supplements. In addition, it describes the likely barriers faced by the key primary audience, some tailored messaging and the preferred communication channels to reach her with information related to MMS.

Figure 2

## Pregnant and Lactating Woman

**Age range:** 17–30 years old

**Livelihood:** harvest food such as rice, brede, cassava

**Family:** lives with her husband and 1–6 children

**Location:** Itasy and Vatovavy Fitovinany (Madagascar)

**Language:** Malagasy

### Typical diet during pregnancy

- Food commonly consumed
  - Rice
- Foods sometimes consumed
- Banana
- Foods occasionally consumed
  - Vegetables
  - Mango
  - Chicken
  - Fish
- She perceives the importance of practicing good nutritional behaviors in order to have a healthy pregnancy, delivery, and infant.

### Current care seeking practices

- She is encouraged by her midwife to attend prenatal consultations/visits
- She typically seeks care sometimes from TBA and medical providers, and sometimes during prenatal care at health facilities
- She is typically encouraged by her midwives to go to hospital when giving birth
- She typically receives health advice from both family and friends, as well as healthcare workers in high regard and follow said advice

### Possible barriers to MMS supplementation

- Her compliance to MMS may be low due to side effects and forgetting to take the supplement
- She may not have finances to purchase MMS
- The facility that offers MMS might have limited stocks available to her
- She has had mixed effects with IFA which might translate to her perception of MMS
- She might have difficulties traveling afar to receive access to MMS products
- She might forget to consume her MMS as instructed
- She might not consume the entire prescribed MMS

### Audience segment

#### Secondary

- Community health agents
- Health workers
- Traditional birth attendants
- Medical staff
  - Midwife
  - Medical doctors

#### Family members

- Spouse
- Parents

#### Tertiary

- Community members
- Community leaders
  - President of the Fokontany (village)

### Preferred communication channels to reach pregnant moms

Interpersonal (community health agents, health workers, traditional birth attendants, midwife, doctor, spouse and parents)

- Peer-to-peer information
- Word of mouth
- Door-to-door
- Meetings

#### Social mobilization

- Mass awareness raising by community agents and traditional birth attendants
- Sensitization during specific events (e.g. monthly weighing, mother and child week)

#### Media

- Radio
- TV

### Words and phrases to promote messages

#### Optimal health of mother and child

*Fahasalamana tonga lafatra ho an'ny reny sy ny zaza*

or

*Fahasalamana saha ny reny ny sy zaza*

#### Strength and energy

*Hery sy tanjaka*

#### Growth of the fetus

*Fitomboanan'ny zaza am-bohoka*

#### Protects against hemorrhage

*Miaro amin'ny fahaverezan-dra*

or

*Misoroka amin'ny fahaverezan-dra*

# Maternal risk perception towards pregnancy-related illnesses

Many pregnant women in both districts, Itasy and Vatovavy Fitovinany experience pregnancy related illnesses like most pregnant women around the world. Among those illnesses, the most salient were vomiting, back pain, headaches, hip pain. However, nutrition related illnesses may not be salient in this setting and pregnant women may have low perception towards micronutrient deficiency related illnesses.

A free listing was conducted among women of reproductive age in order to understand their perception towards pregnancy-related illnesses. The most frequently-mentioned illness terms generated from free list activities in Itasy are listed in **Table 20**.

**Table 20** *Most salient pregnancy related illness in Itasy*

Malagasy illness term	Approximate English equivalent	Frequency (n=30)
Mandoa	Vomiting	(25) 83.3%
Marary valahana	hip pain	(19) 63.3%
Marary kibo	Stomach pain	(18) 60.0%
Tsy mahazaka fofona	Can't stand odors	(15) 50.0%
Marary loha	Headaches	(14) 46.6%
Marary vavony	Upset stomach	(14) 46.6%
Sery	Cold	(14) 46.6%
Kohoka	Cough	(13) 43.3%
Maloiloy	Malaise	(12) 40.0%
Fanina	Dizziness	(11) 36.6%
Manavy	Fever	(10) 33.3%
Rera-dava	Permanent fatigue	(9) 30.0%
Tazo ou tazomoka	Malaria	(8) 26.6%
Mandeha ra be / very ra be	Hemorrhage	(7) 23.3%
Te andoa	Nausea	(7) 23.3%
Reraka, kely aina	Weakness	(6) 20.0%
Mivonto tongotra	Swelling feet	(6) 20.0%
Marary nify	Toothache	(6) 20.0%
Malaikomana	Lack of appetite	(5) 16.6%

In Itasy, the majority of participants mentioned vomiting, hip pain, and stomach pain as the most salient pregnancy related illnesses. These illnesses were said to be common but were thought to be a result of the pregnancy.

***“Vomiting happens as soon as the fetus takes its place in the mother’s womb.”***

***-Itasy, free list fieldnote, pregnant woman***

The frequently mentioned illness terms generated from free list activities in Vatovavy Fitovinany are listed in **Table 21** below. The majority of participants mentioned headaches and back pain as the most common pregnancy related illnesses.

**Table 21** *Top pregnancy related illness in Vatovavy Fitovinany*

Malagasy illness term	Approximate English equivalent	Frequency (n=30) %
Marary lamosina	Back pain	(21) 70.0%
Marary andoha	Headaches	(21) 70.0%
Mandoa	Vomiting	(15) 50.0%
Tazo	Malaria	15() 50.0%
Fanigny	Fainting and dizziness	(15) 50.0%
Famina Fanigny	Dizziness	(8) 26.6%
Marary fotope	Pain in the lower pelvis and legs	(8) 26.6%
Magnifatry Troky	Belly pain	(8) 26.6%
Marary fotope	Legs pain	(8) 26.6%
Marary vaniha	Hip pain	(7) 23.3%
Marary vavony	Stomach ache	(6) 20.0%
Mikohaka	Cough	(6) 20.0%
Marary ila	Pain in the left or right side of the body	(4) 13.3%
Sery	Cold	(4) 13.3%
Mandé rà lava	Bleeding	(4) 13.33
Marary ambodivaniha	Pelvic pain	(3) 10.0%
Marary nify	Toothache	(3) 10.0%
Marary ambavafo	Stomach problem	(3) 10.0%
Malemimely lohalika	Knee pain	(3) 10.0%
Mandé Rà	Bleeding	(3) 6.6%
Malaikomana	Lack of appetite	(3) 6.6%

During interviews with pregnant women, it is apparent that perceptions about illnesses varied among participants. The majority of participants consider the severity of pregnancy-related illnesses based on their potential to cause death. Additionally, free list field notes indicate that some illnesses were considered as moderate or severe illnesses as participants felt that if they were left untreated, may harm the mother and/or the baby. Participants explained that the least serious illnesses happen during the first three months of pregnancy and do not require treatment most of the time. The **Table 22** below categorizes pregnancy related illnesses according to women in Itasy and Vatovavy Fitovinany.



**Table 22** Perceived severity of pregnancy related illnesses according to pregnant women

Illnesses	Quotations
Most serious pregnancy related illnesses	
<ul style="list-style-type: none"><li>• Stomach pain</li><li>• Stomach ache</li><li>• Malaria</li><li>• Bleeding</li><li>• Weakness</li><li>• Swelling feet</li></ul>	<p><i>“These are risky diseases without immediate treatment. Malaria, stomach pain without treatment causes bleeding and anemia can lead to miscarriage and even death.”</i></p> <p><i>-Itasy, interview, pregnant woman</i></p>
Moderately serious pregnancy related illnesses	
<ul style="list-style-type: none"><li>• Hip pain</li><li>• Headaches</li><li>• Dizziness</li><li>• Fever</li><li>• Fatigue</li><li>• Cough</li><li>• Toothache</li><li>• Lack of appetite</li></ul>	<p><i>“We have this disease (hip pain) when we work a lot. The solution is to go see a doctor.”</i></p> <p><i>-Vatovavy Fitovinany, free list fieldnote, pregnant woman</i></p>
Least serious pregnancy related illnesses	
<ul style="list-style-type: none"><li>• Nausea</li><li>• Vomiting</li><li>• Cold</li></ul>	<p><i>“When the pregnant woman brushes her teeth, she vomits and feels sick. No treatment because illness is not serious.”</i></p> <p><i>-Itasy, free list fieldnote, pregnant woman</i></p>

While anemia was not listed during free listing, interview findings reveal that pregnant women in both districts associate anemia with bleeding or hemorrhage, malaria, and stomach pain. Participants explained that IFA gives energy to pregnant women and is important in hemorrhage prevention during delivery.

*“A pregnant woman has just given birth with a huge hemorrhage, that’s why all pregnant women must take the iron battery to fight against this hemorrhage, to give energy to the mother during her pregnancy, and not to lose a lot of blood during the delivery.”*

*-Vatovavy Fitovinany, interview, pregnant woman*

Overall, pregnant women in both districts have similar perception of the severity of pregnancy related illnesses. Participants consider that the most serious and moderately serious illnesses may harm the mother and/or baby, therefore requiring care at the health center. However, the multiple micronutrient supplementation programs may not be able to address the pregnancy-related illnesses listed by participants in both Italy and Vatovavy Fitovinany.

## Secondary audience segments

Pregnant women in Itasy and Vatovavy Fitovinany are directly influenced by **community health agents, health workers, traditional birth attendants, medical staff** (e.g. midwife and medical doctor), as well as family members (e.g. spouse and parents). Interviews conducted in both districts indicated that pregnant women primarily receive advice from community health agents and health workers regarding their pregnancies. Targeting community health agents and health workers emerged as an important promotional strategy for MMS across the participatory workshops, the main reason being that “they are

the ones who mobilize pregnant women” and “are considered as the health agents in the community”. This perception was shared across the interviews as well as group discussions.

*“It is these community workers who need to be motivated for this. Because they are at the level of the target community, they see and know the people there, they see their habits on the daily level and it would be easier for them to convince them about this product and people accept it easily.” -Itasy, Interview, health worker*

*“First, the community worker, he will have to know it first.”  
-Vatovavy Fitovinany, Focus group, PLW*

In Itasy and Vatovavy Fitovinany, another important secondary audience segment were **husbands**. Women focused on the importance of targeting husbands “because they generally make the decisions at the family level” and because targeting husbands would “ensure that what the wife eats is good for her health and also to remind her [to take her supplement]”.

*“This is very important because, for example, if the wife is not interested then if her husband listens to the radio and he listens to the program, however it is the man who will convince the woman to take it and say the benefits.” -Itasy, Focus group, PLW*

*“For example, there are times when we forget to take it and it reminds us that you need to take your medicine. It is also a new drug that they should be aware of. He can encourage us too, because the doctor gave it because it is necessary.”  
-Vatovavy Fitovinany, Focus group, PLW*

In Itasy specifically, the **midwife and parents** also played an important role, whilst in Vatovavy Fitovinany, other key secondary audience segments included **traditional birth attendants**, as “many women go to see the traditional birth attendants and women listen to them”. Additionally, women’s parents were key secondary audience segments since “they are the ones who will take care of the women especially if she is single or lives with her parents” as conveyed by pregnant women during the participatory workshops.

## Tertiary audience segments

Pregnant women in Itasy and Vatovavy Fitovinany are indirectly influenced by the **community** in general and community leaders (e.g.: the president of the Fokontany). In Itasy specifically, pregnant women said:

*“The entire community should be included [in the promotional strategy]!”  
-Itasy, Focus group, PLW*

Moreover, they highlighted the key role of the **president of the Fokontany** (village) which was also mentioned by the health workers and pregnant women.

*“The best place to distribute it when it arrives ... the president is the first to let it be known.”  
-Itasy, Interview, pregnant woman*

*“The community agents and the traditional birth attendants must convince them [pregnant women] even the president must take his responsibility towards that!  
-Vatovavy Fitovinany, Interview, health worker*

In summary, regarding tertiary audience segments which influence pregnant women, it appeared that both the community in general and community leaders influenced pregnant women in both districts.

## Preferred communication channels for MMS promotion

Promotion-related recommendations for MMS require a better understanding of the preferred communication channels for MMS promotion. These can be divided into three categories (1) interpersonal (2) social mobilization (3) media. The preferred communications channels were fairly similar across both districts.

