Study & Analysis:

Reproductive Health Costing Indonesia 2005-2010

United Nations Pupulation Fund
Indonesia
2007

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About the Author

Dr. Sri Moertiningsih Adioetomo is currently a professor at the Faculty of Economics University of Indonesia, Jakarta and senior researcher at the Demographic Institute, at the same faculty, where she previously served as Director. Her demographic research has focused on issues of demography and population dynamics, social and economic consequences of the changes in age structure, fertility and reproduction including the changing pattern of family size desires in Indonesia. She has carried her research insights into policy through service as Deputy for Women's Empowerment in the Coordinating Ministry for the People's Welfare and Senior Advisor to the Minister of Population and Transmigration. Her work has appeared in numerous national and international journals, and edited books. Recently she has been participating in UNFPA activities assisting the Bangkok Country Support Team (as a CST plus) as reproductive health consultants for the UNFPA Indonesia in conducting the Reproductive Health Costing in 6 provinces and 22 districts in Indonesia and assisting the data processing, analyzing and report writing of the 2005 Lao Reproductive Health Survey for the LAO PDR.

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FOREWORD

The world leaders at the Cairo International Conference on Population and Development (ICPD-1994) promised to allocate more resources for reproductive health and agreed that US$18.5 billion would be required in 2005 to meet the ICPD goals. The need for additional resources was then reinforced by the Millennium Summit reports. The report of the UN Secretary General -- ***Investing in Development*** --identified a funding gap of US$73 billion for 2006 globally to meet the Millennium Development Goals by 2015. This resource gap will increase to US$89 and 135 billion in 2010 and 2015 respectively.

Similar analysis of funding gap should also take place at regional, national, province, or district levels. This approach will provide more detailed estimation of needs and allow more involvement of respective government in addressing the needs of their population.

Costing reproductive health services especially in such a big and diverse country like Indonesia is indeed challenging. However, acknowledging the need of having such analysis, UNFPA Indonesia supported by the consultant Dr. Sri Moertiningsih Adioetomo, carried out the exercise in 2006 and produced ***The Indonesia Reproductive Health Costing 2005-2010.*** The report has estimated the price of 33 reproductive health services in 22 districts in Indonesia. I thank my UNFPA colleagues Eva Wiesman and Jane Saltner who initiated the modeling software and provided valuable technical advice to the country office in carrying out the exercise. My colleague Dr. Hidayat and consultant Ms. Manasi Bhattacharyya made valuable contributions in finalizing the report.

I would also like to take this opportunity to acknowledge and appreciate the hard work of the consultant and her team who have demonstrated their professional imprints in this work. I am also thankful to the government officials at central, provincial and district levels in this study. I sincerely hope that the policy makers, implementers and development partners will use this study to enhance the funding of reproductive health programme in Indonesia.

UNFPA will continue to support the efforts led by the government of Indonesia in advancing reproductive health, gender and population issues which aim at improving the quality of life of Indonesian women, men and adolescents.

Jakarta, December 2007

Zahidul Huque
Representative
UNFPA Indonesia CO

EXECUTIVE SUMMARY

This study attempts to estimate the cost of reproductive health (RH) including family planning services (FP) covered in the UNFPA 7th Country Programme[1] areas. The costing has been carried out at the national, provincial and district levels[2] with the application of a newly developed[3] computer program (RH Costing Model Version 1.1 MP). In this respect, it is worth mentioning that Indonesia was selected as one of the pilot countries to exercise this model[4].

Indonesia is committed to the ICPD Plan of Action[5] for implementing the integrated RH services, which is fundamental towards accomplishing the Millennium Development Goals (MDG) including the reduction of Maternal Mortality Ratio (MMR) by three-quarters and Under-five Mortality Rate (U5MR) by two-thirds (of their 1990 levels), and combating HIV/AIDS by 2015. However, budgetary support for RH including FP interventions has not been adequate to fulfill this commitment. The changes in the socio-political scenario over the last decade, and emergence of the decentralized governance system, could prove to be effective in the implementation of RH including FP services. However, while decentralization has brought decision makers closer to people needing the services, it could be a major obstacle if they lacked the proper knowledge about RH programmes. Therefore, effective advocacy is crucial in order to persuade policy makers to fulfill women's reproductive rights as well as make them realize the significance of the investment in achieving other crucial MDGs. For this purpose, it is imperative to estimate the cost of RH services at the national, provincial and district levels, which would serve as an effective advocacy and planning tool.

The RH Costing model is based on the WHO Standard Treatment guidelines consisting of 33 RH including FP interventions, which are as follows:

Family Planning	ANC and Delivery Care	Obstetric Complication
1 Oral contraceptives (Pill)	11 Antenatal Care	16 Prolonged labor (> 18 hours)
2 Injectables	12 Malaria Prevention within ANC	17 Forceps or Vacuum – Assisted Delivery (AVD)
3 Condom-male	13 Malaria Treatment within ANC	18 Caesarian Section (C-Section)
4 Condom-female	14 Delivery care	19 Postpartum Hemorrhage
5 IUD	15 Postpartum Care	20 Puerperal sepsis
6 Implant		21 Hypertensive disorders of Pregnancy
7 Sterilization-female		22 Pos-abortion complication (PAC)
8 Sterilization-male		
9 Other methods		
10 Emergency contraception		
Other Maternal Conditions	**Newborn Intervention**	**Sexually transmitted infections**
23 Obstetric Fistula (OF)	25 Prevention of Ophtalmia Neonaturum	29 Chlamydia
		30 Gonorrhea
		31 Syphilis
24 Urinary Tract Infections	26 Treatment of Neonatal Complications (LBW, Sepsis, etc)	32 Trichomonas
25 Mastitis	27 Prevention of Mother-to Child Transmition of HIV (PMTCT)	33 Pelvic Inflamatory disease (PID)

[1] *Though the 7th Country Programme of UNFPA covers 2006-2010, the study carries out the costing exercise for 2005-2010.*
[2] *Refer to the list presented in page-2.*
[3] *This Reproductive Health Needs model was developed in 2005, by Eva Weismann and Janeke Saltner, UNFPA New York, under the Millennium Project. Laos was the other country.*
[4] *The 1994 International Conference on Population and Development (ICPD), Cairo for the first time emphasized the reproductive rights and acknowledged the need for an*
[5] *integrated approach in all discussions of populations and development.*

Data for the study were collected at national, provincial and district levels, and to get an insight into the RH scenario, policy makers and programme planners were consulted at all levels. Thus the study findings presented in this report are outcomes of the application of the RH costing model, complemented and enriched by the inputs provided by the diverse stakeholders at various levels.

The basic concept of this RH Costing Model resembles the logic of Activity-Based Costing (ABC). ABC is a more accurate cost management system than traditional cost accounting, which improves the efficiency of the business process by determining the true cost of a product or service. ABC determines the activities required by outputs and assigns resource costs to activities.

The software has three interlinked components. The first part contains list of drugs, supplies and cost per case data. The second part consists of input data, estimation of population requiring services, total cost and cost summary, personnel requirements, personnel cost and summary of personnel and the third part contains population data base, coverage rate and incidence or prevalence rate. By using this wide range of data, the software makes population projections over the period 2005-2015, and the estimation of cost is done using the information on cost per case. The total cost consists of two components: cost of drugs and supplies, and cost of personnel.

The RH Costing Model calculates the personnel cost directly on the basis of staff time required to provide each of the services. The cost for each health staff is computed in terms of number of hours devoted to a particular RH service per week. Finally, the number of 'personnel required' is estimated by converting the total staff time into the number of staff needed for each category, namely, doctors, midwives, lab technicians etc. As the model estimates in 2005, to provide services for 47,094,822 reproductive health cases, including 19 million contraceptive users (refer to table-2 in Appendix-B), the estimated number of personnel required was 24,461 midwives, 8,005 attendants, 539 lab technicians, 140 anesthetists, 2,480 obstetricians and 313 general physicians. However, these estimates do not seem realistic. Weissman recognizes this fact and suggests that since *'reproductive health services are usually provided with other health services in a rather integrated manner, it is generally recommended to calculate personnel costs in a separate model that deals with the human resource requirements of the health system as a whole' (2005).*

Therefore, the present study focuses on the cost of drugs and supplies needed to implement the RH services. The total cost of drugs and supplies is computed by multiplying the cost of drugs and supplies required per case by the population requiring the services. Given the cost per case, total cost of drugs and supplies would be proportional to the size of the population requiring the services and the coverage rates.

With a population of 222.78 million, Indonesia is the fourth most populous country in the world. The country has 61,768,977 women of reproductive age (WRA), and 67 percent of these women (41.4 million) are married. The latest Indonesian Demographic and Health Survey, conducted in 2002/3, recorded a 92 percent coverage of Ante Natal Care (ANC), 67 percent coverage of deliveries assisted by health personnel, and 87 percent of post natal care (PNC) coverage. The data also reveals a 60.3 percent Contraceptive Prevalence Rate (CPR) among married couples. Thus, the statistics suggest that there is a lot of scope for improvement in reproductive health services.

Analysis of RH indicators in the 22 UNFPA supported districts under the study reveals that the performance of most of these districts lags behind the national average, which may be due to the relatively backward socio-economic profile of the areas. In majority of the districts, ANC coverage in 2005 was higher than 80 percent. However, this coverage rate is lower than the national average, and the target coverage set for Healthy Indonesia 2010 (95 percent). Aceh, Palembang, OKI, Dompu, East and Central Lombok and Alor had relatively higher ANC coverage among the 22 surveyed districts, whereas districts such as TTS, Manggarai, Kupang in East Nusatenggara, and Tasik and Indramayu in West Java had the least coverage. Lower coverage of ANC could be partly attributed to the relatively less-developed socio-economic status of the latter districts. It is noticeable that higher coverage of ANC was not always associated with a higher coverage of delivery assistance by skilled personnel. The 2002/3 IDHS found that in Indonesia, 59 percent of deliveries took place at home. In 15 of the 22 study districts, skilled assistance during delivery was less than 60

percent. This could be a result of the combination of demand and supply factors. The demand side factors could be primarily socio-cultural in nature. In almost all the study districts the coverage rate of PNC ranged between 60-80 percent. As for the contraceptive prevalence rate, in more than one-third of the districts (namely West Sumba, Alor, Aceh, TTS, and Kupang), more than half of the couples did not use any form of contraception. These districts have to work harder to accomplish the target CPR of 70 percent by 2015.

At the national level, in 2005, the current coverage needs an investment of 165.4 million for drugs and supplies. Providing the 'WHO Golden Standard' with full coverage will cost 255.1 million in 2005. For the period 2005-2009, Indonesia needs to invest 902.3 million for the implementation of RH including FP services.

The decomposition of RH investment into major components (FP, maternal and neo-natal and sexually transmitted infections) suggests that the non-FP cost component of RH investment for 2005 was higher than the FP component, and the annual increase in the former, required for accomplishing the 2010 Healthy Indonesia goals, was also much higher than the latter. However, interestingly, the increase in investment over 2010-2015, needed for attaining the universal coverage in 2015, is less for the non-FP component as compared to the FP. This trend can also be seen at the district level. In some districts with low performance in CPR, such as, Aceh, Tasik, Manggarai, Indramayu, Sambas, TTS, Alor, and West Sumba, required annual increase in the RH Cost component would decline over 2010-2015. This could be due to the fact that by 2010 the FP indicators, such as CPR, would improve as a result of investment in the FP services. The reduced number of pregnant women would also reduce the demand for RH services such as ANC, deliveries, EMOC and PNC and eventually, in the long run, investment in the FP services might result in a fall in the cost needed to achieve 100 percent coverage by 2015.

Based on the current low coverage rate, the cost per capita is about USD 0.74 per year. In majority of the districts, cost per capita ranges from USD 0.70 to USD 0.90. Since cost per capita is a very general measure, this study estimates the cost per WRA[6]. At the current coverage rate, the average cost per WRA ranges between USD 2 to USD 3 per year. In contrast, when the coverage is universal at 2005 population, the cost per WRA increases to about USD 4.0 per year[7], or only USD 0.33 per month, which is indeed an insignificant amount. The local government, therefore, should make sincere efforts to look for funding in order to fulfill women's reproductive rights to good quality RH services in compliance with the WHO standard of treatment.

However, at present there is a significant gap between the estimated cost and the actual budgetary allocation. Due to dearth of disaggregated data on health budgets, it is difficult to work out the funding gap, but the Human Development Report (UNDP) suggests that in 2001, the public health expenditure was 0.6 percent of the GDP and private health expenditure was 1.8 percent, implying that 25 percent of total health expenditure was covered by the government, while the rest was borne by the people themselves, which underlines an urgent need for an increased allocation for RH services.

[6] *Cost per WRA is computed as total cost divided by total number of WRA.*
[7] *Cost per WRA increases when the coverage is universal, as the total cost increases while total number of WRA remains the same.*

Recommendations

This pilot exercise raises a number of issues and provides recommendations to ensure the effectiveness of future endeavors.

Firstly, the model focuses on the cost of drugs and supplies for reasons mentioned earlier. However, in practice, personnel cost forms an integral part of the total cost. So, the model needs to provide a practical mechanism of computing the personnel cost component.

The software should also have options to deal with country specific situations. The model assumes that all the 33 RH services are provided at facility-based institutions or health centres. However, in the Indonesian context, some services are delivered through outreach activities. For instance, neonatal and post natal care services are often provided by village midwives through home-visits. Most often costs of these visits, including the transport cost and incentives for the midwives, are borne by the patients. These costs should be taken into consideration while computing the personnel cost.

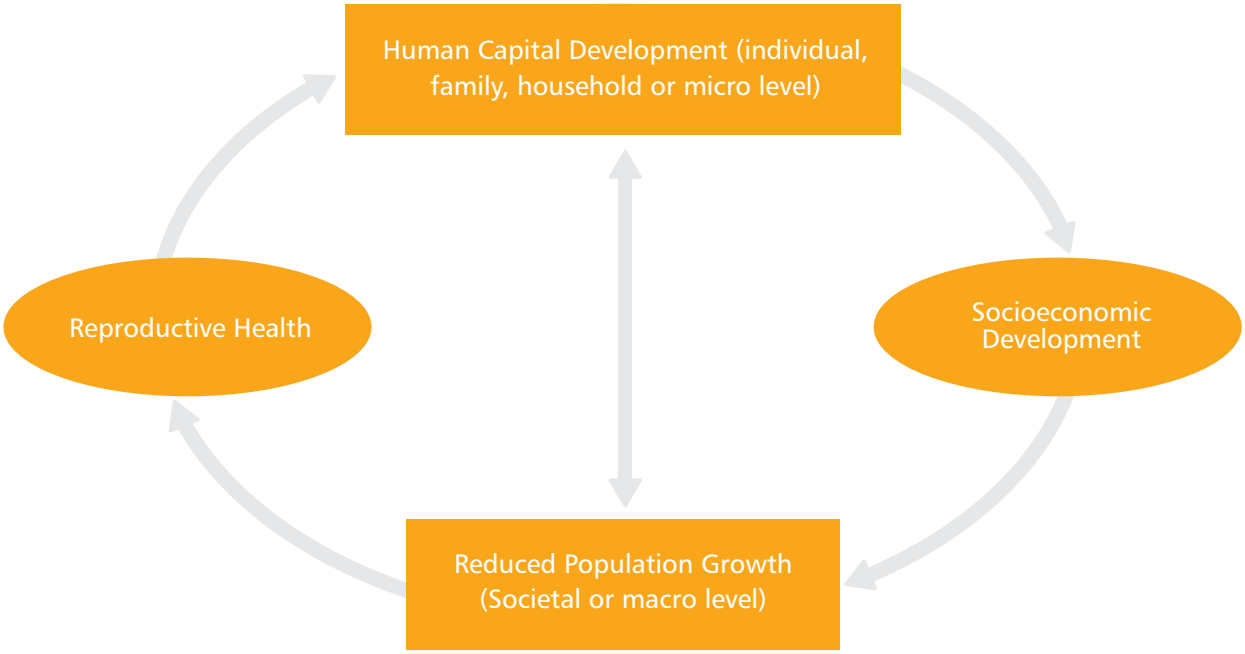
Secondly, the model assumes a uniform unit cost throughout the country. In a huge archipelago like Indonesia, the cost of commodities cannot be the same, as the cost of transportation to the far flung islands is prohibitively higher. Hence, for more realistic estimation, differential cost consideration needs to be incorporated in the model. For this purpose, data on market prices of drugs and supplies should be collected at the provincial level through the health department.

