Uganda's Resources to Finance Family Planning Commodities

Implications for a Total Market Approach

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Uganda's Resources to Finance Family Planning Commodities

Implications for a Total Market Approach

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ABBREVIATIONS

CIP	costed implementation plan
CPR	contraceptive prevalence rate
CYP	couple-year of protection
ECP	emergency contraceptive pill
FP	family planning
FY	fiscal year
HMIS	health management information system
IUD	intrauterine device
KII	key informant interview
MOH	Ministry of Health
NDA	National Drug Authority
NGO	nongovernmental organization
PACE	Program for Accessible Health Communication and Education
PMA	Performance Monitoring and Accountability
QTY	quantity
RHIS	routine health information system
RHU	Reproductive Health Uganda
SDP	service delivery point
TMA	total market approach
UDHS	Uganda Demographic and Health Survey
UHMG	Uganda Health Marketing Group
UNFPA	United Nations Population Fund
UON	universe of need
USAID	United States Agency for International Development
USD	United States dollar
WHO	World Health Organization
WRA	women of reproductive age

EXECUTIVE SUMMARY

Background: Uganda is in the initial stages of adopting a total market approach (TMA) as a sustainable way to finance national needs for family planning (FP) commodities. We assessed how in-country resources could mitigate financing shortages for FP commodities.

Method: Import data for FP commodities available at the National Drug Authority (NDA) of Uganda were analyzed to establish the financing trends for FP commodities in different sectors of the country for a three-year period (July–June 2013–2014, 2014–2015, and 2015–2016).

The need for FP commodities, the quantity of FP commodities distributed, and the proportion of FP commodities financed by the government, the private sector, and global financing mechanisms in Uganda per year were determined through a quantitative analysis of secondary data. The commercial value of FP commodities used in Uganda per year was computed using data obtained from the NDA, and market prices were obtained through retail audits. The TMA indicators that could be routinely reported in Uganda's routine health information system (RHIS) were determined through key informant interviews (KIIs) targeting national-level stakeholders.

Findings: The universe of need (UON) increased from 2014 to 2016. The extent to which the UON was met by supplies available in-country was below one percent for all commodities, on average. The total quantity of male condoms and implants distributed in-country during the period 2014 to 2016 decreased and the quantity of intrauterine devices (IUDs), injectables, female condoms, emergency contraceptive pills (ECPs), and combined oral pills increased. The commercial value of all FP commodities distributed in Uganda per year declined from United States dollar (US$)89,175,917 in 2013–2014 to US$81,112,086 in 2014–2015 and decreased further in 2015–2016 to US$21,128,815.

The market for FP commodities in Uganda is not sustainable because most commodities are supplied by a few majority market shareholders and is greatly subsidized by the government and development partners. Up to 90 percent of FP commodities were subsidized during fiscal years (FY) 2013–2014 and 2014–2015; the rate of subsidization was 84 percent during FY 2015–2016. Female condoms, implants, and IUDs were subsidized 100 percent, despite being relatively more expensive per unit.

Last, the country lacks a dependable data source on the quantity of imported FP commodities and the cost price. These data could feasibly be accessed from the NDA but are not available in a retrievable form. Because the data are not collated, there is no analysis to regularly establish the market volume segmented by product; the market value of each product; the market share by sector, importer, and brand; and the value of market subsidies by product, all of which are useful indicators of TMA.

Recommendations: We recommend further inquiry into the declining commercial value of FP commodities distributed in Uganda to identify and address the underlying causes. The country should adopt strategies for TMA that respond to observed market inefficiencies. The NDA should provide a dependable data source on the quantity of FP commodities imported into the country and the cost price, and regularly analyze the data to produce a report on the market volume segmented by product; market value of each product; market share by sector, importer, and brand; and the value of market subsidies by product, as done in this research report.

1.0 INTRODUCTION

1.1 Background

FP commodities in Uganda may be accessed from three sectors: the public sector, where they are 100 percent subsidized; the private sector (including nongovernmental organizations [NGOs]), where they are partially subsidized; and the private sector, which has zero subsidies (Rosen, Sacher, Kalangwa, & Kyaddondo, 2013). When national planning and implementation consider and seek to enhance all sources of financing for FP commodities, as opposed to promoting mainly public-sector sources, a TMA is said to have been adopted (Pallin, Meekers, Longfield, & Lupu, 2013). The TMA concept has recently gained recognition because of its ability to free increasingly scarce public-sector resources by encouraging expenditure on FP commodities through the private sector by organizations and individuals that can afford them (Kalangwa, Sentongo, Balyejjusa, & Asiimwe, 2016).

Uganda is in the initial stages of adopting a TMA as a sustainable way to finance the national need for FP commodities. Recent guidance on TMA by PATH and The Population Council notes that a TMA to FP:

> "…is based on an understanding that meeting the diverse needs of various population segments equitably will require increased attention on coordination across sectors. It emphasizes the need for the public sector, nongovernmental organization (NGO) sector, and commercial sector to collaborate to increase access to FP for all segments of the population. Within this context, there is growing appreciation of the value of strategic coordination across sectors. In low-income countries, where donor funding continues to support a significant share of the health care system, TMA can play an important role in building sustainable public-private partnership models. At its core, TMA is useful for providing a framework and relevant data that can help planners facilitate a purposeful and constructive working relationship among the public, NGO (including social marketing organizations), and commercial sectors. These sectors often work from different information sources and may not be aware of one another's activities and focus. Because knowledge gaps are likely to persist, it is crucial for planners to align data across sectors" (Brady, Wedeen, Hutchings, & Parks, 2016).

TMA strategies must be evidence-based, and that requires up-to-date data on market size, market growth, and relevant market segments. To assess market size, key stakeholders in Uganda have been coordinating social marketing organizations to share logistics data that could be analyzed to understand Uganda's FP market landscape and to subsequently develop a TMA strategy. However, information gaps still exist, and there is no clarity on the key indicators and baseline for a TMA in Uganda. These factors could undermine the adoption of a TMA in Uganda.

In some cases, the NDA may have data on specific (privately owned) products (Meekers, Haynes, & Kampa, 2016). The commercial sector is occasionally willing to share sales data on the most popular brands, but commercial-sector stakeholders are often reluctant to share this information. Market research firms are another excellent source of commercial market data.

The United States Agency for International Development, which funded the study reported here through its MEASURE Evaluation project, seeks to promote voluntary FP in low- and middle-income countries as part of its effort to prevent child and maternal deaths. Global access to FP can reduce maternal deaths

by 30 percent and save the lives of 1.4 million children each year; it also can help achieve all 17 Sustainable Development Goals by 2030.[1]

Our research aimed to increase access to FP in Uganda, by examining the extent to which in-country resources could mitigate financing shortages for FP commodities through a TMA. Import data for FP commodities available at Uganda's NDA were analyzed to establish the trends for financing FP commodities through different sectors in the country. The research is unique because national interventions in Uganda have not yet considered the analysis of routinely collected commodity information by the government through the NDA, even though this is a potential source of regularly updated data for the TMA. This research demonstrated the feasibility of and potential information gaps that could be closed through regular analysis of government data on the quantity of FP products imported into the country, their price, importers, and brands. The analysis also covered such data as market volume segmented by product; market value of each product; market share by sector, importer, and brand; and the value of market subsidies by product in the RHIS. The research specifically identified indicators that could be regularly reported by the NDA for inclusion in the RHIS. The research demonstrated the value of including data collected by the NDA in the RHIS and immediately informs the TMA discourse in Uganda.

1.2 Research Questions

The study's main research question was to what extent can in-country resources mitigate financing shortages for FP commodities in Uganda, and what are the implications for a TMA? The study also sought to answer the following questions:

- What is the need for FP commodities in Uganda per year?
- What quantity of FP commodities are distributed in Uganda per year?
- What is the commercial value of FP commodities used in Uganda per year?
- What proportion of FP commodities in Uganda is financed by the government, the private sector, and global financing mechanisms?
- Which indicators could be routinely reported in the RHIS to inform a TMA in Uganda?

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[1] https://www.usaid.gov/what-we-do/global-health/family-planning

2.0 LITERATURE REVIEW

In this section we present our review of the literature on financing options for FP commodities, the TMA, TMA indicators, and the RHIS.

2.1 Financing Options for FP Commodities

Essential medicines in developing countries are accessed through the private sector, NGOs, and the public sector (Cameron, Ewen, Ross-Degnan, Ball, & Laing, 2009), and are financed through out-of-pocket expenditures, private insurance schemes, and public support schemes. The three major financing mechanisms for condoms in developing countries are free condoms, which are fully subsidized by the government and development partners; socially marketed condoms, which are partially subsidized and offered to the market at an artificially low price; and commercially marketed condoms, where the user pays the full price (Htat, Longfield, Mundy, Win, & Montagu, 2015).

A market map illustrates the state of the market by showing the proportion that each sector satisfies. In 2013, a case study on the TMA for male condoms identified three sectors in Uganda: public, commercial, and socio-marketing (Pallin, Meekers, Longfield, & Lupu, 2013). In 2015, an evaluation of the Uganda market revealed the market size for FP was nearly equal between the public and private sectors (Kalangwa, Sentongo, Balyejjusa, & Asiimwe, 2016). The market map that emerged from these data is shown in Figure 1.

Figure 1. Market map
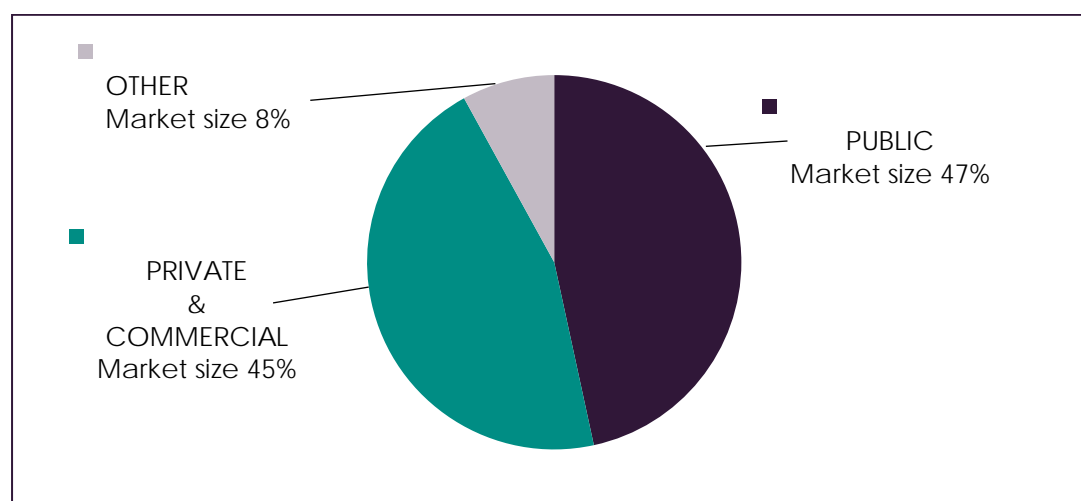
Concept adapted from Pallin, Meekers, Longfield, & Lupu (2013). Data from Kalangwa, Sentongo, Balyejjusa, & Asiimwe (2016) are used.

2.2 Total Market Approach

Based on a description by Pallin, Meekers, Longfield, & Lupu (2013), we defined the TMA as a situation where national planning and implementation considers and seeks to enhance all sources of financing for FP commodities, as opposed to promoting mainly public-sector sources. A TMA aims to capture how the various sources and consumers of FP commodities are envisaged. If the assumption is that FP commodities are only available and accessed through publicly funded mechanisms (e.g., the public supply chain under the National Medical Stores or through social marketing initiatives subsidized by the government) then that is considered a limited market approach. However, if additional possibilities are explored, including commodity access mechanisms that are purely private, then this is considered to be taking a TMA.