**Table 23** *List of preferred mode of communication channels for MMS promotion*

Interpersonal	<ul style="list-style-type: none"> <li>• peer to peer information sharing</li> <li>• door-to-door</li> <li>• word of mouth</li> <li>• meetings</li> <li>• gatherings</li> <li>• debates</li> <li>• exchanges</li> </ul>
Social mobilization	<p>Regular events</p> <ul style="list-style-type: none"> <li>• hospital consultations</li> <li>• prenatal consultations</li> </ul> <p>Specific events</p> <ul style="list-style-type: none"> <li>• monthly weighing at TOBY SECALINE</li> <li>• mother and child week</li> </ul> <p>Venues</p> <ul style="list-style-type: none"> <li>• FAFY centers</li> <li>• hospitals</li> <li>• Information Education Communication</li> <li>• health centers</li> </ul> <p>Promotional material</p> <ul style="list-style-type: none"> <li>• Signs and postings</li> <li>• descriptive and explanatory messages with images</li> <li>• verbal announcements</li> <li>• megaphones</li> </ul>
Media	<ul style="list-style-type: none"> <li>• radio</li> <li>• television</li> <li>• Facebook</li> <li>• newspaper</li> </ul>

## Interpersonal channels

Many communication channels were identified in this setting for MMS promotion. The most preferred interpersonal communication channels were peer to peer information sharing, as well as door to door information sharing and meetings/exchanges.

Indeed, preferred interpersonal channels included **peer to peer information sharing** among women; **door-to-door** by SECALINE across the commune and Fokontany; **word of mouth** as well as **meetings and gatherings and even debates/exchanges** between pregnant women. During the participatory workshop in Itasy, women said that “it is best if women who know the product well talk to women who do not know the product”. Regarding meetings, in Vatovavy Fitovinany, specific meetings were mentioned such as: “Réunion Populaire”, “Assemblée Dina” and the “Réunion Tanamaro”.

*“But it can also be described in a meeting where everyone gathers, after the information spreads so the big meeting may be the best.” -Itasy, Interview, pregnant woman*

*“For example, while the fokontany chief is organizing a fokontany meeting, we take a small 15-minute opportunity to infiltrate ourselves into the awareness session on “Tazomoka”, tuberculosis and food.” -Vatovavy Fitovinany, Interview, health worker*

## Social mobilization channels

A range of communication channels were identified in this context. The most preferred social mobilization channels were signs and postings at community and health centers.

Social mobilization channels included the promotion of supplements on regular occasions (e.g., **hospital consultations, prenatal consultations**) or at other identified venues for promotional activities (e.g.: **FAFY centers, hospitals, Information Education Communication, health centers**) and specific events (e.g., during the **monthly weighing at TOBY SECALINE** or during the **mother and child week**).

*“FAFY centers must raise awareness. Put up posters in FAFY centers and hospitals. So that people will be aware that there is this kind of product.” -Itasy, Interview, pregnant woman*

*“For us here, we put up displays and everyone can watch, that’s what people usually do here, it’s more efficient! -Vatovavy Fitovinany, Interview, health worker*

Accompanying promotional material mentioned included **signs and postings** at health centers and at the fokontany level, the main reason being that “health centers are frequently visited by women”. In Vatovavy Fitovinany specifically, during the participatory workshop women expressed the importance of “mass awareness raising by community agents and traditional birth attendants”. **Descriptive and explanatory messages with images** were preferred. Additionally, **verbal announcements and megaphones** were mentioned as ways to enhance these social mobilization channels.

## Media based channels

The most preferred media channels across both districts were radio commercials. However, TV advertisements also scored high based on workshop data.

Media channels were similar across both districts. Sensitization through **radio** (e.g., Antsiva) commercials, **television** and **Facebook. Newspapers** as a media channel were only mentioned in Vatovavy Fitovinany. However, television and radio advertisements were the preferred media channels across Itasy and Vatovavy Fitovinany according to the participatory workshop data, since “people listen to the radio and mothers are reached faster” as expressed by mothers in Itasy.

*“We make the announcement on the radio... or on Facebook which is popular right now. This is the faster and more efficient way.” -Itasy, Interview, pregnant woman*

# Tailored messages that may resonate with mothers to improve MMS compliance

**Table 24** Words and phrases to promote messages

English	Malagasy
Optimal health for the mother and child	Fahasalamana tonga lafatra ho an'ny reny sy ny zaza or Fahasalamana saha ny reny ny sy zaza
Strength and energy	Hery sy tanjaka
Growth of the fetus	Fitomboanan'ny zaza am-bohoka
Protects against hemorrhage	Miaro amin'ny fahaverezan-dra or Misoroka amin'ny fahaverezan-dra

Tailored messages that resonated with mothers and which can be used within messaging were exactly the same across both districts and included the following: the importance of good health for the mother and baby; the product gives energy and strength; the product ensures the growth of the fetus; the product protects against hemorrhage. In terms of specific messaging which may improve MMS compliance, across both districts mothers referred to the role that their spouse can play to encourage their wife to consume the product. Finally, in *Itasy* specifically, mothers also mentioned the importance of clear messaging on the method of use and on dosage.

## Optimal health for the mother and child

The importance of good health for the mother and the child came across very strongly in both *Itasy* and *Vatovavy Fitovinany*, and throughout all methods (interviews, group discussions and participatory workshop). The health aspect was further defined as long term health as well as health which has positive effects on both the mother and/or pregnant woman and her body and child and/or fetus and long-term health of the child.

***“The complementary food improves health. It participates in the health of the woman and also in the health of the baby.” -Itasy, interview, pregnant woman***

***“We would say, always eat this product because it makes you healthy.” -Vatovavy Fitovinany, focus group, pregnant woman***

In *Itasy* and *Vatovavy Fitovinany*, the preferred slogans put forward during the participatory workshop converged around the importance of good health for the mother and child:

**Table 25** Community workshop findings from *Itasy* and *Vatovavy Fitovinany*s

District	Most preferred slogan for MMS package and reasons
Itasy	Brings health to mother and fetus
	For the health of the mother and the child
	Bringing health for pregnant women
Vatovavy Fitovinany	Women should eat this product, and they and their child will be healthy
	Pregnant women eat for good health
	Pregnant healthy women



The theme of good health for the mother and the child (particularly for the mother) came across to some extent during the participatory workshops when preferred logos for MMS packaging were voted on.

**Table 26** Community workshop findings from Itasy and Vatovavy Fitovinany

District	Most preferred logo for MMS package and reasons
Itasy	A smiling, healthy pregnant woman who shows no signs of weakness
	A smiling and healthy, pregnant woman taking prenatal supplement
Vatovavy Fitovinany	Photo of a healthy and dynamic pregnant woman

In Itasy, one of the top logos to be considered for MMS packaging revolved around a healthy mother. Indeed, the image was of a smiling and healthy, pregnant woman taking a prenatal supplement (the smile symbolizes the good health of the pregnant woman). In Vatovavy Fitovinany, the image of a healthy and dynamic pregnant woman also featured as a top preference among the participants.

## Strength and energy

Another key message which significantly resonated with pregnant and lactating women in both districts was that MMS messaging should be linked to providing strength and energy. This specific messaging theme was exactly the same across both districts, where the most preferred slogan voted on during the participatory workshop included strength and energy for mom and child (fetus):

**Table 27** Community workshop findings from Itasy and Vatovavy Fitovinany

District	Most preferred slogan for MMS package and reasons
Itasy	Strength and energy for mother and child
Vatovavy Fitovinany	Gives energy and strength

When asked about brand names related to MMS supplement across both districts, women preferred a name that contained the word energy.

**Table 28** Community workshop findings from Itasy and Vatovavy Fitovinany

District	Most preferred name for MMS package and reasons
Itasy	It is a supplement that gives energy to pregnant women
Vatovavy Fitovinany	Gives more energy

Likewise, throughout the group discussions and interviews, messaging around strength and energy were common across the two districts.

*“It helps with energy. It gives energy to pregnant women.” -Itasy, interview, pregnant woman*

*“We must tell that this drug prevents bleeding and also brings energy.”  
-Vatovavy Fitovinany, interview, health worker*

The theme of energy and strength also emerged from the participatory workshops, specifically in Itasy when preferred logos for MMS packaging were voted on. In Itasy, one of the top logos to be considered for MMS packaging showed a smiling, healthy pregnant woman who shows no signs of weakness.

## Growth of the fetus

An additional key message that strongly resonated with pregnant women in both Itasy and Vatovavy Fitovinany was around the importance of the growth of the fetus across the interviews. This was confirmed by the health workers in Vatovavy Fitovinany. Participants further described a rapid growth as a positive growth, and a small fetus as being problematic and of concern.

*“I want the folic acid iron tablet to contribute to the rapid growth of the fetus, so the pregnant woman should take it.” -Itasy, interview, pregnant woman*

*“But if we say you will be strong and your baby will develop well if you take it, they are motivated to take it even if it is exhausted, they will look everywhere.”  
-Vatovavy Fitovinany, interview, health worker*

This specific theme did not explicitly come across during the participatory workshops, where the closest theme to the growth of the fetus revolved around the health of the fetus in general.

## Protection against hemorrhage

Protection against hemorrhage represented an important message for pregnant women across both districts. In Itasy, protection against hemorrhage during childbirth was mentioned in particular and women were fearful of losing a lot of blood when giving birth. In Vatovavy Fitovinany, along with the theme of preventing hemorrhage, women referred to the importance of proper blood flow and the importance of having strong blood. Health workers often referred to the protective benefits of supplements against hemorrhages. No specific reference to hemorrhage or blood as a key theme for MMS messaging was made during the workshops.

*“What motivates them is what the midwife said they have to take it, she said it prevents bleeding, that’s why they took it.” -Itasy, interview, pregnant woman*

*“I tell them that this medicine is good for the flow of your blood in the body, so as not to bleed, you have to take it.” -Vatovavy Fitovinany, interview, health worker*

## Spouse should encourage the wife

With regards to specific messaging which may improve MMS compliance, the role of the spouse in encouraging their wives to consume supplements was mentioned in Itasy and Vatovavy Fitovinany. Women mentioned that their spouses were concerned about their health especially during the pregnancy period and often encouraged them to consume the supplements in order for them to become healthy. Women underlined the importance for the husband to not only provide them advice, but for them to understand the difference and health related consequences of a woman who consumed supplements versus a woman who does not. In addition, it was mentioned that men could play an important part in reminding pregnant women to consume their supplements whenever they forgot to do so.

*“[The spouse should] support pregnant women by giving them advice!”  
-Itasy, focus group, PLW*

***“He wants you to be healthy when you are pregnant, and the spouse wants his wife to be healthy. This is his idea.” -Vatovavy Fitovinany, focus group, PLW***

In line with above, in Itasy specifically, one of the top logos to be considered for MMS packaging was the image of a couple with the man who gives a glass of water with the prenatal supplement to the woman, and the woman who takes the supplement and glass of water. Such an image would aid to increase men’s involvement around women’s health. A similar theme around men’s involvement did not emerge as a preferred choice in the participatory workshop in Vatovavy Fitovinany.

To conclude, specific messaging which may improve MMS compliance revolved around the spouse encouraging the wife to consume supplements. In Malagasy, this specific messaging would translate to: “tokony handrisika ny vehivavy ny vadiny” or “tokony hanohana ny vehivavy ny vadiny”.

## **Clear messaging on method of use**

Finally, in Itasy only, did mothers mention the importance of clear messaging on the method of use and on dosage. Women referred to the importance of knowing the advantages and disadvantages of the supplements and required a complete and clear explanation of the product including its positive effects, to what extent it differed from other products and any negative side effects.

***“[The one who distributes] has to explain how to use it, and its dose.”***  
***-Itasy, interview, pregnant woman***

In both Itasy and Vatovavy Fitovinany, participants highlighted multiple facility based and community-based distribution for prenatal supplementations. The top listed facility-based distribution for supplements included hospitals, doctors, and pharmacies. Meanwhile, the top listed community-based distribution for prenatal supplements in both districts included Toby FAFY and Seecaline, and community health agents.

In summary, specific messaging which may improve MMS compliance also revolved around the need for clear messaging on method of use. In Malagasy, this specific messaging would translate to: “Hafatra mazava tsara momba ny fomba fampiasana”.

## **Facility-based placement**

In Itasy, interview data shows that participants also listed hospitals and doctors as facility-based locations where prenatal supplements are distributed. To a lesser extent, participants also mentioned pharmacies as additional locations for distribution. Equally in Vatovavy Fitovinany, participants described that they received prenatal supplements at pharmacies, during antenatal care visits with the doctor at the hospital. A participant did specify that supplements should only be distributed at the hospital as they attend antenatal care.

***“[supplement distribution] At the hospital only, because the pregnant women must go there for the prenatal consultation.” -Itasy, interview, pregnant women***

# Community-based placement

Market observation indicates that medical depot (depot de médicaments) (52.4% in Itasy and 54.4% in Vatovavy Fitovinany), created in 2013 to increased access to medicine for communities with limited access to pharmacy services, and community run pharmacy (PhaGecom du CSB II) (26.2% in Itasy and 45.5% in Vatovavy Fitovinany) were the top point community-based distributions where supplements were sold, as highlighted in **Table 29**. In Itasy, interview data demonstrates that toby, CSB, markets, sage femme, and community health agent were some of the key community-based placements for supplement distribution. While in Vitovavy Fitovinany, participants also mentioned receiving distribution of supplements at the grocery shop (épicerie), community health agents, or from the traditional birth attendants. Despite the supplements' distribution at the grocery shop, a participant suggested the importance of shifting the distribution to doctors and community health agents only.