Thirdly, in order to motivate policy makers to invest in reproductive health, effective advocacy has a pivotal role to play. The accomplishment of the 2010 Healthy Indonesia targets and 2015 universal coverage would not be possible without an effective communication campaign at national, provincial and district levels. For realistic cost estimation, the cost of advocacy and behavior change communication (BCC) should be built into the model.

Finally, for an effective advocacy, a broader conceptual approach justifying the RH investment should be adopted. A rights-based approach and efficiency argument can go hand in hand for promoting the RH investment. As Sen et al. (1994) suggests, investing in people's health and reproductive rights is not only worthy in its own right, it is even more conducive to population stabilization. In the long run, investing in reproductive health care will produce healthy human resources with higher productivity, thereby contributing to economic prosperity. For the purpose of advocacy, this broader context and cumulative return of the RH investment should be communicated to the policy makers.

The impact of this investment can be demonstrated first at the micro level in terms of individual and household well-being. At the macro level, the efficiency of this investment can be viewed from the improved socio-economic and demographic indicators. The following diagram establishes these inter-linkages.

Figure 1: Simple Conceptual Framework (adapted from Seligman et.al.; 1997)



This diagram is the simple conceptual framework of Seligman et al (1997).This simple framework states that improvement in RH including FP services based on an ethical, empowerment approach improves the health and well being of the people and contributes in population stabilization. Improved health and productivity result in a reduction in poverty, which in turn improves the overall quality of life. As mentioned earlier, better quality of life stabilizes the population at the macro level, and at the micro level a reduced number of children would improve the reproductive health of women by reducing their reproductive burden. This would also enable women to participate in economic, social and political activities, which could enhance their confidence, expand their life choices, and contribute to their socioeconomic development. Improved reproductive health and longevity of mothers has an intergenerational effect in terms of better attention and care given to children, which results in their improved health and overall well-being.

Thus, investment in RH including FP services has multiple direct and indirect returns at the individual, household and societal levels. It not only promotes individuals' basic human rights, it also improves the quality of human resources and stabilizes the population. RH investment also has long term socio-economic impacts in terms of better quality of life for women and men, and better physical and cognitive development for their children. This wider context provides enough justification to promote RH including FP expenses as a worthy investment.

In a populous country like Indonesia, it is not easy to make a major investment required for RH including FP services, given the budgetary constrains and lack of awareness and convictions among various stakeholders. This RH costing exercise promises to be an effective advocacy tool, which can go a long way in persuading and sensitizing policy makers to prioritize RH investments, and thereby facilitating the process of fulfilling the ICPD commitments and accomplishing the MDG targets.

LIST of ABBREVIATIONS

ABC	Activity-Based Costing
ABM	Activity-Based Management
ANC	Ante Natal Care
ASFR	Age Specific Fertility Rate
Bappenas	*Badan Perencana Pembangunan Nasional;* National Planning Bureau.
BKKBN	*Badan Koordinasi Keluarga Berencana Nasional;* National Family Planning Coordinating Board.
BPS	*Badan Pusat Statistik;* Central Bureau of Statistics
CBR	Crude Birth Rate
CPR	Contraceptive Prevalence Rate
DAU	*Dana Alokasi Umum* (Budget Allocated for General Purposes)
EMOC	Emergency Obstetric Care
FP	Family Planning
ICPD	International Conference on Population and Development
IDHS	Indonesian Demographic and Health Survey
IEC/BCC	Information Education Communication, Behavioral Change Communication
KABUPATEN	DISTRICT
LBW	Low Birth Weight
MCH	Maternal and Child Health
MDG	MilleniumDevelopment Goal
MNH	Maternal and Neonatal Health
MOH	Ministry of Health
MWRA	Married Women at Reproductive Ages
NTB	*Nusa Tenggara Barat;* West Nusatenggara
NTT	*Nusa Tenggara Timur;* East Nusatenggara
OKI	Ogan Komering Ilir
PNC	Post Natal Care
PUSKESMAS	*Pusat Kesehatan Masyarakat;* Public Health Center
RHs	Reproductive Health (services)
RKP	*Rencana Kerja Pemerintah;* The Annual Government Work Plan
RPJM	Mid Term Development Plan
STI	Sexually Transmitted Infections
Susenas	*Survey Sosial Ekonomi Nasional;* National Socioeconomic Survey
TFR	Total Fertility Rate
UNAIDS	Joint United Nations Program on HIV/AIDs
UNFPA	United Nations Population Funds
WHO	World Health Organization
WRA	Women of Reproductive Age

The Report

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1. Background

At the Millennium Summit in 2000, world leaders came together to adopt the United Nations Millennium Declaration[1], which lay the foundation of eight Millennium Development Goals (MDGs). MDGs set quantitative targets for removing the abject poverty, hunger and diseases affecting the lives of billions of people. Improved sexual and reproductive health directly and indirectly underpins the achievement of these goals[2].

The Millennium Project was commissioned by the United Nations Secretary General in 2002 to develop a concrete action plan for achieving the MDGs. In 2006, UNDP established The MDG Support to help developing countries meet the MDG targets. The key activities include among others: developing MDG tools and research to adapt MDGs in a country specific context, to build capacity and to formulate and strengthen policies. One of the tools designed under the project is the Reproductive Health Need assessment Model, which helps countries estimate the cost of scaling up a basic package of reproductive health (RH) including family planning (FP) services from current to universal coverage levels. Indonesia was chosen as one of the pilot countries[3] to exercise the model.

Indonesia is committed to the ICPD Plan of Action for implementing the integrated RH services, which is fundamental towards accomplishing the MDG targets including the reduction of Maternal Mortality Ratio (MMR) by three-quarters and Under-five Mortality Rate (U5MR) by two-thirds (of their 1990 levels), and combating HIV/AIDS by 2015. However, budgetary support for reproductive health and family planning interventions has not been adequate to fulfill this commitment. The changes in the socio-political scenario over the last decade, and emergence of the decentralized governance system, could prove to be effective in the implementation of the reproductive health services. However, while decentralization brought the decision makers closer to people needing the services, it could be a major obstacle if they lacked proper knowledge about the RH programs. Therefore, effective advocacy is crucial in order to persuade policy makers to honor women's reproductive rights as well as make them realize the efficiency of investing in reproductive health services to achieve other crucial MDGs. For this purpose, it is imperative to estimate the cost of RH including FP services at the national, provincial and district levels, which would serve as an effective advocacy and planning tool.

2. Objectives of the study

Against the backdrop discussed above, the UNFPA- Indonesia has initiated a study to estimate the cost of reproductive health including family planning services (RH Costing henceforth) in compliance with the WHO Standard of Treatment guidelines. The objectives of the study are specified below:

- To estimate the cost of implementing reproductive health including family planning services on the basis of WHO Standard Treatment Guidelines that would serve as a highly useful tool to carry out advocacy with the policy makers and planners
- To identify the funding gaps and other requirements in providing integrated RH services
- To help develop local capacities in the area of health financial analysis and financing for RH

[1] *See General Assembly resolution 55/2.*
[2] *Improved sexual and reproductive health directly underpins goals 3–8 and indirectly affects the achievement of goals 1 and 2 (Sing et al, UNFPA, 2003).*
[3] *Laos is the other country.*
[4] *The 1994 International Conference on Population and Development (ICPD), Cairo for the first time emphasized the reproductive rights and acknowledged the need for an integrated approach in all discussions of populations and development.*

3. Study Areas

The study attempts to estimate the cost of providing RH including FP services at national, provincial and district levels. Six provinces and 22 districts covered under UNFPA 7th Country Programme[5] were selected. The provinces and districts covered are as listed below:

Provinces	Districts
1. NAD (Aceh)	Aceh Barat (West Aceh) Aceh Jaya Aceh Besar (The Big Aceh)
2. South Sumatra,	District OKI, Palembang Municipality
3. West Java,	Bandung Municipality District Indramayu District Tasikmalaya
4. West Kalimantan,	Singkawang Municipality, Pontianak Municipality, District Landak District Sambas District Sintang
5. West Nusa Tenggara (NTB),	District Lombok Barat (West Lombok), District Dompu, District Central Lombok District East Lombok
6. East Nusatenggara (NTT).	District Kupang, District Manggarai. District Alor District Timur Tengah Selatan (TTS) District West Sumba

4. Study Approach

RH costing exercise in the present study was carried out by the application of the Reproductive Health Costing Model software, Version 1.1 MP, developed by Eva Weissman and Janeke Saltner, UNFPA New York, on the basis of the WHO Standard Treatment guidelines.

Required data for the study was collected by visiting the selected areas (as listed above). Statistical reports and relevant documents were consulted for this purpose. To identify the areas of funding gap, the estimated cost was compared (wherever comparable) with the existing budgetary allocations from the state and local budget plans available at the Ministry of Health (MOH) and the National Family Planning Coordination Board (BKKBN). In the case of non-comparable data, the investment needed for the provision of free services to the most disadvantaged strata of the population was worked out.

[5] *Though the 7th Country Programme of UNFPA covers 2006-2010, the study carries out the costing exercise for 2005-2010.*

However, the findings of this technical exercise were complemented by insights gained from a number of consultations at various levels. Discussions were held with policy makers and program planners from related sectors at the national, provincial and district levels. While at the national level officials from Bappenas (National Development Planning Agency); Directorate General of Family Health, MOH; Bureau of Finance at the MOH; and BKKBN were interviewed, at the province and district levels the study team was able to contact local managers and decision makers.

5. RH Costing Model: The UNFPA Software

The software used for the RH including FP costing purpose is the 'Reproductive Health Costing Model, Version 1.1 MP 2005, developed by Eva Weissman and Janeke Saltner[6]. This model enables the user to estimate the direct cost of providing a set of 33 reproductive interventions as mentioned below:

Family Planning	ANC and Delivery Care	Obstetric Complication
1 Oral contraceptives (Pill) 2 Injectables 3 Condom-male 4 Condom-female 5 IUD 6 Implant 7 Sterilization-female 8 Sterilization-male 9 Other methods 10 Emergency contraception	11 Antenatal Care 12 Malaria Prevention within ANC 13 Malaria Treatment within ANC 14 Delivery care 15 Postpartum Care	16 Prolonged labor (> 18 hours) 17 Forceps or Vacuum – Assisted Delivery (AVD) 18 Caesarian Section (C-Section) 19 Postpartum Hemorrhage 20 Puerperal sepsis 21 Hypertensive disorders of Pregnancy 22 Pos-abortion complication (PAC)
Other Maternal Conditions	**Newborn Intervention**	**Sexually transmitted infections**
23 Obstetric Fistula (OF) 24 Urinary Tract Infections 25 Mastitis	25 Prevention of Ophtalmia Neonaturum 26 Treatment of Neonatal Complications (LBW, Sepsis, etc) 27 Prevention of Mother-to Child Transmition of HIV (PMTCT)	29 Chlamydia 30 Gonorrhea 31 Syphilis 32 Trichomonas 33 Pelvic Inflamatory disease (PID)

The basic concept of this RH Costing Model resembles the logic of Activity-Based Costing (ABC)[7]. ABC is a more accurate cost management system than traditional cost accounting, which improves the efficiency of the business process by determining the true cost of a product or service. ABC determines the activities required by outputs and assigns resource costs to activities. It then identifies all of the outputs, for which an activity segment performs activities and consumes resources, and assigns activity costs to outputs[8] using activity drivers[9].

[6] Weissman@unfpa.org; http://www.unmilleniumproject.org/policy/index.htm
[7] *Activity-based Costing is a useful tool for product costing, profitability analysis, cost-benefit analysis (for non-profit activities), budget planning and investment justification.*
[8] *Outputs can be products, services, or customers (persons or entities to whom a federal agency is required to provide goods or services).*
[9] *Activity drivers assign activity costs to outputs based on individual outputs' consumption or demand for activities. For example, a driver may be the number of times an activity is performed (transaction driver) or the length of time an activity is performed (duration driver).*

In the RH Costing Model, the output/cost-object is the provision of the RH services. Resources needed to provide RH services are drugs, supplies and personnel that are assigned to the 33 interventions mentioned in the above matrix. This model could be a very useful tool for the planners and managers for developing effective RH programs, and it can also serve as a monitoring and evaluation tool. Since in this model the cost components can be disaggregated activity-wise, in case of lack of funds, the model enables the planners to prioritize the activities. For instance, if a particular area is not malaria-prone, planners may leave the preventive activities, which require a lot of investment, and utilize the budget for other pressing matters.

The software has three interlinked components as mentioned below.

Part 1 Cost per case:
This part contains list of drugs, supplies and cost per case.-

Part 2 - Total cases and cost:
This part consists of input data, estimation of population requiring services, total cost and cases, cost summary, personnel requirements, personnel cost and summary of personnel.

Part3 - Data Base:
This part contains population data base, and data concerning coverage rate and incidence or prevalence rate.

5.1 Data requirements

The RH costing model needs input data, which belong to following 5 categories:

1. Demographic data (number of women in reproductive age, number of births, etc.)
2. Epidemiological data (such as the incidence/prevalence of pregnancy complications & STIs).
3. Current coverage rates and targets for different types of interventions (such as % of women receiving antenatal care)
4. Information on drugs and supplies required for each of the interventions (based on the WHO treatment guidelines).
5. Data on cost of drugs, supplies and personnel.

The following sections focus on these data and discuss their implications for the RH costing exercise.

5.2 Estimation of population requiring services

The application of Activity-Based Costing in RH Costing Model starts with an estimation of the population requiring RH services[10]. To get an estimate of women needing RH services, first of all, the number of births is calculated. Multiplying it by 1.05, we obtain the number of all women requiring Ante Natal Care.[11]

For higher accuracy, this software estimates the number of births using Bongaart's Model on Proximate Determinants of Fertility. The application of Bongaart's model needs the number of women of reproductive age (WRA) group (15-49) and Age Specific Fertility Rates (ASFR).

[10] *The reference period is 2005-2015.*
[11] *Here it assumed that 5% of pregnancies do not result in successful births.*

To get the estimate of births, ASFR for each age group of women is multiplied by the total number of women in that particular group. This model also requires input on proximate determinants of fertility: percentage of women married to calculate index of marriage, post partum infecundability (in months) to calculate index of infecundability, abortion rate to calculate index of abortion, involuntary sterility to calculate index of sterility, total method effectiveness of contraceptive used, and total fecundity. Estimate of TFR is obtained by multiplying index of marriage, index of postpartum infecundability, index of abortion, index of sterility, total method effectiveness and total fecundability. Due to the unavailability of data, the abortion rate is set at zero percent. Postpartum infecundability is derived from raw data of Indonesian Demographic and Health Survey (IDHS) 2002/3 for the province level. But, since the sampling procedure for the IDHS 2002/3 is not valid for the district level analysis, it is assumed that district postpartum infecundability follows the same pattern as the one found at the provincial level.

