



# MINISTRY OF PUBLIC HEALTH & SANITATION

## Report on the Reviewed National Family Planning Commodities Forecast and Quantification for the Years 2011/12 to 2013/14

January 2012

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*With Support from:*





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### **About MSH/HCSM**

The MSH/HCSM Program strives to build capacity within Kenya to effectively manage all aspects of health commodity management systems, pharmaceutical and laboratory services. MSH/HCSM focuses on improving governance in the pharmaceutical and laboratory sector, strengthening pharmaceutical management systems and financing mechanisms, containing antimicrobial resistance, and enhancing access to and appropriate use of medicines and related supplies.

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## ACRONYMS

AMC	Average Monthly Consumption
AOP	Annual Operational Plan
CCSS	Contraceptive Commodity Security Strategy
CoCs	Combined Oral Contraceptives
CPR	Contraceptive Prevalence Rate
CYP	Couple-Years Of Protection
DMPA	Depot Medroxyprogesterone Acetate
DoP	Department Of Pharmacy
DRH	Division Of Reproductive Health
ECP	Emergency Contraceptive Pills
F&Q	Forecasting And Quantification
FHOK	Family Health Options Kenya (Fhok)
FP	Family Planning
FY	Financial Year
HIS	Health Information Systems
HIV	Human Immunodeficiency Virus
IUCD	Intrauterine Contraceptive Device
KDHS	Kenya Demographic And Health Survey
KEMSA	Kenya Medical Supplies Agency
KEPH	Kenya Essential Package For Health
KfW	Kreditanstalt Für Wiederaufbau
KNBS	Kenya National Bureau Of Statistics
KSP	KEMSA Support Program
KURHI	Kenya Urban Reproductive Health Initiative
LAM	Lactational Amenorrhea Method
LAPM	Long Acting And Permanent Methods
LMU	Logistics Management Unit
MDGs	Millennium Development Goals
MoMS	Ministry Of Medical Services
MoPHS	Ministry Of Public Health And Sanitation
MSH/HCSM	Management Sciences For Health/Health Commodities and Services Management (Program)
MSK	Marie Stopes Kenya
NASCOP	National Aids & Sexually Transmitted Infections Control Program
OJT	On The Job Training
POP	Progestin Only Pills
PSI	Population Services International

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RH	Reproductive Health
RHCS	Reproductive Health Commodity Security
SCMS	Supply Chain Management Systems
SDM	Standard Days Method
SOF	(KEMSA's) Standard Order Form
SOPs	Standard Operating Procedures
TFR	Total Fertility Rate
TOWA	Total War Against HIV & AIDS (Project)
UNFPA	United Nations Population Fund
USAID	United States Agency for International Development
USD	United States Dollar
WB	The World Bank
WHO	World Health Organization
WRA	Women Of Reproductive Age



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## EXECUTIVE SUMMARY

In July 2011 the Department of Reproductive Health along with other organizations and donors prepared a forecast for 36 months of consumption for ten pharmaceutical and supply items for family planning. A new exercise was scheduled for January 2012 to revise the assumptions of that forecast as well as to develop a supply plan that will guide the procurement of products.

A Population based-based forecast was prepared from the data collected based on three different scenarios: high<sup>1</sup>, low<sup>2</sup> and middle<sup>3</sup>/intermediate scenarios. A consumption based forecast couldn't be conducted due limited availability of reliable consumption data at the time. However, it is anticipated that the next annual revision will also include consumption based scenarios.

The estimated cost of the forecast quantities was based on the middle scenario, which was selected as the most reasonable situation, is \$15.6 million for the first year (July 2011 – June 2012), \$16.8 million for the second year and \$17.9 million for the third year, for a total of \$50.3 million. However, given the current stock on hand and the forecast consumption, the supply plan for this three year period consists of procurement quantities that total \$42.9 million (\$14.8 million for procurements until June 2012, \$10.9 million for the period from July 2012 until June 2013 and \$17.2 million for the period from July 2013 until June 2014). The lower cost of the supply plan is due to the stocks on hand and the shipments that are already on transit.

The team made a number of recommendations regarding the quantification of family planning commodities (see Page 17). Key recommendations concern (1) monthly monitoring of supply plan; (2) review of the supply plan every quarter; (3) collection of additional consumption data to enable a comparison forecast to be developed yearly; (4) monitoring of supplier performance to increase the accuracy of lead time estimates; (5) conduct PipeLine software training for DRH, KEMSA and other key in-country stakeholder personnel; (6) mobilize resources for all shipments that are planned but unfunded in the current supply plan.

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<sup>1</sup> based on the goals for population coverage estimated in the Rwanda/Uganda meetings

<sup>2</sup> based on the increase of population coverage trend from KDHS 2003/4 to KDHS 2008/9

<sup>3</sup> value between previous two scenarios

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## **BACKGROUND**

### **Overview of the FP country program**

Kenya has been actively pursuing a program to increase the access of modern contraceptive methods among the population of sexually active citizens. Throughout the years there has been considerable progress in this area as was shown in the quinquennial (once every five years) Kenya Demographic and Health Survey (KDHS). The 2008/9 KDHS showed that the current use of modern contraception methods by all sexually active women was only 44.6%. The goal of the program was to increase this to a value higher than 56% for the fiscal year 2014/2015 based on objectives developed during FP conference in Kampala (2009) and follow up meeting in Kigali in 2010.