*“I do not agree, it will be necessary to go to the doctor, because the storekeeper will not know the explanation of its [supplements] use and their dosage, AC or doctor [will], if there is bad explanation, it will lead to the bad use end[ing] with a disease.”*

*-Vatovavy Fitovinany, interview, health worker*

**Table 29** Community workshop findings from Itasy and Vatovavy Fitovinany

Point of supplement distribution	% (n)
Dépôt de Médicaments	0.52 (22)
PhaGecom du CSB II	0.26 (11)
Vendeur de médicament au marché noir	0.12 (5)
Pharmacie du centre médical-chirurgical	0.07 (3)
Dispensaire	0.02 (1)

In both Itasy and Vatovavy Fitovinany, participants during interviews and market observation displayed multiple modes of prenatal supplementation distribution, particularly for community-based placement.



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# Acknowledgments

Firstly, we would like to extend our sincere thanks to the many participants who volunteered to participate in interviews, focus group discussions, and community workshops during fieldwork. These participants include pregnant and lactating women and health workers in Itasy and Vatovavy Fitovinany, Madagascar. Their voices are reflected in study findings which we hope will improve the quality of maternal health and nutrition services in the future.

Importantly, we could not have completed this formative study without the dedication of our local partner, the GRET-Madagascar team, particularly Andry Razakandrainy and Jean-Michel Rakotoarivelo, who led data collection and management activities during especially challenging circumstances during 2020–2021 when COVID-19 made study activities in most settings difficult if not impossible.

We would also like to thank the UNICEF Madagascar team for the in-country technical support and coordination. We are equally grateful for the support and involvement of Government officials during data collection. Thank you also to Sight and Life whose collaboration with Pennsylvania State team members, including unwavering support in the form of financial, human, and technical resources, allowed this study to be completed. This study would not have been possible without funding also provided by the Bill and Melinda Gates Foundation.

## Appendix A: Complete Community Workshop Results

**Question 1:** Now, we would like to discuss how a micronutrient supplement should look to make it attractive to pregnant women in this community. We will be asking for your ideas for the color, name, logo and slogan for this product. Let's start with color. Please brainstorm a color scheme that you think would suit a product like this.

**Table 1** Workshop findings in Masindray, Itasy regarding the preferred colors of the MMS

Types de Couleur	Nombre de votes	Pourquoi?
Orange	42	Couleur tres impressionnante
Jaune claire	15	Aucune raison particulière, elle l'aime juste
Vert pomme	7	
Rouge	6	

**Table 2** Workshop findings in Ampefy, Itasy regarding the preferred colors of MMS

Types de Couleur	Nombre de votes	Pourquoi?
Marron	22	Pour être comme le chocolat
Rose	18	Plus attrayant
Rouge vif	12	
Violet + rose= mauve	8	
Orange	8	C'est pour donne une image plus naturelle du produit et le comparé avec le fruit "orange"
Jaune poussin	5	
Vert comme le vert du drapeau de Madagascar	4	
Bleu ciel	3	

**Table 3** Workshop findings in Antanetibe, Itasy regarding the preferred colors of the MMS

Types de Couleur	Nombre de votes	Pourquoi?
Orange	46	Couleur vive et attire les yeux
Vert	14	
Rouge	10	
Rose pâle	5	

**Table 4** Workshop findings in Antaretra, Vatovavy Fitovinany regarding the preferred colors of MMS

Types de Couleur	Nombre de votes	Pourquoi?
Orange	24	Attire les yeux. En modifiant la couleur de la boîte ou de la comprimé, il se peut que le produit n'aurait pas d'odeur, c'est comme la vitamine C
Grenat	11	Ne sait pas
Mavokely	8	Attire les yeux des femmes
Blanc	2	N'a pas sorti des idées

**Table 5** Workshop findings in Androrangavola, Vatovavy Fitovinany regarding the preferred colors of MMS

Types de Couleur	Nombre de votes	Pourquoi?
Blanc	23	Pas d'odeur si l'emballage ou les comprimés mêmes se colorent en blanc. Elles pensent que la mauvaise odeur de l'acide folique provient de sa couleur rouge
Orange	9	C'est comme la Vitamine C. Les femmes apprécient la Vitamine C
Rose (mavokely)	8	Pour lui donner plus d'attraction

**Table 6** Workshop findings in Ambiabé, Vatovavy Fitovinany regarding the preferred colors of the MMS

Types de Couleur	Nombre de votes	Pourquoi?
Orange	32	Cela donne déjà une idée que c'est sucré. On est déjà content quand on le voit
Rose (mavokely)	11	Donne une motivation à la consommation
Blanc	7	C'est une chose nouvelle

**Question 2:** Next, we would like you to think about a good name for a product like this. The name can be one, two or three words.

**Table 7** Workshop findings in Masindray, Itasy regarding preferred names for MMS

Nom du produit	Nombre de votes	Pourquoi?
Fanampy hery (complément énergétique)	41	C'est un complément qui devrait apporter de l'énergie pour la femme enceinte
Sakafo mahasalama (aliment sain)	15	Cela apporte de la santé pour les femmes enceintes et pour le fœtus
Sakafo Miaro (aliment qui protège)	14	C'est un aliment que les femmes pensent protège les femmes de l'hémorragie pendant l'accouchement
Mahasoa (apporte du bien)	0	
Fandresena (qui apporte du victoire)	0	

**Table 8** Workshop findings in Antanetibe, Itasy regarding preferred names for MMS

Nom du produit	Nombre de votes	Pourquoi?
Tena hery (vraie énergie)	32	Car il donne de la force, de l'énergie et de la santé
Hery fiarovana (anticorps; énergie de protection)	19	La consommation régulière dy complement apporte beaucoup de santé à la femme, quand l'enfant sera né il sera en bonne santé, il aura de la force
Piloko (mon comprimé)	17	C'est pour rappeler que c'est mon comprimé c'est à dire que dans le logo on voit déjà une femme enceinte et c'est une femme enceinte qui rappelle que c'est son comprimé
Piloko salama (mon comprimé de santé)	4	
Mampitombo lanja (augmente le poids)	3	

**Table 9** Workshop findings in Antaretra, Vatovavy Fitovinany regarding preferred names for MMS

Nom du produit	Nombre de votes	Pourquoi?
Herinaina	14	Manome Hery sy Aina ny vatana (Donner au corps de l'énergie et de la vie)
Vitamine Maro loko	13	Maro ny karazana zavatra ao aminy (Vitamine de différents couleurs)
Fanafody misy otrikaina	6	Médicaments avec beaucoup de micronutriments
Pilifera misy Vitamine	5	Acide folique avec plusieurs vitamines
Fahasalamana	5	La santé
Vitahery	2	Vitamine qui donne de l'énergie)
Fanorena	0	Ce qui construit

**Table 10** Workshop findings in Androrangavola, Vatovavy Fitovinany regarding preferred names for MMS

Nom du produit	Nombre de votes	Pourquoi?
Pile Complet	13	Car le produit contient des micronutriments complets
Vehivavy Tomady	3	La femme est en bonne santé
Sira Mineraly	3	Sels minéraux
Pilecalcium	3	Car il y a du calcium dans le produit)
Licaline	3	Ceci vient du terme Vitamine car le produit contient plusieurs vitamines
Fanampy Hery	3	Donner plus d'énergie
Tsiry	2	Elle contient plusieurs micronutriments et cela permet au fœtus de bien développer comme les bourgeons terminaux des plantes)
Otrik'aina ho an'ny vehivavy bevoka	2	Le mot Otrik'aina (micronutriments) attire les femmes à les consommer et les utiliser

AIBV	2	Aina ho an'ny Vehivavy Bevoka (C'est la vie pour les femmes enceintes)
SRNRL	1	Sira Mineraly
Pile de vie	0	Comprimés responsables de la bonne santé de la mère et de l'enfant

**Table 11** Workshop findings in Ambiabé, Vatovavy Fitovinany regarding preferred names for MMS

Nom du produit (Ambiabé)	Nombre de votes	Pourquoi?
Fanombo	15	Intervient dans le bon développement du fœtus
Fahasoavana	12	Donne du bonheur ou de bonne chose
Mineraly	9	Car il y a beaucoup de minéraux dans la produit
Hery fiarovana	8	Donne de l'énergie
Mahasama	6	

**Question 3:** Now, let's think about a good slogan to represent this product. The slogan could be a short phrase that is memorable.

**Table 12** Workshop findings in Masindray, Itasy regarding preferred slogans for MMS

Slogan	Nombre de votes	Pourquoi?
Tena hery ho an'ny reny sy ny zaza ao am-bohoka (vraie énergie pour la mère et l'enfant dans son ventre)	29	Cela devrait attirer l'attention des femmes enceintes
Mahasalama ny reny sy ny zaza ao am-bohoka (apport de la santé pour la mère et l'enfant dans son ventre)	23	
Mahasalama ny reny bevohoka (apporte de la santé pour les femmes enceintes)	17	
Fanampianana hery ho an'ny vehivavy bevohoka (apporte de l'énergie en plus pour les femmes enceintes)	3	
Hery vaovao ho an'ny reny sy ny zaza (nouvelle énergie pour la mère et l'enfant)	3	

**Table 13** Workshop findings in Ampefy, Itasy regarding preferred slogans for MMS

Slogan	Nombre de votes	Pourquoi?
Ho an'ny fahasalaman'ny reny sy ny zaza (Pour la santé de la mère et de l'enfant )	20	
Hery ho ahy sy ny zanako (ma force et celle de mon enfant)	15	C'est pour apporte de la force à la femme enceinte et à l'enfant
Tanjaka sy hery ho an'ny reny sy ny zaza (Force et énergie pour la mère et l'enfant)	14	
Fitsimbinana ny reny sy ny zaza (pour préserver la mère et l'enfant)	11	Car sa prise devrait préserver la santé de la femme et de son enfant
Fahombiazan'ny reny sy ny zaza (succée de la mère et de l'enfant)	8	
Fanirian'ny reny sy ny zaza (vœu/souhait pour la mère et l'enfant)	4	
Fifalian'ny reny sy ny zaza (pour la joie de la mère et de l'enfant)	4	C'est pour apporte de la joie à la femme enceinte et à l'enfant
Hery ho an'ny reny sy ny sombin'ny ainy (force pour la mère et son enfant =fragement de vie)	2	
Harena ho an'ny reny sy ny zaza (richesse pour la mère et l'enfant)	2	

**Table 14** Workshop findings in Antanetibe, Itasy regarding preferred slogans for MMS

Slogan	Nombre de votes	Pourquoi?
Tena hery ho an'ny reny sy ny zaza (vraie énergie pour les mères et les enfants)	29	Car il apporte de l'énergie pour la mère et l'enfant
Mahasalama ny reny sy ny zaza ao ambohoka (apporte de la santé à la mère et au fœtus)	23	
Mahasalama ny reny bevohoka (apporte de la santé pour les femmes enceintes)	17	
Fanampiana hery ho an'ny vehivavy bevohoka (apporte de l'énergie supplémentaire pour les femmes enceintes)	3	
Hery vaovao ho an'ny reny sy ny zaza (nouvelle énergie pour les mères et les enfants)	3	



**Table 15** Workshop findings in Antaretra, Vatovavy Fitovinany regarding preferred slogans for MMS

Slogan	Nombre de votes	Pourquoi?
Fahasalaman'ny Reny Bevoka (Santé des femmes enceintes)	11	
Salama ny Reny Bevoka (Les femmes enceintes, en bonne santé)	11	
Mampavitrika ny Vatanao (Rend le corps dynamique)	9	
Manome Hery sy mampatanjaka (Donne de l'énergie et de la force)	8	
Mahaso (Apporte du bien)	6	
Mahafaly anareo	0	

**Table 16** Workshop findings in Androrangavola, Vatovavy Fitovinany regarding preferred slogans for MMS

Slogan	Nombre de votes	Pourquoi?
Mange, toi et ton enfant sera en bonne santé (Ohano, ianao sy ny zanakao di ho salama tsara)	12	
Le couple mère et foetus ont de l'énergie (Ny renny sy ny zaza ao ankibo, hahazo hery)	11	
Les femmes enceintes, va au CSB pour avoir le produit (Ry vehivavy Bevoka mandehana any ami CSB mba hahazo ty vokatra ity)	5	
Les femmes, mange ce produit (Ry vehivavy, ohano ity)	5	
Toutes les femmes, mange ceci! Ry Vehivavy rehetra , ohano ity!)	4	
Couple mère-foetus en bonne santé (Reny sy ny zaza ao ankibo, ho salama tsara)	3	

**Table 17** Results of the workshop in Ambiabe, Vatovavy Fitovinany regarding preferred slogans for MMS

Slogan	Nombre de votes	Pourquoi?
fanombo, fahasalaman ny renny renny sy zaza. Fanombo, Santé de la femme et le foetus	20	
ry vb, mihinana ilay fanombo mb ho antoky ny fahasalamao, Les femmes enceintes, mange le Fanombo pour ta bonne santé	15	
mazoto mihinana ry vb, Les femmes enceintes, mange!	6	
Apporte plus de protection contre les maldies aux femmes enceintes (Mitondra hery fiarovana ho an'ny vehivavy bevoka)	5	
Ry vehivavy bevoka, manatona tobimpahasalamana (Les femmes enceintes, aller au centre de santé)	4	

**Question 4:** Now, let's discuss what a good logo would look like. The logo could be a simple picture that represents the name and the slogan of the product.