A TMA is a process that aims to increase the use of FP products and services equitably and sustainably (Pallin, Meekers, Longfield, & Lupu, 2013; Brady, Weeden, Hutchings, & Parks, 2016) through a fully rational and efficiently segmented market in which key target groups have access to a full range of FP products and services (Meekers, Haynes, & Kampa, 2016). TMA requires evidence-based decisions through actions undertaken in all supply sectors (Pallin, Meekers, Longfield, & Lupu, 2013). It aims to meet the diverse needs of various population segments (Brady, Weeden, Hutchings, & Parks, 2016; Meekers, Haynes & Kampa, 2016). TMA requires increased attention to coordination across sectors, (Meekers, Haynes, & Kampa, 2016) (Brady, Weeden, Hutchings, & Parks, 2016) with the public, NGO, and commercial sectors working together in a manner that uses their comparative advantages to grow the total market (Meekers, Haynes, & Kampa, 2016).

2.3 TMA Indicators

The indicators recommended for assessing the state of the TMA are market size, market accessibility, market sustainability, and market equity (Meekers, Haynes, & Kampa, 2016).

2.3.1 Market Size

The total market size for FP refers both to the volume of FP products or services and the number of consumers in the market (Barnes, Vail, & Crosby, 2012 as quoted in Meekers, Haynes, & Kampa, 2016). The metrics for market size have changed over time and they now include the UON, market volume, and use of FP commodities (Pallin, Meekers, Longfield, & Lupu, 2013). The contraceptive prevalence rate (CPR) has also been proposed as a proxy indicator for market size (Meekers, Haynes, & Kampa, 2016). However, we adopted the UON, market volume, use of FP, and unmet need for FP as the metrics for the TMA, because they are the most current measures of market size (Meekers, Haynes, & Kampa, 2016).

Metrics for Market Size

Universe of Need

The UON was initially defined as "the number of products or services needed to reach universal coverage in the market'' (Pallin, Meekers, Longfield, & Lupu, 2013). However, our study adopted the more recent and explicit definition: "The total number of each type of family planning product and service needed to meet the demand for family planning'' (Meekers, Haynes, & Kampa, 2016).

Market Volume

Market volume refers to the number of products or services sold, distributed, or provided in a given market in a specified period regardless of cost (Pallin, Meekers, Longfield, & Lupu, 2013; Meekers, Haynes, & Kampa, 2016). Meekers, Haynes, & Kampa (2016) further notes that import data are not an appropriate data source for market volume because import data include stock not yet on the market.

Use of FP

Use of FP refers to "the percentage of the population at risk using a product or service, or adopting a behavior'' (Pallin, Meekers, Longfield, & Lupu, 2013). Use of FP products and services can be estimated using the percentage of sexually active women currently using each type of FP method (i.e., CPR) and the percentage distribution of contraceptive users by FP method (contraceptive method mix). This information is obtained through a population-based survey.

Unmet Need

The definition of unmet need has changed over time. It was originally defined as the percentage of women of reproductive age (WRA) who are sexually active and do not wish to become pregnant but are not using any form of contraception (Meekers, Haynes, & Kampa, 2016). It was later changed to consider only women who were sexually active and at risk of becoming pregnant, and to consider unmet need for birth spacing and unmet need for limiting birth (Meekers, Haynes, & Kampa, 2016). Unmet need for FP serves as a proxy measure for a market's growth potential. Distinguishing between unmet need for spacing and limiting sheds light on the relative importance of reversible and permanent FP methods.

The level of unmet need can therefore be used to estimate the potential market size whereby the higher the unmet need, the higher the potential market size (Meekers, Haynes, & Kampa, 2016).

2.3.2 Market Accessibility

Market accessibility depends on knowledge of the source of FP products and services, geographic and financial access, and the extent to which products and services are provided without interruption (Meekers, Haynes, & Kampa, 2016).

Knowledge of the FP source for all people that require a FP service is the first step to market accessibility. The lack of knowledge of FP sources implies poor accessibility and may indicate the need for communication, education, and marketing efforts around FP.

The increased percentage of non-users due to the lack of access for any given reason indicates poor accessibility to FP. Failure to use FP products and services available in a community may be due to potential users having geographical barriers such that they cannot reach the source, or if they reach the source, they may not have the funds to pay for the products and services. The percentage of non-users who report that their non-use of a particular method is due to the lack of required funds is a good proxy measure for financial access. The percentage who report that their non-use is because of lack of access or the source is too far are good proxy measures for geographic access (Meekers, Haynes, & Kampa, 2016).

Access to FP can also be affected by stockouts of FP products or gaps in services. Gaps in services could be due to the lack of or inadequately trained staff at retail outlets, clinics, and other service delivery points (SDPs) where people access FP. This is measured by SDPs that report a stockout of each FP product in the past three years, and the percentage of providers who report gaps in the availability of specific FP services. Product stockouts or gaps in service delivery indicate poor accessibility.

2.3.3 Market Equity

Market equity is the extent to which different socio-economic strata access and use FP products and services (Pallin, Meekers, Longfield, & Lupu, 2013; Meekers, Haynes, & Kampa, 2016). Market equity is analyzed by studying market indicators by socioeconomic status, such as the number of WRA who accessed FP services in rural areas against those who accessed FP services in urban areas. Disaggregating data by socioeconomic status can show how the poor have benefited from the market trends.

The equity index is the "degree to which products or services are used or adopted across socioeconomic strata." Pallin, Meekers, Longfield, & Lupu (2013) calculate the equity index by the percentage of condom users that fall in the bottom two wealth quintiles. This method was used to study equity with data from the 2016 Uganda Demographic and Health Survey (UDHS).

2.3.4 Market Sustainability

The TMA seeks to transform the market into a self-sustaining entity (Meekers, Haynes, & Kampa, 2016). Market sustainability is indicated by the willingness to pay for FP products and services at the market value (Meekers, Haynes, & Kampa, 2016). Market sustainability has been measured by market value and market subsidy (Pallin, Meekers, Longfield, & Lupu, 2013). Market sustainability is also indicated by market share of the market leader (Meekers, Haynes, & Kampa, 2016).

Measures of Market Sustainability

Market Subsidy

Market subsidy has been defined as the "total number of products and services provided by the public and donor sector which are free or with reduced cost" (Meekers, Haynes, & Kampa, 2016). According to Pallin, Meekers, Longfield, & Lupu (2013), the value of the market subsidy for each brand is obtained by the following formula:

Value of market subsidy = market volume (unit costs of goods sold less average consumer price)

A market that is dominated by subsidized brands discourages market sustainability, and a market share dominated by the donor sector cannot encourage sustainability, especially when donor funds are withdrawn. A high market share held by the commercial sector ensures sustainability (Meekers, Haynes, & Kampa, 2016).

Market Value

Market value refers to the total dollar value of all FP products obtained by the sum of the volume of each product and service multiplied by the unit cost (Pallin, Meekers, Longfield, & Lupu, 2013; Meekers, Haynes, & Kampa, 2016). Market value is used to indicate willingness to pay for FP products and services (Meekers, Haynes, & Kampa, 2016). A high market value may encourage commercial interest in the market, demonstrating market sustainability (Meekers, Haynes, & Kampa, 2016) and indicated by a high percentage of FP users who obtain contraceptives from the private sector (Meekers, Haynes, & Kampa, 2016). Generally, the higher the market value, the higher the sustainability.

A study of the condom market in Uganda explored three sectors: the public sector, which distributes fully subsidized (free) condoms; the social marketing sector, which distributes partially subsidized condoms at low cost; and the commercial sector, which sells condoms for a profit (Pallin, Meekers, Longfield, & Lupu, 2013). Our study covers these three sectors.

2.4 Routine Health Information System

According to Volume 1 of Meekers, Haynes, & Kampa (2016), data from information systems can be obtained quickly and cheaply. Information systems support demand forecasting and supply planning, including information on current and future clients. They can improve the allocation of resources (Pallin, Meekers, Longfield, & Lupu, 2013; Meekers, Haynes, & Kampa, 2016) and facilitate understanding of the market, thus focusing subsidies on those who need them. They can be used to improve commodity projections and forecasting to identify market needs and gaps in supply (Brady, Weeden, Hutchings, & Parks, 2016). Analysis of available market information gives a picture of the state of the market.

Information systems support strategic planning, including pricing, marketing, and distribution strategies for FP services and products. The RHIS is a common, yet under-utilized, source of information about the TMA that can help stakeholders effectively coordinate and improve their working relationships (Pallin, Meekers, Longfield, & Lupu, 2013; Meekers, Haynes, & Kampa, 2016).

3.0 METHODS

We used a mix of quantitative and qualitative techniques to answer the research questions. We collected, analyzed, and presented secondary data using the concept of a market map with the aim of illuminating the state of the TMA in Uganda. The basis of inference differed for each research question based on the primary data collected and secondary data accessed. Below we provide our basis of inference for each research question.

The need for FP commodities, the quantity of FP commodities distributed, and the proportion of FP commodities financed by the government, private sector, and global financing mechanisms in Uganda per year were determined through a quantitative analysis of secondary data. The commercial value of FP commodities used in Uganda per year was computed using the quantitative figures obtained above and the market prices obtained through retail audits. Due to logistical limitations, the retail audits were conducted in Mukono district only and the qualitative inference was used in extending the prices found in Mukono district to national representation. The indicators to inform the TMA that could be routinely reported in Uganda's RHIS were determined through researcher-administered questionnaires. Due to logistical constraints, the questionnaires were administered to national-level stakeholders only. The sample size was small and not statistically significant such that a qualitative basis of inference was used in arriving at our findings on indicators that could be routinely reported in the RHIS to inform the TMA in Uganda.

The study followed a case study research design to obtain an understanding of the context of the TMA and the interplay among market size, market accessibility, market sustainability, and market equity in Uganda.

Data were collected for a three-year period (July–June 2013–2014, 2014–2015, and 2015–2016) to get the most current data and to establish trends.

3.1 Data Collection

3.1.1 Document Review

Secondary data were collected from several sources:

a. Documents on the national quantification for FP commodities from the Uganda Ministry of Health (MOH) and UDHS reports were used to obtain data about the UON. UDHS reports were used to collect data on the use of FP, unmet need for FP, and the identification of FP users by wealth quintiles.
b. The MOH health management information system (HMIS) manual was used to identify data meant to be captured, analyzed, stored, and reported at national, district, and health facility levels.
c. HMIS records were used to identify actual data that are captured, analyzed, stored, and reported at national, district, and health facility levels.
d. Import and export records at the NDA were used to identify market volume and market value.

e. SDP survey reports by the United Nations Population Fund (UNFPA) and Performance, Monitoring and Accountability (PMA) facility survey reports were used to generate data on product stockout rates.

f. Data collected from national warehousing institutions, mainly the National Medical Stores and Uganda Health Marketing Group (UHMG), were used to triangulate information on the quantity of FP commodities imported into the country and to establish the unit cost of goods sold.

Details on the data collected through the application of the document review tool are provided in the Document Review Checklist (Appendix 1).

3.1.2 Retail Audits

Retail audits involving the review of price lists, sales records, and purchase records were carried out to determine the number of products, their quantity, the unit cost of products, and the average consumer prices. We set out to conduct retail audits in 44 pharmacies in Mukono district, where the research team was located (Appendix 5). The district was chosen because of its proximity, making it ideal in view of budget limitations. A checklist was used to carry out the retail audits (Appendix 2).

Most pharmacies targeted for retail audit refused to participate. We successfully conducted retail audits in 16 pharmacies.[2]

3.1.3 Research Administered Questionnaire

We collected data on indicators that could be routinely reported in the national RHIS using questionnaires. Researcher-administered questionnaires were conducted with six program managers located at the MOH, UNFPA, PATH, UHMG, FHI 360 and the Program for Accessible Health Communication and Education (PACE). The interviewees were one inspector of drugs, one head of the Pharmacy Department, one logistics coordinator, the Reproductive Health Commodity Security Coordinator at MOH and two medical doctors. The interviews sought to establish the range of FP data generated, including the cost price of commodities, data on manufacturers, importers, and the quantity of FP commodities imported. These data identified the indicators that could be routinely reported by the NDA for inclusion in the RHIS. Appendix 3 provides the interviewer-administered questionnaire.