For the calculation of women requiring FP services, the composition of contraceptive methods used is assumed to remain constant over 2005-2015. But the Contraceptive Prevalence Rate (CPR) and unmet needs are programmed to meet a particular goal. There are three options to set the goal, which are: (1) increasing CPR to achieve 70 percent by 2015; (2) reducing unmet needs to zero percent by 2015; or (3) increasing the proportion of contraceptive demand satisfaction to 90 percent by 2015. The selection of the option depends on the context. The number of new users is projected on the basis of long-term method users (IUD, Norplant and Sterilization), using the FamPlan Model[12].

The WHO Standard Treatment guideline suggests that all pregnant women should have access to antenatal check up (ANC), assistance by skilled personnel during delivery, and post natal check up (PNC). However, in reality many women are still deprived of these services. So, actual coverage rates[13] are used as the basis for estimating resources and cost needed to provide these services to women. For projecting the cost figures for 2015, RH coverage rates are set at 100 percent in order to accomplish the MDG milestones.

Similar steps are followed to estimate the population requiring services for Sexually Transmitted Infection (STI).

The Input Data sheet provides a column for the users to fill in target rates and population projection for the year 2015. The software then interpolates the rates using linear projection to fill in figures between 2005 and 2015.

5.3 Calculation of cost of Drugs, Supplies and Personnel

The estimation of cost is done using the information on Cost per Case. The total cost consists of two components, which are: cost of drugs and supplies, and cost of personnel. The total cost of drugs and supplies is calculated by multiplying the cost of drugs and supplies required per case by the population requiring the services.

The provision of delivery services requires the use of gloves, delivery cleaning kit, oxytocin, alcohol swab etc., and 100 percent time of nurse and midwife and 25 percent time of obstetrician. The total cost for drugs and supplies per case is USD 4.38, whereas the total cost of personnel per case is USD 2.07.
The prices of drugs and supplies are quoted from UNICEF Supply Catalogue[14] and MSH International Drug Price Indicator.[15]

[12] *A computer program designed by Spectrum, for making family planning projections.*
[13] *That is, how many percent of women have access to ANC or what proportion of deliveries are assisted by skilled personnel, etc*
[14] *See* (http://www.supply.unicef.dk/catalogue)
[15] *See* (http://erc.msh.org/dmpguide). *Also see Users' Guide provided by Eva Weismann* (http://www.unmilleniumproject.org/policy/index.htm).

The calculation of cost of personnel is based on the salaries of personnel (auxiliary/attendant, nurse/midwife, general practitioner, obstetrician, anaesthesist, paediatrician and lab technician) of the WHO CHOICE project that is equivalent to SEARO B ranking.

6. Application of the UNFPA RH Costing Model in the Indonesian Setting

6.1 Available sources: Choices of Data for Input

This section discusses the sources of data, which could be utilized for the RH costing exercise. As mentioned above, application of the RH costing model requires a wide range of demographic and epidemiological data for the calculation of population requiring RH including FP services. Quality of the data is generally judged by its scientific validity, reliability and accuracy. Population Census is one of the highly valued sources of data, as it covers the entire population, and is thus free from sampling error. It provides basic population data by background characteristics, such as total population by age and sex, rural and urban residence, marital status by age and sex. Census data can be used to derive demographic indicators such as Crude Birth Rate, Age Specific Fertility Rate, and Total Fertility Rate. While Indonesian census is conducted every ten years, a shorter version is undertaken in between (Mini Census).

The next significant source of data in Indonesia is large sample surveys with more detailed information, such as Socio-economic Surveys (SUSENUS), which are conducted every year, and the Indonesian Demographic and Health Survey (IDHS), which is conducted on a demand basis. The IDHS contains comprehensive information on fertility, family planning, maternal health, etc. Data collected from these surveys usually have higher accuracy level, and less content errors. However, concurrently, they are exposed to sampling errors. IDHS is designed to be representative at the provincial level only.

Other existing data sets, which could also be utilized as inputs for the UNFPA RH Costing model, are statistical reports/official documents, such as provincial health profile, containing district level family planning statistics, family registration data etc; the district level reports on mother and child health services, consisting of detailed information on number of pregnant women receiving ANC, number of delivery attended by skilled health personnel etc. But this report does not show the proportion of the population at risk. Therefore, it is hard to estimate the coverage rates of services as mentioned above.

Another important source of data is Districts in Numbers published by District Statistical Offices, which contains population figures, disaggregated by age and sex, and rate of population growth. This could be a useful source for making population projections. The publication entitled Proyeksi Penduduk Indonesia 2000-2025 ('Indonesia Population Projection'), by the National Planning Bureau and BPS, funded by the UNFPA in 2005, is another good source for projections on population, women of reproductive age group (WRA), Crude Birth Rate (CBR), and Total Fertility Rate (TFR) at the national as well as provincial levels. Special publications, such as the 'UNFPA 6th Country Program: Laporan Indikator Data Base 2004 Untuk 44 Kabupaten Terpilih' (Report on Data Base Indicators for 44 Selected Districts) published by the UNFPA and BPS, and contains indicators on RH including FP, demographic parameters, gender etc., is yet another useful source of data for the RH Costing exercise.

6.2 Selection of Input Data

The previous section suggests that Indonesia offers a wide range of data sets from which to choose the best inputs for estimating the population requiring RH including FP services, the coverage and incidence rates. For this study, data has been selected on the basis of the criteria mentioned earlier: validity, reliability and accuracy. The population census has been the most preferred source, followed by SUSENUS and IDHS. For the district level, the study has mostly used the UNFPA & BPS 'Laporan Indikator Data Base 2004' (Indicator Database 2004) and Districts in Numbers.

However, as data from different sources are not always consistent and comparable with each other, it was difficult to choose the most appropriate data for the application of the software. In majority of the cases, contradictory data posed serious challenges. For instance, the official report on the CPR for the Manggarai district showed that 63.4 percent of married women were using contraception, but the demographic performance of the district did not reflect this high reported CPR. The SUSENAS 2004 recorded that Manggarai had a high CBR of 33.10 per 1000 population, and a TFR of 4.25 per woman (Report on Basic Indicators, UNFPA and BPS, 2005, page 75, 89). In comparison to this, CPR at the national level was lower at 60.3 percent, whereas TFR and CBR were 2.4 and 22 respectively, which are much lower than the corresponding Manggarai figures. Thus, it seemed that the official CPR data of the district did not reflect the actual prevalence rate. This study therefore, uses the CPR data of SUSENAS 2004, which is much lower (48.7 percent) and consistent with other demographic indicators.

Major demographic indicators, such as total population, annual rate of growth, CBR, TFR Current Use of FP, and percentage of deliveries attended by skilled personnel are derived from the SUSENAS 2004. Therefore, they are highly accurate at the district level.

For this study, in addition to the official publication, special tabulations have been carried out to derive maternal health data at the province level. Due to unavailability of district level data on obstetric complications, province level rates of proximate determinants of fertility, post partum infecundability, and management of newborn complication etc., have been used for district level estimation.

Data sources were different for Aceh: NAD, Aceh Jaya, Aceh Besar and Aceh Barat districts. The December 2004 Tsunami had wiped away hundreds of thousands of Acehnese, therefore Census data (collected before 2005) was no longer valid for the current situation. Moreover, for security reasons, 2002/3 IDHS was not conducted in Aceh. Therefore, the RH Costing exercise for these districts was postponed until the recent SPAN (Census for Aceh and Nias) was conducted in 2005 by BPS under the UNFPA funding. Data on the coverage of RH services such as ANC, PNC, and Delivery Assisted by Health Personnel were extracted from the 1997 IDHS. Therefore, while the computation of RH costs for these areas was based on the very recent data on population by age, sex and marital status, data on the coverage of RH services was based on the 1997 IDHS, assuming stable conditions since 1997[16].

Overall, Input Data used for the computation of Total Cost in the RH Costing exercise have been taken from the best available data sources (refer to Appendix-A).

[16] *Due to vertical conflict between the population of Aceh and the Central government, it is reasonable to assume that the coverage of basic services for the Achenese population remained the same over the years*

6.3 Reproductive Health Costing

6.3.1 Personnel cost

As mentioned earlier, the total cost of providing reproductive services consists of three components: cost of drugs, cost of supplies and cost of personnel.

The RH Costing Model calculates the personnel cost directly on the basis of staff time required to provide each of the services. The cost for each health staff is computed in terms of number of hours devoted to a particular RH service per week. In this exercise, the cost calculations are based on the assumption that each health staff works 30 hours per week and 48 weeks per year for the delivery of RH services, which means the annual cost per personnel is calculated for 1440 hours. At the end, these cost estimations are summarized as 'personnel cost'. Finally, the number of 'personnel required' is estimated by converting the total staff time into the number of staff needed for each category, namely, doctors, midwives, lab technicians etc.

The model offers a method of estimating staff requirement and personnel cost. However, as has been recognized by Weissman (User guide, 2005), there are practical difficulties in estimating personnel cost for RH services. In the Indonesian context the limitations[17] are as follows:

Firstly, the 33 reproductive interventions consist of activities that are mostly conducted at facility based institutions which, in Indonesian the setting, are sub-district health centers (PUSKESMAS). Currently there are about 7000 health centers spread over 441 districts. The doctors, midwives and other staff working at the health centers are government civil servants, who receive fixed monthly salaries. As noted by Weissman, the salaries of the health staff do not always reflect the cost of providing RH services, as these are delivered along with other health services.

Secondly, the model assumes that all the 33 RH services (section-5) are provided at facility-based institutions/ health centres. However, in the Indonesian case, some services are delivered through outreach-activities. For instance, neonatal and post natal care services are provided by the village midwives through home-visits. Most often costs of these visits, including the transport cost and incentives for the midwives, are borne by the patients.

Thirdly, as the model estimates in 2005, to provide services for 47,094,822 reproductive health cases, including 19 million contraceptive users (refer to table-2 in Appendix-B), the estimated number of personnel required was 24,461 midwives, 8,005 attendants, 539 lab technicians, 140 anesthetists, 2,480 obstetricians and 313 general physicians. However, as mentioned earlier, in Indonesia, health services are provided through 7000 health centers (PUSKESMAS) spread over the entire archipelago. To increase the accessibility of health services at the village level, it is crucial to place at least one doctor in each health centre and one midwife (called midwife at the village - BDD) in 55,000 villages all over Indonesia, which means we need at least 7000 general physicians and 55,000 village midwives.

Thus it seems that the personnel cost estimated by the RH costing model may not be a realistic one[18], and **unless the model is revised to produce a practical estimation, it is reasonable to focus on the cost of drugs and supplies.**

[17] *Some of the limitations are valid for most of the countries in the world*
[18] *According to Weismann, it is better to calculate personnel cost in a separate model that deals with the human resource requirements of the health system as a whole (User's Guide, Weissman, 2005).*

6.3.2 Cost of Drugs and Supplies

The second major component of RH cost is the cost of drugs and supplies. Before applying the RH costing model to estimate the costs of drugs and supplies in the Indonesian context, it is imperative to examine: first, whether the drugs and supplies, enlisted in Cost per Case component of the software, are also administered in Indonesia, and second, whether the UNICEF prices[19] for drugs and supplies are at the same level as the Indonesian prices. To review the list of drugs and supplies, a gynecologist, Dr. Diapari Siregar from Jakarta, was consulted. It revealed that there were negligible differences between the varieties of drugs and supplies listed in Part 1 of the model, and those used in Indonesia.

Next, to compare the prices of drugs and supplies quoted in UNICEF's catalogue with the Indonesian prices, a survey on market prices of drugs and supplies was conducted in and around Jakarta. Large pharmaceutical suppliers were interviewed, and data on the existing market prices provided by them were compared with the prices of drugs and supplies listed in the model. The survey results showed that the prices quoted by UNICEF or MSH were comparable with the same or similar drugs and supplies. In some cases, quotations by UNICEF were even lower than the market prices. Therefore, based on the survey findings, it was decided that the cost of drugs and supplies quoted in the model would be used for the Indonesian RH costing exercise.

Before presenting the estimated costs of drugs and supplies, it would be relevant to have a discussion on the coverage rates of RH services, as cost to a great extent depends on the coverage.

With a population of 222.78 million people, Indonesia is the fourth most populous country in the world. The country has 61,768,977 women of reproductive age (WRA), and 67 percent of these women (41.4 million) are married. The latest IDHS, conducted in 2002/3, has recorded 92 percent coverage of Ante Natal Care (ANC), 67 percent coverage of deliveries assisted by health personnel, and 87 percent of post natal care (PNC) coverage. The data also reveals a 60.3 percent Contraceptive Prevalence Rate (CPR) among married couples. Thus, the statistics suggest that there is a lot of scope for improvement in reproductive health services. To strengthen the implementation of RH including FP services, Indonesia has set targets for the Healthy Indonesia 2010 and universal coverage of these services by 2015. The targets for the Healthy Indonesia 2010 include 95 percent coverage of ANC services, 90 percent coverage of Delivery Assistance by Health Personnel and PNC services, and 80 percent coverage of Emergency Obstetric Care by 2010. The BKKBN has a challenging task of increasing the CPR to 70 percent, in order to reduce the TFR to 2.1 per woman by 2015. Finally, to accomplish the MDG milestones set for IMR and MMR by 2015, it is essential to attain universal coverage of ANC, PNC, EMOC and Delivery Assistance by health Personnel.

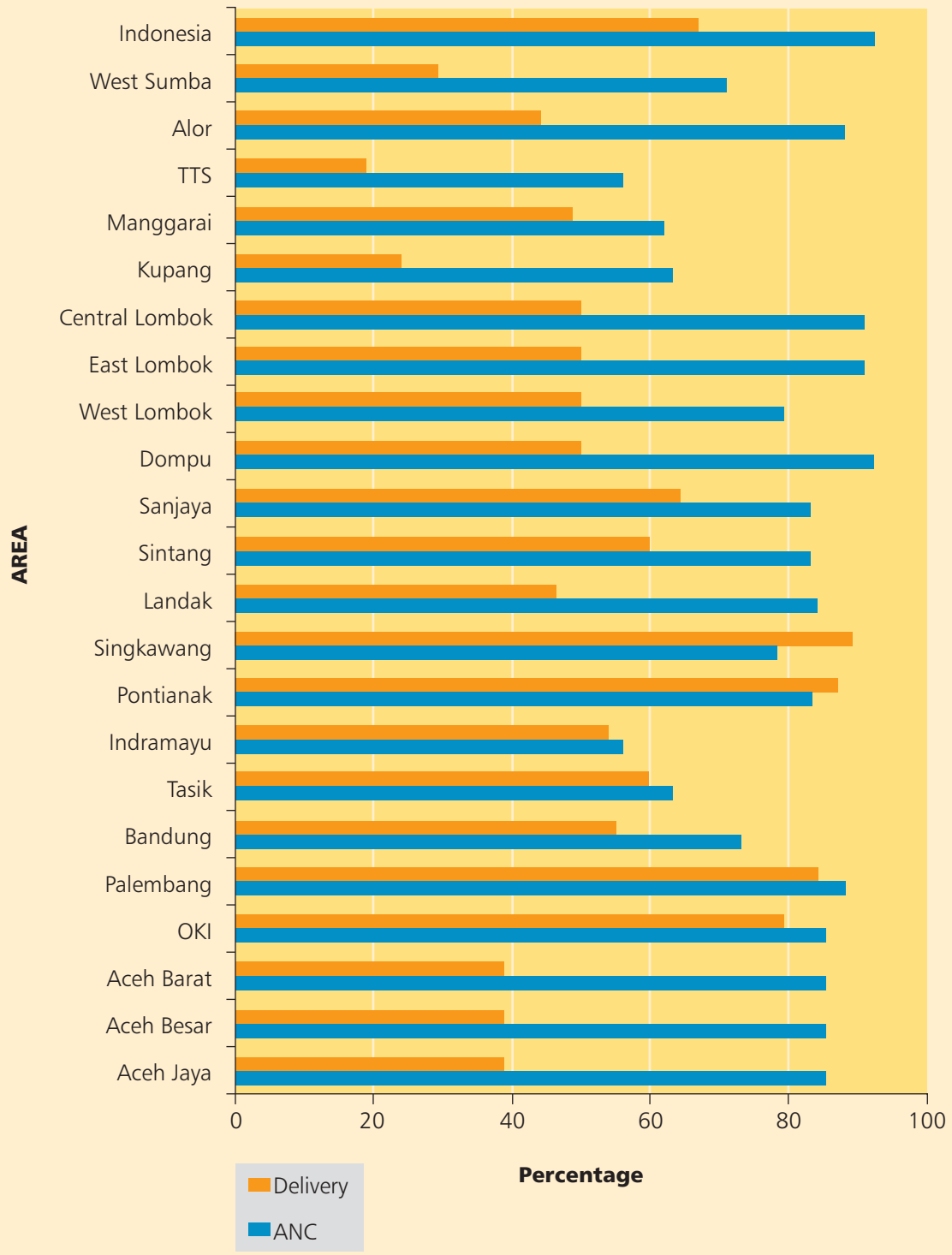
Analysis of RH including FP indicators in the 22 UNFPA intervention districts under the study reveals that the performance of most of these districts lags behind the national average, which may be due to the relatively backward socio-economic profile of the areas selected for UNFPA interventions. Figure 1 presents the coverage rates of ANC and Delivery Assistance by skilled personnel in the 22 districts under study. The diagram shows that in majority of the districts, ANC coverage in 2005 was higher than 80 percent, however, the rates were still lower than the national average, and the target coverage set for Healthy Indonesia 2010.