**Table 18** Workshop findings in Masindray, Itasy regarding the preferred logos for MMS

Logo	Nombre de votes	Pourquoi?
Une femme enceinte souriante, en bonne santé, qui ne montre aucun signe de faiblesse	29	Une image très convainquante de suite une sensibilisation directe; car les cibles sont les femmes
Une femme enceinte qui est en train de prendre le complément prénatal (nommé fanampy hery par la majorité des participants)	18	Pour inciter les femmes enceintes que c'est à prendre comme un comprimé, que c'est bon que le FAF
un enfant dans le ventre de la femme (vers le premier mois de grossesse)	15	Car c'est aussi pour la santé de l'enfant
Un enfant de 6 mois qui s'assoit et qui sourit	5	
Des fruits colorés en orange (papaie, orange, mangue)	3	Elle souhaite une image naturelle du produit car elles pensent que l'Orange (le fruit) apporte beaucoup de vitamines

**Table 19** Workshop findings in Ampefy, Itasy regarding preferred logos for MMS

Logo	Nombre de votes	Pourquoi?
Image d'un couple avec l'homme qui donne un verre d'eau avec le complément prénatal et la femme qui prend le CP et le verre d'eau	27	intérêt de faire participer l'homme à la santé de la femme;
Image de deux femmes enceintes qui discutent dont l'une sensibilise et l'autre écoute	18	C'est important que les femmes qui connaissent les bienfaits du produit sensibilise et discute avec les autres
Image d'une femme enceinte assise sur la table avec assiette à moitié vide	13	
Image d'une femme enceinte qui va aller au centre de santé	12	
Image d'une femme enceinte qui tient un verre d'eau et en train de prendre le complément prénatal	7	
Photo d'une orange avec quelques feuilles	3	Un logo "naturel" et frais

**Table 20** *Workshop findings in Antanetibe, Itasy regarding preferred logos for MMS*

Logo	Nombre de votes	Pourquoi?
Image d'une femme enceinte qui sourit et qui est en train d'avaler le complément prénatal	52	Une fois qu'on voit le logo, on sourit et on a envie de prendre le complément prénatal. Le sourire est important pour montrer la bonne santé de la femme enceinte
Plat appétissant (ex: poisson, mi-soa, salade de pattes, soupe)	16	Pour augmenter l'envie de prendre le complément prénatal
Image d'une femme enceinte qui va aller au centre de santé	6	
Image du soleil brillant	1	

**Table 21** *Workshop findings in Antaretra, Vatovavy Fitovinany regarding the preferred logos for MMS*

Logo	Nombre de votes	Pourquoi?
Sary VB qui mange le produit	19	Satria natokana ho an'ny vehivavy bevoka (Car c'est destiné aux femmes enceintes)
Voankazo (Orange, Banane, fraise, ananas)	15	Mitondra hery, misy vitamine, manampy amin'ny fan-devonankanina. (Apporte de l'énergie, des vitamines, aide à la bonne digestion des aliments)
Poisson	8	Mampatanjaka sy mampitombo ny zaza ao ankibo (Donne de force au fœtus et lui permet de bien se développer)
Légumes	3	Misy vitamine (riches en vitamines)

**Table 22** *Workshop findings in Androrangavola, Vatovavy Fitovinany regarding the preferred logos for MMS*

Logo	Nombre de votes	Pourquoi?
Photo d'une femme enceinte en bonne santé et dynamique	25	
Photo d'une femme enceinte qui mange le produit	15	On reconnaît que c'est pour les femmes enceintes
Photo d'une femme enceinte	10	
Photo d'une femme enceinte qui tient son bassin	0	Elle est fatiguée et a besoin de manger le produit

**Table 23** Workshop findings in Ambiabe, Vatovavy Fitovinany concerning the preferred logos for MMS

Logo	Nombre de votes	Pourquoi?
Photo d'une femme enceinte qui avale le produit	17	Dès que les femmes trouvent ce logo, cela leur rappelle déjà de le consommer
Photo d'une femme enceinte qui tient avec sa main le produit	14	La femme est en position assise pour dire qu'il est nécessaire de le consommer tranquillement car c'est peut être à cause de la précipitation de la consommation qui provoque le vomissement
Photo d'une femme enceinte	10	Cela donne une spécificité au produit permettant de le distinguer des autres produits. Le produit sera facile à connaître
Photo de pomme, banane, ananas	5	C'est un aliment que les femmes enceintes ont envie de consommer (mampanaizana)
Photos des fruits orange	4	Donne envie de manger comme on a envie de manger le fruit orange

**Question 5:** What are the preferred ways to promote MMS products??

**Table 24** Workshop findings in Masindray, Itasy concerning the preferred modes of promotion for MMS

Mode de promotion	Nombre de votes	Pourquoi?
Publicité à la radio et TV	35	Les radio sont les plus écoutés
Faire une chanson sur le complément prénatal et la diffuser à la télé et à la radio	23	Les messages dans les chansons sont plus facilement captés par les gens
Affichage au niveau des centres de santé	10	C'est au niveau de ces centres que les femmes reçoivent des conseils et fréquentent pour toutes les questions de santé
Diffusion au niveau de facebook	2	

**Table 25** Workshop findings in Ampefy, Itasy regarding preferred modes of promotion for MMS

Mode de promotion	Nombre de votes	Pourquoi?
Affichage au niveau des centre communauté FAFY gérés par les agents communautaires au niveau des fokontany	20	Les centres sont présent au niveau de chaque Fokontany et avec des activités de nutrition comme pesée, conseilling...
Publicité à la radio et TV	18	Les moyens le plus rapide
Information par pair entre les femmes	15	C'est mieux si les femmes qui connaissent bien le produit qui convainquent celles qui ne l'utilisent pas ou qui ne le connaissent pas encore
Animation au niveau des Fokontany	14	C'est pour sensibiliser l'ensemble de la communauté
Affichage au niveau des centres de santé	13	Les centres de santé sont fréquentés par les femmes

**Table 26** Workshop findings in Antanetibe, Vatovavy Fitovinany regarding the preferred modes of promotion for MMS

Mode de promotion	Nombre de votes	Pourquoi?
Distribution de T-shirt avec le nom du produit	34	Beaucoup de gens lisent les T-shirt dans la rue et facilement connue dans la communauté
Publicité aux émissions sanitaire à la radio pour les mères et les enfants	22	On touche beaucoup de mères
Information par pair entre les femmes	10	
Affichage au niveau des centres de santé, au niveau des communauté et aux marché	9	

**Table 27** Workshop findings in Antaretra, Vatovavy Fitovinany concerning the preferred modes of promotion for MMS

Mode de promotion	Nombre de votes	Pourquoi?
Affichage	15	
Fivoriana (Organisation d'une réunion dans la communauté)	12	
AC	11	
Fanisana ny VB (Recensement des femmes)	5	
Radio		
TV	2	

**Table 28** Workshop findings in Androrangavola, Vatovavy Fitovinany on the preferred modes of promotion for MMS

Mode de promotion	Nombre de votes	Pourquoi?
Sensibilisation des matrones suivi du partage de connaissance entre les femmes	12	Même raisons que ce que nous trouvons avec la stratégie
Promotion au niveau des centres de santé	7	
Komity c'est à dire la personne influente au niveau de chaque hameau du fokontany	7	
Publicité radio/télé	5	
Mobilisation des Agents communautaires	5	
TV	2	
Mettre des affichages	4	

**Table 29** Workshop findings in Ambiambe, Vatovavy Fitovinany regarding the preferred modes of promotion for MMS

Mode de promotion	Nombre de votes	Pourquoi?
Mode de promotion	Nombre de votes	Pourquoi?
On met des affichages dans plusieurs endroits de la communauté, les centres de santé	32	C'est le plus utilisé dans la communauté
Sensibilisation des masses par les Agents communautaires	18	
Sensibilisation des femmes enceintes	9	Ce sont les premières personnes à sensibiliser car ce sont eux qui les consomment. Elles sont censées de le connaître déjà
Radio	5	
megaphone any ami tsena	4	
fifampiresahan eo ami samy vb	4	

**Question 6:** Finally, we would like to have your suggestions on promotional strategies for an appropriate introduction of the product. Suggest strategies to promote the product and justify your answer.

**Table 30** Workshop findings in Masindray, Itasy regarding the preferred promotion strategies of MMS

Stratégie de promotion	Nombre de votes	Pourquoi?
Chère femmes enceintes, prenez du complément prénatal FANAMPY HERY car il vous donne de la santé et à votre enfant (le fœtus); cibles les femmes enceintes et à diffuser à la radio et TV	40	Les femmes enceintes seraient immédiatement convaincu
Pour la santé de la mère et de l'enfant ; à faire en chanson: il faut le prendre une fois par jour pendant 6 mois et à prendre pendant le repas du soir; cibles les femmes enceintes et les agents communautaire et les maris	25	Cibler les maris car ce sont généralement les décisionnaires au niveau de la famille
Message : chères femmes enceintes, prenez le complément prénatal car il vous rend en bonne santé ; à diffuser à la radio et TV et cible les femmes enceintes	5	Ce sont les femmes enceintes qui vont les prendre



**Table 31** Workshop findings in Ampefy, Itasy regarding preferred MMS promotion strategies

Stratégie de promotion	Nombre de votes	Pourquoi?
Cibles uniquement les maris; messages: chers pères de familles, sensibilisent vos femmes pour consulter les centres de santé pour avoir des conseils sur le complément prénatal pour lui protéger pendant la grossesse et L'accouchement; à passer via la radio et TV et affichage	19	Pour convaincre aussi les pères de famille
Pour les personnels de santé; messages: dire aux femmes enceintes que la prise de CP et bien pour sa santé et pour celle de son enfant; discussion directe	19	
Cibles : femmes enceintes; messages; prenez des compléments prénataux pour votre santé et celle de votre enfant; par affichage	16	
Cibles femmes enceintes; messages: lui inciter de toujours prendre le CP car cela lui apporte de l'énergie et lui éviter beaucoup d'hémorragie lors de l'accouchement; par affichage	13	
Cibles: toute la communauté; messages: membres de la communauté sensibilisent les femmes enceintes pour prendre le complément prénatal car c'est pour leur bien; à passer par la radio et Tv et affichage	13	

**Table 32** Workshop findings in Antanetibe, Itasy regarding preferred MMS promotion strategies

Stratégie de promotion	Nombre de votes	Pourquoi?
Cibles : femmes enceintes; messages: sensibilisation des femmes enceintes pour aller au centre communautaire; à faire passer par affichages	30	Ce sont les AC qui sensibilisent en premier les femmes enceintes et ce sont surtout les femmes enceintes qui sont ciblées
Cibles : pères de familles; messages: sensibiliser les pères pour la prise du complément prénatal par les femmes et faire passer les avantages; par affichage et radio et télé	15	
Distribution de t-shirt pour les femmes enceintes et à donner à toutes les femmes qui participent toujours aux séances de pesés	12	
Cibles AC; messages: les AC sensibilisent les femmes à prendre le CP et à aller au CSB pour les CPN; à faire passer par message au téléphone et lettre	9	
Cibles : la communauté; messages: sensibilisation de masse sur le complément prénatal; à faire passer par des fêtes communautaires	9	

**Table 33** Workshop findings in Antaretra, Vatovavy Fitovinany regarding the preferred promotion strategies of the MMS

Stratégie de promotion	Nombre de votes	Pourquoi?
Mari des femmes enceintes	21	Ils lui rappellent de prendre les médicaments quand elles ont oublié
Sensibiliser les Agents communautaires (AC)	14	Ils sont considérés comme agents de santé dans la communauté
Matrone	8	
Leur parents	1	C'est surtout pour les femmes non mariées
Les personnels de santé	1	Les femmes les rencontrent quand elles font des CPN
Chef FKT (chef quartier)	0	C'est la personne qui aide les AC pour la sensibilisation des femmes. C'est une personne influente
Famille (sœur, tante, etc)	0	Ce sont leur proche
Namana	0	