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[2] These pharmacies were Abacus Pharma (A) Ltd, Aventis Pharmacy Ltd, Bwino Pharmacy, Carden Pharmacy Ltd, Central Pharmacy Ltd, Dis-Chem Pharmaceuticals Ltd, Malystal Pharmacies Ltd, Medreich (U) Ltd, Moon Pharmaceuticals Ltd, Morid Pharmacy, Munir Pharmacy, New Multicare Pharmacy, New Multicare Pharmacy Ltd, Qualicare Pharmacy, Silver Pharmacy Ltd, and Sima Pharmacy Ltd.

3.2 Data Analysis

3.2.1 Data Obtained through Document Review

Data were analyzed to establish the market size, including the use of FP, unmet need, the UON, and market volume. The method mix for each FP method and CPR were used as proxies for use of FP. Method mix, CPR, and unmet need among married women and unmarried sexually active women were obtained from the 2016 UDHS.

Calculating the Universe of Need

The calculation of the UON consists of the quantity of commodities sufficient to meet current demand and the quantity of commodities that is required to meet unmet need for FP. To determine the quantity of commodities sufficient to meet current demand, we followed these steps:

Step 1: Obtained the number of WRA, A (Source: 2016 UDHS).
Step 2: Obtained the method mix per commodity, B (Source: UDHS). Sterilization, female, T; Sterilization, male, U; Condoms, male, V; Condoms, female, W; Combined oral contraceptive pills (hereafter referred to as pills), X; ECPs, Y; IUDs, Z; implants, S; and injectables, R. Note that T+U+V+W+X+Y+Z+S+R = CPR = current use.
Step 3: Obtained the couple-year of protection (CYP) conversion factor, C (Source: MEASURE Evaluation Family Planning and Reproductive Health Indicators Database).
Step 4: The quantity of commodities sufficient to meet current demand was calculated using the formula: Quantity of commodities sufficient to meet current demand = A*B*C. Current demand was calculated for each method, for example, sterilization, female = A*T*C.

To determine the quantity of commodities that is required to meet unmet need for FP, we followed these steps, making separate calculations for married and unmarried women:

Step 1: Obtained the method mix per commodity, B (Source: 2016 UDHS). Sterilization, female, T; Sterilization, male, U; Condoms, male, V; Condoms, female, W; Pills, X; ECPs, Y; and IUDs, implants, S and injectables, R.
Step 2: Determined unmet need among married women, P.
Step 3: Determined the potential method mix for each method if unmet need were met (Table 1).
Step 4: Repeated the above process to determine the quantity of commodities required to meet the unmet need among unmarried women. For each method, we determined the UON using the formula: UON = Qty (using) + qty (unmarried with unmet need) +qty (married with unmet need).

Table 1. Determination of potential method mix, by method

Method	Method mix (2016 UDHS)	Potential method mix
Sterilization, female	T	H=T*P/CPR
Sterilization, male	U	I=U*P /CPR
Condoms, male	V	J=V*P /CPR
Condoms, female	W	K=W*P /CPR
Pills	X	L=X*P/ CPR
ECPs	Y	M=Y*P/ CPR
IUDs	Z	N=Z*P/ CPR
Implants	S	O=S*P/ CPR
Injectables	R	Q=R*P/ CPR

Note that T+U+V+W+X+Y+Z+S+R = unmet need (married women).

The quantity required to meet unmet need among married women was determined for each method using the formula: Quantity (Qty) =A*Method mix unmet*conversion factor

Calculating Market Volume

Market volume is described by the quantity of each product distributed. Import and export records at the NDA were reviewed to obtain the quantity of products for each FP method imported or exported, segregated by sector over a period of three years. We calculated the market volume as follows (using product Y as an example):

Step 1: Obtained the total quantity of product Y imported, segregated by sector (A)
Step 2: Obtained the total quantity of product Y exported, segregated by sector (B)
Step 3: Obtained the total quantity of product Y manufactured in-country, segregated by sector to which it was supplied (C)
Step 4: Obtained the total quantity of product Y distributed, segregated by sector
Market Volume D = (A+C)-B
Step 5: The above process (steps 1 to 4) was repeated to determine the market volume for each FP product.

Comparing the Universe of Need and Market Volume

The UON was compared with market volume to determine the extent to which FP need is met by the supplies available in the country. The UON was used to estimate the potential size of the market for products or services. The higher the UON, the higher the potential market. Meanwhile, market volume was used to identify the proportion of the potential market that is currently supplied. The difference between the UON and market volume was taken as the immediate gap in supply.

a. Market Accessibility

Market accessibility was assessed using knowledge of different sources that provide FP, financial access, geographical access, and uninterrupted supply of products and services.

Knowledge of the different sources that provide FP was estimated using the UDHS data on the number of WRA (15 to 49 years) who know at least one source of a modern FP product or method.

Regarding financial access, the 2016 UDHS report does not elaborate on the reasons for unmet need. To assess financial access, we referred to peer-reviewed literature that had information on or related to the following: percentage of current users who last obtained their method from the public sector; percentage of current users who last obtained their method from the private sector; percentage of non-users who report that they are not using FP because of the cost of the method; and percentage of users who would be willing to pay for their current method.

To determine geographical access, we referred to peer-reviewed literature that had information on or related to the following: percentage of WRA who report living within two hours of the closest FP source; and percentage of non-users who report lack of access as the reason for not using FP.

Uninterrupted supply of products and services was assessed using data from the annual national SDP survey reports produced during the period of review (2013, 2014, and 2015) on the number of SDPs that experienced a stockout of each specific FP product/method.

b. Market Sustainability

To assess the sustainability of the Uganda market, we determined the market value of each FP method/service, market share held by the market leader, market share held by the leading brand, market share held by each sector, and the value of the market subsidy.

Determining the market value of each FP method/service entailed the following steps:

Step 1: Recalled the market volume for each FP method/service calculated under market size (M).
Step 2: Determined the average consumer price (N) for each FP method/service using data obtained from retail audits.
Market value of each FP method/service = M x N
For example, the market value for condoms, male= $M_{MC}*N_{MC}$, where M_{MC} represents the market volume of male condoms and N_{MC} represents the average consumer price of male condoms.
The market value for each commodity was calculated per year to establish a trend over three years.

To determine the market share held by the market leader, we calculated as follows:

Step 1: Organized data obtained from the NDA on the quantity of imports and exports of products for each FP method, by name of importers and exporters, brand, sector, and year over a three-year period.
Step 2: Using Microsoft Excel, obtained subtotals on the quantity of imports and exports of products for each FP method for each importer and exporter per year over a three-year period.
Step 3: Using Excel, calculated the difference between the quantity imported and the quantity exported to determine the quantity of products for each FP method distributed by each importer and exporter per year over a three-year period.
Step 4: Using Excel, obtained the sum of the quantity of products for each FP method distributed by all importers and exporters per year over a three-year period.
Step 5: Using Excel, sorted the quantity of products for each FP method distributed (highest – lowest) by each importer and exporter per year over a three-year period. The importer/exporter who emerged with the highest quantity of products for each FP method distributed per year was selected as the market leader.
Step 6: Using Excel, calculated the market share of the market leader using the quantity of products for each FP method distributed per year (obtained from step 5) divided by the sum of the quantity of products for each FP method distributed by all importers and exporters per year (obtained in step 4).

To determine the market share held by the leading brand, we calculated as follows:

Step 1: Organized data obtained from the NDA on the quantity of imports and exports of products for each FP method by name of importers and exporters, brand, sector, and year over a three-year period.
Step 2: Using Excel, obtained subtotals on the quantity of imports and exports of products for each FP method for each brand per year over a three-year period.
Step 3: Using Excel, calculated the difference between the quantity imported and the quantity exported to determine the quantity of products for each FP method distributed per brand per year over a three-year period.
Step 4: Using Excel, obtained the sum of the quantity of products for each FP method distributed for all brands per year over a three-year period.
Step 5: Using Excel, sorted the quantity of products for each FP method distributed (highest – lowest) by brand per year over a three-year period. The brand that emerged with the highest quantity of products for each FP method distributed per year was selected as the leading brand.
Step 6: Using Excel, calculated the market share of the leading brand using the quantity of products of the leading brand distributed per year (obtained from step 5) divided by the sum of the quantity of products for each FP method distributed for all brands per year (obtained in step 4).

To determine the market share held by each sector, we calculated as follows:

Step 1: Organized data obtained from the NDA on the quantity of imports and exports of products for each FP method by name of importers and exporters, brand, sector, and year over a three-year period.
Step 2: Using Excel, obtained subtotals of the quantity of imports and exports of products for each FP method for each sector per year over a three-year period.
Step 3: Using Excel, calculated the difference between the quantity imported and the quantity exported to determine the quantity of products for each FP method distributed per sector per year over a three-year period.
Step 4: Using Excel, obtained the sum of the quantity of products for each FP method distributed for all sectors per year over a three-year period.
Step 5: Using Excel, calculated the market share of each sector using the quantity of products distributed for each sector (obtained from step 3) per year divided by the sum of the quantity of products for each FP method distributed for all sectors per year (obtained in step 4) over a three-year period.

To determine the value of the market subsidy, we calculated as follows:

Step 1: Recalled the market volume for each FP method/service calculated under market size (M).
Step 2: Recalled the average consumer price (N) for each FP method/service obtained using data from retail audits.
Step 3: Obtained the average unit cost price of each FP method from the NDA imports documents (e.g., verification certificates) per year over three years.
Step 4: Calculated the subsidy per unit of each FP method/service using the formula "unit cost of goods less average consumer price."
Step 5: Calculated the total value of the subsidy provided, segregated by sector using the formula "market volume multiplied by subsidy per unit of each FP method/service" (obtained under step 4). The total value of product P subsidies=value of NGO subsidies + value of public subsidies.

The steps for determining the value of the market subsidy were repeated for each FP method/service.

c. Market Equity

The equity index for each FP method/service was determined by extracting the following information from UDHS reports:

Step 1: Obtained the percentage of the population in each wealth level/quintile who used a FP method. If a FP method/service was mainly used by those in the high wealth quintile, then there was no equity.
Step 2: Obtained the proportion of urban and rural residents who used a FP method. If a FP method/service was mainly used by rural residents or mainly by urban residents, then there was no equity.

3.2.2 Analysis of Data Obtained from Questionnaires

Data from interviewer-administered questionnaires were captured in an Excel worksheet to analyze the types of data generated and reported from the NDA and the accessibility of information by end users. Frequency tables were generated to determine the number of users who accessed FP information, the source of the information, and the form in which the information was accessed. Tables were prepared to show the proportion of respondents who used the information accessed, the uses of the information accessed, and the types of information needed by stakeholders. However, the number of respondents reached was not sufficiently high to justify a quantitative basis of inference; however, it was useful for sustaining a qualitative-based inference. The data analyzed were used to identify indicators that the NDA can routinely report.

3.2.3 Analysis of Data Obtained from Retail Audits

Data from price lists and purchase records were captured and analyzed in Excel to determine the average consumer price and the unit cost of goods for each product, respectively. The average consumer price was used to calculate the market value of each product. The unit cost of goods sold was used to triangulate data obtained from the warehouses.

3.3 Stakeholder Involvement

Stakeholders from the MOH were involved as respondents. This was planned to build ownership of the study results, with priority placed on government coordination and to help identify and address specific barriers that could prevent stakeholders from acting to implement the study's recommendations. Dissemination meetings were planned, and sufficient time was allocated for participants to discuss the study report through small group work and to develop action plans for using the results.

3.4 Ethical Consideration

The study was approved by the Research Ethics Committee of Makerere University College of Health Sciences, which works under the Uganda National Council for Science and Technology. Informed consent from respondents was sought using a consent form (Appendix 4). The data collected were treated with anonymity. Respondents were given codes to protect their identity. The data were captured in Excel worksheets that were password protected to restrict access and ensure confidentiality of the information. The data will be kept for three years after the study and disposed thereafter in a safe way. During the time when the data are kept, only the administrators will have access to them.

4.0 FINDINGS

This section presents the data on the four TMA indicators: market size, market accessibility, market sustainability, and market equity. It also discusses the indicators that could be routinely reported in the RHIS to inform the TMA in Uganda.

Market Size

Market size was determined by establishing the UON and the market volume.

4.1.1. Universe of Need

The UON was used to estimate the size of the potential market for products or services.