Aceh, Palembang, OKI, Dompu, East and Central Lombok and Alor had relatively higher ANC coverage among the surveyed 22 districts, whereas districts such as TTS, Manggarai, Kupang in East Nusatenggara, and Tasik and Indramayu in West Java had the least coverage. Lower coverage of ANC could partly be attributed to the relatively

[19] *Note: As mentioned earlier (in section 5.3)), prices were quoted from UNICEF's Supply Catalogue and MSH International Drug Price Indicator - see Weisman, 2005*

less-developed socio-economic status of majority of the latter districts. It is noticeable that higher coverage of ANC was not always associated with a higher coverage of delivery assistance by skilled personnel. The 2002/3 IDHS found that in Indonesia 59 percent of the deliveries took place at home. In majority of the study districts (15) skilled assistance during delivery was less than 60 percent. The urban financial centres such as Palembang, Singkawang, Pontianak and OKI, were among the better off districts, and in contrast, Aceh and most of the districts in East Nusatenggara and Lombok, had the lowest coverage of delivery assistance by skilled personnel. This pattern may be a resultant of the combination of demand and supply side factors. The demand side factors could be primarily socio-cultural in nature.

Figure 1 Coverage of ANC and Delivery Assisted by Health personnel 2005



Since data on Emergency Obstetric Care (EMOC) was not available, this study followed the default model, which assumed that the coverage of EMOC was 50 percent of deliveries assisted by health personnel, as shown in Figure-2. Given the unsatisfactory coverage of skilled assistance during delivery (67 percent) and EMOC (34 percent) in the study districts, it would be a challenging task for them to step up the coverage of skilled assistance during delivery to 90 percent and EMOC to 80 percent by 2010.

Figure 2 Coverage of Delivery Assisted by Health personnel 2005 and EMOC 2005

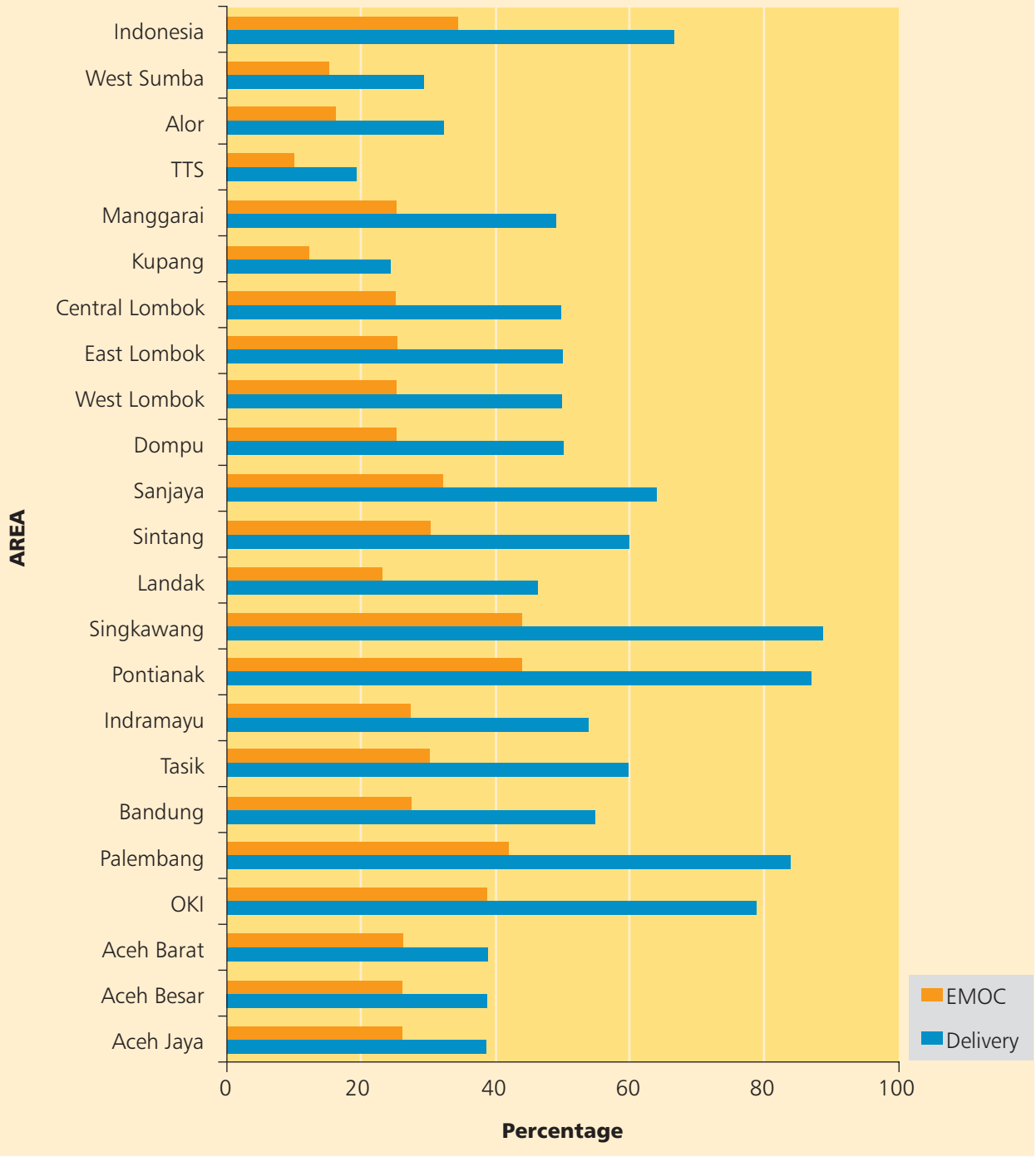
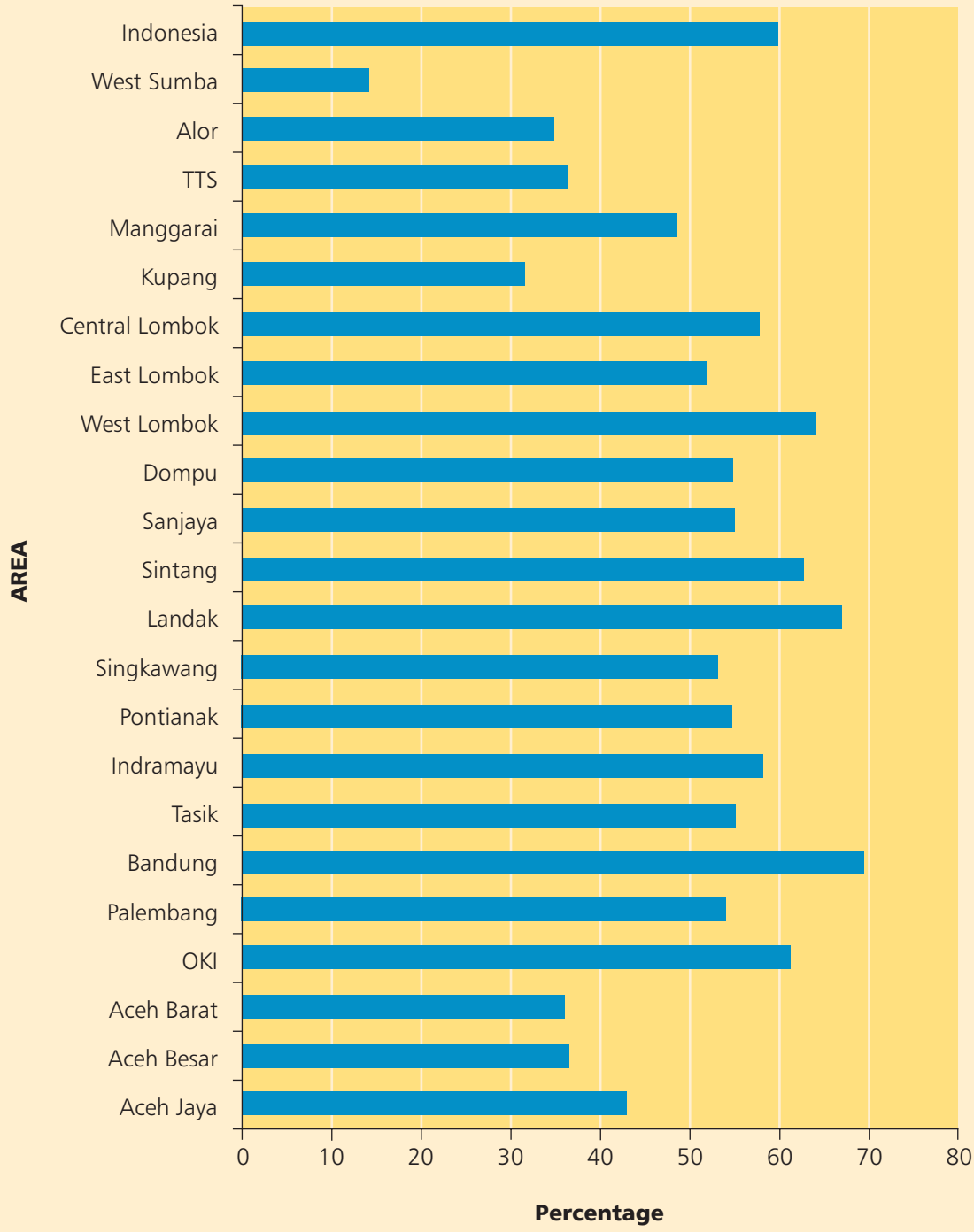


Figure 3 presents the CPR, which is indicated by the percentage of couples using contraception. The data was taken from SUSENAS 2004, which was part of the Indicator

Figure 3 Contraceptive Prevalence 2005



Database 2004 published, by BPS in collaboration with UNFPA. The diagram reveals a consistent coverage pattern, with most the rates being proportional to the economic status of the districts. In more than one-third of the districts, more than half of the couples do not use any form of contraception. These districts have to work harder to accomplish the target CPR of 70 percent by 2015. Detailed figures of RH including FP indicators are presented in Appendix B, displayed as Table 1 for every district.

These 2005 district coverage rates of reproductive health including family planning services were used as the basis for estimating the cost of investment in drug and supplies, first at the current performance, then for meeting the targets of Healthy Indonesia 2010 and finally, the universal coverage[20]
by 2015.

Table 1 outlines the RH cost estimates for the year 2005. The table presents the total as well as per capita cost estimates at current and full coverage rates. At the national level, in 2005, the current coverage needs an investment of USD165.4 million for drugs and supplies, which further increases to USD173.2 million in 2006, and an increase of USD 7.1 million per year to reach USD 201.4 million for touching the 2010 Healthy Indonesia milestones. From 2010, an additional budget of USD 2.2 million per year would be required to achieve the universal coverage in 2015. For 2015, the estimated total investment is USD 212.3 million (refer to Table 2). For the period 2005-2009, Indonesia needs to invest USD 902.3 million for the implementation of RH including FP services

As discussed earlier, the estimated cost of drug and supplies to implement the 33 RH interventions (please see section 5) for each area is proportional to the population size (refer to columns 2 and 3) as well as the coverage rate. For instance, as shown in Table-1, Aceh Jaya with its population of 58,391 required to spend USD 43,414 at the 2005 coverage rate, whereas for Palembang, with a population of 1.3 million, the budget required was USD 1.05 million. As shown in Table-2, for 2006, the targeted expenditure on drugs and supplies for Palembang increased to USD 1.063 million (Table 2, column 2), which was due to both the increase in population size as well as the increase in coverage rates. To accomplish the targets for Healthy Indonesia 2010, the amount of investment should be further raised to USD 1,203,316 at an annual rate of USD 34,975, whereas to attain the universal coverage by 2015, an annual increase of USD 21,902 should be made available.

Table-2 presents a decomposition of the total cost of the RH services in terms of maternal and neonatal health (MNH), STI and FP services. It is noticeable that, in 2005, the total cost of MNH services is higher than the FP component, and the annual increase in the former, required for accomplishing the 2010 healthy Indonesia goals, is also much higher than the latter. However, interestingly, the increase in investment over 2010-2015, needed for attaining the universal coverage in 2015, is less for the total cost of the MNH component as compared to the FP component. This trend can also be seen at the district level. In some districts with low performance in CPR, such as, Aceh, Tasik, Manggarai, Indramayu, Sambas, TTS, Alor, and West Sumba, 'required annual increase' in the MNH cost components would decline over 2010-2015. This could be due to the fact that by 2010 the FP indicators, such as CPR, would improve significantly in order to meet the target of 70 percent coverage rate. The reduced number of pregnant women would also reduce the demand for services such as ANC, deliveries, EMOC and PNC and eventually, in the long run, it might result in a fall in the required investment needed to achieve 100 percent coverage by 2015. This trend is also evident in Table-3.