To increase the coverage of the population that is estimated to access the family planning services through the public sector the DRH developed a forecast of commodities in July 2011 that would cover the next 3 years. This forecast quantified the estimated need based on population based data but didn't have a clear supply plan that could guide the program for procurements.

The DRH and MSH-HSCM convened a revision of the estimates developed in July 2011 during the beginning of 2012 with the intention to validate the assumptions as well as determine a supply plan that will guide the procurement of pharmaceuticals and supply items for the next three years. This supply plan would have to be clearly monitored on a monthly basis to achieve the goals of maintaining a flexible supply chain that can accommodate the needs of the country despite continuously changing circumstances.

## **METHODOLOGY**

The F&Q process employed a population based model to determine the quantities of family planning methods required. This utilized data on the number of clients estimated to be reached from the KDHS 2008/09 and population growth estimates from the Kenya National Bureau of Statistics (KNBS). With this information the forecasting & quantification team was able to employ the population-based forecasting approach.

The population data was fed into Quantimed® software and various assumptions applied to it to generate the commodity requirements for FY2011/12 to 2013/14. Results from Quantimed® were entered into PipeLine® software to generate a supply plan for the various FP commodities.

Participants also analyzed available logistics data (both issues and consumption data) but resolved not to use the data based on doubts about its quality and reliability.

## **ASSUMPTIONS**

The scope of the quantification was defined as a national level forecast of 10 supply items and medicines. These covered all the current methods provided in the country for family planning and included both male and female condoms that are also used for HIV/STI prevention. It is for this reason that these two items were only taken into consideration for the future consumption calculation and not for the supply planning portion.

A forecast of consumption of these commodities was prepared for a 36 month period, commencing in July 2011 through June 2014. July 2011 was chosen as the start point because it was the initial point of the previous quantification that was under review and allows comparison of values. From this forecast, a supply plan—a rationally and systematically determined list of shipment quantities and delivery dates based on inventory parameters—for the period January 2012 to June 2014 (30 months) would be developed.

The prime options for forecasting health commodity requirements are the population-based and the consumption-based methodologies. In the former, estimates are calculated from—amongst other factors—the target of clients visiting FP service delivery points and the quantities necessary for each procedure. In the latter approach, reports on the actual consumption of each commodity are used to provide the basis for an estimate of future needs.

It was not possible to undertake a consumption-based forecast because of the lack of reliable and specific data on the actual consumption for each commodity. The DRH is working hard to strengthen this area via trainings of the personnel at the sites to obtain accurate and reliable data that could be used in future quantifications. Data that was available included the number of patients estimated to be treated from the KDHS 2008-2009 and reliable growth estimates of the population based on the national bureau of statistics. With this information the quantification team was able to employ the population-based forecasting approach.

The quantification team, consisting of members of the DRH, KEMSA, PSI, Marie Stopes Kenya, UNFPA, USAID and MSH (see Annex 2), made the following assumptions:

- The Forecast covers only those items procured by the public sector and not those intended for the private or social market;

- Population to be covered by the quantification is all sexually active women of reproductive age (15 to 49 years of age). The number of women in the country of that age group was taken for each year from 2011 until 2015 from the national bureau of statistics as shown below;

*Table 1 Population covered by quantification*

Cohort	2011	2012	2013	2014	2015
Women 15-19 years	2,093,542	2,144,235	2,196,575	2,250,265	2,384,344
Women 20-24 years	2,019,648	2,008,417	1,994,571	1,978,139	2,025,182
Women 25-29 years	1,873,729	1,910,409	1,949,143	1,989,982	1,982,531
Women 30-34 years	1,518,404	1,581,803	1,654,019	1,735,424	1,768,572
Women 35-39 years	1,197,781	1,253,532	1,305,885	1,355,866	1,404,336
Women 40-44 years	875,437	925,087	980,642	1,039,490	1,099,240
Women 45-49 years	684,461	710,050	736,840	767,616	803,963
Total Women of Reproductive Age	10,263,002	10,533,533	10,817,675	11,116,782	11,468,168

- All sexually active women represent the women that have had intercourse within one year as defined by KDHS 2008-2009 and it is in average 71.5% of all women of reproductive age. The number of all sexually active women for the estimation is as follows;

*Table 2 Proportion of sexually active women*

Age of Women	Timing of last sexual intercourse within the last 4 weeks	Timing of last sexual intercourse within 1 year
15-19	13.20%	14.40%
20-24	46.00%	28.60%
25-29	64.60%	23.20%
30-34	67.40%	23.30%
35-39	64.40%	21.30%
40-44	57.60%	20.50%
45-49	53.10%	21.40%

*Table 3 Number of sexually active women*

Age of Women	2011	2012	2013	2014	2015
15-19	577,818	591,809	606,255	621,073	658,079
20-24	1,506,657	1,498,279	1,487,950	1,475,692	1,510,786
25-29	1,645,134	1,677,339	1,711,348	1,747,204	1,740,662
30-34	1,377,192	1,434,695	1,500,195	1,574,030	1,604,095
35-39	1,026,498	1,074,277	1,119,143	1,161,977	1,203,516
40-44	683,716	722,493	765,881	811,842	858,506
45-49	509,923	528,987	548,946	571,874	598,952
Total Sexually Active Women	7,326,940	7,527,879	7,739,718	7,963,691	8,174,597