**Table 34** Workshop findings in Androrangavola, Vatovavy Fitovinany regarding the preferred promotion strategies of the MMS

Stratégie de promotion	Nombre de votes	Pourquoi?
Sensibiliser les matrones	24	La plupart des femmes sont allées voir la matrone. Les matrones sont écoutées par les femmes. Les canaux de sensibilisation sont les Acs, les Komity du Fokontany, les agents de santé peuvent aussi parler aux matrones
Le mari de la femme	6	Ils sont à sensibiliser pour qu'ils s'assurent que ce que sa femme mange est bien pour la santé de sa femme. Ils laissent facilement les femmes à l'acheter. Les canaux de sensibilisation sont les affichages, faire un spot dans les salles de vidéo dans les fokontany (c'est un lieu très fréquenté par leur mari)
Les parents de la femmes	6	Car il y a des femmes enceintes célibataires ou des femmes qui habitent avec leurs parents. C'est mieux que leurs parents soient sensibilisés car elles doivent suivre aussi les conseils de leurs parents. Ce sont eux qui vont prendre soins d'eux pendant la grossesse et surtout lors de l'accouchement.
Les femmes enceintes	4	Sont à sensibiliser car c'est elle qu'on cible pour le produit. Les canaux de sensibilisation sont les Acs, les Komity dans les fokontany et les centres de santé

**Table 35** Workshop findings in Ambiabé, Vatovavy Fitovinany regarding the preferred promotion strategies of the MMS

Stratégie de promotion	Nombre de votes	Pourquoi?
Sensibiliser leur mari	15	Qui détient l'argent. Il peut rappeler à sa femme de prendre le MMS. Le plus souvent, le mari donne l'ordre pour prendre ce genre de médicament
Les parents surtout leur mères	11	C'est pour les femmes qui ne se marient pas
Les matrones	10	
Sensibilisation au niveau des centres de santé par des affichages et les conseils des médecins ou sage femmes	10	Dans le centre, il y a des affichages et les mères peuvent les voir. C'est le lieu où les femmes fréquentent
Faire connaître le produit aux AC	4	Ce sont des personnes ayant beaucoup de relation avec les femmes

## Appendix B : Instruments de collecte des données (Français)

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### Form A. Phase 1 Groupe de Discussion

#### Informations démographique :

Nom du collecteur de données : \_\_\_\_\_

Date: \_\_\_\_\_

Adresse : \_\_\_\_\_

Nombre de participants: \_\_\_\_\_

#### Introduction :

Merci d'avoir pris le temps de nous parler aujourd'hui. Nous aimerions connaître votre avis sur les suppléments en micronutriments et la supplémentation pendant la grossesse.

**1. Pour commencer, chacun peut-il nous parler un peu de sa famille ?**

Soin prénatal :

**2. Nous avons entendu dire que les X [utiliser résultat de l'atelier de la question 1] sont des défis courants auxquels les femmes sont confrontées pendant la grossesse. Pouvez-vous nous parler de votre expérience avec cela ?**

a. Sonder les défis liés à la nutrition

b. Sonder sur le soutien social

#### Produits MMS :

**3. Voyons maintenant votre expérience avec les suppléments pendant la grossesse. Nous avons entendu que de nombreuses femmes enceintes de cette communauté utilisent X [utiliser résultat d'observation]. Pouvez-vous me dire pourquoi ?**

a. Sonder ce qui rend ces produits désirables ?

b. Sonder les produits qui ne sont pas appréciés par la communauté et pourquoi

c. Sonder comment ces produits sont utilisés

d. Sonder à quel point il est facile ou difficile d'utiliser les suppléments

**4. Pouvez-vous décrire les obstacles pour obtenir ou utiliser ces suppléments ?**

a. Sonde sur la disponibilité

b. Sonder l'abordabilité

c. Sonder sur l'accessibilité

d. Sonder sur la désirabilité

e. Sonder où les suppléments sont vendus

**5. Nous avons entendu dire que les suppléments peuvent provoquer X [utiliser résultat de l'atelier de la question 2]. Pouvez-vous expliquer pourquoi ?**

## **Promotion MMS :**

Nous aimerions maintenant connaître votre avis sur la façon dont ces produits devraient être promus dans cette communauté.

- 6. Pouvez-vous décrire à quoi devrait ressembler un produit pour le rendre attrayant pour les femmes enceintes ?**
  - a. Sonder sur les couleurs
  - b. Sonder sur le logo
  - c. Sonder les noms
  - d. Sonder sur les couleurs, les noms et les logos qui ne devraient pas être utilisés
- 7. Pouvez-vous décrire à quel point un produit doit être facile à utiliser pour en faciliter l'usage ?**
  - a. Sondez sur l'emballage
- 8. Pouvez-vous nous dire où ce produit devrait être promu ?**
  - a. Sonder où les femmes enceintes obtiennent souvent des conseils de santé
  - b. Sonder les publicités sur la santé dans la communauté
- 9. Pouvez-vous nous dire à qui ce produit devrait être commercialisé ?**
  - a. Sondez sur la publicité destinée aux pères
  - b. Sondez sur les différences de messages en fonction du public

**Merci pour votre participation !**

## Form B. Phase 1 Atelier de Groupe

### Informations démographique :

Nom du collecteur de données : \_\_\_\_\_

Date: \_\_\_\_\_

Adresse : \_\_\_\_\_

Nombre de participants: \_\_\_\_\_

**Introduction :** Nous aimerions entendre vos suggestions sur le développement d'une marque pour un supplément de micronutriments spécialement pour les femmes enceintes. Veuillez exprimer vos idées librement ; Il n'y a pas de bonnes ou de mauvaises réponses. Nous vous poserons une série de questions et voterons sur vos réponses. Veuillez justifier chaque réponse.

**Question 1 :** Pour commencer, nous aimerions que vous nous disiez quels sont les défis en matière de nutrition auxquels les femmes enceintes de cette communauté sont confrontées. Votons sur les principaux défis.

- Vous aurez 5 votes à utiliser. Vous pouvez utiliser tous vos votes sur un défi ou les diviser.

**Question 2 :** Quelles sont les avantages et les inconvénients de la supplémentation chez les femmes enceintes ?

Image de marque : discutez des marques courantes dans la communauté en mettant l'accent sur les couleurs, les noms, les logos et les slogans. Utilisez des marques comme les équipes sportives comme exemple.

**Question 3 :** Maintenant, nous aimerions discuter à quoi devrait ressembler un supplément de micronutriments pour le rendre attrayant pour les femmes enceintes de cette communauté. Nous vous demanderons vos idées pour la couleur, le nom, le logo et le slogan de ce produit. Commençons par la couleur. Veuillez réfléchir à un schéma de couleurs qui, selon vous, conviendrait à un produit comme celui-ci.

- Votons sur le schéma de couleurs. Vous avez 5 votes et pouvez utiliser les 5 sur une même idée ou les diviser.

**Question 4 :** Ensuite, nous aimerions que vous réfléchissiez à un bon nom pour un produit comme celui-ci. Le nom peut être un, deux ou trois mots.

- Votons sur les noms. Vous avez 5 votes et pouvez utiliser les 5 sur une même idée ou les diviser.

**Question 5 :** Maintenant, réfléchissons à un bon slogan pour représenter ce produit. Le slogan pourrait être une phrase courte, facile à mémoriser.

- Votons sur les slogans. Vous avez 5 votes et pouvez utiliser les 5 sur une même idée ou les diviser.

**Question 6 :** Voyons maintenant à quoi ressemblerait un bon logo. Le logo peut être une simple image représentant le nom et le slogan du produit.

- Votons sur les idées de logo. Vous avez 5 votes et pouvez utiliser les 5 sur une même idée ou les diviser.

**Question 7 :** Quels sont les différents modes de promotion préférés des produits MMS ?

**Question 8 :** Pour finir, nous aimerions avoir vos suggestions sur les stratégies promotionnelles en vue d'une introduction appropriée du produit. Proposez-nous des stratégies pour promouvoir le produit tout en justifiant votre réponse.

- Votons sur les stratégies. Vous avez 5 votes et pouvez utiliser les 5 sur une même stratégie ou les diviser.

Merci pour votre participation. Quelqu'un a-t-il d'autres questions ou commentaires ?



## Form C. Phase 1 Observation du Marché

### Informations démographique :

Nom du collecteur de données : \_\_\_\_\_

Date : \_\_\_\_\_

Lieu : \_\_\_\_\_

### Inclusion et exclusion

#### Critères A. Tableau d'inclusion et d'exclusion

Suppléments	Inclure	Exclure
Type de consommateur	Adultes, femmes enceintes, femmes allaitantes	Enfants, + 50 ans
MMS	Contient au moins 10 vitamines et minéraux	A moins de 10 vitamines et minéraux
Forme de livraison	Pilules, gélules, cachets	Sirops et poudres
Ingrédients	Minéraux, vitamines, acides gras essentiels, acides aminés essentiels	Ingrédients à base de plantes, fusionnement d'herbes et de vitamines

### Checklist pour l'observation du marché:

Section 1: Denk Prenatal	
1. Denk Prenatal est-il vendu dans la communauté ?	<input type="checkbox"/> Oui <input type="checkbox"/> non <input type="checkbox"/> n/a
2. Denk Prenatal a-t-il été vendu dans la communauté dans le passé ?	<input type="checkbox"/> Oui <input type="checkbox"/> non <input type="checkbox"/> n/a (passez à la section 2)
3. Quelle unité de Denk Prenatal est vendue ?	_____ (encercler l'unité de choix : tablet, blisters ou sachet)
4. Combien coûte Denk Prenatal ?	_____ (unité en monnaie locale)
<i>Veuillez sélectionner un lieu de vente principal :</i>	
5. Combien d'unités de Denk Prenatal le propriétaire du magasin déclare-t-il avoir vendu au cours de la dernière semaine ?	_____ unités vendues la semaine dernière (Encercler l'unité de choix : tablet, blisters ou sachet)
6. Qui le propriétaire du magasin voit-il le plus souvent acheter Denk Prenatal ?	<input type="checkbox"/> femme <input type="checkbox"/> homme <input type="checkbox"/> autre:
7. Quel genre d'endroit vend Denk Prenatal dans cette communauté ?	<input type="checkbox"/> Stand de marché <input type="checkbox"/> petit magasin <input type="checkbox"/> Ménage <input type="checkbox"/> pharmacie <input type="checkbox"/> autre :
8. Comment Denk Prenatal est-il affiché/présenté dans le magasin ?	<input type="checkbox"/> n/a <input type="checkbox"/> derrière le comptoir <input type="checkbox"/> affiché devant d'autres produits <input type="checkbox"/> autre: _____



## Section 2: Gestarelle

1. Est-ce que Gestarelle est vendu dans la communauté ?	<input type="checkbox"/> Oui <input type="checkbox"/> non <input type="checkbox"/> n/a
2. t-ce que Gestarelle a été vendu dans la communauté dans le passé ?	<input type="checkbox"/> Oui <input type="checkbox"/> non <input type="checkbox"/> n/a (passez à la section 3)
3. Quelle unité de Gestarelle est vendue ?	_____ (encercler l'unité de choix : tablet, blisters ou sachet)
4. Combien coûte Gestarelle?	_____ (unité en monnaie locale)
Veuillez sélectionner un lieu de vente principal :	
1. Combien d'unités de Gestarelle le propriétaire du magasin déclare-t-il avoir vendu au cours de la dernière semaine ?	_____ unités vendues la semaine dernière (Encercler l'unité de choix : tablet, blisters ou sachet)
2. Qui le propriétaire du magasin voit-il le plus souvent acheter Gestarelle ?	<input type="checkbox"/> femme <input type="checkbox"/> homme <input type="checkbox"/> autre:
3. Quel genre de sites vendent Gestarelle dans cette communauté ?	<input type="checkbox"/> Stand de marché <input type="checkbox"/> petit magasin <input type="checkbox"/> Ménage <input type="checkbox"/> pharmacie <input type="checkbox"/> autre :
4. Comment la Gestarelle est-elle affiché/présenté dans le magasin ?	<input type="checkbox"/> n/a <input type="checkbox"/> derrière le comptoir <input type="checkbox"/> affiché devant d'autres produits <input type="checkbox"/> autre: _____