[20] *100% coverage of ANC, PNC, Delivery Assisted by Personnel and EMOC and 70% coverage of CPR with no need left unmet.*

Table 1

Estimated Total and Per Capita Investment Needed for Drugs and Supplies at 2005 and Full Coverage Rates

(Costs in USD)

Areas	Estimated Total population 2005	Estimated investment needed to implement RH including FP services at 2005 Coverage	Cost per capita at 2005 Coverage	Cost per WRA at 2005 Coverage	Cost per WRA Full coverage at 2005 population
(1)	(2)	(3)	(4)	(5)	(6)
Indonesia	222,781,487	165,425,825	0.74	2.68	4.13
Aceh Jaya	58,391	43,414	0.74	2.98	5.28
Aceh Besar	281,399	236,205	0.84	2.69	5.09
Aceh Barat	149,550	114,190	0.76	2.68	5.07
Palembang	1,315,317	1,050,946	0.80	2.83	3.97
OKI	1,010,031	926,896	0.92	3.37	4.46
Bandung	2,239,624	1,753,243	0.78	2.51	3.63
Tasik	1,643,500	1,217,857	0.74	2.74	4.27
Indramayu	1,678,600	1,285,374	0.77	2.85	4.36
Pontianak	490,095	333,344	0.68	2.36	3.43
Singkawang	164,539	125,645	0.76	2.82	4.09
Landak	305,856	253,180	0.83	3.21	4.54
Sintang	494,039	421,634	0.85	3.10	4.32
Sambas	478,698	417,685	0.87	3.39	4.88
Dompu	213,722	115,351	0.54	2.58	3.83
West Lombok	716,461	569,093	0.79	2.83	3.93
East Lombok	1,082,757	1,105,960	1.02	3.47	5.25
Central Lombok	839,319	852,940	1.02	3.43	4.98
Kupang	338,275	147,792	0.44	1.83	4.29
Manggarai	680,545	528,256	0.78	3.11	5.51
TTS	404,200	213,300	0.53	2.02	4.44
Alor	169,762	105,531	0.62	2.16	4.28
West Sumba	398,104	**204,905**	**0.51**	**2.24**	**4.89**

(Note: Refer to section-5.3 for details of cost estimation)

Table 2

Investment costs per area of study *(in USD)*

Areas	Investment needed in 2006	Investment needed in 2010	Annual Increase in Investment to achieve Healthy Indonesia2010	Investment needed in 2015	Annual Increase in investment to achieve Full Coverage by 2015
(1)	(2)	(3)	(4)=(3-2)/4	(5)	(6)=(5-3)/5
Indonesia					
FP	84,905,792	91,724,325	1,704,633	100,292,589	1,713,653
MNH	82,714,399	104,226,537	5,378,035	109,197,436	994,180
STI	5,649,964	5,512,073	-34,473	2,822,030	-538,009
TOTAL	173,270,155	201,462,935	7,048,195	212,312,045	2,169,822
NAD/Aceh					
Aceh Jaya					
FP	15,843	20,797	1,239	26,809	1,202
MNH	28,716	36,833	2,029	31,341	-1,098
STI	1,613	1,572	-10	757	-163
TOTAL	46,172	59,202	3,258	58,907	-59
Aceh Besar					
FP	86,855	112,550	6,424	147,160	6,922
MNH	164,023	211,609	11,897	202,302	-1,861
STI	8,063	8,376	78	4,343	-807
TOTAL	258,941	332,535	18,399	353,805	4,254
Aceh Barat					
FP	36,828	48,699	2,968	63,068	2,874
MNH	81,310	106,260	6,238	97,243	-1,803
STI	4,262	4,148	-29	1,995	-431
TOTAL	122,400	159,107	9,177	162,306	640
South Sumatra					
OKI					
FP	465,896	512,896	11,750	572,928	12,006
MNH	449,307	531,281	20,494	590,726	11,889
STI	27,857	28,560	176	14,599	-2,792
TOTAL	943,060	1,072,737	32,419	1,178,253	21,103
Palembang					
FP	466,715	534,693	16,995	622,226	17,507
MNH	558,338	630,300	17,991	671,442	8,228
STI	38,366	38,323	-11	19,158	-3,833
TOTAL	1,063,419	1,203,316	34,974	1,312,826	21,902

Table 2 (continued)

Areas	Investment needed in 2006	Investment needed in 2010	Annual Increase in Investment to achieve Healthy Indonesia2010	Investment needed in 2015	Annual Increase in investment to achieve Full Coverage by 2015
(1)	(2)	(3)	(4)=(3-2)/4	(5)	(6)=(5-3)/5
West Java					
Bandung					
FP	982,214	981,696	-130	980,177	-304
MNH	811,863	1,203,941	98,020	1,386,714	36,555
STI	55,427	59,259	958	31,042	-5,643
TOTAL	1,849,504	2,244,896	98,848	2,397,933	30,607
Tasik					
FP	753,097	878,035	31,235	1,042,133	32,820
MNH	517,802	710,409	48,152	745,570	7,032
STI	31,039	37,370	1,583	21,907	-3,093
TOTAL	1,301,938	1,625,814	80,969	1,809,610	36,759
Indramayu					
FP	781,176	833,437	13,065	896,080	12,529
MNH	548,372	742,411	48,510	726,808	-3,121
STI	32,856	39,370	1,629	21,077	-3,659
TOTAL	1,362,404	1,615,218	63,204	1,643,965	5,749
West Kalimantan					
Pontianak					
FP	145,478	163,362	4,471	185,928	4,513
MNH	183,754	236,989	13,309	240,500	702
STI	11,897	12,138	60	6,373	-1,153
TOTAL	341,129	412,489	17,840	432,801	4,062
Singkawang					
FP	51,439	57,392	1,488	64,660	1,454
MNH	71,758	77,171	1,353	84,775	1,521
STI	3,554	3,674	30	1,921	-351
TOTAL	126,751	138,237	2,872	151,356	2,624
Landak					
FP	137,905	140,523	655	143,628	621
MNH	119,447	172,587	13,285	187,621	3,007
STI	7,791	7,736	-14	3,792	-789
TOTAL	265,143	320,846	13,926	335,041	2,839
Sintang					
FP	233,934	253,996	5,016	279,373	5,075
MNH	202,476	269,051	16,644	310,847	8,359
STI	13,472	13,957	121	7,166	-1,358
TOTAL	449,882	537,004	21,781	597,386	12,076

Table 2 (continued)

Areas	Investment needed in 2006	Investment needed in 2010	Annual Increase in Investment to achieve Healthy Indonesia2010	Investment needed in 2015	Annual Increase in investment to achieve Full Coverage by 2015
(1)	(2)	(3)	(4)=(3-2)/4	(5)	(6)=(5-3)/5
Sambas					
FP	212,126	235,724	5,900	265,275	5,910
MNH	211,661	258,699	11,760	259,588	178
STI	12,188	12,223	9	6,060	-1,233
TOTAL	435,975	506,646	17,668	530,923	4,855
West Nusatenggara					
Dompu					
FP	12,852	15,259	602	18,465	641
MNH	15,271	18,669	849	18,947	56
STI	4093	4577	121	3482	-219
TOTAL	32,216	38,504	1,572	40,893	478
West Lombok					
FP	366,301	395,446	7,286	432,021	7,315
MNH	225,735	329,270	25,884	374,484	9,043
STI	16,520	17,772	313	9,781	-1,598
TOTAL	608,556	742,487	33,483	816,287	14,760
Central Lombok					
FP	407,397	455,664	12,067	517,748	12,417
MNH	446,427	651,435	51,252	668,965	3,506
STI	26,403	26,140	-66	13,046	-2,619
TOTAL	880,227	1,133,239	63,253	1,199,758	13,304
East Lombok					
FP	94,456	111,347	4,223	133,452	4,421
MNH	175,192	193,747	4,639	177,759	-3,198
STI	28617	31005	597	22763	-1,648
TOTAL	298,265	336,099	9,459	333,974	-425
East Nusatenggara					
Kupang					
FP	66,498	96,055	7,389	135,334	7,856
MNH	97,509	130,477	8,242	137,713	1,447
STI	5,555	6,655	275	3,862	-559
TOTAL	169,562	233,188	15,907	276,909	8,744
Manggarai					
FP	165,302	204,898	9,899	258,188	10,658
MNH	386,306	519,347	33,260	506,496	-2,570
STI	13,653	16,701	762	9,494	-1,441
TOTAL	565,261	740,946	43,921	774,178	6,646

Table 2 (continued)

Areas	Investment needed in 2006	Investment needed in 2010	Annual Increase in Investment to achieve Healthy Indonesia2010	Investment needed in 2015	Annual Increase in investment to achieve Full Coverage by 2015
(1)	(2)	(3)	(4)=(3-2)/4	(5)	(6)=(5-3)/5
TTS					
FP	113,867	152,853	9,746	203,446	10,119
MNH	117,531	198,829	20,324	173,605	-5,045
STI	7,746	9,630	471	5,381	-850
TOTAL	239,144	361,311	30,542	382,433	4,224
Alor					
FP	48,706	67,255	4,637	91,654	4,880
MNH	65,515	83,991	4,619	81,119	-574
STI	5,050	5,057	2	2,537	-504
TOTAL	119,271	156,303	9,258	175,310	3,801
West Sumba					
FP	30,381	60,111	7,433	101,344	8,247
MNH	186,483	250,879	16,099	192,260	-11,724
STI	8,122	9,271	287	5,083	-838
TOTAL	224,985	320,262	23,819	298,687	-4,315

Table 3 displays the estimated national investment (for RH including FP services) into major components for present and projected CPRs. The table compares the cost of each component of RH services when CPR increases toward 70 percent by 2015, with the cost of the services, when CPR is constant at the 2005 rate. The data shows that in the long run, as the FP services improve, the costs of non-FP reproductive services decline significantly.

In Table 3, the results of the simulation show that, with increasing coverage, the cost of providing the FP services increases by 14.5 percent over 2005-2015. In absolute term, the total cost needed to provide FP services increases from USD 83 million to USD 100.3 million. However, this increase in the investment in FP planning is compensated by the reduction in the cost needed to provide ANC, Delivery Services and Obstetric Complications. As the table exhibits, the cost of ANC and Delivery care reduces by 28.3 percent within 10 years .This significant reduction in cost might be explained by the fact that when CPR increases, the demand for RH services significantly falls. Thus, the number of women requiring ANC and delivery services would be lower, and this, in turn would reduce the number of cases requiring EMOC.

Table 3

2015 RH costs with CPR constant at 2005 rate and increased CPR (70%)
(Costs are in USD)

RH Services	2005 CPR at 60%	2015 CPR constant at 2005 rate	2015 CPR increases to 70%	Percent difference	Changes in costing over 10 years
Family Planning	83,208,920	85,799,555	100,292,589	14.5%	14,493,034
ANC and Delivery Care	51,001,965	57,554,425	44,848,470	-28.3%	-12,705,956
Obstetric Complications	20,512,313	64,206,858	59,242,737	-8.4%	-4,964,122
Other Maternal Conditions	826,895	831,354	647,821	-28.3%	-183,533
Newborn Interventions	4,447,180	5,721,515	4,458,409	-28.3%	-1,263,106
STI	5,428,551	2,822,020	2,822,020	0.0%	0
OVERALL TOTAL	165,425,825	216,935,727	212,312,045	-2.2%	-4,623,682
TOTAL PER CAPITA	0.74	0.88	0.86	-2.2%	-0.02
Number of WRA	61,768,977	67,618,377	67,618,377	0.0%	0
Total per WRA	2.68	3.21	3.11	-3.0%	-0.09

As discussed earlier, at the national level, the total cost of RH services for the period 2005-2009 is USD 902.3 million. Table-1 shows that, based on the current low coverage rate, the cost per capita is about USD 0.74 per year. In majority of the districts, cost per capita ranges from USD 0.70 to 0.90. However, in Dompu, Kupang, TTS, Alor, and West Sumba districts, per capita cost is considerably lower than the national average and most of the other districts, whereas East and Central Lombok show a relatively higher estimate of per capita cost. It would be interesting to see why per capita cost varies widely, while the intervention is standard. Variations in cost per capita might be partly due to the variations in contraceptive method mix and type of EMOC services prevalent in the districts. However, this issue needs further exploration.

Since cost per capita is a very general measure, this study estimates the cost per WRA[21] . This is presented in column 5 of Table 1. In majority of the districts, at the current coverage rate, the average cost per WRA ranges between USD 2 to 3 per year. In contrast, when the coverage is universal, the cost per WRA is about USD 4.0 per year[22], or only

[21] *Cost per WRA is computed as total cost divided by total number of WRA*
[22] *Cost per WRA increases for universal coverage, as the total cost increases, while total number of WRA remains the same.*

USD 0.33 per month, which is indeed an insignificant amount. The local government therefore should be able to look for funding to fulfill women's reproductive rights to good quality RH services in compliance with the WHO standard of treatment.

7. Funding Gap

As has been discussed in the previous section, to provide the RH services for the period of 2005-2009, an investment of 902.3 million is required to meet the needs of drugs and supplies for RH including FP services, which is essentially a substantial amount and government budget falls short of this required investment. To figure out the funding gap, we need data on budget allocation for RH including FP services. However, it is difficult to obtain data specifically on these accounts, which reflects policy-makers' lack of awareness and conviction towards the fulfillment of ICPD commitments.

For instance, in 2005, USD 59.5 million was allocated for Family Planning programs (Nota Keuangan, Ministry of Finance, 2005). Without the explicit disaggregated data, it is difficult to compare these allocated budgets with the estimated RH costs. However, we get an indication of this funding gap from the data presented in the 2004 Human Development Report (UNDP), which suggests that in 2001 the public health expenditure was 0.6 percent of the GDP and private health expenditure was 1.8 percent, implying that 25 percent of total health expenditure was covered by the government, while the rest was borne by the people themselves. Given data constraints and the significant budgetary gap in the health expenditure, this section focuses on the most underprivileged strata of the population needing immediate attention.

The following table (Table 4) presents the estimated cost for the provision of RH including FP services for the poor[23] people . The number of poor people is derived from SUSENAS 2004 (BPS). It could be noted that districts with poor performance of RH including FP services also have higher percentage of poor people. Aceh, OKI, Landak, Dompu, West Lombok, Kupang, Manggarai, TTS, Alor and West Sumba are the poorest areas, with 25 percent or more of the population living below the poverty line. So these districts evidently require immediate attention. However, the absolute amount of funding needed in these districts may still be lower than some of the better off districts, e.g., in 2006, Bandung needs USD 62,513 for the provision of free RH services to the poor, whereas a much worse off district Aceh Jaya, needs an allocation of USD 14,590. This is due to the fact that although Bandung has much lower percentage of people living below the poverty line, in absolute terms the number is much higher than Aceh Jaya because of a larger total population.