- There will be three scenarios of growth for the coverage of family planning methods. They are:
  - a. High: Based on the goals for the program of achieving 56% coverage of modern methods of family planning for married women by 2015. Annual growth rate of 2.77% of coverage
  - b. Low: Continuing the trend of growth presented from the KDHS 2003-2004 to the one in 2008-2009 of 1.32% increase in coverage among all sexually active women
  - c. Intermediate: Scenario in the middle of the previous two scenarios. Annual growth rate of 2.04% of coverage
- There are different rates of growth or decrease for the different products used among the women on modern methods for family planning for the period of the quantification as shown below:

*Table 4 Rate of change for different products among women on modern methods of family planning*

Product	2011/12	2012/13	2013/14
DMPA	57.4%	58.6%	59.8%
POPs	4.3%	4.1%	3.9%
COCs	12.2%	11.6%	11.1%
Male Condoms	6.8%	6.5%	6.2%
Implants - Jadelle	3.5%	3.8%	4.2%
Implants - Implanon	3.5%	3.8%	4.2%
IUCD	4.4%	4.6%	4.8%
Female Condoms	0.3%	0.3%	0.3%
Cycle Beads	0.2%	0.2%	0.2%
Other Methods	7.5%	6.4%	5.2%

- The source mix between public and private (including social market) market share is stated below. These numbers are based on the KDHS 2008/09 figures and incorporate changes due to some products being solely available through private sources

*Table 5 Source mix between public and private sector*

Product	Public Sector KDHS 2008/9	Public Sector Estimates forecasting period
DMPA	70%	85%
POPs	45%	100%
COCs	45%	85%
Male Condoms	77%	85%
Implants - Jadelle	81%	85%
Implants - Implanon	81%	100%
IUCD	72%	75%
Female Condoms	0%	100%
Cycle Beads	0%	100%
Emergency Pills	0%	10%

- The amount of EC pills couldn't be calculated with previous data on population, so the team selected to use retrospective consumption data of the product in the private sector provided by the Kenya Pharmaceutical Association. This private sector consumption was assumed to cover 90% of the market, thus making the additional 10% the part covered by the government. The figures for the public sector portion are as follows;

*Table 6 Estimated public sector consumption of EC pills (packs)*

Year	Estimated Public Sector Consumption (Packs)
2011/2012	379,782
2012/2013	459,340
2013/2014	538,899

- The dosage and number of days of use of each of the methods is detailed in tables 7 and 8 below. Table 7 lists items with multiple doses per year, which include condoms. For condoms, the number used per year was assumed to be 120, which are the couple years of protection (CYP) estimated by USAID. Table 8 lists items with doses that last for multiyear periods;

*Table 7 Dosage and number of days of use for each method (medicines)*

Item No.	Product	Days per year dosage administered	Dosage	Type of Condition
1	DMPA	4	1 vial	Chronic
2	POPs	210	1 pill	Acute
3	COCs	365	1 pill	Chronic
4	Male Condoms	120	1 condom	Chronic
5	Female Condoms	120	1 condom	Chronic
6	Emergency Pills*	20	2 pills	Chronic

*Table 8 Dosage and number of days of use for each method (supplies)*

Product	Duration in years per item	Dosage	Type of Condition
Implants - Jadelle	3	2 rods	Acute
Implants - Implanon	3	1 rod	Acute
IUCD	3	1 IUCD	Acute
Cycle Beads	3	1 unit	Acute

- For male and female condoms, forecasting will focus on quantities to be consumed and not the supply planning aspects. The consumption estimates will be shared with the Kenya National AIDS and STI Control Program (NAS COP) that regularly purchases these commodities;
- Historic product prices for all items were obtained from RH Interchange and used to determine the financial implications of the forecast quantities and to cost the supply plan. These prices were as follows;

Table 9 Historical product prices (source: RH Interchange)

Product	Pack Size	Prices RH Interchange per pack	Unit price in Kenya shilling (1 USD =Ksh 87.60)*
DMPA	1 vial	\$1.15	100.75
POPs	35 tabs (1 cycle)	\$0.33	29.00
COCs	28 tabs/21 tabs (1 cycle)	\$0.32	28.05
Male Condoms	1 condom	\$0.03	2.65
Implants - Jadelle	2 rods	\$25.03	2,192.65
Implants - Implanon	1 rod	\$25.03	2,192.65
IUCD	1 IUD	\$0.62	54.30
Female Condoms	1 female condom	\$0.70	61.35
Cycle Beads	1 unit	\$1.20	105.15
EC Pill	2 tabs	\$0.28	24.55

\*Source: CBK website January 13, 2012

- There would be no price change over the forecast period and the exchange rate was determined to be Ksh 87.60 per US dollar (taken on January 13, 2012 from the central bank of Kenya website).
- The following inventory management parameters for the overall programme were set for the supply planning activity
  - Minimum national stock level of nine months of supply (three months at sites)
  - Maximum national stock level of 15 months of supply (six months at sites)
  - Desired interval between orders of six months
- The order times in months were estimated as follows for the different suppliers based on historical information