The number of WRA (15 to 49 years) was determined using data obtained from the 2014 census report, as follows: 7,996,088, 8,235,971, and 8,483,051 for the years 2014, 2015, and 2016, respectively. Table 2 shows how the number of WRA was calculated.

Table 2. Number of WRA

No. of women in Uganda by the year 2014	17,573,818
Proportion of women in Uganda of reproductive age	0.455
Average annual growth rate	0.03
No. of WRA 2014	7,996,088
No. of WRA 2015	8,235,971
No. of WRA 2016	8,483,051

Source: 2014 Uganda Census Report (Uganda Bureau of Statistics, 2016)

The quantity per commodity sufficient to meet current demand for FP was determined using the formula: Number of WRA * method mix per commodity among users of FP * CYP conversion factor (C).

The commodity for which the highest quantity was needed was male condoms, at 2.59 million, 2.73 million, and 2.44 million in 2014, 2015, and 2016, respectively. The service with the lowest needed quantity was male sterilization at 85,980, 97,415, and 91,216 for the years 2014, 2015, and 2016, respectively. Table 3 provides details on the quantity per commodity sufficient to meet current FP demand.

Table 3. Quantity per commodity sufficient to meet current demand for FP

	CYP conversion factor (C)	Method mix per commodity, among FP users			Quantity per commodity sufficient to meet current FP demand		
		2014	2015	2016	2014	2015	2016
Female sterilization	0.11	2.90	3.04	2.70	2,493,404	2,692,189	2,462,822
Male sterilization	0.11	0.10	0.11	0.10	85,980	97,415	91,216
Male condom	120	2.70	2.76	2.40	2,590,732,512	2,727,753,596	2,443,118,688
Female condom	120	N/A	0.06	N/A	N/A	59,298,992	N/A
Pills	15	2.90	3.08	1.90	347,829,828	380,501,861	241,766,954
ECPs	20	N/A	N/A	0.10	N/A	N/A	16,966,102
IUDs	0.22	0.50	0.94	1.50	869,140	1,683,003	2,766,213
Implants	0.40	2.70	3.86	6.30	8,635,776	12,716,340	21,377,289
Injectables	6.00	14.1	15.04	18.5	676,469,045	743,214,024	941,618,661
Standard days method	0.67	0	0.01	0.4			
Lactational amenorrhea	4.00	0.2	0.2	0.9			
mCPR		26.1	29.1	34.8			
Source	MEASURE Evaluation FP/RH Indicators Database	Costed Implemen-tation Plan (CIP) 2014	CIP 2014	2016 UHDS			

The quantity per commodity required to meet unmet need for FP was determined using the calculations for unmet need for FP among married WRA, unmarried WRA, and CPR. The unmet need among married women and CPR were obtained from the MOH's 2014 costed implementation plan (CIP) (Ministry of Health, Uganda, 2014) and the 2016 UDHS report (Uganda Bureau of Statistics [UBOS] and ICF, 2017). The unmet need among unmarried women was obtained from the PMA reports (Performance Monitoring and Accountability 2020 [PMA2020] Project, Makerere University, School of Public Health, 2014), as indicated in Table 4.

Table 4. Unmet need and CPR used to calculate the UON

	2014	2015	2016	Source
Unmet need among married WRA	34.3	34.3	28.4	2014 from CIP, 2015 assumed constant, 2016 from UDHS
Unmet need among unmarried WRA	8	8	8	PMA (no new data, assumed constant). Data available are for sexually active unmarried WRA, but their population is not given.
CPR	26.1	29.1	34.8	2014 from CIP, 2015 assumed constant, 2016 from UDHS

The potential method mix per commodity among married and unmarried women with unmet need for FP was estimated using the formula: current method mix * unmet need/CPR. We then calculated the quantity of commodities required to meet the potential demand using the formula: WRA * potential method mix * CYP. This was done separately for married and unmarried women and was then summed. Again, we found that male sterilization was the least needed, and male condoms had the highest quantity needed. Tables 5 and 6 present the results of the calculations for female- and male-controlled FP methods, respectively.

Table 5. Quantity of female-controlled FP methods required to meet unmet need for FP

Required data	Year	Female sterilization	Female condoms	Pills	ECPs	IUDs	Implants	Injectables	Lactational amenorrhea	mCPR	Source
CYP* conversion factor (C)		0.11	120	15	20	0.22	0.40	6.00	4.00		
Method mix per commodity among users of FP	2014	2.90		2.90		0.50	2.70	14.1	0.2	26.1	CIP 2014
	2015	3.04	0.06	3.08		0.94	3.86	15.04	0.2	29.1	CIP 2014
	2016	2.70		1.90	0.10	1.50	6.30	18.5	0.9	34.8	2016 UDHS
Potential method mix per commodity among married WRA with unmet need for FP	2014	3.8111		3.8111		0.6571	3.5483	18.5299	0.2628	34.3	
	2015	3.5832	0.0707	3.6304		1.1080	4.5498	17.7276	0.2357	34.3	
	2016	2.2034		1.5506	0.0816	1.2241	5.1414	15.0977	0.7345	28.4	
Quantity per commodity to meet unmet need among married WRA	2014	3,276,773		457,109,698		1,142,204	11,348,931	888,999,550			
	2015	3,173,267	69,895,375	448,495,320		1,983,746	14,988,675	876,022,028			
	2016	2,009,889		197,304,066	13,845,900	2,257,484	17,445,834	768,447,413			
Potential method mix per commodity among unmarried WRA with unmet need	2014	0.8889		0.8889		0.1533	0.8276	4.3218	0.0613	8	
	2015	0.8357	0.0165	0.8467		0.2584	1.0612	4.1347	0.0550	8	
	2016	0.6207		0.4368	0.0230	0.3448	1.4483	4.2529	0.2069	8	
Quantity per commodity to meet unmet need among unmarried WRA	2014	764,262		106,614,507		266,404	2,646,981	207,346,834			
	2015	740,121	16,302,129	104,605,323		462,682	3,495,901	204,320,007			
	2016	566,166		55,578,610	3,900,254	635,911	4,914,320	216,464,060			

*CYP obtained from www.measureevaluation.org/prh/rh_indicators/specific/fp/cyp

Table 6. Quantity of FP methods that are male-controlled or require male engagement needed to meet unmet need for FP

Required data	Year	Male sterilization	Male condoms	Standard days method
CYP conversion factor(C)		0.11	120	0.67
Method mix per commodity among users of FP	2014	0.10	2.70	0
	2015	0.11	2.76	0.01
	2016	0.10	2.40	0.4
Potential method mix per commodity among married WRA with unmet need for FP	2014	0.1314	3.5483	
	2015	0.1297	3.2532	0.0118
	2016	0.0816	1.9586	0.3264
Quantity per commodity to meet unmet need among married WRA	2014	112,993	3,404,679,125	
	2015	114,823	3,215,187,228	
	2016	74,441	1,993,809,504	
Potential method mix per commodity among unmarried WRA with unmet need	2014	0.0307	0.8276	
	2015	0.0302	0.7588	0.0027
	2016	0.0230	0.5517	0.0920
Quantity per commodity to meet unmet need among unmarried WRA	2014	26,354	794,094,257	
	2015	26,781	749,897,896	
	2016	20,970	561,636,480	

The UON was determined by summing the quantity of commodities needed to meet current demand, the quantity of commodities that would be required to meet unmet need among married WRA, and the quantity of commodities that would be required to meet unmet need among unmarried WRA.

The quantity of commodities required to meet the UON was highest for male condoms, at 6,789,505,894, 6,692,838,720 and 4,998,564,672 for the years 2014, 2015, and 2016, respectively. The UON was lowest for male sterilization, at 225,327, 239,019, and 186,627 for 2014, 2015, and 2016, respectively. The UON got increasingly higher for IUDs, implants, and injectables, but decreased significantly for male and female sterilization, male condoms, and pills. Table 7 shows the UON for each FP method tracked.

Table 7. Universe of need

	2014	2015	2016
Female sterilization	6,534,439	6,605,577	5,038,877
Male sterilization	225,327	239,019	186,627
Female condoms	N/A	145,496,496	N/A
Male condoms	6,789,505,894	6,692,838,720	4,998,564,672
Pills	911,554,033	933,602,504	494,649,630
ECPs	N/A	N/A	34,712,256
IUDs	2,277,748	4,129,431	5,659,608
Implants	22,631,688	31,200,916	43,737,443
Injectables	1,772,815,429	1,823,556,059	1,926,530,134

UON = Qty (using) + qty (married with unmet need) + qty (unmarried with unmet need)

4.1.2. Market Volume

The volume of commodities distributed by each sector in each year was established by reviewing NDA import data. The market volume for each product was determined by calculating the sum of the quantities of imports and products manufactured in-country and then subtracting the quantity of exported products. However, according to the NDA data reviewed, no products were manufactured in-country or exported to other countries. Therefore, the total number of commodities imported each year was taken as the total quantity distributed in the country.

According to archival data obtained from the NDA, the total quantity of male condoms and implants distributed in-country from 2014 to 2016 declined, and that of injectables, female condoms, oral pills and ECPs. fluctuated, first increasing dramatically, then decreasing. The total quantity of IUDs distributed first decreased and then increased   Table 8 shows the trends in the market volume for the various commodities.

Table 8. Market volume

	NGO	Private		Public	Total quantity
Male condoms					
2013–2014	2,615,679	3,668,400		60,154,675	66,438,755
2014–2015	10,368,000	378,576		61,166,936	71,913,512
2015–2016	13,739,999	512,624		432,000	14,684,623
Female condoms					
2013–2014	55,000				55,000
2014–2015	7,502,400				7,502,400
2015–2016	1,200,000				1,200,000
Implants					
2013–2014	25,000	103,000		303,712	431,712
2014–2015		116,300		263,372	379,672
2015–2016				295,000	295,000
IUDs					
2013–2014		1		40	41
2014–2015		10			10
2015–2016		53		200	253
ECPs					
2013–2014		211,960		9,450	221,410
2014–2015		66,000		10,000	76,000
2015–2016		364,654		1,240	365,894
Pills					
2013–2014		7,782			7,782
2014–2015		10,500		185,710	196,210
2015–2016		24,130		142,003	166,133
Injectable contraceptives					
2013–2014		2,700		5,995	8,695
2014–2015				741,000	741,000
2015–2016		3,000,000		84,000	3,084,000

Source: NDA data

4.1.3 Extent of Need Met by Supplies In-Country

The UON was compared with market volume to determine the extent to which need is met by the supplies available in-country. The extent of need met was determined for male condoms, pills, ECPs, IUDs, injectable contraceptives, and implants. Female condoms were omitted because the UON calculated was zero. The difference between the UON and market volume was taken as the immediate gap in supply. Over the past three years, the average extent to which the UON was met by the supplies available in-country was below one percent for all commodities. Moreover, the met need for male condoms declined from 0.979 percent in 2014 to 0.294 percent in 2016. Table 9 presents the supply gaps identified, showing the extent of need and unmet need for the various commodities.

Table 9. Supply gap as an extent of need met and unmet

	UON	Market volume	Supply gap (quantity)	Unmet need (%)
Male condoms				
2013–2014	6,789,505,894	66,438,755	6,723,067,139	99.02
2014–2015	6,692,838,720	71,913,512	6,620,925,208	98.93
2015–2016	4,998,564,672	14,684,623	4,983,880,049	99.71
Female condoms				
2013–2014	0	55,000		
2014–2015	145,496,496	7,502,400	137,994,096	94.84
2015–2016	0	1,200,000		
Implants				
2013–2014	22,631,688	431,712	22,199,976	98.09
2014–2015	31,200,916	379,672	30,821,244	98.78
2015–2016	43,737,443	295,000	43,442,443	99.33
IUDs				
2013–2014	2,277,748	41	2,277,707	100.0
2014–2015	4,129,431	213	4,129,421	100.0
2015–2016	5,659,608	50	5,659,355	100.0
ECPs				
2013–2014	0	221,410		
2014–2015	0	76,000		
2015–2016	34,712,256	365,894	34,346,362	98.95
Pills				
2013–2014	911,554,033	7,782	911,546,251	100.0
2014–2015	933,602,504	196,210	933,406,294	99.98
2015–2016	494,649,630	166,133	494,483,497	99.97
Injectable contraceptives				
2013–2014	1,772,815,429	8,695	1,772,806,734	100.0
2014–2015	1,823,556,059	741,000	1,822,815,059	99.96
2015–2016	1,926,530,134	3,084,000	1,923,446,134	99.84

Market Accessibility

The accessibility of services depends on the geographical distance from the facility, financial significance, and the uninterrupted supply of services. Knowledge of any source of FP shows how accessible are the services. However, we did not find data on knowledge of any source of FP; the Uganda Bureau of Statistics data showed only the percentage of women who know the FP methods.