[23] *The estimated budget that should be made available for free RH including FP services to the poor people is derived by multiplying the total estimated cost by the percentage of poor people*

Table 4

Minimal Funding Required for the provision of RH services for the Poor

(Costs in USD)

Areas	Investment needed in 2006	Percentage of Poor People in 2004 (BPS	Minimal funding Required for providing RH services to the poor
(1)	(2)	(3)	(4)=(2)*(3)
NAD/Aceh			
Aceh Jaya			
FP	15,843	31.6	5,006
MNH	28,716	31.6	9,074
STI	1,613	31.6	510
TOTAL	46,172	31.6	14,590
Aceh Besar			
FP	86,855	29.9	25,970
MNH	164,023	29.9	49,043
STI	8,063	29.9	2,411
TOTAL	258,941	29.9	77,423
Aceh Barat			
FP	36,828	35.65	13,129
MNH	81,310	35.65	28,987
STI	4,262	35.65	1,519
TOTAL	122,400	35.65	43,636
South Sumatra			
OKI			
FP	465,896	22.02	102,590
MNH	449,307	22.02	98,937
STI	27,857	22.02	6,134
TOTAL	943,060	22.02	207,662
Palembang			
FP	466,715	9.57	44,665
MNH	558,338	9.57	53,433
STI	38,366	9.57	3,672
TOTAL	1,063,419	9.57	101,769
West Java			
Bandung			
FP	982,214	3.38	33,199
MNH	811,863	3.38	27,441
STI	55,427	3.38	1,873
TOTAL	1,849,504	3.38	62,513

Table 4 (continued)

Areas	Investment needed in 2006	Percentage of Poor People in 2004 (BPS	Minimal funding Required for providing RH services to the poor
(1)	(2)	(3)	(4)=(2)*(3)
Tasik			
FP	753,097	16.14	121,550
MNH	517,802	16.14	83,573
STI	31,039	16.14	5,010
TOTAL	1,301,938	16.14	210,133
Indramayu			
FP	781,176	16.49	128,816
MNH	548,372	16.49	90,427
STI	32,856	16.49	5,418
TOTAL	1,362,404	16.49	224,660
West Kalimantan			
Pontianak			
FP	145,478	6.47	9,412
MNH	183,754	6.47	11,889
STI	11,897	6.47	770
TOTAL	341,129	6.47	22,071
Singkawang			
FP	51,439	9.78	5,031
MNH	71,758	9.78	7,018
STI	3,554	9.78	348
TOTAL	126,751	9.78	12,396
Landak			
FP	137,905	24.68	34,035
MNH	119,447	24.68	29,480
STI	7,791	24.68	1,923
TOTAL	265,143	24.68	65,437
Sintang			
FP	233,934	16.6	38,833
MNH	202,476	16.6	33,611
STI	13,472	16.6	2,236
TOTAL	449,882	16.6	74,680
Sambas			
FP	212,126	14.46	30,673
MNH	211,661	14.46	30,606
STI	12,188	14.46	1,762
TOTAL	435,975	14.46	63,042

Table 4 (continued)

Areas	Investment needed in 2006	Percentage of Poor People in 2004 (BPS	Minimal funding Required for providing RH services to the poor
(1)	(2)	(3)	(4)=(2)*(3)
West Nusatenggara			
Dompu			
FP	12,852	26.49	3,404
MNH	15,271	26.49	4,045
STI	4093	26.49	1,084
TOTAL	32,216	26.49	8,534
West Lombok			
FP	366,301	31.87	116,740
MNH	225,735	31.87	71,942
STI	16,520	31.87	5,265
TOTAL	608,556	31.87	193,947
Central Lombok			
FP	407,397	27.1	110,405
MNH	446,427	27.1	120,982
STI	26,403	27.1	7,155
TOTAL	880,227	27.1	238,541
East Lombok			
FP	94,456	26.83	25,343
MNH	175,192	26.83	47,004
STI	28617	26.83	7,678
TOTAL	298,265	26.83	80,024
East Nusatenggara			
Kupang			
FP	66,498	32.68	21,731
MNH	97,509	32.68	31,866
STI	5,555	32.68	1,815
TOTAL	169,562	32.68	55,413
Manggarai			
FP	165,302	31.31	51,756
MNH	386,306	31.31	120,953
STI	13,653	31.31	4,275
TOTAL	565,261	31.31	176,983
TTS			
FP	113,867	37.38	42,564
MNH	117,531	37.38	43,933
STI	7,746	37.38	2,895
TOTAL	239,144	37.38	89,392

Table 4 (continued)

Areas	Investment needed in 2006	Percentage of Poor People in 2004 (BPS	Minimal funding Required for providing RH services to the poor
(1)	(2)	(3)	(4)=(2)*(3)
Alor			
FP	48,706	29.06	14,154
MNH	65,515	29.06	19,039
STI	5,050	29.06	1,467
TOTAL	119,271	29.06	34,660
West Sumba			
FP	30,381	42.04	12,772
MNH	186,483	42.04	78,397
STI	8,122	42.04	3,414
TOTAL	224,985	42.04	94,584

8. Limitations of the model/study

The RH costing model described above (Weissman, 2005) does not include interventions related to prevention and treatment of HIV/AIDS, although they are burning reproductive health issues today. The Millennium Project offers separate models for them. The model also does not include the treatment of infertility, and the detection and treatment of reproductive cancers such as ovarian, and breast cancer.

As discussed earlier, though the model offers a method of estimating staff requirement and personnel cost, the estimates do not seem realistic, and the additional costs of outreach activities are not taken into consideration.

Another limitation of the study is the uniform unit cost assumption throughout the country. The actual cost of providing RH services will be much higher than the estimated cost.

9. Advocacy: How to make policy makers invest in reproductive health services?

The 1994 International Conference on Population and Development (ICPD), Cairo was a watershed event, which for the first time recognized the centrality of reproductive rights and the need for a holistic approach in all discussions of populations and development. ICPD shifted the focus of the population policy from an emphasis on achieving demographic goals of reducing the population growth, to adopting a comprehensive reproductive health policy. The ICPD Programme of Action also endorses a modified version of the WHO's definition of the term "reproductive health'. Paragraph 7.2 of the document states that, *"Reproductive health is a state of complete physical and mental well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and its functions and process. Reproductive health therefore implies that people are able to have a satisfying and safe sex life that they have the capability to reproduce and freedom to decide if, when and how often to do so."* As Anand (cited in Sen et al, 1994) suggests, it is ethically sound to view "populations" as people. He argues that the intrinsic importance of individual well-being and freedom, including the right of reproductive choice, far outweighs 'an instrumental rationale for population control'.

Correa and Petchesky (cited in Sen et al, 1994) assert that states should be obliged to provide the enabling conditions required for realizing reproductive rights. An integrated reproductive health approach is one of the enabling conditions, which dissolves the boundaries among human rights, sexuality, reproduction and development.

This integrated reproductive health approach calls for a range of reproductive services. Paragraph 7.6 urges governments to provide women and men with pre-and post natal care, safe delivery, and treatment of infertility, reproductive tract infections, and sexually transmitted diseases.

Indonesia is committed to the ICPD Programme of Action and efforts have been made to implement an integrated health policy. Reproductive health including family planning services have been provided over the years. As discussed earlier, there have been improvements in the coverage rates of ante-and post natal care, and skilled assistance during delivery, and the contraceptive prevalence rate has also been stable since the economic crisis. However, Maternal Mortality Ratio remains alarming at 307 per 100,000 births and Infant Mortality Ratio is also high at 35 per 1000 live births. Neonatal deaths largely contribute to the high Infant Mortality Ratio. These rates vary across provinces and districts. West Java, West Nusatenggara and East Nusatenggara are the areas characterized by high infant mortality ratios, high birth rates and low coverage of deliveries attended by skilled personnel.

RH services, such as provision of ante-and post natal care, and skilled assistance during delivery can reduce the MMR and IMR significantly by improving the health of the mother as well as the child, and preventing several fatal infectious diseases, low birth weight and neo-natal mortality. Integration of adolescents in reproductive health care is crucial, as it will enable them to enter a safer motherhood, avoid unsafe sexual behaviors and thereby reduce the risk of STIs and HIV/AIDs.

In most cases unavailability and inaccessibility of RH services are responsible for high mortality ratios. Poor health infrastructure is one of the major reasons for poor reproductive health performances of some areas. Poverty is the main reason for the inaccessibility of reproductive health care services. This is especially true for the emergency obstetric care services. Though the referral system seems to be improving with the increase in the coverage of deliveries attended by skilled personnel, these women have to pay for the emergency obstetric care. In most cases, delay in the decision to seek professional help for obstetric complications can be attributed to the lack of affordability. In this respect governments have a crucial role to play. To achieve the MDG milestones by 2015, investment in integrated RH including FP services is imperative. It calls for a concerted effort and involvement of a number of stakeholders at various levels. Community participation, private partnership and consortium of donor agencies might be sought.

As has been demonstrated before, USD 0.33 per month is needed per woman to provide good quality of reproductive health services, which is indeed an insignificant amount. However, the total investment, which is proportional to the population size, is a staggering amount: for the period 2005-2009, an investment of 902.3 million in drugs and supplies is required to meet RH goals.

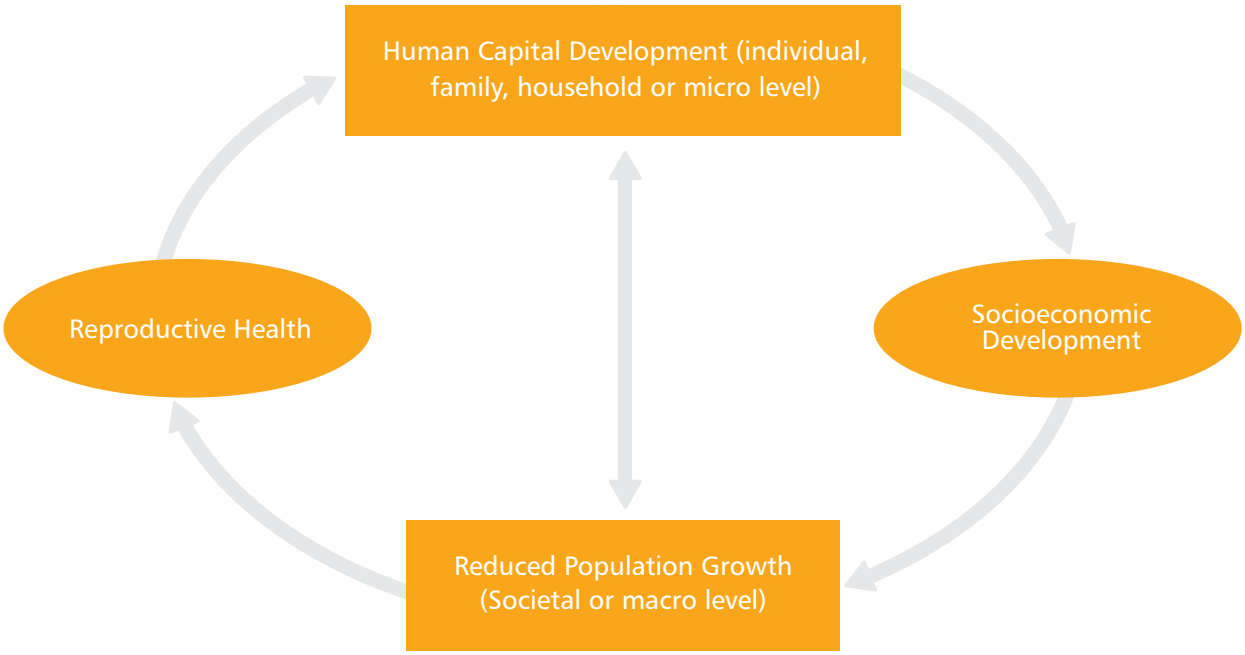
It is not always easy to persuade governments to invest in reproductive health services. Especially in the era of decentralization, policy makers seem to prefer investing in physical projects, as they have visible outcomes in a relatively short period of time, whereas investment in RH services does not produce any tangible outcome in the short run. In most of the cases, policy makers are either unaware of this long-term effect, or they prefer to see the outcomes of their investments while they are still in power.

Thus, advocacy has an important role to play in this respect. As Sen et al (1994) suggest, investing in people's health and reproductive right is not only worthy in its own right, it is even more conducive to population stabilization than narrowly conceived policies of population control. As history suggests, countries that have accomplished the goal of population stabilization, have achieved so through promoting better quality of life.

In the long run, investing in reproductive health care will produce healthy human resources with higher productivity, thereby contributing to economic prosperity. For the purpose of advocacy, this broader context and cumulative return of the RH investment should be communicated to the policy makers.

The impact of this investment can be demonstrated first at the micro level, in terms of individual and household well-being. At the macro level, the efficiency of this investment can be viewed from the improved socio-economic and demographic indicators. The following diagram establishes these inter-linkages.

Figure 1: Simple Conceptual Framework (adapted from Seligman et.al.; 1997)



This diagram is the simple conceptual framework of Seligman et al (1997).This simple framework states that improvement in RH including FP services based on an ethical, empowerment approach improves the health and well being of the people and contributes to population stabilization. Improved health and productivity result in reduction in poverty, which in turn improves the overall quality of life. As mentioned earlier, better quality of life stabilizes the population at the macro level, and at the micro level reduced number of children improves the reproductive health of women by reducing their reproductive burden. This would also enable women to participate in economic, social and political activities, which would enhance her confidence and expand her life choices and also contribute to the socioeconomic development of the society. Improved reproductive health and longevity of mothers has an intergenerational effect in terms of better attention and care given to each child, which results in their improved health and overall well-being.

Thus, investment in RH including FP services has multiple direct and indirect returns at the individual, household and societal levels. It not only promotes individual's basic human rights, improves the quality of the human resources and stabilizes population; it also has long term socio-economic impacts in terms of better quality of life of women and men, and better physical and cognitive development of the children. This wider context provides enough justification to promote RH including FP expenses as a worthy investment.

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List of Input Data Used for the Calculation of RH Costing Model, Data Sources And Description



No	Input Data	Data Sources	Discriptions
1. Population (2005-2015)			
	Total Population (2005-2015)	1. Indonesia: UN Population Projection, 2004 Revision 2. Province Level: Population Projection 2000-2025, by BPS, Bappenas and UNFPA, 2005 3. District Level: UNFPA 6th Country Program. *Laporan Indikator Data Base 2004. Untuk 44 Kabupaten Terpilih.* (Report on the Data Base Indicators, for 44 selected districts, 2004). BPS and UNFPA, 2005. 4. For districts in NTB and Aceh, figures are taken *Kabupaten Dalam Angka*, (Districts in Figures), published by BPS District Offices.	Number of population of the selected area.
	Population Growth Rate	1. Indonesia: UN Population Projection, 2004 Revision 2. Province Level: Population Projection 2000-2025, by BPS, Bappenas and UNFPA, 2005 3. District Level: UNFPA 6th Country Program. *Laporan Indikator Data Base 2004. Untuk 44 Kabupaten Terpilih.* (Report on the Data Base Indicators, for 44 selected districts, 2004). BPS and UNFPA, 2005. 4. For districts in NTB and Aceh, figures are taken from *Kabupaten Dalam Angka,* (Districts in Numbers), published by BPS District Offices.	Many times rates are calculated from two point of times of total population
	Number of women at Reproductive Age - WRA (15-49), 2005 - 2015	1. Indonesia: UN Population Projection, 2004 Revision 2. Province Level: Population Projection 2000-2025 by BPS, Bappenas and UNFPA, 2005 based on 2000 Census 3. For districts level figures are taken from *Kabupaten Dalam Angka,* (Districts in Numbers), published by BPS District Offices.	
	Number of women at Reproductive Age (15-49) by age group (2005-2015)	1. Indonesia: UN Population Projection, 2004 Revision 2. Province Level: Population Projection 2000-2025 by BPS, Bappenas and UNFPA, 2005 based on 2000 Census 3. For district level figures are taken from Kabupaten Dalam Angka, (Districts in Figures), published by BPS District Offices. *4. Hasil Pendataan Keluarga* (Report on Family Registration), BKKBN (National Family Planning Board)	

No	Input Data	Data Sources	Discriptions
	Percent of women married (15-49)	1. Indonesia: Indonesia Population Census 2000. 2. Province Level: BPS, 2000 Population Census. 3. OR, *Hasil Pendataan Keluarga* (Report on Family Registration), BKKBN (National Family Planning Board)	1. At the province level percentages of women married (15-49) are calculated from the 2000 Census. 2. Most data on marriage are tabulated for women 10 years plus, therefore for the district level the percentage of women 15-49 who were married is assumed to follow the province level, distinguishing whether it is urban or rural areas. 3. The software treated the % of married women will go down by 5% in 2015.
	Crude Birth Rate - CBR, (per 1000 population)	1. Indonesia: UN Population Division 2. Province Level: Population Projection, Bappenas, BPS, UNFPA, 2000 Population C ensus. 3. District level: UNFPA 6Th Country Program. *Laporan Indikator Data Base 2004. Untuk 44 Kabupaten Terpilih.* (Report on the Data Base Indicators, for 44 selected districts, 2004). BPS and UNFPA, 2005. 4. District level: figures are taken from Kabupaten Dalam Angka, (Districts in Figures), published by BPS District Offices.	1. CBR is used to estimate the number of births (CBR*total population)/1000 2. Births*% of delivery care = number of women requiring delivery care. 3. Births*1.05 = number of women requiring ANC (not all pregnant women will have full delivery) 4. These births are compared with results of births estimation from Total Fertility Rate (TFR) calculated using Bongaart's model of Proximate Determinant of Fertility. 5. Projection of CBR 2005-2015 is based on figures from UN Population Projection, rev. 2004 (National), or Population Projection 2000-2025 by BPS, Bappenas and UNFPA, 2005. 6. For the district level, the trend is assumed to follow the related Province level.
	Total Fertility Rate (TFR) and Age Specific Fertility Rate (ASFR) 15-49.	1. Indonesia: UN Population Division 2. Province Level: Population Projection, Bappenas, BPS, UNFPA, 2000 Population Census. 3. District level: UNFPA 6Th Country Program. *Laporan Indikator Data Base 2004. Untuk 44 Kabupaten Terpilih.* (Report on the Data Base Indicators, for 44 selected districts, 2004). BPS and UNFPA, 2005. 4. District level: figures from Kabupaten Dalam Angka, (Districts in Figures), published by BPS are used as data source.	1. Data on ASFR and TFR are used to estimate number of births using Bongaarts Model of Proximate Determinants of Fertility. 2. The trend of TFR and ASFR for the district level are assumed to follow the pattern of related province.
	HIV Prevalence (% women 15-49)	No data available	The software estimates the rate to be 0.1% based on Report on Global AIDS Epidemic (UNAIDS, 2004)