## Section 3: Pregnacare

1. Pregnacare est-il vendu dans la communauté ?	<input type="checkbox"/> Oui <input type="checkbox"/> non <input type="checkbox"/> n/a
2. Pregnacare a-t-il été vendu dans la communauté dans le passé ?	<input type="checkbox"/> Oui <input type="checkbox"/> non <input type="checkbox"/> n/a (passez à la section 4)
3. Quelle unité de Pregnacare est vendue ?	_____ (encercler l'unité de choix : tablet, blisters ou sachet)
4. Pour combien Pregnacare est-il vendu ?	_____ (unité en monnaie locale)
Veuillez sélectionner un lieu de vente principal :	
5. Combien d'unités de Pregnacare le propriétaire du magasin déclare-t-il avoir vendu au cours de la dernière semaine ?	_____ unités vendues la semaine dernière (Encercler l'unité de choix : tablet, blisters ou sachet)
6. Qui le propriétaire du magasin voit-il le plus souvent acheter Pregnacare ?	<input type="checkbox"/> femme <input type="checkbox"/> homme <input type="checkbox"/> autre:
7. Quel genre de sites vend Pregnacare dans cette communauté ?	<input type="checkbox"/> Stand de marché <input type="checkbox"/> petit magasin <input type="checkbox"/> Ménage <input type="checkbox"/> pharmacie <input type="checkbox"/> autre :
8. Comment le Pregnacare est-il affiché/présenté dans le magasin ?	<input type="checkbox"/> n/a <input type="checkbox"/> derrière le comptoir <input type="checkbox"/> affiché devant d'autres produits <input type="checkbox"/> autre: _____



#### Section 4: Multivita

1. Multivita est-il vendu dans la communauté ?	<input type="checkbox"/> Oui <input type="checkbox"/> non <input type="checkbox"/> n/a
2. Multivita a-t-il été vendu dans la communauté dans le passé ?	<input type="checkbox"/> Oui <input type="checkbox"/> non <input type="checkbox"/> n/a (passer à l'entretien semi-structuré)
3. Quelle unité de Multivita est vendue ?	_____ (encercler l'unité de choix : tablet, blisters ou sachet)
4. Combien coûte une unité de Multivita?	_____ (unité en monnaie locale)
<i>Veuillez sélectionner un lieu de vente principal :</i>	_____ unités vendues la semaine dernière
5. Combien d'unités de Multivita le propriétaire du magasin déclare-t-il avoir vendu au cours de la dernière semaine ?	(Encercler l'unité de choix : tablet, blisters ou sachet)
6. Qui le propriétaire du magasin voit-il le plus souvent acheter Multivita ?	<input type="checkbox"/> femme <input type="checkbox"/> homme <input type="checkbox"/> autre:
7. Quel genre de sites vendent Multivita dans cette communauté ?	<input type="checkbox"/> Stand de marché <input type="checkbox"/> petit magasin <input type="checkbox"/> Ménage <input type="checkbox"/> pharmacie <input type="checkbox"/> autre :
8. Comment la Multivita est-elle affichée/présenté dans le magasin ?	<input type="checkbox"/> n/a <input type="checkbox"/> derrière le comptoir <input type="checkbox"/> affiché devant d'autres produits <input type="checkbox"/> autre: _____



#### Section 6: Nom de supplémentation: \_\_\_\_\_

1. Est-ce que [Nom de supplémentation] est vendu dans la communauté ?	<input type="checkbox"/> Oui <input type="checkbox"/> non <input type="checkbox"/> n/a
2. st-ce que [Nom de supplémentation] a été vendu dans la communauté dans le passé ?	<input type="checkbox"/> Oui <input type="checkbox"/> non <input type="checkbox"/> n/a (passez à la section 2)
3. Sous quelle présentation [Nom de supplémentation] est vendu ?	_____ (encercler l'unité de choix : tablet, blisters ou sachet)
4. Combien coûte [Nom de supplémentation]?	_____ (unité en monnaie locale)
<i>Veuillez sélectionner le lieu de vente principal :</i>	_____ unités vendues la semaine dernière
5. Combien d'unités de [Nom de supplémentation] le propriétaire du magasin déclare-t-il avoir vendu au cours de la dernière semaine ?	(Encercler l'unité de choix : tablet, blisters ou sachet)
6. Qui le propriétaire du magasin voit-il le plus souvent acheter [Nom de supplémentation] ?	<input type="checkbox"/> femme <input type="checkbox"/> homme <input type="checkbox"/> autre:
7. Quel genre de magasin vend [Nom de supplémentation] dans cette communauté ?	<input type="checkbox"/> Stand de marché <input type="checkbox"/> petit magasin <input type="checkbox"/> Ménage <input type="checkbox"/> pharmacie <input type="checkbox"/> autre :
8. Comment la [Nom de supplémentation] est-elle disposée dans le magasin ?	<input type="checkbox"/> n/a <input type="checkbox"/> derrière le comptoir <input type="checkbox"/> affiché devant d'autres produits <input type="checkbox"/> autre: _____

### Section 7: Nom de supplémentation: \_\_\_\_\_

1. Est-ce que [Nom de supplémentation] est vendu dans la communauté ?	<input type="checkbox"/> Oui <input type="checkbox"/> non <input type="checkbox"/> n/a
2. st-ce que [Nom de supplémentation] a été vendu dans la communauté dans le passé ?	<input type="checkbox"/> Oui <input type="checkbox"/> non <input type="checkbox"/> n/a (passez à la section 2)
3. Sous quelle présentation [Nom de supplémentation] est vendu ?	_____ (encercler l'unité de choix : tablet, blisters ou sachet)
4. Combien coûte [Nom de supplémentation]?	_____ (unité en monnaie locale)
<i>Veillez sélectionner le lieu de vente principal :</i>	_____ unités vendues la semaine dernière (Encercler l'unité de choix : tablet, blisters ou sachet)
5. Combien d'unités de [Nom de supplémentation] le propriétaire du magasin déclare-t-il avoir vendu au cours de la dernière semaine ?	
6. Qui le propriétaire du magasin voit-il le plus souvent acheter [Nom de supplémentation] ?	<input type="checkbox"/> femme <input type="checkbox"/> homme <input type="checkbox"/> autre:
7. Quel genre de magasin vend [Nom de supplémentation] dans cette communauté ?	<input type="checkbox"/> Stand de marché <input type="checkbox"/> petit magasin <input type="checkbox"/> Ménage <input type="checkbox"/> pharmacie <input type="checkbox"/> autre :
8. Comment la [Nom de supplémentation] est-elle disposée dans le magasin ?	<input type="checkbox"/> n/a <input type="checkbox"/> Derrière le comptoir <input type="checkbox"/> Affiché devant d'autres produits <input type="checkbox"/> autre: _____

### Section 8: Nom de supplémentation: \_\_\_\_\_

1. Est-ce que [Nom de supplémentation] est vendu dans la communauté ?	<input type="checkbox"/> Oui <input type="checkbox"/> non <input type="checkbox"/> n/a
2. st-ce que [Nom de supplémentation] a été vendu dans la communauté dans le passé ?	<input type="checkbox"/> Oui <input type="checkbox"/> non <input type="checkbox"/> n/a (passez à la section 2)
3. Sous quelle présentation [Nom de supplémentation] est vendu ?	_____ (encercler l'unité de choix : tablet, blisters ou sachet)
4. Combien coûte [Nom de supplémentation]?	_____ (unité en monnaie locale)
<i>Veillez sélectionner le lieu de vente principal :</i>	_____ unités vendues la semaine dernière (Encercler l'unité de choix : tablet, blisters ou sachet)
5. Combien d'unités de [Nom de supplémentation] le propriétaire du magasin déclare-t-il avoir vendu au cours de la dernière semaine ?	
6. Qui le propriétaire du magasin voit-il le plus souvent acheter [Nom de supplémentation] ?	<input type="checkbox"/> femme <input type="checkbox"/> homme <input type="checkbox"/> autre:
7. Quel genre de magasin vend [Nom de supplémentation] dans cette communauté ?	<input type="checkbox"/> Stand de marché <input type="checkbox"/> petit magasin <input type="checkbox"/> Ménage <input type="checkbox"/> pharmacie <input type="checkbox"/> autre :
8. Comment la [Nom de supplémentation] est-elle disposée dans le magasin ?	<input type="checkbox"/> n/a <input type="checkbox"/> Derrière le comptoir <input type="checkbox"/> Affiché devant d'autres produits <input type="checkbox"/> autre: _____

### Section 9: Nom de supplémentation: \_\_\_\_\_

1. Est-ce que [Nom de supplémentation] est vendu dans la communauté ?	<input type="checkbox"/> Oui <input type="checkbox"/> non <input type="checkbox"/> n/a
2. st-ce que [Nom de supplémentation] a été vendu dans la communauté dans le passé ?	<input type="checkbox"/> Oui <input type="checkbox"/> non <input type="checkbox"/> n/a (passez à la section 2)
3. Sous quelle présentation [Nom de supplémentation] est vendu ?	_____ (encercler l'unité de choix : tablet, blisters ou sachet)
4. Combien coûte [Nom de supplémentation]?	_____ (unité en monnaie locale)
<i>Veillez sélectionner le lieu de vente principal :</i>	
5. Combien d'unités de [Nom de supplémentation] le propriétaire du magasin déclare-t-il avoir vendu au cours de la dernière semaine ?	_____ unités vendues la semaine dernière (Encercler l'unité de choix : tablet, blisters ou sachet)
6. Qui le propriétaire du magasin voit-il le plus souvent acheter [Nom de supplémentation] ?	<input type="checkbox"/> femme <input type="checkbox"/> homme <input type="checkbox"/> autre:
7. Quel genre de magasin vend [Nom de supplémentation] dans cette communauté ?	<input type="checkbox"/> Stand de marché <input type="checkbox"/> petit magasin <input type="checkbox"/> Ménage <input type="checkbox"/> pharmacie <input type="checkbox"/> autre :
8. Comment la [Nom de supplémentation] est-elle disposée dans le magasin ?	<input type="checkbox"/> n/a <input type="checkbox"/> Derrière le comptoir <input type="checkbox"/> Affiché devant d'autres produits <input type="checkbox"/> autre: _____

### Section 10: Nom de supplémentation: \_\_\_\_\_

1. Est-ce que [Nom de supplémentation] est vendu dans la communauté ?	<input type="checkbox"/> Oui <input type="checkbox"/> non <input type="checkbox"/> n/a
2. st-ce que [Nom de supplémentation] a été vendu dans la communauté dans le passé ?	<input type="checkbox"/> Oui <input type="checkbox"/> non <input type="checkbox"/> n/a (passez à la section 2)
3. Sous quelle présentation [Nom de supplémentation] est vendu ?	_____ (encercler l'unité de choix : tablet, blisters ou sachet)
4. Combien coûte [Nom de supplémentation]?	_____ (unité en monnaie locale)
<i>Veillez sélectionner le lieu de vente principal :</i>	
5. Combien d'unités de [Nom de supplémentation] le propriétaire du magasin déclare-t-il avoir vendu au cours de la dernière semaine ?	_____ unités vendues la semaine dernière (Encercler l'unité de choix : tablet, blisters ou sachet)
6. Qui le propriétaire du magasin voit-il le plus souvent acheter [Nom de supplémentation] ?	<input type="checkbox"/> femme <input type="checkbox"/> homme <input type="checkbox"/> autre:
7. Quel genre de magasin vend [Nom de supplémentation] dans cette communauté ?	<input type="checkbox"/> Stand de marché <input type="checkbox"/> petit magasin <input type="checkbox"/> Ménage <input type="checkbox"/> pharmacie <input type="checkbox"/> autre :
8. Comment la [Nom de supplémentation] est-elle disposée dans le magasin ?	<input type="checkbox"/> n/a <input type="checkbox"/> Derrière le comptoir <input type="checkbox"/> Affiché devant d'autres produits <input type="checkbox"/> autre: _____

## Form D. Phase 2 Free List

Numéro :

Informations démographique :

Nom du collecteur de données : \_\_\_\_\_

Date : \_\_\_\_\_

Région : \_\_\_\_\_

District : \_\_\_\_\_

Commune : \_\_\_\_\_

Caractéristiques des répondants : Age : \_\_\_\_\_ Nombre d'enfants : \_\_\_\_\_

No.	Question de Free List	Commentaires pour guider les notes de terrain
	Énumérez tous les différents aliments que les femmes enceintes consomment dans cette communauté.	Sondez sur les aliments mentionnés : <ul style="list-style-type: none"><li>• Sonder sur la description de cet aliment.</li><li>• Sonder sur les raisons pour lesquelles les femmes enceintes consomment cet aliment.</li></ul>
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		



No.	Question de Free List	Commentaires pour guider les notes de terrain
	Faites-moi une liste de toutes les maladies dont les femmes enceintes de cette communauté souffrent.	<p>Sondez sur les maladies mentionnées :</p> <ul style="list-style-type: none"> <li>• Sonder sur les causes perçues de la maladie.</li> <li>• Sonder sur le traitement perçu de la maladie.</li> </ul>
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		

## Form E. Phase 2 Entretien Semi-Directifs avec les Femmes Enceintes

Numéro :

### Informations démographiques :

Nom du collecteur de données : \_\_\_\_\_

Date : \_\_\_\_\_

Adresse : \_\_\_\_\_

### Objectifs de recherche

1. Identifier les facteurs liés au produit qui sont importants pour la génération de la demande de MMS
2. Analyse ethnographique des termes de santé et de maladie nutritionnelles pour la promotion des MMS

### Introduction :

1. Merci d'avoir pris le temps de me parler. Pour commencer, pouvez-vous me parler de votre famille ?
2. Pourriez-vous s'il vous plaît me parler d'une journée typique pour vous ?
3. Maintenant, pouvez-vous me parler des ressources disponibles pour les femmes enceintes dans cette communauté ?