4.2.1 Financial Access

The 2016 UDHS report does not discuss the reasons for unmet need. To assess the extent of financial access, we referred to the 2011 UDHS, which had information on or related to the following:

1. Percentage of current users who last obtained their method from a public-sector source
2. Percentage of current users who last obtained their method from a private-sector source
3. Percentage of non-users who reported that they were not using FP because of the cost of the method
4. Percentage of users who would be willing to pay for their current FP method

Female sterilization and implants were accessed primarily from the public sector, and injectable contraceptives, pills, IUDs, and male condoms were accessed mainly from the private sector. The percentage of WRA not using FP due to the cost of the method was below two percent in 2011. This indicates a willingness to pay for FP among WRA. We did not have data on male sterilization, female condoms, and ECPs. Table 10 shows the data on financial access to FP in Uganda.

Table 10. Financial access to FP in Uganda

	Sterilization, female	Condoms, male	Pills	IUDs	Injectables	Implants	All methods
Percentage of current users who last obtained their method from a public-sector source	79.1	28.6	45.7	38.9	39	85.1	
Percentage of current users who last obtained their method from a private provider	19	61.4	52.7	50.4	60.5	14.4	
Percentage of non-users who reported that they were not using FP because of the method's cost		0.4	0.9		1.5	0	1.1

Source: UDHS, 2011 (Uganda Bureau of Statistics [UBOS] & ICF International, 2012)

4.2.2 Geographic Access

We planned to identify the percentage of WRA who reported living within two hours of the closest FP source, but because we could not find literature with such data, we used data obtained from the recent SDP survey of 2015 (Eficon Consulting, 2015) on the time taken to reach the nearest facility in rural and

urban settings. Most facilities were within two hours distance such that geographical access could not be considered a major challenge. Table 11 summarizes the average time to reach SDPs for FP.

Table 11. Average time to reach an SDP for FP

Characteristics		Travel time from place of residence to SDP (hours)	Waiting for and receiving services (hours)	Travel time from the SDP to place of residence (hours)
Residence	Urban	1.8	2.0	1.8
	Rural	1.9	2.1	1.9
Management	Government	1.9	2.1	1.9
	Private	1.5	1.7	1.5
	NGO/private not-for-profit	2.9	1.8	2.0
	Other	2.0	1.8	1.9

Source: Eficon Consulting, 2015

4.2.3 Uninterrupted Supply of Products and Services

We planned to gather data on the number of SDPs that experienced a stockout of each FP product or method from the annual national SDP survey reports; however, we found that the survey reports provided information on the percentage of SDPs that had had a stockout of any one product and the percentage of SDPs with an uninterrupted supply in the past six months. Absolute numbers were not given. The survey reports showed that more than 70 percent of SDPs had experienced stockouts of at least one FP commodity in the past six months. Moreover, 28.3 percent of facilities in the private sector had not experienced any stockout; 16.7 percent of NGO-owned SDPs had not experienced stockouts; and 19.2 percent of government facilities had had an uninterrupted supply of FP commodities. Table 12 presents the information given in the SDP survey report (2015).

Table 12. Number of SDPs that reported a stockout of a FP product or method in the past six months

Characteristics	One or more of the contraceptive methods offered by this SDP was out-of-stock on a given day in the last six months preceding the survey (percent)	All contraceptive methods offered by this SDP were available/in stock on all days in the last six months preceding the survey (percent)
Urban	73.5	26.5
Rural	81.7	18.3
Government	80.8	19.2
Private	71.7	28.3
NGO	83.3	16.7
Other	0	100

According to the 2011 UDHS, 1.7 percent of respondents reported that they had discontinued a FP method because of lack of access to the product. This included 4.3 percent of male condom users, 2.6 percent of pill users, 1.3 percent of injectables users, and 2.2 percent of implants users. Unfortunately, such data were not available in the 2015 SDP report and 2016 UDHS.

Market Sustainability

We determined market sustainability by establishing the market value of each product followed by calculating the market share of the products by sector, importer, and brand. The presence of players with substantial market share was associated with the lack of sustainability.

4.3.1 Market Value of Each Product

Market value was determined by establishing the quantity of products used in the country (market volume) and the unit value of the commodities obtained through retail audits. During the retail audits, data were captured from 16 pharmacies in Mukono district. We used a retail audit checklist to review purchase records, price lists, and sales lists, and we itemized the brands available for each product. The consumer price of each FP product from each pharmacy visited was captured on an Excel worksheet. The average price of each brand of commodity over the three years was determined and used to calculate the market value.

The prices were captured in Uganda shillings but converted to U.S. dollars using the exchange rate of US$1 = 3500 Uganda shillings (Table 13).

Table 13. Average consumer prices of FP commodities in Uganda

Commodity	Brand	Average consumer price (US$)		
		2014	2015	2016
Oral pills	Microgynon	0.81	0.65	0.67
	Pilplan Plus	0.42	0.36	0.36
Male condoms	Bare Back	0.79	0.64	0.83
	Endurance	0.69	0.55	0.85
	Erotica	0.63	0.50	0.90
	Flavors	0.81	0.65	0.85
	Friestar	0.44	0.35	0.35
	Hot pink	0.81	0.65	0.85
	King size	0.63	0.50	0.90
	Kiss	0.19	0.15	0.15
	Life guard	0.13	0.10	0.10
	Moods	0.50	0.40	0.50
	O Condom	0.21	0.17	0.17
	Power play	1.00	0.80	0.90
	Protector	0.13	0.10	0.10
	Romantic	0.69	0.55	0.55
	Rough rider	0.97	0.78	0.89
	Trust condom	0.97	0.78	0.89
	Wet n' wild	1.00	0.80	0.80
	Dom	0.38	0.35	0.45
ECPs	Backup	2.82	2.11	2.04
	Depregdina	2.63	2.56	2.34
	Fasile-one	2.82	2.26	2.25
	i-pill	2.44	1.96	2.32
	Lydia post pill	0.00	0.00	1.50
	P2	2.72	1.77	1.70
	Postinor 2	3.51	2.63	2.36
Injectables	Depo-Provera	2.82	2.11	2.04

Source: Retail audits

The retail audit did not generate consumer prices for IUDs and implants, because they were not available in the retail outlets. We used the most common and the highest unit price paid for IUDs imported into Uganda during the review period, which was US$173 per IUD, according to the NDA archival data. Similarly, the unit cost of implants was found to be US$8.50 per implant, according to the NDA archival data. These costs exclude the costs of insertion and removal of the methods. The average consumer prices were applied to the market volume to arrive at the market value of the FP commodities used in Uganda, as shown in Table 14.

Table 14. Market value of FP commodities used in Uganda

Contraceptive	Year	Market volume	Average consumer price (US$)	Market value
Male condoms	2013–2014	66,438,754.56	1.27	84,428,696.03
	2014–2015	71,913,512.00	1.02	73,431,716.93
	2015–2016	14,684,623.04	1.00	14,741,094.36
Female condoms	2013–2014	55,000.00	0.50	27,500.00
	2014–2015	7,502,400.00	0.50	3,751,200.00
	2015–2016	1,200,000.00	0.50	600,000.00
Implants	2013–2014	431,712.00	8.50	3,669,552.00
	2014–2015	379,672.00	8.50	3,227,212.00
	2015–2016	295,000.00	8.50	2,507,500.00
IUDs	2013–2014	41.00	173.00	7,093.00
	2014–2015	213.00	173.00	36,849.00
	2015–2016	50.00	173.00	8,650.00
ECPs	2013–2014	221,410.00	4.66	1,030,966.87
	2014–2015	76,000.00	2.97	225,629.91
	2015–2016	365,894.00	2.15	787,104.84
Pills	2013–2014	7,782.00	0.69	5,397.60
	2014–2015	196,210.00	0.56	110,853.12
	2015–2016	166,133.00	0.56	92,400.48
Injectables	2013–2014	8,695.00	0.77	6,711.48
	2014–2015	741,000.00	0.44	328,625.79
	2015–2016	3,084,000.00	0.78	2,392,065.44
Total	2013–2014			89,175,916.98
	2014–2015			81,112,086.75
	2015–2016			21,128,815.12

4.3.2 Market Share by Sector

Archival data from the NDA reveal that the public sector contributed the largest proportion of FP commodities, often above 90 percent, except for ECPs, where the private sector had a higher share. Table 15 presents the market share, by sector and by commodity.

Table 15. Market share by sector, per commodity

	NGO	Private	Public	Total quantity	Market leader	Market share
Male condoms						
2013–2014	2,615,679	3,668,400	60,154,675	66,438,755	Public	90.5%
2014–2015	10,368,000	378,576	61,166,936	71,913,512	Public	85.1 %
2015–2016	13,739,999	512,624	432,000	14,684,623	NGO	93.6%
Female condoms						
2013–2014			55,000	55,000	Public	100%
2014–2015			7,502,400	7,502,400	Public	100%
2015–2016			1,200,000	1,200,000	Public	100%
Implants						
2013–2014	25,000	103,000	303,712	431,712	Public	70.4%
2014–2015		116,300	263,372	379,672	Public	69.4%
2015–2016			295,000	295,000	Public	100%
IUDs						
2013–2014		1	40	41	Public	100%
2014–2015		10			Private	100%
2015–2016		53	200	253	Public	79.05%
ECPs						
2013–2014		211,960	9,450	221,410	Private	95.7%
2014–2015		66,000	10,000	76,000	Private	86.8%
2015–2016		364,654	1,240	365,894	Private	99.7%
Pills						
2013–2014		7,782		7,782	Private	100%
2014–2015		10,500	185,710	196,210	Public	94.6%
2015–2016		24,130	142,003	166,133	Public	85.5%
Injectables						
2013–2014		2,700	5,995	8,695	Public	68.9%
2014–2015			741,000	741,000	Public	100%
2015–2016		3,000,000	84,000	3,084,000	Private	97.28%

4.3.3 Market Share by Importer

We analyzed archival data to determine the market share across importers to infer whether certain importers had an overly controlling share. The existence of importers with big shares implies that the market is dependent on that single importer and supply to the entire country could therefore be compromised if the importer was no longer able to import.

We found that for most products, there were importers with a controlling share of the market. Public providers and NGOs, including Reproductive Health Uganda (RHU) and the AFFORD Alternative Distribution Mechanism implemented by UHMG (and best known as UHMG), with financing from

UNFPA, had a controlling market share for female condoms, injectables, and male condoms. On the other hand, private sector-based importers had a controlling share of ECPs and pills (Table 16).