No	Input Data	Data Sources	Discriptions
2. Coverage Rates			
	Ante Natal Care (% of all pregnant women)	1. Indonesia: Indonesian Demographic and Health Survey (IDHS) 2002/2003 2. Province Level: Publication of the ndonesian Demographic and Health Survey (IDHS) 2002/2003, 3. For the district level: Profil Kesehatan Propinsi (Provincial Health Profiles), published by the Provincial Health Offices. 4. Supplement: figures from Report on LB 3KIA/KB (Report on MCH and FP programmes).	The software estimated ANC to be 100% in 2015 (every pregnant women went to have complete ANC) For the province level: ANC coverage used for the province level is taken from IDHS publication matched with special tabulation from DHS raw data.
	Skilled attendance at delivery (% percentage of all deliveries)	1. Indonesia: Indonesian Demographic and Health Survey (IDHS) 2002/2003 2. Province Level: Indonesian Demographic and Health Survey (IDHS) 2002/2003, special tabulation from raw data. 3. District: UNFPA 6Th Country Program. *Laporan Indikator Data Base 2004. Untuk 44 Kabupaten Terpilih.* (Report on the Data Base Indicator, for 44 selected districts, 2004). BPS and UNFPA. 4. OR figures from Report on LB 3KIA/KB (Report on MCH and FP programmes).	The software estimated Delivery Attended by Skilled Health Personnel to be 100% in 2015. For the province level: Data for coverage of Skilled Attendance at Delivery is taken from IDHS publication matched with special tabulation from DHS raw data. For the district level: UNFPA & BPS Data Base or Report on MCH and FP programmes.
	Postpartum Care (% of all deliveries)	1. Indonesia: Indonesian Demographic and Health Survey (IDHS) 2002/2003 2. Province Level: Indonesian Demographic and Health Survey (IDHS) 2002/2003 3. Figures from Report on LB 3KIA/KB (Report on MCH and FP programmes).	The software estimated that coverage of Postpartum Care should reached 100% by 2015. For the province level: Data for coverage of Skilled Attendance at Delivery is taken from IDHS publication matched with special tabulation from DHS raw data.
	Emergency obstetric care (% of delivery coverage)	1. Data not available	It is estimated that obstetric complication is 15% of all pregnancies. For the calculation of % of women requiring management of obstetric complication EMOC coverage is assumed to be 50% of delivery coverage. It is targeted to be 100% treatment of EMOC in 2015. For the province level: Some data for EMOC coverage can be derived from IDHS publication matched with special data processing from DHS raw data.

No	Input Data	Data Sources	Discriptions
			For the district level percent of women requiring management of obstetric complication is assumed to follow provincial patterns.
	STI testing and treatment	No data available	It is assumed to be 50% on ANC coverage, and estimated to be 100% treatment in 2015. Some districts under the UNFPA Projects on Integrated Reproductive Health Care conducted the STI testing and treatment, however, it is difficult to obtain data on the coverage rate, especially among pregnant women.
3. Family Planning			
a) Short-term Methods			
	Pill	Not es for all contraceptive use coverage: 1. For Indonesia and the province level: coverage rates and method mix are derived from the IDHS 2002/2003 2. For the district level: UNFPA 6Th Country Program. *Laporan Indikator Data Base 2004. Untuk 44 Kabupaten Terpilih.* (Report on the Data Base Indicators, for 44 selected districts, 2004). BPS and UNFPA, 2005. 3. Information on CPR for the district levels are also available from Susenas 2004 and from family planning districts offices. But data are not consistent.	1. The proportion of method mix is assumed to be constant during 2005-2015 2. Coverage found from IDHS 2002/3 or Susenas 2004 data are lower than those recorded by the District level BKKBN (or similar institutions). 3. At the district CPR is selected whether from Susenas 2004 or from the FP offices, depends on the consistencies with other data they are CBR and TFR. 4. In many cases we prefer to use CPR coverage from Susenas because of statistical consideration, but apply records on the composition of contraceptive method used (method mix) supplied by the family planning offices.
	Injection		5. Percentages of method mix are calculated both on the basis of number of married women 15-49, and percentage on the basis of married women using contraception.
	Condom Male		6. Number of new acceptors are estimated using FamPlan FP Projection (Spectrum).
	Condom Female		
	Other Modern Methods		
	Traditional Methods		
b) Long-term Methods			

No	Input Data	Data Sources	Discriptions
	IUD		
	Norplant		
	Female sterilization		
	Male sterilization		
4. Family Planning Target (To choose one of the following options)			
	1) Achieve a Specific Contraceptive Prevalence		
	Current CPR	1. Indonesia: IDHS 2002/3 2. Province level: IDHS 2002/3 at the province level 3. District: UNFPA 6Th Country Program. *Laporan Indikator Data Base 2004. Untuk 44 Kabupaten Terpilih.* (Report on the Data Base Indicator, for 44 selected districts, 2004). BPS and UNFPA. 4. Or BKKBN report at the district level	Please see notes above.
	CPR to be achieved by 2015		The software set 60% of CPR to be achieved in 2015
	2) Reduce unmet need		
	Current Unmet Need (% of married women who wanted no more children but not using contraception)	1. Indonesia: IDHS 2002/3 2. Province level: IDHS 2002/3 at the province level	1. Data for Unmet Need for province level is taken from IDHS 2002/3 tabulations and matched with special tabulation from raw data. 2. For the district level, no data is available, therefore it is assumed to have same coverage rate with those at the province level.
	Unmet need by 2015 to be reduced to …		The software set unmet need to be reduced to 0% in 2015
	3) Increase in Proportion of Demand Satisfied		
	Current Proportion Demand Satisfied	1. Indonesia: derived from IDHS 2002/3 2. Province level: derived from IDHS 2002/3 at the province level	1. Proportion of demand satisfied is calculated from the CPR divided by the coverage rate of CPR plus the coverage rate of Unmet Need. 2. For the district level, no data is available, therefore it is assumed to have same coverage rate with those at the province level.
	% Demand Satisfied by 2015		The software set 90% of demand satisfied in 2015.
5. Method Effectiveness			
a) Short-term Methods			
	Pill	92% given	15 cycles per CYP
	Injection	100% given	43-4 injections per CYP
	Condom Male	81%	120 condoms per CYP

No	Input Data	Data Sources	Discriptions
	Condom Female	81%	120 condoms per CYP
	Other modern methods	81%	
	Traditional Methods	50%	
b) Long-term method			
	IUD	96%	
	Norplant	100 %	
	Female sterilization	100 %	
	Male sterilization	100 %	
6. Other proximate Determinants of Fertility			
	Percent of WRA in union	See percent of women married	
	Postpartum infecundability (in months)	1. Indonesia: IDHS 2002/3 2. Pro vince level: IDHS 2002/3 at the province level (sp ecial tabulation from raw data)	Figure for the district level is assumed to be at the same level to those for the province level.
	Total abortion rate (per 1000 WRA)	No data available	
	Involuntary Sterility (% of WRA)	1. Indonesia: IDHS 2002/3 2. Province level: IDHS 2002/3 at the province level (special tabulation from raw data)	Figure for the district level is assumed to be at the same level to those for the province level.
7. Maternal and Newborn Health **8. Incidence/Prevalence and Delivery Complications**			
Obstetric Complications - % of deliveries requiring management of :			
	Prolonged labor >18 hours)	No data available	Assumed to be about 1.2x incidence of obstructed labour
	Forceps or Vacuum Assisted Delivery (AVD)	No data available	Assumed that 50% of prolonged labor cases required AVD
	C-section	National and Province level: IDHS 2002/3 District level: assumed to have the provincial pattern	Or 7.2% WHO Global Burden Disease, 2000
	Postpartum hemorrhage	Nati onal and Province level: IDHS 2002/3 District level: assumed to have the provincial pattern	Or 5.1% WHO Global Burden Disease, 2000
	Puerperal sepsis	Nati onal and Province level: IDHS 2002/3 District level: assumed to have the provincial pattern	Or 5.0% WHO Global Burden Disease, 2000
	Hypertensive disorders (eclampsia & pre eclampsia)	Nati onal and Province level: IDHS 2002/3 District level: assumed to have the provincial pattern	Or 5.1% WHO Global Burden Disease, 2000
	Post-abortion Complications	No data available	Or 5.8% WHO Global Burden Disease, 2000
9. Obstetric Fistula			
	Annual fistula number of fistula cases	No incidence - No data available	
	Backlog of fistula cases that require repair	No incidence – no data available	
10. Other Maternal Conditions - % of pregnant women requiring treatment			
	Malaria prevention	No data available. If available it is difficult to indicate how many percent of the activities is targeted to pregnant women.	The software assumed 100% prevention in high malaria region.

No	Input Data	Data Sources	Discriptions
	Malaria treatment	No data available. If available it is difficult to indicate howmany percent of the activities is targeted to pregnant wome.	The software assumed 1% prevention in high malaria region (WHO, 2000). Remains constant to 2015.
	Urinary tract infection	No data available	The software assumed 25% coverage (Global Estimate). Remains constant to 2015.
	Mastitis	No data available	The software assumed 15% coverage (Global Estimate). Remains constant to 2015.
11. Incidence of newborn complications			
% of newborn requiring :			
	Prevention of opthalmia neonaturum	No data available	Should be 100%
	Treatment of neonatal complications (LBW, sepsis)	No data available	About 10% in 2005 and reduced to 5% with the increase in skilled attendance, incidence should decline.
	% of mother and newborns requiring PMTCT	No data available	Assumed to be the same as HIV prevalence among women 15-49 (see above).
12. Sexually Transmitted Infections Prevalence of STIs			
% of women 15-49 years having:			
	Chlamydia	No data available	Assumed to be 0.4% in 2005, reduced to 1.7% in 2015 (WHO, 2001)
	Gonorrhea	No data available	Assumed to be 3.2% in 2005, reduced to 0.8% in 2015 (WHO, 2001)
	Syphilis	No data available	Assumed to be 5.0% in 2005, reduced to 0.1% in 2015 (WHO, 2001)
	Trichomonas	No data available	Assumed to be 8.4% in 2005, reduced to 3.0% in 2015 (WHO, 2001)
	Pelvic Inflammatory Disease	No data available	Assumed to be 1.7% in 2005, reduced to 0.6% in 2015 (WHO, 2001)
13. Health Personnel and Salaries			
	Auxiliary/Attendant	Calculated based on patterns of salaries in the SEARO B regulations/list	Each staff is assumed to work 30 hrs per week with 48 weeks per year.
	Nurse/midwife	Calculated based on patterns of salaries in the SEARO B regulations/list	Each staff is assumed to work 30 hrs per week with 48 weeks per year.
	General Physician	Calculated based on patterns of salaries in the SEARO B regulations/list	Each staff is assumed to work 30 hrs per week with 48 weeks per year.
	Obstetrician	Calculated based on patterns of salaries in the SEARO B regulations/list	Each staff is assumed to work 30 hrs per week with 48 weeks per year.
	Paediatrician	Calculated based on patterns of salaries in the SEARO B regulations/list	Each staff is assumed to work 30 hrs per week with 48 weeks per year.
	Anaesthesist	Calculated based on patterns of salaries in the SEARO B regulations/list	Each staff is assumed to work 30 hrs per week with 48 weeks per year.
	Lab technician	Calculated based on patterns of salaries in the SEARO B regulations/list	Each staff is assumed to work 30 hrs per week with 48 weeks per year.

Result of Reproductive Health Costing



APPENDIX B Result of Reproductive Health Costing

Result of Reproductive Health Costing

INDONESIA



TABLE SUMMARY

Reproductive Health Costing using UNFPA Model
INDONESIA (in USD)

1. Cost for drugs and supplies *(in USD)*

INDONESIA

	Component	Year						
		2005	2006	2007	2008	2009	2010	2011
1	Family Planning	83,208,920	84,905,792	86,606,145	88,309,603	90,015,788	91,724,325	100,292,589
2	ANC and delivery care	51,001,965	51,094,868	51,029,997	50,827,941	50,512,783	50,061,204	44,848,470
3	Obstetric complication	20,512,313	26,179,835	31,808,567	37,391,257	42,925,445	48,396,951	59,242,737
4	Other maternal condition	826,895	839,087	821,495	802,417	782,311	760,881	647,821
5	Newborn intervention	4,447,180	4,600,608	4,733,347	4,845,407	4,936,805	5,007,501	4,458,409
6	Sexually Transmitted Diseases	5,428,551	5,649,964	5,771,886	5,791,453	5,705,803	5,512,073	2,822,020
	TOTAL	**165,425,825**	**173,270,155**	**180,771,437**	**187,968,077**	**194,878,936**	**201,462,935**	**212,312,045**
	TOTAL PER CAPITA	**0.74**	**0.77**	**0.79**	**0.82**	**0.84**	**0.86**	**0.86**
	Number of WRA	**61,768,977**	**62,353,917**	**62,938,857**	**63,523,797**	**64,108,737**	**64,693,677**	**67,618,377**
	Total per WRA	**2.68**	**2.78**	**2.87**	**2.96**	**3.04**	**3.11**	**3.14**

2. Cost for drugs, supplies and personnel *(in USD)*

	Component	Year						
		2005	2006	2007	2008	2009	2010	2011
1	Family Planning	90,288,431	92,129,177	93,973,693	95,821,570	97,672,400	99,525,775	108,820,328
2	ANC and delivery care	64,964,114	65,281,791	65,281,791	65,314,339	65,084,428	64,669,624	58,344,460
3	Obstetric complication	24,592,316	31,375,226	31,375,226	44,773,480	51,376,760	57,897,507	70,689,349
4	Other maternal condition	1,626,368	1,657,820	1,657,820	1,585,369	1,545,646	1,503,305	1,279,927
5	Newborn intervention	6,196,286	6,409,217	6,409,217	6,748,456	6,874,791	6,972,235	6,202,138
6	Sexually Transmitted Diseases	7,031,783	7,339,187	7,339,187	7,578,170	7,502,578	7,292,150	4,091,980
	TOTAL	**194,699,297**	**204,192,418**	**206,036,934**	**221,821,383**	**230,056,602**	**237,860,595**	**249,428,183**
	TOTAL PER CAPITA	**0.87**	**0.91**	**0.91**	**0.96**	**0.99**	**1.01**	**1.01**
	Number of WRA	**61,768,977**	**62,353,917**	**62,353,917**	**63,523,797**	**64,108,737**	**64,693,677**	**67,618,377**
	Total per WRA	**3.15**	**3.27**	**3.30**	**3.49**	**3.59**	**3.68**	**3.69**