### Soin prénatal :

Maintenant, j'aimerais en savoir plus sur la santé pendant la grossesse dans cette communauté.

1. **Pouvez-vous décrire à quoi devrait ressembler une grossesse saine ?**
2. **Pouvez-vous décrire les changements apportés à votre régime alimentaire après la grossesse ?**
  - a. Sonder les conseils reçus concernant l'alimentation pendant la grossesse
  - b. Demandez-lui qui lui a donné des conseils
  - c. Sondez sur les aliments qui sont bons pour les femmes enceintes
  - d. Sondez sur les aliments que les femmes enceintes devraient éviter
  - e. Sonder à quel point il est facile ou difficile de maintenir une alimentation saine pendant la grossesse
3. **Pouvez-vous décrire les maladies dont souffrent les femmes enceintes de cette communauté ?**
  - a. Sondez sur la gravité des maladies
  - b. Sonder sur les maladies qui la préoccupent le plus
  - c. Sonder sur les conséquences d'une maladie non traitée
  - d. Sonder la cause de chaque maladie
  - e. Sonder sur la prévention de chaque maladie
  - f. Sonder sur les maladies liées à la nutrition
  - g. Sonder sur le traitement
4. **Pouvez-vous décrire les soins de santé que vous avez reçus depuis le moment où vous saviez que vous étiez enceinte jusqu'à maintenant ?**
  - a. Sonder les pratiques de recours aux soins de santé
  - b. Sonder sur la connaissance du moment où il faut chercher des soins
  - c. Sonder les défis rencontrés lorsqu'elle recourt aux soins de santé

- 5. À quels obstacles les femmes de cette communauté doivent-elles faire face pour rester en bonne santé pendant la grossesse ?**
- a. Sonder sur le soutien communautaire
  - b. Sonder sur le soutien familial
  - c. Sonder l'accès aux soins
  - d. Sonder sur l'accès aux aliments

### **Supplément de micronutriments**

Ce sont d'excellentes informations. J'aimerais maintenant savoir ce que vous pensez des suppléments en micronutriments.

- 6. Pouvez-vous nous dire ce que vous savez sur les suppléments en micronutriments ?**
- a. Sonder les résultats à court terme
  - b. Sonder sur les résultats à long terme
  - c. Sonder sur la prévention des maladies
- 7. Pouvez-vous décrire des produits similaires que vous ou d'autres femmes enceintes de votre communauté utilisez ?**
- a. Sonder sur la source des suppléments
  - b. Sonder sur la disponibilité
  - c. Sonder l'abordabilité
  - d. Sonder sur le partage
  - e. Sonder sur ce qui les rend désirables
  - f. Sonder les produits qui ne sont pas désirables
  - g. Sondez sur les autres médicaments utilisés pendant la grossesse
- 8. Pouvez-vous décrire votre perception de ce produit ?**
- 9. Pouvez-vous décrire comment ces produits vous ont été expliqués ?**
- a. Demandez-lui qui lui a parlé de ces produits
  - b. Sonder l'efficacité de cette explication
  - c. Sonder sur la façon dont l'explication pourrait être amélioré
- 10. Pouvez-vous me dire comment commercialiser au mieux un supplément de micronutriments pour les femmes enceintes dans cette communauté ?**
- a. Explorer les moyens de promouvoir le produit
  - b. Sonder sur les réseaux de distribution efficaces

Merci d'avoir répondu aux questions précédentes.

## Form F. Phase 2 Entretien Semi-Directifs avec les Agents de Santé

### Informations démographiques :

Nom du collecteur de données :

Date : \_\_\_\_\_

Adresse : \_\_\_\_\_

### Introduction :

1. Pourriez-vous s'il vous plaît me parler de votre rôle dans la communauté ?
2. Parlez-moi d'une journée type en tant qu'agent de santé ?
3. Pouvez-vous décrire les ressources de santé disponibles pour les femmes enceintes dans cette communauté ?

### Soin prénatal :

J'aimerais maintenant en savoir plus sur la santé des femmes pendant la grossesse dans cette communauté.

1. **Pouvez-vous décrire à quoi devrait ressembler une grossesse en bonne santé ?**
2. **Pouvez-vous décrire les maladies dont souffrent les femmes enceintes de cette communauté ?**
  - a. Sonder la gravité des maladies
  - b. Sonder les conséquences d'une maladie non traitée
  - c. Sondez sur la cause de chaque maladie
  - d. Sondez sur la prévention de chaque maladie
  - e. Sonder sur le traitement
3. **Pouvez-vous me parler des maladies qui vous préoccupent le plus ?**
4. **Parlez-moi des soins qu'une femme enceinte reçoit au cours de sa grossesse**
  - a. Sonder sur les conseils nutritionnels donnés aux femmes enceintes
  - b. Sonder sur si les conseils sont suivis
  - c. Sonder sur les raisons pour lesquelles les femmes peuvent ou non suivre les conseils
  - d. Sonder sur les pratiques de recours aux soins de santé
5. **À quels obstacles les femmes de cette communauté doivent-elles faire face pour rester en bonne santé pendant la grossesse ?**
  - a. Sonder sur le soutien communautaire / familial
  - b. Sonder sur l'accès aux soins
  - c. Sonder sur l'accès aux aliments

## **Supplément de micronutriments**

Ce sont d'excellentes informations. J'aimerais maintenant entendre vos suggestions sur l'élaboration d'un programme qui introduira un complément alimentaire en micronutriments

- 6. Pouvez-vous décrire les avantages d'une supplémentation en micronutriments pour une femme pendant sa grossesse ?**
  - a. Sondez sur les défis
  - b. Sonder sur la prévention des maladies
- 7. Pouvez-vous décrire des produits similaires que les femmes enceintes de cette communauté utilisent ?**
  - a. Sondez sur la source des médicaments / suppléments
  - b. Sonder sur l'abordabilité
  - c. Sonder sur le partage
  - d. Sonder ce qui les rend désirables
  - e. Sonder les produits qui ne sont pas souhaitables
  - f. Sondez sur l'acceptabilité du supplément de micronutriments
  - g. Sonder sur la perception du produit
- 8. Pouvez-vous décrire votre perception du produit ?**
- 9. Veuillez décrire la façon la plus efficace de commercialiser un supplément de micronutriments dans cette communauté ?**
  - a. Sonder sur les moyens les plus fiables pour distribuer le produit
  - b. Sonder sur les voies de distribution
  - c. Sonder sur comment expliquer le supplément de micronutriments aux femmes
  - d. Sonder sur les meilleures façons de vous assurer que le produit est utilisé correctement

**Merci pour votre temps. Y a-t-il autre chose dont vous aimeriez discuter qui n'a pas été évoqué ?**

## Appendix C : Data Collection Instruments (English)

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### Form A. Phase 1 Focus Group

#### Demographic Information:

Data Collector Name: \_\_\_\_\_ Date: \_\_\_\_\_

Location : \_\_\_\_\_ Number of participants: \_\_\_\_\_

#### Introduction:

Thank you for taking the time to speak with us today. We would like to hear your thoughts on micronutrient supplements and supplementation during pregnancy.

1. To start, can everyone tell us a little about their family?

#### Antenatal Care:

2. We have heard that X are common challenges that women face during pregnancy. Can you tell us about your experience with this?
  - a. Probe on challenges related to nutrition
  - a. Probe on social support

#### MMS Products:

3. Now let's discuss your experience with supplements during pregnancy. We have heard that many pregnant women in this community use X. Can you tell me why that is?
  - a. Probe on what makes these products desirable
  - b. Probe on products disliked by the community and reasons why
  - c. Probe on how these products are used
  - d. Probe on how easy or difficult it is to use the supplements
4. Can you describe any barriers in getting or using these supplements?
  - a. Probe on availability
  - b. Probe on affordability
  - c. Probe on accessibility
  - d. Probe on desirability
  - e. Probe on where supplements are sold
5. We have heard that supplements can cause X. Can you please explain why that is?

#### MMS Promotion:

Now we would like to hear your thoughts on how these products should be promoted in this community.

6. Can you describe what a product should look like to make it attractive to pregnant women?
  - a. Probe on colors
  - b. Probe on logo



- c. Probe on names
  - d. Probe on colors, names and logos that should not be used
- 7. **Can you describe how easy to use a product should be to facilitate use?**
  - a. Probe on packaging
- 8. **Can you tell us where this product should be promoted?**
  - a. Probe on where pregnant women often get health advice
  - b. Probe on health advertisements in the community
- 9. **Can you tell us who this product should be marketed to?**
  - c. Probe on advertising to fathers
  - d. Probe on differences in messaging depending on audience

## Form B. Phase 1 Market Observation

### Demographic Information:

Data Collector Name: \_\_\_\_\_

Date: \_\_\_\_\_

Location: \_\_\_\_\_

### Market Observation Checklist:

Section 1: Denk Prenatal	
1. Is Denk Prenatal being sold in the community?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a
2. Has Denk Prenatal been sold in the community in the past?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a (skip to section 2)
3. What unit of Denk Prenatal is being sold?	<input type="checkbox"/> packets of 60 tablets <input type="checkbox"/> single tablet other: _____
4. How much is Denk Prenatal being sold for?	_____ (list price of unit in local currency)
Please pick a primary selling location:	_____ units sold in the past week
5. How many units of Denk Prenatal does the store owner report selling in the past week?	Location type: _____ (see options below)
6. Who does the store owner most frequently see purchasing Denk Prenatal?	<input type="checkbox"/> women <input type="checkbox"/> male <input type="checkbox"/> other: _____
7. What kind of location is selling Denk Prenatal in this community?	<input type="checkbox"/> market stand <input type="checkbox"/> small store <input type="checkbox"/> household <input type="checkbox"/> pharmacy <input type="checkbox"/> other: _____
8. How many total number of locations are selling Denk Prenatal?	_____ total locations
9. How is Denk Prenatal displayed in the store?	<input type="checkbox"/> n/a <input type="checkbox"/> behind counter <input type="checkbox"/> displayed in front of other products <input type="checkbox"/> other: _____



## Section 2: Gestarelle

1. Is Gestarelle being sold in the community? ☐ Yes ☐ No ☐ n/a
2. Has Gestarelle been sold in the community in the past? ☐ Yes ☐ No ☐ n/a (skip to section 2)
3. What unit of Gestarelle is being sold? ☐ packets of 60 tablets  
☐ single tablet other: \_\_\_\_\_
4. How much is Gestarelle being sold for? \_\_\_\_\_ (list price of unit in local currency)
- Please pick a primary selling location: \_\_\_\_\_ units sold in the past week
5. How many units of Gestarelle does the store owner report selling in the past week? Location type: \_\_\_\_\_ (see options below)
6. Who does the store owner most frequently see purchasing Gestarelle? ☐ women ☐ male ☐ other: \_\_\_\_\_
7. What kind of location is selling Gestarelle in this community? ☐ market stand ☐ small store  
☐ household ☐ pharmacy  
☐ other: \_\_\_\_\_
8. How many total number of locations are selling Gestarelle? \_\_\_\_\_ total locations
9. How is Gestarelle displayed in the store? ☐ n/a ☐ behind counter  
☐ displayed in front of other products  
☐ other: \_\_\_\_\_



## Section 3: Pregnacare

1. Is Pregnacare being sold in the community? ☐ Yes ☐ No ☐ n/a
2. Has Pregnacare been sold in the community in the past? ☐ Yes ☐ No ☐ n/a (skip to section 2)
3. What unit of Pregnacare is being sold? ☐ packets of 60 tablets  
☐ single tablet other: \_\_\_\_\_
4. How much is Pregnacare being sold for? \_\_\_\_\_ (list price of unit in local currency)
- Please pick a primary selling location: \_\_\_\_\_ units sold in the past week
5. How many units of Pregnacare does the store owner report selling in the past week? Location type: \_\_\_\_\_ (see options below)
6. Who does the store owner most frequently see purchasing Pregnacare? ☐ women ☐ male ☐ other: \_\_\_\_\_
7. What kind of location is selling Pregnacare in this community? ☐ market stand ☐ small store  
☐ household ☐ pharmacy  
☐ other: \_\_\_\_\_
8. How many total number of locations are selling Pregnacare? \_\_\_\_\_ total locations
9. How is Pregnacare displayed in the store? ☐ n/a ☐ behind counter  
☐ displayed in front of other products  
☐ other: \_\_\_\_\_