Table 10 Estimated supply lead times

Supplier	Plan to Order (Months)	Order to Ship (Months)	Ship to Receive (Months)
Global Fund	8	2	3
Government of Kenya	6	4	3
USAID Deliver Project	6	4	3

## **Data**

The following key data was collected for the quantification exercise (with source of the information in parenthesis)

- Monthly consumption reports from available sites (MSH and KEMSA LMU);
- Stock on Hand (SOH) at Central Level (KEMSA);
- Stocks on Hand (SOH) at Implementing Partners warehouses (PSI, Marie Stopes Kenya, Tupange)
- Shipments of supplies and medicines ordered to date, but not yet received (UNFPA, KEMSA, DRH, MSH);

## **DATA MANIPULATION AND ANALYSIS**

As was previously noted in the assumptions section, the calculation for the EC pills even for the population based portion was based solely on consumption data obtained through the private sector. The numbers used for the scenarios were then taken to be just 10% of the total market for this product since it is assumed that 90% of the consumption in the country is through private sector.

A database was created in Quantimed, an access-based software tool specifically for the set of 10 medicines and supplies that are used in country for family planning. The output of the Quantimed tool is a month by month estimate of the consumption of each product.

The advantages of the Quantimed tool for forecasting are:

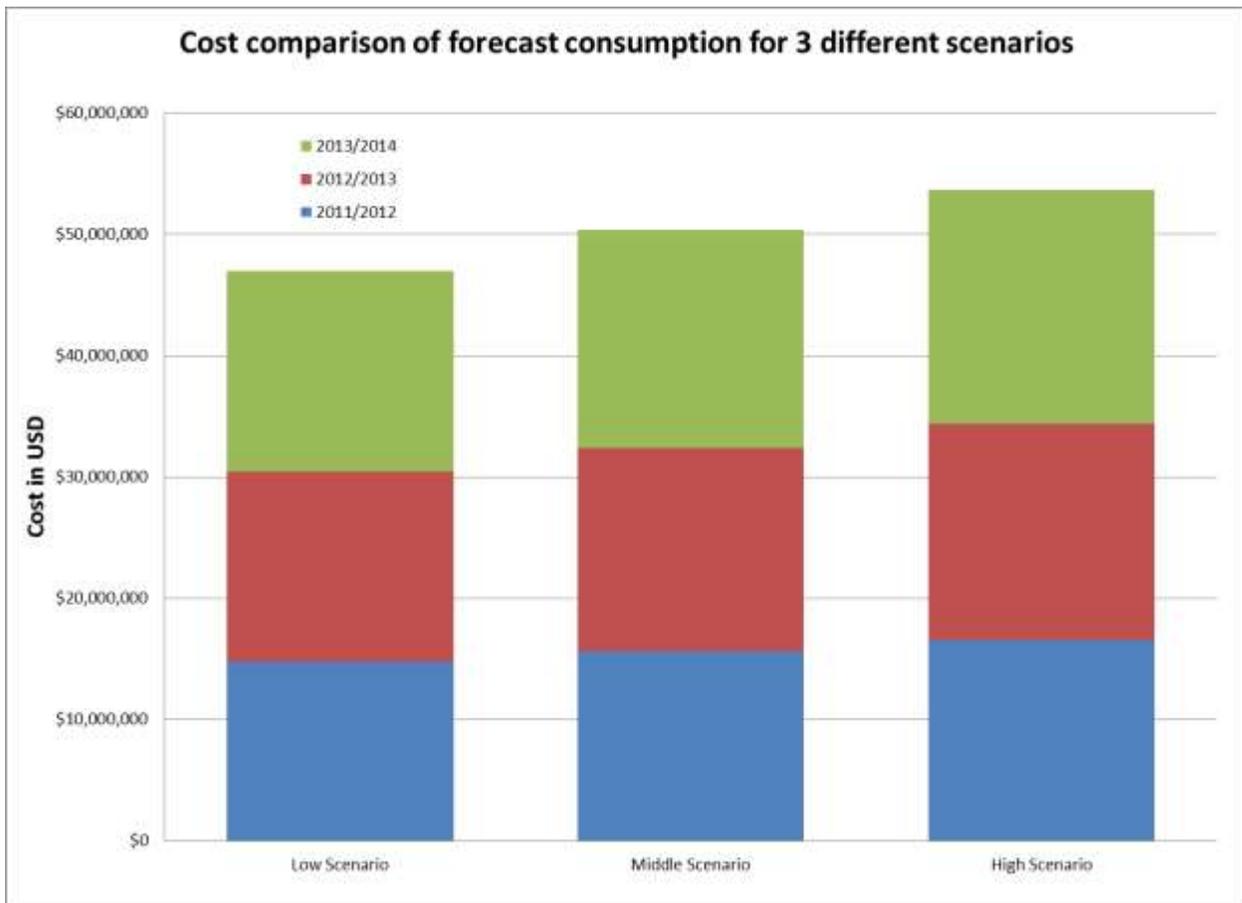
- When appropriate data is available, both a population-based and a consumption-based forecast can be developed and compared to best determine the future consumption.
- Alternative forecasts can be rapidly generated to account for differing assumptions about growth in clients or with updated consumption data
- Quantimed enables the export of the forecast in a file format that can be electronically imported into PipeLine, the supply monitoring and planning tool.