Table 16. Market share by importer for selected FP commodities

Importer	2013–2014	2014–2015	2015–2016
Female condoms			
RHU	55,000		
AFFORD/UHMG		4,500,000	
Surgipharm (U) Ltd		2,400	
UNFPA		1,500,000	1,200,000
Total	55,000	6,002,400	1,200,000
Market share	1.00	0.75	1.00
Lead importer	RHU	AFFORD/UHMG	UNFPA
Injectables			
Kampala Pharmaceutical	2,500		
RHU	285		34,000
AFFORD/UHMG	5,910	741,000	
Norvic Enterprises			3,000,000
USAID			50,000
Total	8,695	741,000	3,084,000
Market share	0.68	1.00	0.97
Lead importer	AFFORD/UHMG	AFFORD/UHMG	Norvic Enterprises
Male condoms			
Uganda Cares	1,499,999	999,999	
Medipharm Sales Ltd	512,624	550,512	315,216
AFFORD/UHMG		31,797,199	61,166,936
UNFPA	12,240,000		10,368,000
UHMG		1,615,680	
Supply Chain Management Systems		28,357,476	
Vine Pharmaceuticals Ltd		1,980,000	
Moonlink Pharmaceutical		1,137,888	
Surgipharm (U) Ltd			63,360
Total	14,252,623	66,438,754	71,913,512
Market share	0.86	0.48	0.85
Lead importer	UNFPA	AFFORD/UHMG	AFFORD/UHMG
ECPs			
Quality Chemicals Ltd	46,960		
AFFORD/UHMG	9,450	10,000	1,240
Health Care Ltd	165,000	66,000	
ECO Pharmacy			10,714

Importer	2013–2014	2014–2015	2015–2016
Total	221,410	76,000	11,954
Market share	0.75	0.87	0.90
Lead importer	Health Care Ltd	Health Care Ltd	ECO Pharmacy
Oral pills			
Surgipharm (U) Ltd	50	160	19,451
Kampala Pharmaceutical	412		
Vine Pharmaceuticals Ltd	7,320		43,920
Laborex (U) Ltd		8,696	14,252,623
AFFORD/UHMG		8,695	512,624
Eris Ltd		30	1,500
USAID			1,000
Total	7,782	17,581	14,831,118
Market share	0.94	0.49	0.96
Lead importer	Vine Pharmaceuticals Ltd	Laborex (U) Ltd	Laborex (U) Ltd
IUDs			
Surgipharm (U) Ltd	1	3	40
Vine Pharmaceuticals Ltd/RHU	40	200	0
Laborex (U) Ltd	0	10	10
Total	41	213	50
Market share	0.98	0.94	0.80
Lead importer	Vine Pharmaceuticals Ltd/ RHU	Vine Pharmaceuticals Ltd/ RHU	Surgipharm (U) Ltd
Implants			
AFFORD/UHMG/MOH	152,000	15,000	224
Vine Pharmaceuticals	160		15,000
IPA		17,390	
NMS	17,614		
Surgipharm	60,200		
Lead importer	AFFORD/UHMG/MOH	IPA	Vine Pharmaceuticals

4.3.4 Market Share by Brand

We analyzed archival data to determine the market share across brands to infer whether certain brands had an overly controlling share. The existence of brands with big shares implies that the market is dependent on those few brands and does not allow for effective competition, thereby undermining sustainability.

We found only a few brands of each commodity undermining competition and market sustainability. For oral pills, Microgynon was the primary brand on the market, at 94.06 percent, 97.31 percent, and 59.81 percent of the market share in 2013–2014, 2014–2015, and 2015–2016, respectively. In 2015–2016, two brands, Yasmin and Microlut, came into the country and reduced the market share of Microgynon (Table 17).

Table 17. Market share of pills

	2013–2014		2014–2015		2015–2016	
Brand	Quantity	Market share	Quantity	Market share	Quantity	Market share
Microgynon	7,320	94.06%	190,940	97.31%	96,373	59.81%
Yasmin	50	0.64%	5,270	2.69%	45,130	28.01%
Microlut		0.00%		0.00%	19,632	12.18%
Combination 3	412	5.29%		0.00%		0.00%
Total	7,782	100.00%	196,210	100.00%	161,135	100.00%
Lead brand	Microgynon		Microgynon		Microgynon	

Despite the numerous different brands of condoms, brand value was minimal and market share was still concentrated in a few brands. The leading brands were supported with public funds, including non-branded condoms, constituting 83.35 percent of the value in 2013–2014. In 2014–2015, the Hot Pink brand contributed 49.17 percent, followed by the non-branded condoms at 15.98 percent, both financed using public funds. In 2015–2016, 53.94 percent were non-branded, followed by Condom 53 at 27.25 percent, another donor-funded commodity that is socially marketed (Table 18).

Table 18. Market share of condoms

Brand	2013–2014		2014–2015		2015–2016	
	Quantity	Market share	Quantity	Market share	Quantity	Market share
Male condom (non-branded)	12,240,000	83.35%	10,620,000	15.98%	38,788,536	53.94%
Bare Back	33,040	0.22%	36,720	0.06%	62,640	0.09%
Condom "o" Black Studded		0.00%	1,874,880	2.82%		0.00%
Condom 53		0.00%	12,960,000	19.51%	19,594,400	27.25%
Endurance	41,040	0.28%	28,080	0.04%	30,240	0.04%
Erotica	11,520	0.08%	10,368	0.02%	17,280	0.02%
Flavours	26,640	0.18%	17,280	0.03%	8,640	0.01%
Hot Condom	17,280	0.12%	21,600	0.03%	17,280	0.02%
Hot Pink	432,000	2.94%	32,664,816	49.17%	13,152,000	18.29%
Icon	1,499,999	10.21%	999,999	1.51%		0.00%
King Size	6,480	0.04%	19,440	0.03%	12,960	0.02%
Life Guard		0.00%	5,628,660	8.47%		0.00%
Love Condoms		0.00%	1,999	0.00%		0.00%
Mates Condoms	24,624	0.17%		0.00%	22,896	0.03%
Meal One-dotted		0.00%	1,137,888	1.71%		0.00%
Moods		0.00%		0.00%	63,360	0.09%
Power Play	8,640	0.06%	27,360	0.04%	36,720	0.05%
Rough Rider	303,040	2.06%	353,664	0.53%	89,280	0.12%
Wet n' Wild	40,320	0.27%	36,000	0.05%	17,280	0.02%
Total	14,684,623	100.00%	66,438,755	100.00%	71,913,512	100.00%
Lead Brand	Male condom (non-branded)		Hot pink		Male condom (non-branded)	

Regarding female condoms, there was only one brand on the market—the FC2 FEMALE condom—over the three-year period.

Only one brand of injectable contraceptive was imported at a time. In 2013–2014, 100 percent of injectables were Norigynon, and in 2014–2015, 100 percent were Depo-provera. In 2015–2016, 62.5 percent were Norigynon and 37.5 percent were Noristerat. However, we observed that the two new brands, Norigynon and Noristerat, were not well-accepted, and therefore, a significant proportion of them expired in the supply chain (Table 19).

Table 19. Market share of injectables

Brand	2013–2014		2014–2015		2015–2016	
	Quantity	Market share	Quantity	Market share	Quantity	Market share
Depo-provera		0.00%	410,000	100.00%		0.00%
Norigynon	50,085	100.00%		0.00%	100	62.50%
Sayana press		0.00%		0.00%		0.00%
Noristerat		0.00%		0.00%	60	37.50%
Total	50,085	100.00%	410,000	100.00%	160	100.00%
Lead brand	Norigynon		Depo-provera		Norigynon	

The major brand of ECPs was Postinor 2, which contributed at least 75 percent of market share in each of the three years (Table 20).

Table 20. Market share of ECPs

Brand	2013–2014		2014–2015		2015–2016	
	Quantity	Market share	Quantity	Market share	Quantity	Market share
Fasile One	9,450	4.27%	10,000	13.16%	11,954	3.27%
i-pill	46,960	21.21%		0.00%	19,940	5.45%
Postinor 2	165,000	74.52%	66,000	86.84%	334,000	91.28%
Total	221,410	100.00%	76,000	100.00%	365,894	100.00%
Lead brand	Postinor 2		Postinor 2		Postinor 2	

There are only two major brands of implants: Implanon and Jadelle. Their market share fluctuated from year to year (Table 21).

Table 21. Market share of implants

Brand	2013–2014		2014–2015		2015–2016	
	Quantity	Market share	Quantity	Market share	Quantity	Market share
Jadelle	333,078	78.13%	71,100	18.73%	280,000	94.92%
Implanon	93,234	21.87%	308,572	81.27%	15,000	5.08%
Total	426,312	100.00%	379,672	100.00%	295,000	100.00%
Lead brand	Jadelle		Implanon		Jadelle	

There are only two major brands of IUDs: Mirena and Copper T. Their market share fluctuated from year to year (Table 22).

Table 22. Market share of IUDs

Brand	2013–2014 Quantity	2013–2014 Market share	2014–2015 Quantity	2014–2015 Market share	2015–2016 Quantity	2015–2016 Market share
Mirena	1	2.44%	13	6.10%	50	100.00%
Copper T	40	97.56%	200	93.90%		0.00%
Total	41	100.00%	213	100.00%	50	100.00%
Leading brand	Copper T		Copper T		Mirena	

4.3.5 Value of Market Subsidies

We estimated the value of market subsidies to gain insight on the ability of the market to sustain itself in the absence of donor funds. The higher the proportion of the subsidy, the less sustainable the market. We found that the market for FP was highly subsidized. The items for which we could not get a consumer price, because they were not available in the pharmacies at which we conducted retail audits, were assumed to be 100 percent subsidized. We assumed that such items were provided free to clients, and that any charge involved was from providers for their time and for consumables necessary for the insertion and removal of implants and IUDs, such as cotton wool, medical gauze, and clean water.

The overall proportion of subsidy provided through NGOs and the public sector was estimated at 82 percent during FY 2013–2014, 79 percent during 2014-2015, and 77 percent during FY 2015-2016. Female condoms, implants, ECPs, and IUDs were 100 percent subsidized. Table 23 shows the proportion and value of the subsidy for FP commodities in Uganda.

Table 23. Proportion and value of subsidy for FP commodities in Uganda

	Quantity (NGO)	Quantity (public)	Total quantity subsidized	Consumer price (US$)	Cost price (US$)	Subsidy (%)	Subsidy (value)
Male condoms							
2013–2014	2,615679	60,154,675	62,770,354	0.20	0.26	24%	3,891,762
2014–2015	10,368,000	61,166,936	71,534,936	0.22	0.22	1%	143,070
2015–2016	13,739,999	432,000	14,171,999	0.29	0.37	22%	1,162,104
Female condoms							
2013–2014	55,000		55,000		0.70	100%	38,500.00
2014–2015	7,502,400		7,502,400		0.62	100%	4,672,744.80
2015–2016	1,200,000		1,200,000		0.50	100%	600,000.00
Implants							
2013–2014	25,000	303,712	328,712		8.50	100%	2,794,052.00
2014–2015		263,372	263,372		8.50	100%	2,238,662.00
2015–2016		295,000	295,000		9.29	100%	2,740,550.00
IUDs							
2013–2014		41	41		173	100%	7,093
2014–2015		213	213		173	100%	36,849
2015–2016		50	50		173	100%	8,650
Pills							
2013–2014				0.69	113.27	99%	
2014–2015		185,710	185,710	0.56	3.61	84%	565,492.19
2015–2016		142,003	142,003	0.56	16.80	97%	2,306,670.63
ECP							
2013–2014		9,450	9,450		0.65	100%	6142.50
2014–2015		10,000	10,000		0.68	100%	6,800
2015–2016		1,240	1,240		0.66	100%	818.4
Injectables							
2013–2014		5,995	5,995	0.77	1.50	49%	4,365.09
2014–2015		741,000	741,000	0.44	1.30	66%	634,674.21
2015–2016		84,000	84,000	0.78	1.00	22%	18,846.47
Total/Average							
2013–2014						8290%	6,741,914.54
2014–2015						79%	8,298,292.07
2015–2016						77%	6,837,639.42

Source: Average consumer price/commodity (US$) was obtained from retail audits, and the average cost price/commodity (US$) was obtained from the NDA archival data.

4.3.6 Market Equity

We determined the percentage of women accepting FP in the five wealth quintiles specified by the Uganda Bureau of Statistics and assessed the proportion of FP users in the rural setting versus the urban setting to make an inference about market equity. Access to commodities by WRA from all wealth quintiles, including those in rural settings, implied that there was equitable access.

We found more uptake of FP in the highest wealth quintile compared with the lower quintiles. The uptake of FP in urban areas was higher than in rural areas among both married and unmarried women. These findings indicate that there was no market equity (Table 24).