#### Section 4: Multivita

1. Is Multivita being sold in the community?

☐ Yes ☐ No ☐ n/a

2. Has Multivita been sold in the community in the past?

☐ Yes ☐ No ☐ n/a (skip to section 2)

3. What unit of Multivita is being sold?

☐ packets of 60 tablets  
☐ single tablet other: \_\_\_\_\_

4. How much is Multivita being sold for?

\_\_\_\_\_ (list price of unit in local currency)

*Please pick a primary selling location:*

5. How many units of Multivita does the store owner report selling in the past week?

\_\_\_\_\_ units sold in the past week

Location type: \_\_\_\_\_  
(see options below)

6. Who does the store owner most frequently see purchasing Multivita?

☐ women ☐ male ☐ other: \_\_\_\_\_

7. What kind of location is selling Multivita in this community?

☐ market stand ☐ small store  
☐ household ☐ pharmacy  
☐ other: \_\_\_\_\_

8. How many total number of locations are selling Multivita?

\_\_\_\_\_ total locations

9. How is Multivita displayed in the store?

☐ n/a ☐ behind counter  
☐ displayed in front of other products  
☐ other: \_\_\_\_\_



## Form C. Phase 1 Community Workshop

### Demographic Information:

**Data Collector Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Location:** \_\_\_\_\_ **Number of Participants:** \_\_\_\_\_

**Introduction:** We would like to hear your suggestions on developing a brand for a micronutrient supplement specifically for pregnant women. Please express your ideas freely; there are no right or wrong answers. We will be asking you a series of questions and will vote on your responses.

**Question 1:** To start we would like you to tell us what challenges regarding nutrition that pregnant women in this community face. Let's vote on the foremost challenges.

- You will have 5 votes to use. You can use all your votes on one challenge or split them up.

**Branding:** Discuss common brands in the community focusing on colors, names, logos and slogans. Use brands like sports teams as examples.

**Question 2:** Now, we would like to discuss how a micronutrient supplement should look to make it attractive to pregnant women in this community. We will be asking for your ideas for the color, name, logo and slogan for this product. Let's start with color. Please brainstorm a color scheme that you think would suit a product like this.

- Let's vote on a mix of colors. You have 5 votes and can use all 5 on one idea or split them up.

**Question 3:** Next, we would like you to think about a good name for a product like this. The name can be one, two or three words.

- Let's vote on the names. You have 5 votes and can use all 5 on one idea or split them up.

**Question 4:** Now, let's think about a good slogan to represent this product. The slogan could be a short phrase that is memorable.

- Let's vote on the slogans. You have 5 votes and can use all 5 on one idea or split them up.

**Question 5:** Now, let's discuss what a good logo would look like. The logo could be a simple picture that represents the name and the slogan of the product.

- Let's vote on the logo ideas. You have 5 votes and can use all 5 on one idea or split them up.

**Question 6:** What are the preferred ways to promote MMS products?

- Let's vote on the logo ideas. You have 5 votes and can use all 5 on one idea or split them up.

**Question 7:** Finally, we would like to have your suggestions on promotional strategies for an appropriate introduction of the product. Suggest strategies to promote the product and justify your answer.

- Let's vote on the logo ideas. You have 5 votes and can use all 5 on one idea or split them up.

Thank you for your participation. Does anyone have any additional questions or comments?

Form D. Phase 2 Free List

Demographic Information:

Data Collector Name: \_\_\_\_\_

Date: \_\_\_\_\_ Location: \_\_\_\_\_

Respondent characteristics: Age: \_\_\_\_\_ Gender: \_\_\_\_\_

Number of Children: \_\_\_\_\_

No.	Free List Question	Comments to guide field notes
	List all of the different foods you consume in this community.	<ul style="list-style-type: none"><li>• Probe on the top 5 foods mentioned to determine well as a description of that food in general.</li><li>• You might probe about their availability by season. Probe on any foods that seem confusing, new, or unclear to you for further clarification</li></ul>
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No.	Free List Question	Comments
	List for me all of the illnesses that you suffer from as a pregnant woman in this community.	<ul style="list-style-type: none"> <li>• After listing, probe on the top 5 illnesses to get local explanations.</li> <li>• Probe on any nutrition-related illnesses (e.g., anemia). Probe on any illnesses that seem confusing, new, or contradictory to you.</li> </ul>
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## Form E. Phase 2 Pregnant Women Semi-Structure Interview

### Demographic Information:

**Data Collector Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Location:** \_\_\_\_\_

### Introduction

1. Thank you for taking the time to speak with me. To start, can you please tell me about your family?
2. Could you please tell me about a typical day for you?
3. Now can you tell me about the resources available for pregnant women in this community?

### Antenatal Care:

Now I would like to know more about health during pregnancy in this community.

1. **Can you please describe what a healthy pregnancy should look like to you?**
2. **Can you please describe any changes to your diet after you became pregnant?**
  - Probe on any advice regarding diet during pregnancy received
  - Probe on who gave her the advice
  - Probe on foods that are good for pregnant women
  - Probe on foods that pregnant women should avoid
  - Probe on how easy or difficult it is to maintain a healthy diet during pregnancy
3. **Can you please describe the illnesses that pregnant women in this community suffer from?**
  - Probe on seriousness of illnesses
  - Probe on diseases she is most concerned about
  - Probe on consequences of untreated illness
  - Probe on the cause of each illness
  - Probe on prevention of each illness
  - Probe on treatment
4. **Can you describe any health care you have received from the time you knew you were pregnant to now?**
  - Probe on healthcare seeking practices
  - Probe on knowledge of when to seek care
  - Probe on challenges faced in seeking health practices
5. **What barriers do women in this community face to stay healthy during pregnancy?**
  - Probe on community support
  - Probe on family support
  - Probe on access to care

## **Micronutrient Supplementation**

This is great information. Now I would like to hear your thoughts on micronutrient supplements.

**1. Can you please tell us what you know about micronutrient supplements?**

- Probe on short- term outcome
- Probe on long-term outcome
- Probe on illness prevention

**2. Can you describe any similar products that you or other pregnant women in your community use?**

- Probe on source of supplements
- Probe on availability
- Probe on affordability
- Probe on sharing
- Probe on what makes them desirable
- Probe on products that are not desirable
- Probe on other medications used during pregnancy

**3. Can you describe your perception of this product?**

**4. Can you describe how these products were explained to you?**

- Probe on who told her about these products
- Probe on how effective this explanation was
- Probe on how it could be improved

**5. Can you please tell me how to best market a micronutrient supplement to pregnant women in this community?**

- Probe on ways to promote the product
- Probe on effective ways to share knowledge on the product (distribution channels)

Thank you for your time. Is there anything else you would like to discuss that was not brought up?

## Form F. Phase 2 Health Worker Semi Structured Interview

### Demographic Information:

Data Collector Name: \_\_\_\_\_ Date: \_\_\_\_\_

Location: \_\_\_\_\_

### Introduction

1. Could you please tell me about your role in the community?
2. Tell me about a typical day as a health worker?
3. Can you please describe what health care resources there are for pregnant women in this community?

### Antenatal Care:

Now I would like to know more about health during pregnancy in this community.

1. **Can you please describe what a healthy pregnancy should look like?**
2. **Can you please describe the illnesses that pregnant women in this community suffer from?**
  - Probe on seriousness of illnesses
  - Probe on consequences of untreated illness
  - Probe on the cause of each illness
  - Probe on prevention of each illness
  - Probe on treatment
3. **Can you tell me about illnesses that you are most concerned with?**
  - Probe on specific stories/ narratives
4. **Tell me about the care that a pregnant woman receives over the course of her pregnancy**
  - Probe on any nutritional advice given to pregnant women
  - Probe on if advice is followed
  - Probe on reasons why women may or may not follow advice
  - Probe on healthcare seeking practices
5. **What barriers do women in this community face in staying healthy during pregnancy?**
  - Probe on community/family support
  - Probe on access to care

## **Micronutrient Supplementation**

This is great information. Now I would like to hear your suggestions about developing a program that will introduce a micronutrient food supplement

**1. Can you describe the benefits to micronutrient supplement for a woman during her pregnancy?**

- Probe on challenges to access micronutrient supplement benefits
- Probe on illness prevention

**2. Can you describe similar products that pregnant women in this community use?**

- Probe on source of medications/ supplements
- Probe on affordability
- Probe on sharing
- Probe on what makes them desirable
- Probe on products that are not desirable
- Probe on acceptability of micronutrient supplement

**3. Can you describe your perception of the product?**

**4. Please describe the most effective way to market a micronutrient supplement in this community?**

- Probe on trusted communication channels
- Probe on different ways to share information of micronutrient supplements (distribution channels)
- Probe on how to explain the micronutrient supplement to women
- Probe on best ways to ensure that the product is being used correctly

Thank you for your time. Is there anything else you would like to discuss that was not brought up?

## Appendix D: Codebook

	No.	Brief Code Name	Full description of code	When to use and when not to use the code
<b>1.0 Introduction</b>				
1	1.1	Participant information	Description of family or household	Use this code when participants are discussing their specific family or household
<b>2.0 Social norms around health and nutrition</b>				
2	2.1	Nutrition	Experiences of nutrition challenges during pregnancy	Use this code when participants discuss nutrition challenges (supplement, foods, financial barrier, negative perception around supplement...) women face during pregnancy
3	2.2	Health	Experience of health challenges during the pregnancy	Use this code when participants discuss topics related to prenatal, antenatal care, negative perception around health, and health related topics
4	2.3	Social support	Challenges pertaining social support	Use this code when participants discuss challenging experience relating to social support (i.e.: community support, family support, and other)
5	2.4	Facilitating factors	Description of factors that improve health and nutrition	Use this code when participants mention factor that brings positive outcomes to health and nutrition (advice from health agents etc, positive perception around health/nutrition.)
6	2.4.1	Social support	Facilitating factors pertaining social support	
7	2.4.2	Nutrition	Description of factors that improve nutrition	
8	2.4.3	Health	Description of factors that improve health	
9	2.5	Cultural values	Description of core cultural values of pregnant and lactating women in this setting	Use this code when participants mention cultural values for pregnant and lactating women (i.e.: forbidden foods, traditions, customs, and others)
<b>3.0 Product characteristics</b>				
10	3.1	Color	Description of color	Use this code when participants discuss product types related to color (ie: blue, red, white, and etc.)
11	3.2	Logo	Description of logo	Use this code when participants discuss product types related to logos (i.e.: pregnant women with child, pregnant women taking supplement and etc.)
12	3.3	Slogan	Description of slogan	Use this code when participants discuss product types related to slogan (i.e.: a theme that should be associated with the product)

13	3.4	Brand name	Description of brand name	Use this code when participants discuss product types related to brand names
14	3.5	Packaging	Description of packaging for product	Use this code when participants discuss packaging types (e.g: box, bottle packaging, what should be included in the package such as ingredients, and other)
15	3.6	Taste	Description of product's taste	Use this code when participants discuss taste related to product (e.g: bitter taste, sweet taste)
<b>4.0 Product promotion</b>				
16	4.1	Communication channels	Description of communication channels	Use this code when participants identify methods which can be used to advertise product (marketing through television, flyers, radios etc.)
17	4.2	Audience target	Description of target audience to reach pregnant women	Use this code when participants identify specific target audiences to reach pregnant women (i.e.: fathers, mothers in law, fathers in law, and indirect influencers of pregnant mom's behaviors.)
18	4.3	Tailored messages	Messages tailored to pregnant women	Use this code when participants mention types of advertising messages aimed for pregnant women to improve prenatal supplement access, acceptability and use
19	4.4	Price	Description of price suggested by participants	Use this code when participants discuss prices (i.e: desired cost of supplement)
20	4.5	Place of distribution	Description of where supplements should be distributed	Use this code when participants discuss places where they would like to or see supplements distributed
<b>5.0 Product specific challenges</b>				
21	5.1	Availability	Description of prenatal supplements availability	Use this code when participants talk about availability of prenatal supplements (e.g: supply shortage and etc.)
22	5.2	Accessibility	Description of prenatal supplements accessibility	Use this code when participants describe accessibility of prenatal supplements (e.g: cost, distance to market)