A PipeLine database was populated with the details of the individual products, the forecast quantities generated in Quantimed, data on stock on hand in the program (KEMSA), and shipments of medicines and supply items received, shipped and ordered (but not yet received). Based on this information a supply plan for the 10 products was developed.

## RESULTS

### Forecast of consumption for July 2011 to June 2014

Forecast quantities were obtained for the all scenarios to compare the cost gaps between them. The quantification team selected the intermediate (middle) scenario since it represented the middle ground between the current trend shown between the last two KDHS and the goals of the program for the year 2015. The costs for all the scenarios are shown below.



*Figure 1 Cost comparison of forecast consumption for 3 different scenarios*

The forecast quantity of each individual product for the selected middle scenario is presented below. The forecasts for the other scenarios are in Annex 3.

Table 11 Forecast quantity of individual product for the selected middle scenario

Product	July 2011 - June 2012		July 2012 - June 2013		July 2013 - June 2014		TOTAL
	Base Units	Cost	Base Units	Cost	Base Units	Cost	Cost
Medroxyprogesterone acetate [DMPA] 150MG/vial VIAL (INJ)	7,721,032	\$8,879,187	8,422,356	\$9,685,709	9,169,025	\$10,544,379	\$29,109,274
Levonorgestrel [POP] 0.03MG/tab TABLET (PO)	348,192	\$38,301	345,816	\$38,040	341,568	\$37,572	\$113,913
Ethinylestradiol-levonorgestrel [COCs] 0.03+0.15MG/tab tablet	5,135,883	\$1,643,482	5,245,728	\$1,678,633	5,338,047	\$1,708,175	\$5,030,290
Levonorgestrel [EC Pill] 0.75MG/tab TABLET (PO)	603,793	\$169,062	723,085	\$202,464	842,377	\$235,866	\$607,391
Levonorgestrel [Jadelle] 75MG/rod ROD (SC)	57,168	\$1,200,528	59,328	\$1,245,888	61,380	\$1,288,980	\$3,735,396
Etonogestrel [Implanon] 68MG/rod ROD (SC)	67,260	\$1,534,873	69,804	\$1,592,927	72,216	\$1,647,969	\$4,775,770
Condoms (Lubricated)	26,310,270	\$1,052,411	26,884,815	\$1,075,393	27,370,859	\$1,094,834	\$3,222,638
Female Condom	1,562,432	\$1,093,702	1,715,660	\$1,200,962	1,879,636	\$1,315,745	\$3,610,410
Iud (Copper)	56,112	\$34,789	57,408	\$35,593	58,560	\$36,307	\$106,690
Cycle Beads	3,024	\$3,629	3,060	\$3,672	3,072	\$3,686	\$10,987
<b>TOTAL</b>		<b>\$15,649,965</b>		<b>\$16,759,280</b>		<b>\$17,913,514</b>	<b>\$50,322,759</b>

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## Stock on Hand Reports

The stock on hand data obtained from KEMSA was reported for the central level store only. This data is shown below. The stock count for both the male and female condoms won't be reported since this stock represents both the items that are used for family planning as well as those for the STI HIV/AIDS prevention program.

*Table 12 Stock on hand data obtained from KEMSA for stocks at the central level store*

Product	Stock on Hand as of 31-DEC-2011 (Packs)
medroxyprogesterone acetate [DMPA] 150MG/vial VIAL (INJ)	720,700
levonorgestrel [POP] 0.03MG/tab TABLET (PO)	1,651,740
ethinylestradiol-levonorgestrel [COCs] 0.03+0.15MG/tab tablet (PO)	8,662,908
levonorgestrel [EC Pill] 0.75MG/tab TABLET (PO)	919,878
Levonorgestrel [Jadelle] 75MG/rod ROD (SC)	86,360
Etonogestrel [Implanon] 68MG/rod ROD (SC)	59,285
Iud (Copper)	132,400
Cycle Beads	-

## SUPPLY PLAN

The supply planning process commenced with;

- the stock on hand at 31<sup>st</sup> December 2011 as the baseline;
- incorporation of minimum/maximum inventory parameters as described above in the assumptions section;
- reduction of monthly stock by the amount of successive monthly forecast consumption figures and;
- addition to inventory the quantities in known shipments.

In addition to the above, stock adjustments were made for product expiries.

Assessing the stock status (for each product) month by month enables the identification of the month when stock on hand would be reduced by consumption to the minimum level. Comparing the estimated stock on hand for this month with the desired stock level determines the quantity needed to arrive in that month to restore inventory to satisfactory level.

The PipeLine tool facilitates this analysis and the resulting set of planned shipments is known as the supply plan. Multiplying the shipment quantities by product costs and an additional percentage for freight and insurance produces estimates of the resources needed to procure and ship these planned quantities. The supply plan was only developed for the middle commitments scenario with individual shipments listed for all the products except both male and female condoms, which will be planned by NASCOP and based on a consumption forecast that also includes the items needed for STI and HIV/AIDS prevention.

The supply plan presents lower costs than the forecast consumption since it takes into consideration current stock levels and already ordered shipments as items that have already been budgeted in previous periods. The product with the largest expenditures for the period is DMPA, which accounts for 81% of the supply plan costs until June 2012, 67% for year 2 and 68% of year 3. The next items based on highest costs are Implantable rods (Jadelle and Implanon) with 17% of the supply plan costs until June 2012, 13% for year 2 and 19% for year 3. COCs are next with 16% in year 2 and 10% in year 3. The full supply plan is shown below.