Table 24. Market equity for FP commodities in Uganda

Required data	Variables	Year	Sterilization, female	Sterilization, male	Condoms, male	Condoms, female	Pills	ECPs	IUDs	Injectables	Implants	Total % of FP users	Not using FP	No. of women
Percentage of population in each wealth level/quintile who used a FP method	Lowest level	2011	0.9	0	1	missing	0.4	missing	0.2	8.2	2	12.7	85.3	1,063
		2016	2.3	0	1.3	0	0.5	0	0.8	11.6	4.7	21.2		
	Second level	2011	2.6	0	2	missing	1.3	missing	0	12.6	2.8	21.3	76.8	1,101
		2016	2.9	0.1	1.8	0.1	0.9	0	0.7	18.2	6.4	31.1		
	Middle level	2011	2.8	0.1	2.5	missing	2	missing	0.4	13.5	3.1	24.4	70.7	1,042
		2016	2.8	0	1.9	0	1.3	0.1	1.1	20.6	7.1	34.9		
	Fourth level	2011	4.9	0.1	2.5	missing	2.7	missing	0.4	17.6	2.7	30.9	65	997
		2016	2.7	0.3	2.9	0	2.5	0	1.4	21.8	6.8	38.4		
	Highest level	2011	3.4	0.1	5.1	missing	7.5	missing	1.5	18.1	2.7	38.4	53.8	1,215
		2016	2.9	0	4	0	3.9	0.3	3	20.1	6.2	40.4		
Percentage of rural residents who used a FP method	Married	2011	3	0.1	2.3	missing	1.9	missing	0.3	12.9	2.8	23.3	73.1	4526
		2016	2.8	0.1	2.1	0	1.2	0	1.2	18.2	6.1	31.7		
	Unmarried	2011	missing	missing	missing	missing	missing	missing	missing	missing	missing	0		
		2016	0.7	0	10	0	3	0	0.9	24.7	4.9	44.2		
Percentage of urban residents who used a FP method	Married	2011	2.5	0.2	4.7	missing	7.9	missing	1.6	19.9	1.8	38.6	54.2	892
		2016	2.6	0	3.6	0	3.9	0.3	2.3	19.4	6.8	38.9		
	Unmarried	2011	missing	missing	missing	missing	missing	missing	missing	missing	missing	0		
		2016	0.4	0	20.8	0	7	0.7	1.4	13.5	7.9	51.7		

Data sources: 2011 and 2016 UDHS

Indicators to Be Routinely Reported in the RHIS to Inform the TMA in Uganda

4.4.1 FP Data Generated, Reported, and Accessed

The MOH generates FP data on the cost price of commodities, manufacturers, importers, and the quantity of FP commodities imported through data obtained from technical working groups and reports from partners. Other data are sometimes generated through market research.

The NDA generates data on manufacturers and importers by requiring clients to provide the information as a prerequisite for importation. The quantity of commodities imported or exported, and the cost price of the commodities are captured in the verification certificates required for the importation of commodities. Information on the importer and manufacturer of each commodity or brand is captured in the drug register, which is available to the public through the NDA website.

National warehouses (the National Medical Stores and UHMG), which participate in the procurement and distribution of FP commodities, also generate useful data, such as information on importers, manufacturers, and the quantity of commodities imported into the country. For the warehouses, information on the quantity imported into the country is required for forecasting and demand projections. Data on importers, manufacturers, and cost price are important for selecting the source of products. Cost price is also used to determine the budget for commodities.

Development partners provide funds and procure FP commodities. During the planning process for funding and procurement, they generate data on manufacturers and importers of medicines, including those that are not registered in Uganda, and the cost price. This information, which is generated through market research, guides decision making. Sometimes the information generated is shared with technical working groups during stakeholder consultations.

Some implementing partners (i.e., PATH, UHMG, FHI 360, Marie Stopes, RHU, PACE) participate in procurement, and others distribute and offer FP services. Information on manufacturers and importers of unregistered brands or products required for procurement is produced through market research. Respondents from PATH and PACE indicated that their organizations were not generating any data on importers, manufacturers, exporters, cost price, or the quantity imported into the country.

4.4.2 Type of FP Data Needed for Reporting

The MOH needs information on the quantity of FP commodities imported into the country to determine the supply gap and to advocate for development partners' support. The cost price of a commodity is needed for budgeting. Information on manufacturers and importers is required to predict the availability of products. Supply is expected to be reliable if there are several manufacturers of a commodity.

Development partners require information on manufacturers, importers, cost price, and the quantity of FP commodities imported into the country for decision making about funding.

The National Medical Stores requires data on importers, manufacturers, the quantity imported into the country, and cost price to plan for procurement and stock management.

Implementing partners need information on manufacturers, importers, cost price, and the quantity imported into the country for procurement planning.

The NDA requires information about manufacturers and importers for facility inspections to ensure that they meet the quality standards for providing pharmaceuticals. Information on cost price is important to determine regulatory fees.

4.4.3 Data on Unmet Need for FP

Although the NDA shares information on importers and manufacturers of registered drugs through its website, and the information is updated regularly, information on the quantity of FP commodities imported into the country and the cost price cannot be accessed. Organizations require these data for demand forecasting and supply planning to arrive at budgets and funding needs. However, with the data unavailable, organizations must rely on market research, which is not only expensive but is not a comprehensive data source.

Dependable data on the quantity of commodities imported and the cost price could be accessed from the NDA, which captures these data in the importation documents. However, the NDA does not have the information in a retrievable form; one would need to identify relevant archival import documents to provide these data. It would be helpful if the data on import documents were captured in a readily retrievable form before archiving them.

5.0 CONCLUSION

The quantity of commodities required to meet the need for FP commodities in Uganda, or the UON, is highest for male condoms, at 6,789,505,894, 6,692,838,720, and 4,998,564,672 for the years 2014, 2015, and 2016, respectively. The need is lowest for male sterilization, at 225,327, 239,019, and 186,627 in 2014, 2015, and 2016, respectively. The UON got increasingly higher for IUDs, implants, and injectables, but decreased significantly for male and female sterilization. For male condoms, female condoms, and pills, the UON fluctuated going up in 2014–2015 and again down in 2015–2016. The extent to which the UON was met by the supplies available in-country is below one percent for all commodities, on average, over the past three years.

The total quantity of male condoms and implants distributed in-country from 2014 to 2016 declined and that of IUDs, injectables, female condoms, ECPs, and oral pills increased. The met need for male condoms declined from 0.979 percent in 2014 to 0.294 percent in 2016.

Although there were both increases and reductions in the quantity of commodities distributed in the country, a clear trend is evident in the commercial value of all FP commodities used in Uganda per year, which declined from US$89,175,917 in 2013–2014 to US$81,112,086 in 2014–2015 and decreased further to US$21,128,815 in 2015–16. The nine percent decline in 2014–2015 could be partly associated with a global reduction in the unit price for contraceptives. However, this factor cannot account for the 74 percent decline in 2015–2016, which deserves further exploration. It is possible that stock accumulated in the previous years, leading to a reduction in the quantity brought into the country. Alternatively, the uptake of FP methods has been on a negative trend. Either way, further inquiry is recommended to explain this finding.

In addition to the declining commercial value, there are indications that the market for FP commodities in Uganda is not sustainable because most commodities are supplied by just a few majority market shareholders, in terms of the importers and the brands on the market. Across importers and brands, the market share leaders often control more than 50 percent of the market. This gives them a controlling stake to influence the available quantity and price, which undermines market sustainability. Last, the market is greatly subsidized, which further undermines sustainability. The overall proportion of subsidy was estimated at 90 percent in FY 2013–2014 and 2014–2015; it was 84 percent in FY 2015–2016. Female condoms, implants, and IUDs are 100 percent subsidized, yet they are relatively more expensive per unit.

Regarding the proportion of FP commodities financed by the government, the private sector, and global financing mechanisms, the public sector contributes the largest proportion, often above 90 percent. This confirms the non-vibrant market situation for the private sector, further undermining sustainability.

The country lacks a dependable source of data on the quantity of FP commodities imported into the country and the cost price, which could be accessed from the NDA but are not available in retrievable form. Because the data are not collated, there is no analysis regularly done using the data. The country would benefit if these data were regularly analyzed to establish the market volume, segmented by product; the market value of each product; the market share, by sector, importer, and brand; and the value of market subsidies, by product.

6.0 RECOMMENDATIONS

We recommend additional research on the negative trend of the declining commercial value of FP commodities distributed in Uganda to identify and address the underlying causes. Some of the evidence that could be investigated is the global reduction in the unit price for contraceptives, stock accumulation in the previous years and thus a reduction in the quantity brought into the country, and the reduction in uptake of FP methods by FP acceptors.

Uganda should adopt strategies for a TMA that respond to observed market inefficiencies, namely, the declining commercial value; the few majority market shareholders supplying most of the FP commodities in terms of the importers and the brands on the market; and the fact that the market is greatly subsidized by development partners, which finance more than 90 percent of the FP commodities on the market.

The NDA should provide the country with a dependable source of data on the quantity of FP commodities imported into the country and the cost price. These data should be analyzed routinely to produce a report on market volume, segmented by product; the market value of each product; the market share, by sector, importer, and brand; and the value of market subsidies, by product, as has been done in this research report.

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APPENDIX 1. DOCUMENT REVIEW CHECKLIST

Concepts	Data to be collected	Data source
Market size	UON	National quantification for family planning commodities – MOH
	Market volume	Import and export data at the NDA
	Use of FP	UDHS reports
	Unmet need for FP	UDHS reports
Market accessibility	Users of different FP methods from each sector	UDHS report
	WRA using different FP methods	UDHS reports
	Rate of stockouts	SDP surveys by UNFPA; PMA facility survey reports
Market sustainability	Market value	NDA (quantity of products entering the country and price)
	Market subsidy (number of products, average consumer price, unit cost of goods)	NDA (number of products, unit cost)
		SDP surveys by UNFPA; PMA facility survey reports
Market equity	Number of rural residents who used FP methods	UDHS reports
	Number of urban residents who used FP methods	UDHS reports
RHIS	Data required to be captured and reported	HMIS manual
	Data available at national, district, and health facility levels	HMIS records
	Data reported in the HMIS	HMIS records
	Data available through M-track	M-track data accessible online

APPENDIX 2. CHECKLISTS FOR RETAIL AUDITS

Year _____

Purchase records

Type of product	Quantities purchased	Unit cost
Oral Microgynon		
Oral Noristerat		
Oral levenogesterol (emergency)		
Injectables Depo-provera		
Injectable Sayana		
Implants Jadelle		
Implants Implanon		
IUDs		
Condoms, male		
Condoms, female		

Price lists

Type of product	Consumer price
Oral Microgynon	
Oral Noristerat	
Oral levenogesterol(emergency)	
Injectables Depo-provera	
Injectable Sayana	
Implants Jadelle	
Implants Implanon	
IUDs	
Condoms, male	
Condoms, female	

Sales lists

Type of product	Quantity sold	Consumer price
Oral Microgynon		
Oral Noristerat		
Oral levenogesterol(emergency)		
Injectables Depo-provera		
Injectable Sayana		
Implants Jadelle		
Implants Implanon		
IUDs		
Condoms, male		
Condoms, female		

APPENDIX 3. INTERVIEWER-ADMINISTERED QUESTIONNAIRE

Assessment of the extent to which in-country resources could mitigate financing shortages for family planning commodities in Uganda: Implications for a total market approach

Questionnaire No: _____

Name of the organization _____

Cadre of the respondent _____

(Choose the most appropriate/correct code)

SECION 1: DATA GENERATION AND REPORTING			
QN1: Do you generate data on the following? (If "NO" for all options, jump to QN4.)	1- Exporters of FP commodities	YES	NO
	2- Importers of FP commodities	YES	NO
	3- Quantities of FP commodities imported and exported	YES	NO
	4- Manufacturers	YES	NO
	5- Cost Price	YES	NO
	6- Other(specify)		
QN2: Do you report data on the following? (If "NO" for all options, jump to QN4.**)**	1- Exporters of FP commodities	YES	NO
	2- Importers of FP commodities	YES	NO
	3- Quantities of FP commodities imported and exported	YES	NO
	4- Manufacturers	YES	NO
	5- Cost Price	YES	NO
	6- Other(specify)		
QN3: How often do you report data on the following?	1- Exporters of FP commodities	1. Weekly 2. Monthly	

		3. Quarterly 4. Yearly 5. As necessary
	2- Importers of FP commodities	1. Weekly 2. Monthly 3. Quarterly 4. Yearly 5. As necessary
	3- Quantities of FP commodities imported and exported	1. Weekly 2. Monthly 3. Quarterly 4. Yearly 5. As necessary
	4- Manufacturers	1. Weekly 2. Monthly 3. Quarterly 4. Yearly 5. As necessary
	5- Cost Price	1. Weekly 2. Monthly 3. Quarterly

		4. Yearly
		5. As necessary
	6- Other	1. Weekly
		2. Monthly
		3. Quarterly
		4. Yearly
		5. As necessary

SECTION 2: ACCESS OF INFORMATION AND USAGE (tick all that apply)

QN4a: Do you access information on the following? (If "NO" for all options, jump to QN6.)	1- Exporters of FP commodities	YES	NO
	2- Importers of FP commodities	YES	NO
	3- Quantities of FP commodities imported and exported	YES	NO
	4- Manufacturers	YES	NO
	5- Cost Price	YES	NO
QN4b: If YES, from which sources do you access this information?	1- HMIS		
	2- MOH		
	3- DHO		
	4- Private provider or seller of information		
	5- NDA		
	6- Other (specify)		
	1- Paper-based		

QN4c: In what form is the information accessed?	2- Electronic documents (emails)		
	3- Electronic form/system (HMIS, phone-based systems, etc.)		
	4- Other (specify)		
QN5a: Do you use the information accessed?	1- YES 2- NO		
QN5b: If YES, what do you use the information for?	1- Demand forecast		
	2- Stock management		
	3- Other (specify)		
QN6a: Do you need information on the following?	1- Exporters of FP commodities	YES	NO
	2- Importers of FP commodities	YES	NO
	3- Quantities of FP commodities imported and exported	YES	NO
	4- Manufacturers	YES	NO
	5- Cost Price	YES	NO
QN6b: If YES, what do you need this information for?	1- Demand forecast		
	2- Stock management		
	3- Other (specify)		

APPENDIX 4. INFORMED CONSENT FORM

Consent Form

Assessment of the extent to which in-country resources could mitigate financing shortages for family planning commodities in Uganda: Implications for a total market approach

Principal Investigator: Albert Kalangwa
Organization: Access Global Ltd
Contact: +256752447542
Sponsor: MEASURE Evaluation

Background and rationale for the study:
Uganda is in its initial stages of adopting a total market approach (TMA) as a sustainable mechanism to financing national needs for family planning commodities. A TMA to family planning (FP) is based on an understanding that meeting the diverse needs of various population segments equitably will require increased attention to coordination across sectors. In this context, there is growing appreciation of the value of strategic coordination across sectors. Therefore, it is essential that TMA strategies are evidence-based, which requires up-to-date data on the market size and market growth, and on the relevant market segments.

Purpose:
As part of the national response to declining global resources to finance family planning commodities, we hope that the study findings will be used in decision making and to facilitate dialogue on financing options. We will examine the extent to which in-country resources could mitigate the financing shortages for family planning commodities through a TMA and identify indicators that could be regularly reported by the NDA for inclusion in RHIS.

Procedures
Researchers will administer questionnaires to participants at their location.

Who will participate in the study?
Participants from major family planning stakeholders, including funding agencies, procurement and supplying agencies, and program and country-level buyers, will be interviewed to provide data that can be used to identify indicators to be routinely reported by the NDA.

Risk/Discomforts
Particpants will be asked to spare 15 miniutes of their valuable time to respond to the researcher-administered questionnaires. No potential physical, psychological, social, or legal risks are expected for the participants

Benefits
The livelihoods of the facilities will be enhanced if recommendations made as a result of the study are instituted. Participants will refresh their minds about FP commodities in Uganda.

Alternatives

Participation in this study is voluntary and participants are free to leave the study at will with no consequences. Respondents may also propose a different date on which they will be available for the interview.

Cost

Respondents are requested to spend 15 minutes of their time to participate in the interview. No financial costs will be met by the respondents during the study.

Compensation/reimbursement

Participants will not be paid and are not expected to pay any money during the study. Participants will be found at their location.

Questions

Respondents may ask the researcher any question before the interview or afterwards and may also contact the principal investigator (+256752447542) for more information.

Statement of voluntariness

Participation in the study is voluntary. You may join or withdraw from the study of your own free will at any time without a penalty. You are also free to refuse to answer any question.

Confidentiality

The results of this study will be kept strictly confidential and used only for research purposes. My identity will be concealed in as far as the law allows. My name will not appear anywhere on the coded forms with the information. Paper and computer records will be kept under lock and key and password protection, respectively.

The interviewer has discussed this information with me and offered to answer my questions. For any further questions, I may contact the Chairperson, School of Health Sciences Institutional Review Board (MakSHS-IRB) on (+256)772-404970/(+256)0200903786/ or the Uganda National Council of Sciences and Technology Tel: (+256)-41-250431.

STATEMENT OF CONSENT/ASSENT

_____ has described to me what is going to be done, the risks, the benefits involved and my rights regarding the study. I understand that my decision to participate in this study will not alter my usual medical care.

In the use of this information, my identity will be concealed. I am aware that I may withdraw at any time. I understand that by signing this form, I do not waive any of my legal rights but merely indicate that I have been informed about the research study in which I am voluntarily agreeing to participate. A copy of this form will be provided to me.

Name of participant _____

Signature/Thumbprint of participant _____

Age _____

Date (DD/MM/YY) _____

Name of witness _____

Signature/Thumbprint of witness _____

Date (DD/MM/YY) _____

Name of parent/guardian _____

Signature/thumbprint of parent or guardian for minors _____

Date (DD/MM/YY) _____

Name of interviewer _____

Signature of Interviewer _____

Date (DD/MM/YY) _____

APPENDIX 5. HUMAN MEDICINE PHARMACIES TO BE AUDITED IN MUKONO DISTRICT

	List of licensed pharmacies to be interviewed in Mukono district			
#	Name	Reg. no		Location
1	Abacus Parenteral Drugs Limited	NDA/PRE/WHP/2311	Wholesale Pharmacy	Plot 114, Block 191, Gwawamya Kinga Kapeke, Mukono, Uganda
2	Abacus Pharma (A) Ltd	NDA/PRE/WHP/1540	Wholesale Pharmacy	Jinja - Kampala Highway
3	Anise Pharmacy	NDA/PRE/RTP/1017	Retail Pharmacy	Namilyango Rd Junction Mukono
4	Aqua Pharmacy	NDA/PRE/RTP/1072	Retail Pharmacy	Kiwanga-Mukono-kla route
5	Aventis Pharmacy Ltd	NDA/PRE/WHP/2152	Wholesale Pharmacy	Kyagwe Road
6	Bivan Pharmacy	NDA/PRE/RTP/1125	Retail Pharmacy	Nakifuma Town Centre, Mukono, Uganda
7	Blessed Pharmacy	NDA/PRE/RTP/2232	Retail Pharmacy	Jinja-Kampala Highway Entebbe Road, Central Kampala
8	Bwino Pharmacy	NDA/PRE/RTP/1078	Retail Pharmacy	Kyaliwajala Wakiso Central Kampala
9	Carden Pharmacy Ltd	NDA/PRE/RTP/1440	Retail Pharmacy	Namilyango Rd
10	Cipi Pharmacy Ltd	NDA/PRE/RTP/1206	Retail Pharmacy	Seeta
11	Dashe Pharmacy	NDA/PRE/RTP/2120	Retail Pharmacy	Seeta
12	Dis-Chem Pharmaceuticals Ltd	NDA/PRE/RTP/1012	Retail Pharmacy	Wantony
13	Escorts Pharmaceutical Plot 48/50	NDA/PRE/WHP/2310	Wholesale Pharmacy	Kayunga Road
14	Escorts Pharmaceuticals Ltd- Plot 48/50	NDA/PRE/RTP/1114	Retail Pharmacy	Kayunga Road
15	Fortune Pharmacy	NDA/PRE/RTP/2118	Retail Pharmacy	Namugongo Rd
16	Gero Pharmacy	NDA/PRE/RTP/2229	Retail Pharmacy	Kinyonyi Clinic
16	Haya Pharmaceuticals Ltd	NDA/PRE/RTP/2429	Retail Pharmacy	Namiryango Road
17	Kabana Investment Pharmacy Ltd	NDA/PRE/RTP/1060	Retail Pharmacy	Plot 59 - 67 Satellite Beach Mukono - Jinja Rd
18	Larid Pharmacy Ltd	NDA/PRE/RTP/1063	Retail Pharmacy	Mukono-Kayunga Rd
19	Lubus Pharmaceuticals Ltd	NDA/PRE/RTP/1444	Retail Pharmacy	Bukerere Rd
20	Malystal Pharmacies Ltd	NDA/PRE/WHP/2306	Wholesale Pharmacy	Main Street
21	Malystal Pharmacies Ltd	NDA/PRE/RTP/2307	Retail Pharmacy	Main Street
22	Medisell (U) Ltd	NDA/PRE/EXT/1974	External Store	Namanve
23	Medreich (U) Ltd	NDA/PRE/RTP/1077	Retail Pharmacy	Jinja Highway

#	Name	Reg. no		Location
	List of licensed pharmacies to be interviewed in Mukono district			
#	Name	Reg. no		Location
24	Medvin Pharma Ltd	NDA/PRE/WHP/0882	Wholesale Pharmacy	Plot No. 84 Buribo Business Centre, Jinja Road
25	Moon Pharmaceuticals Ltd	NDA/PRE/WHP/0879	Wholesale Pharmacy	Seeta T/C – Mukono
26	Moon Pharmaceuticals Ltd	NDA/PRE/RTP/0878	Retail Pharmacy	Seeta
27	Morid Pharmaceuticals Ltd	NDA/PRE/RTP/1051	Retail Pharmacy	Opp. Nabuti Road
28	MSB Pharmacy Ltd	NDA/PRE/RTP/1988	Retail Pharmacy	Nakifuma
29	Mukono Central Pharmacy	NDA/PRE/RTP/1446	Retail Pharmacy	Bugerere Rd
30	Mukwano Pharmaceuticals Ltd	NDA/PRE/WHP/1049	Wholesale Pharmacy	Kayunga Rd
31	Mukwano Pharmaceuticals Ltd	NDA/PRE/RTP/1046	Retail Pharmacy	Kayunga Rd
32	Nanu Pharmacy Ltd	NDA/PRE/RTP/2236	Retail Pharmacy	Kayunga Rd
33	New Multicare Pharmacy Ltd	NDA/PRE/RTP/0272	Retail Pharmacy	Jinja-Kampala Rd
34	Nvanungi Pharmaceuticals Ltd	NDA/PRE/RTP/1034	Retail Pharmacy	Opp Kiwanga Police Post
35	Opash Uganda Ltd	NDA/PRE/RTP/1917	Retail Pharmacy	Namugongo-Sonde Road
36	QUALICARE PHARMACY	NDA/PRE/RTP/1447	Retail Pharmacy	Jinja Rd
37	Real Care Pharmacy Ltd	NDA/PRE/RTP/1984	Retail Pharmacy	Kayunga Rd
38	Rena Pharmacy	NDA/PRE/WHP/1134	Wholesale Pharmacy	Highway
39	Sarama Pharmaceuticals Ltd	NDA/PRE/WHP/2309	Wholesale Pharmacy	Along Jinja-Kampala Highway
40	Silver Pharmacy and Cosmetics Ltd	NDA/PRE/WHP/1032	Wholesale Pharmacy	Exit
41	Sima Pharmacy Ltd	NDA/PRE/RTP/1514	Retail Pharmacy	Katali Rd
42	Talemwa Pharmacy	NDA/PRE/RTP/2323	Retail Pharmacy	Centre
43	Tosi Pharmacy Ltd	NDA/PRE/WHP/1806	Wholesale Pharmacy	Trading Centre
44	V Care Pharmacy Ltd	NDA/PRE/WHP/1413	Wholesale Pharmacy	Kampala-Jinja Highway