Table 13 Three year supply plan

Probable Funding Agency	Product	Optimal Receive Date	Quantity (Packs)	Total Costs
USAID/UNFPA/KfW	Medroxyprogesterone acetate [DMPA] 150MG/vial	1-Feb-12	10,402,189	\$11,962,517
Unknown	Levonorgestrel [EC Pill] 0.75MG/tab TABLET (PO)	30-Mar-12	952,900	\$266,812
USAID	Etonogestrel [Implanon] 68MG/rod ROD (SC)	31-May-12	100,032	\$2,556,658
<b>Total until June 2012</b>				<b>\$14,785,987</b>
Government of Kenya	Levonorgestrel [EC Pill] 0.75MG/tab TABLET (PO)	31-Aug-12	133,142	\$37,280
Government of Kenya	Medroxyprogesterone acetate [DMPA] 150MG/vial	31-Aug-12	2,621,814	\$3,015,086
Government of Kenya	Cycle Beads	31-Aug-12	47,749	\$57,299
Government of Kenya	levonorgestrel [EC Pill] 0.75MG/tab TABLET (PO)	30-Sep-12	125,758	\$35,212
Government of Kenya	Medroxyprogesterone acetate [DMPA] 150MG/vial	30-Sep-12	2,248,895	\$2,586,229
USAID	Levonorgestrel [Jadelle] 75MG/rod ROD (SC)	30-Sep-12	31,216	\$655,536
Unknown	Levonorgestrel [EC Pill] 0.75MG/tab TABLET (PO)	30-Oct-12	36,000	\$10,080
USAID	Ethinylestradiol-levonorgestrel COCs 0.03+0.15MG	30-Nov-12	2,644,389	\$846,204

Probable Funding Agency	Product	Optimal Receive Date	Quantity (Packs)	Total Costs
Government of Kenya	Levonorgestrel [POP] 0.03MG/tab TABLET (PO)	31-Dec-12	606,411	\$200,116
Government of Kenya	Levonorgestrel [EC Pill] 0.75MG/tab TABLET (PO)	31-Jan-13	64,528	\$18,068
Unknown	Levonorgestrel [EC Pill] 0.75MG/tab TABLET (PO)	28-Feb-13	408,202	\$114,297
USAID	Levonorgestrel [Jadelle] 75MG/rod ROD (SC)	30-Apr-13	34,608	\$726,768
Government of Kenya	Medroxyprogesterone acetate [DMPA] 150MG/vial	31-May-13	1,500,000	\$1,725,000
USAID	Ethinylestradiol-levonorgestrel COCs 0.03+0.15MG	31-May-13	2,695,896	\$862,687
Government of Kenya	Cycle Beads	30-Jun-13	22,809	\$27,371
<b>Total July 2012 - June 2013</b>				<b>\$10,917,232</b>
Unknown	Iud (Copper)	31-Jul-13	31,144	\$19,309
Unknown	medroxyprogesterone acetate [DMPA] 150MG/vial	31-Jul-13	5,210,939	\$5,992,580
Unknown	Etonogestrel [Implanon] 68MG/rod ROD (SC)	31-Jul-13	40,405	\$922,042
Unknown	levonorgestrel [EC Pill] 0.75MG/tab TABLET (PO)	31-Aug-13	460,945	\$129,065
Unknown	Levonorgestrel [EC Pill] 0.75MG/tab TABLET (PO)	30-Oct-13	36,000	\$10,080
Unknown	Levonorgestrel [Jadelle] 75MG/rod ROD (SC)	31-Oct-13	32,913	\$691,173
Unknown	Ethinylestradiol-levonorgestrel COCs 0.03+0.15MG	30-Nov-13	2,707,495	\$866,398
Unknown	Medroxyprogesterone acetate [DMPA] 150MG/vial	31-Jan-14	4,998,965	\$5,748,810
Unknown	Iud (Copper)	28-Feb-14	34,160	\$21,179
Unknown	Levonorgestrel [EC Pill] 0.75MG/tab TABLET (PO)	28-Feb-14	454,782	\$127,339
Unknown	Etonogestrel [Implanon] 68MG/rod ROD (SC)	28-Feb-14	42,126	\$961,315
Unknown	Levonorgestrel [POP] 0.03MG/tab TABLET (PO)	30-Apr-14	191,643	\$63,242
Unknown	Ethinylestradiol-levonorgestrel COCs 0.03+0.15MG	31-May-14	2,724,451	\$871,824
Unknown	Levonorgestrel [Jadelle] 75MG/rod ROD (SC)	31-May-14	35,805	\$751,905
<b>Total July 2013 - June 2014</b>				<b>\$17,176,262</b>
<b>Total until June 2014</b>				<b>\$42,879,481</b>

Note: Supply plan does not include warehousing and distribution cost

## **RECOMMENDATIONS**

### **Monthly monitoring of the supply plan**

It is mandatory that stock levels as well as constant monitoring of upcoming shipments be updated on a monthly basis to allow the program to identify gaps in the future and be able to react to them. The updates should include the stock status for a period of at least 18-months. This can be easily performed with the help of the stock status graph reports generated from the PipeLine software.

### **Review the supply plan every quarter**

The DRH with the help of MSH/HCSM, KEMSA and KSP are undertaking several efforts to strengthen the information base for distribution, inventory management and procurement through the rigorous assessment of site stock levels and regular collection of consumption data, days out of stock and quantities on hand. This forecast of pharmaceuticals and supplies was based only on actual stock levels for the central KEMSA warehouse. By obtaining reliable data for all locations a more accurate picture of the future requirements will be obtained. Therefore it is strongly recommended that the analysis reported here be repeated as data from subsequent months is gathered.

### **Collect additional consumption data to enable a comparison forecast to be developed yearly**

The alternative forecasting methodology, based on consumption, should give a complementary outlook to the forecast presented here. It will be highly desirable to have accurate consumption data when the new forecast takes place and thus allow for a comparative methodology to validate the results of the exercise. By tracking the consumption of each of these items individually for a long period of time there can be corrections to the forecast and supply plans that could save dollars in the case of overstock situations or prevent a stock out situation.

### **Perform an in-depth analysis of each supplier performance to increase the accuracy of lead time estimates**

It is still necessary to verify the information on all suppliers currently serving the FP program in Kenya to be able to have accurate information when planning future shipments. By doing this enough time will be given for planning purposes and the times allotted for shipment preparation, shipping and traffic will coincide with reality.

### **Perform PipeLine software training for DRH, KEMSA and other local key stakeholders personnel**

The training of personnel in the use of PipeLine software will not only help to accurately monitor the stock status of the program, but also create a better understanding of logistics planning and improve the monitoring capabilities of other health logistics programs. The exercise should be geared to train trainers that will be responsible for educating other personnel as necessary.

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**Mobilize resources for all shipments that are planned but unfunded in the current supply plan.**

There are gaps in the funding of shipments that are currently planned based on the middle scenario, which was deemed the most reasonable forecast. Those shipments need to have a secure funding source well ahead of their current planned date to guarantee delivery, so it is important that donors are aware of the gaps and commitments are secured with enough time in advance

## APPENDIX 1: WORKSHOP PROGRAM

Day 1: Wednesday 18<sup>th</sup> January 2012

TIME	ACTIVITY/SESSION	FACILITATOR
8:00 – 8:30 am	Registration	Rapporteur (MSH   HCSCM)
8:30 – 8.40 am	Introductions	DRH
8:40 – 8:50am	Official Opening remarks and Objectives of the meeting	Head DRH
8:50 – 9:00am	Remarks from MSH	MSH
9:00 – 9:10am	Remarks from USAID	USAID
9:10 – 9:30 am	Program status update	DRH
9:30 – 9:45am	KEMSA Presentation (Focusing on current stock, distribution trends and ongoing procurements)	KEMSA
9:45 – 10:25am	Updates from Partners and Stakeholders <ul style="list-style-type: none"> <li>• Current stocks</li> <li>• Consumption/usage trends</li> <li>• Planned procurements</li> </ul>	PSI, MSK, FHOK, Tupange
10:25 – 10:40am	Updates from Partners and Stakeholders Planned procurements and procurement /Delivery status)	USAID, UNFPA, KfW
<b>10.40 – 10:55am</b>	<b>TEA BREAK</b>	
10:55 -11.55am	Stakeholders role in FP Supply Chain	DRH
11.55am – 12:10pm	Recap of the 2011 FP F&Q Process	MSH HCSCM
12:10 – 1:00pm	Consensus on F&Q assumptions and methodology	DRH and MSH HCSCM
<b>1:00 – 2:00 pm</b>	<b>LUNCH</b>	
2:00 – 4:15pm	Consensus on F&Q assumptions and methodology	DRH and MSH HCSCM
4:15 – 4:30pm	Summary of Assumptions	MSH HCSCM
4.30 – 4:40pm	Wrap-up and plan for Day 2	Head DRH

Day 2: Thursday 19<sup>th</sup> January 2012

<b>TIME</b>	<b>ACTIVITY/SESSION</b>	<b>FACILITATOR</b>
<i>FORECASTING AND QUANTIFICATION (F &amp; Q) – CONT'D</i>		
8:30 – 9:00am	Recap of day 1 sessions	DRH
9:00 – 10:00am	FP commodity forecast for 2011/12 to 2013/14	All
<i>10:00 – 10:30 AM</i>	<i>TEA BREAK</i>	
10:30am – 1:00pm	FP commodity forecast for 2011/12 to 2013/14	All
<i>1:00 – 2:00 PM</i>	<i>LUNCH</i>	
2:00 – 4:00pm	<ul style="list-style-type: none"> <li>• Forecast Results</li> <li>• Discussion</li> <li>• Introduction to commodity pipeline monitoring</li> </ul>	All
<i>4:00 – 4:30 PM</i>	<i>TEA BREAK</i>	

Day 3: Friday 20<sup>th</sup> January 2012

<b>TIME</b>	<b>ACTIVITY/SESSION</b>	<b>FACILITATOR</b>
8:30 – 10:30am	Supply planning	All
<i>10:30 – 11:00 AM</i>	<i>TEA BREAK</i>	
11:00am – 1:00pm	<ul style="list-style-type: none"> <li>• Supply planning results</li> <li>• Plenary discussion</li> <li>• Next steps</li> </ul>	All
<i>1:00 – 2:00 PM</i>	<i>LUNCH AND DEPARTURE</i>	

## APPENDIX 2: WORKSHOP PARTICIPANTS

Name of Participant	Title/ Position	Facility/Org	Email Address
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<b>Name of Participant</b>	<b>Title/ Position</b>	<b>Facility/Org</b>	<b>Email Address</b>
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## APPENDIX 3: ADDITIONAL CONSUMPTION FORECAST SCENARIOS

### High Scenario

Product	July 2011 - June 2012		July 2012 - June 2013		July 2013 - June 2014		TOTAL
	Base Units	Cost	Base Units	Cost	Base Units	Cost	Cost
medroxyprogesterone acetate [DMPA] 150MG/vial VIAL (INJ)	8,103,636	\$9,319,181	8,936,873	\$10,277,404	9,827,248	\$11,301,335	\$30,897,920
levonorgestrel [POP] 0.03MG/tab TABLET (PO)	375,120	\$41,263	372,240	\$40,946	367,344	\$40,408	\$122,617
ethinylestradiol-levonorgestrel [COCS] 0.03+0.15MG/tab tablet	5,389,395	\$1,724,606	5,565,220	\$1,780,870	5,720,352	\$1,830,513	\$5,335,989
levonorgestrel [EC Pill] 0.75MG/tab TABLET (PO)	784,711	\$219,719	943,848	\$264,277	1,102,984	\$308,835	\$792,832
Levonorgestrel [Jadelle] 75MG/rod ROD (SC)	61,200	\$1,285,200	63,852	\$1,340,892	66,420	\$1,394,820	\$4,020,912
Etonogestrel [Implanon] 68MG/rod ROD (SC)	72,000	\$1,643,040	75,120	\$1,714,238	78,144	\$1,783,246	\$5,140,524
Condoms (Lubricated)	27,608,868	\$1,104,355	28,522,234	\$1,140,889	29,331,006	\$1,173,240	\$3,418,484
Female Condom	1,640,007	\$1,148,005	1,820,735	\$1,274,514	2,015,094	\$1,410,566	\$3,833,085
Iud (Copper)	60,168	\$37,304	61,776	\$38,301	63,228	\$39,201	\$114,807
Cycle Beads	3,252	\$3,902	3,288	\$3,946	3,312	\$3,974	\$11,822
<b>TOTAL</b>		<b>\$16,526,576</b>		<b>\$17,876,279</b>		<b>\$19,286,139</b>	<b>\$53,688,993</b>

**Low Scenario**

Product	July 2011 - June 2012		July 2012 - June 2013		July 2013 - June 2014		TOTAL
	Base Units	Cost	Base Units	Cost	Base Units	Cost	Cost
medroxyprogesterone acetate [DMPA] 150MG/vial VIAL (INJ)	7,338,338	\$8,439,089	7,907,687	\$9,093,840	8,510,722	\$9,787,330	\$27,320,258
levonorgestrel [POP] 0.03MG/tab TABLET (PO)	321,264	\$35,339	319,464	\$35,141	315,936	\$34,753	\$105,233
ethinylestradiol-levonorgestrel [COCs] 0.03+0.15MG/tab tablet	4,882,299	\$1,562,336	4,926,177	\$1,576,377	4,955,840	\$1,585,869	\$4,724,581
levonorgestrel [EC Pill] 0.75MG/tab TABLET (PO)	422,855	\$118,399	502,303	\$140,645	581,751	\$162,890	\$421,935
Levonorgestrel [Jadelle] 75MG/rod ROD (SC)	53,160	\$1,116,360	54,816	\$1,151,136	56,352	\$1,183,392	\$3,450,888
Etonogestrel [Implanon] 68MG/rod ROD (SC)	62,532	\$1,426,980	64,476	\$1,471,342	66,300	\$1,512,966	\$4,411,289
Condoms (Lubricated)	25,010,768	\$1,000,431	25,246,614	\$1,009,865	25,410,592	\$1,016,424	\$3,026,719
Female Condom	1,484,977	\$1,039,484	1,611,487	\$1,128,041	1,745,740	\$1,222,018	\$3,389,543
Iud (Copper)	52,032	\$32,260	53,040	\$32,885	53,868	\$33,398	\$98,543
Cycle Beads	2,796	\$3,355	2,820	\$3,384	2,832	\$3,398	\$10,138
<b>TOTAL</b>		<b>\$14,774,032</b>		<b>\$15,642,655</b>		<b>\$16,542,438</b>	<b>\$46,959,126</b>

## ANNEX: COMMITMENTS FOR COMMODITY PROCUREMENTS

*Table of procurement commitments*

<b>Product</b>	<b>Unit</b>	<b>Quantity</b>	<b>Total Costs</b>	<b>Commitment</b>
DMPA Injection	Vial	10,402,189	\$11,962,517	Both KfW and UNFPA
EC Pills	Dose	952,900	\$266,812	None
2-Rod Implants (Jadelle)	Set	31,216	\$655,536	USAID
COC Pills	Cycle	2,644,389	\$846,204	USAID
EC Pills	Dose	408,202	\$114,297	None
2-Rod Implants (Jadelle)	Set	34,608	\$726,768	USAID
COC Pills	Cycle	2,695,896	\$862,687	USAID