B 1

TABLE 1 CURRENT COVERAGE RATES, TARGET OF HEALTHY INDONESIA 2010, AND FULL COVERAGE 2015

INDONESIA

1. Family Planning

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Contraceptive Prevalence Rate (all methods)	60%	61%	62%	63%	64%	65%	66%	67%	68%	69%	70%
Remaining Unmet Need	9%	8%	7%	6%	5%	4%	3%	3%	2%	1%	0%
Proportion of Demand Satisfied	88%	89%	90%	91%	93%	94%	95%	96%	98%	99%	100%
Method Mix											
a) Short-term Methods											
Oral Contraceptives (Pill)	21.9%	21.9%	21.9%	21.9%	21.9%	21.9%	21.9%	21.9%	21.9%	21.9%	21.9%
Injectables	46.1%	46.1%	46.1%	46.1%	46.1%	46.1%	46.1%	46.1%	46.1%	46.1%	46.1%
Condom - Male	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Condom - Female	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Traditional methods	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%
b) Long-term Methods											
IUD	10.3%	10.3%	10.3%	10.3%	10.3%	10.3%	10.3%	10.3%	10.3%	10.3%	10.3%
Implant	7.1%	7.1%	7.1%	7.1%	7.1%	7.1%	7.1%	7.1%	7.1%	7.1%	7.1%
Sterilization - Female	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%
Sterilization - Male	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%
c) Other											
Other Method	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
Emergency Contraceptives	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

2. Maternal Health

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Antenatal Care											
ANC Coverage Rate	92%	92%	93%	94%	94%	95%	96%	97%	98%	99%	100%
Skilled Attendance at Delivery											
Delivery Coverage Rate	67%	71%	76%	81%	85%	90%	92%	94%	96%	98%	100%
Postpartum Care											
Postpartum Care Coverage Rate	87%	88%	88%	89%	89%	90%	92%	94%	96%	98%	100%
EmOC											
% of Pregnant Women Requiring											
Management of Prolonged Labor	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%
Delivery by Forceps/Vacuum Extraction	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%
Delivery by C-section	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%
Management of Hemorrhage	7.2%	7.2%	7.2%	7.2%	7.2%	7.2%	7.2%	7.2%	7.2%	7.2%	7.2%
Management of Sepsis	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Management of Hypertensive Disorders	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%
Mgmt. of Abortion Complications	5.8%	5.8%	5.8%	5.8%	5.8%	5.8%	5.8%	5.8%	5.8%	5.8%	5.8%
EmOC Coverage	34%	43%	52%	61%	71%	80%	84%	88%	92%	96%	100%

3. Sexually Transmitted Infections (STIs)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
% of Women Requiring Treatment for											
Chlamydia	0.4%	0.5%	0.7%	0.8%	0.9%	1.1%	1.2%	1.3%	1.4%	1.6%	1.7%
Gonorrhea	3.2%	2.9%	2.7%	2.5%	2.2%	2.0%	1.7%	1.5%	1.3%	1.0%	0.8%
Syphilis	5.0%	4.5%	4.0%	3.5%	3.0%	2.6%	2.1%	1.6%	1.1%	0.6%	0.1%
Trichmoniasis	8.4%	7.9%	7.3%	6.8%	6.2%	5.7%	5.2%	4.6%	4.1%	3.5%	3.0%
Pelvic Inflammatory Disease	1.7%	1.6%	1.5%	1.4%	1.3%	1.1%	1.0%	0.9%	0.8%	0.7%	0.6%
STI Coverage Rate	45.8%	51%	57%	62%	67%	73%	78%	84%	89%	95%	100%

TABLE 2 TOTAL NUMBER OF CASES

INDONESIA

		2005	2006	2007	2008	2009	2010	2015	2005-2009	2006-2010
Family Planning		*For family planning, number of new acceptors for those methods that provide protection for morethan 1 year (IUD, Norplant and Sterilization)*								
1	Oral Contraceptives	5,465,207	5,577,680	5,690,397	5,803,332	5,916,460	6,029,757	6,597,894	28,453,076	29,017,625
2	Injectables	11,504,386	11,741,144	11,978,415	12,216,146	12,454,283	12,692,776	13,888,717	59,894,374	61,082,764
3	Condom - Male	374,329	382,033	389,753	397,488	405,237	412,997	451,911	1,948,841	1,987,509
4	Condom - Female	0	0	0	0	0	0	0	0	0
5	IUD	1,143,640	1,165,617	1,187,623	1,209,652	1,231,700	1,253,761	1,364,487	5,938,230	6,048,352
6	Implant	328,473	334,785	341,105	347,432	353,765	360,101	391,904	1,705,560	1,737,188
7	Sterilization - Female	199,044	202,563	206,083	209,602	213,121	216,638	234,228	1,030,413	1,048,007
8	Sterilization - Male	22,841	23,245	23,649	24,053	24,457	24,860	26,879	118,244	120,263
9	Other Method	49,911	50,938	51,967	52,998	54,032	55,066	60,255	259,845	265,001
10	Emergency Contraceptives	0	0	0	0	0	0	0	0	0
TOTAL		**19,087,830**	**19,478,005**	**19,868,992**	**20,260,703**	**20,653,054**	**21,045,956**	**23,016,273**	**99,348,684**	**101,306,710**
ANC and Delivery Care										
11	Antenatal Care	4,328,728	4,281,875	4,223,927	4,156,921	4,083,074	4,000,703	3,585,509	21,074,525	20,746,500
12	Malaria Prevention within ANC	4,730,850	4,644,116	4,546,746	4,441,155	4,329,877	4,211,266	3,585,509	22,692,744	22,173,160
13	Malaria Treatment within ANC	43,524	42,726	41,830	40,859	39,835	38,744	32,987	208,773	203,993
14	Delivery Care	3,005,216	3,156,230	3,291,844	3,412,499	3,519,159	3,609,656	3,414,770	16,384,948	16,989,388
15	Postpartum Care	3,928,858	3,881,597	3,824,463	3,759,332	3,688,230	3,609,656	3,414,770	19,082,480	18,763,278
TOTAL		**16,037,176**	**16,006,544**	**15,928,810**	**15,810,767**	**15,660,174**	**15,470,025**	**14,033,544**	**79,443,470**	**78,876,319**
Obstetric Complications										
16	Prolonged Labor	131,315	164,694	196,277	225,941	253,644	279,147	297,085	971,870,	1,119,702
17	Delivery by Forceps/Vacuum Extraction	65,657	82,347	98,138	112,970	126,822	139,573	148,542	485,935	559,851
18	Obstructed Labor Req. C-Section	61,884	77,614	92,498	106,478	119,533	131,552	140,006	458,008	527,676
19	Maternal Hemorrhage	108,674	136,298	162,436	186,985	209,912	231,018	245,863	804,306	926,650
20	Puerpal Sepsis	67,921	85,186	101,522	116,866	131,195	144,386	153,665	502,691	579,156
21	Hypertensive Disorders of Pregnancy	20,678	25,935	30,908	35,579	39,942	43,958	46,782	153,042	176,321
22	Postabortion Complications	1,200,171	1,547,874	1,901,886	2,262,209	2,628,843	3,001,787	3,921,866	9,540,984	11,342,599
TOTAL		**1,656,302**	**2,119,947**	**2,583,665**	**3,047,028**	**3,509,892**	**3,971,421**	**4,953,809**	**12,916,835**	**15,231,954**
Other Maternal Conditions										
23	Obstetric Fistula	0	0	0	0	0	0	0		
24	Urinary Tract Infection	1,182,712	1,161,029	1,136,686	1,110,289	1,082,469	1,052,816	896,377	5,673,186	5,543,290
25	Mastitis	675,836	696,617	682,012	666,173	649,481	631,690	537,826	3,370,120	3,325,974
TOTAL		**1,858,548**	**1,857,646**	**1,818,698**	**1,776,462**	**1,731,951**	**1,684,506**	**1,434,203**	**9,043,306**	**8,869,264**
Newborn Interventions										
26	Prevention of Opthalmia Neonatorum	3,005,216	3,156,230	3,291,844	3,412,499	3,519,159	3,609,656	3,414,770	16,384,948	16,989,388
27	Neonatal Complications	171,297	177,122	182,145	186,366	189,784	192,400	170,739	906,715	927,818
28	PMTCT	3,005	3,137	3,259	3,371	3,473	3,564	3,415	16,246	16,805
TOTAL		**3,179,519**	**3,336,490**	**3,477,249**	**3,602,236**	**3,712,416**	**3,805,621**	**3,588,923**	**17,307,909**	**17,934,011**
Sexually Transmitted Infections										
29	Chlamydia	116,711	172,854	238,819	314,850	401,193	498,092	1,149,512	1,244,428	1,625,810
30	Gonorrhea	892,994	933,037	957,557	966,104	958,228	933,481	540,947	4,707,920	4,748,407
31	Syphilis	1,418,617	1,444,229	1,436,335	1,393,994	1,316,266	1,202,211	54,095	7,009,443	6,793,036
32	Trichomoniasis	2,370,956	2,505,224	2,604,783	2,668,605	2,695,665	2,684,937	2,028,551	12,845,233	13,159,214
33	Pelvic Inflammatory Disease	476,169	503,055	522,951	535,652	540,949	538,638	405,710	2,578,777	2,641,245
TOTAL		**5,275,447**	**5,558,400**	**5,760,445**	**5,879,205**	**5,912,302**	**5,857,359**	**4,178,816**	**28,385,800**	**28,967,712**
OVERALL TOTAL		**47,094,822**	**48,357,032**	**49,437,859**	**50,376,402**	**51,179,788**	**51,834,888**	**51,205,569**	**246,445,903**	**251,185,969**

TABLE 3 TOTAL COST OF DRUGS AND SUPPLIES

INDONESIA

		Cost per Case	2005	2006	2007	2008	2009	2010	2015	2005-2009	%	2006-2010	%	Full Coverage at 2005 population
Family Planning														
1	Oral Contraceptives	$5.09	$27,811,074	$28,383,421	$28,957,006	$29,531,704	$30,107,385	$30,683,924	$33,575,031	$144,790,590		$147,663,441		$39,203,006
2	Injectables	$3.80	$43,759,003	$44,659,556	$45,562,058	$46,466,308	$47,372,108	$48,279,256	$52,828,234	$227,819,034		$232,339,287		$61,683,504
3	Condom - Male	$2.85	$1,066,246	$1,088,189	$1,110,180	$1,132,213	$1,154,284	$1,176,388	$1,287,229	$5,551,111		$5,661,253		$1,503,000
4	Condom - Female	$118.10	$0	$0	$0	$0	$0	$0	$0	$0		$0		$0
5	IUD	$1.17	$1,336,686	$1,362,373	$1,388,093	$1,413,841	$1,439,610	$1,465,396	$1,594,813	$6,940,604		$7,069,314		$1,654,636
6	Implant	$25.85	$8,491,147	$8,654,321	$8,817,706	$8,981,265	$9,144,963	$9,308,763	$10,130,869	$44,089,401		$44,907,017		$10,510,889
7	Sterilization - Female	$3.64	$724,552	$737,363	$750,176	$762,988	$775,796	$788,598	$852,629	$3,750,975		$3,814,921		$756,681
8	Sterilization - Male	$0.88	$20,212	$20,569	$20,927	$21,284	$21,642	$21,999	$23,785	$104,634		$106,421		$21,108
9	Other Method	$0.00	$0	$0	$0	$0	$0	$0	$0	$0		$0		$0
10	Emergency Contraceptives	$0.29	$0	$0	$0	$0	$0	$0	$0	$0		$0		$0
TOTAL			**$83,208,920**	**$84,905,792**	**$86,606,145**	**$88,309,603**	**$90,015,788**	**$91,724,325**	**$100,292,589**	**$433,046,249**	**48.0%**	**$441,561,653**	**47.1%**	**$115,332,823**
ANC and Delivery Care														
11	Antenatal Care	$3.75	$16,228,994	$16,053,337	$15,836,082	$15,584,869	$15,308,003	$14,999,183	$13,442,564	$79,011,285		$77,781,474		$17,736,606
12	Malaria Prevention within ANC	$4.33	$20,508,045	$20,132,058	$19,709,962	$19,252,231	$18,769,842	$18,255,669	$15,543,036	$98,372,138		$96,119,762		$20,508,045
13	Malaria Treatment within ANC	$9.85	$428,719	$420,859	$412,035	$402,466	$392,382	$381,633	$324,926	$2,056,460		$2,009,375		$428,719
14	Delivery Care	$4.38	$13,147,871	$13,808,558	$14,401,873	$14,929,741	$15,396,378	$15,792,307	$14,939,676	$71,684,420		$74,328,857		$19,711,950
15	Postpartum Care	$0.18	$688,336	$680,056	$670,046	$658,635	$646,178	$632,412	$598,268	$3,343,251		$3,287,326		$789,376
TOTAL			**$51,001,965**	**$51,094,868**	**$51,029,997**	**$50,827,941**	**$50,512,783**	**$50,061,204**	**$44,848,470**	**$254,467,554**	**28.2%**	**$253,526,793**	**27.0%**	**$59,174,696**
Obstetric Complications														
16	Prolonged Labor	$1.24	$162,245	$203,486	$242,508	$279,159	$313,388	$344,897	$367,060	$1,200,784		$1,383,436		$484,313
17	Delivery by Forceps/Vacuum Extraction	$3.38	$221,895	$278,298	$331,666	$381,793	$428,606	$471,700	$502,012	$1,642,258		$1,892,063		$662,373
18	Obstructed Labor Req. C-Section	$30.41	$1,882,110	$2,360,521	$2,813,192	$3,238,361	$3,635,431	$4,000,955	$4,258,060	$13,929,615		$16,048,460		$5,618,238
19	Maternal Hemorrhage	$34.49	$3,748,673	$4,701,543	$5,603,146	$6,449,973	$7,240,832	$7,968,860	$8,480,947	$27,744,167		$31,964,355		$11,190,068
20	Puerpal Sepsis	$22.55	$1,531,555	$1,920,859	$2,289,217	$2,635,196	$2,958,309	$3,255,751	$3,464,969	$11,335,135		$13,059,332		$4,571,806
21	Hypertensive Disorders of Pregnancy	$9.60	$198,425	$248,862	$296,586	$341,410	$383,271	$421,807	$448,913	$1,468,553		$1,691,936		$592,312
22	Postabortion Complications	$10.64	$12,767,411	$16,466,267	$20,232,251	$24,065,365	$27,965,609	$31,932,981	$41,720,776	$101,496,904		$120,662,473		$38,111,676
TOTAL			**$20,512,313**	**$26,179,835**	**$31,808,567**	**$37,391,257**	**$42,925,445**	**$48,396,951**	**$59,242,737**	**$158,817,416**	**17.6%**	**$186,702,055**	**19.9%**	**$61,230,786**
Other Maternal Conditions														
23	Obstetric Fistula	$30.68	$0	$0	$0	$0	$0	$0	$0	$0		$0		$0
24	Urinary Tract Infection	$0.23	$269,635	$264,691	$259,142	$253,124	$246,781	$240,021	$204,356	$1,293,373		$1,263,759		$269,635
25	Mastitis	$0.82	$557,260	$574,396	$562,353	$549,293	$535,530	$520,860	$443,465	$2,778,832		$2,742,432		$557,260
TOTAL			**$826,895**	**$839,087**	**$821,495**	**$802,417**	**$782,311**	**$760,881**	**$647,821**	**$4,072,205**	**0.5%**	**$4,006,191**	**0.4%**	**$826,895**
Newborn Interventions														
26	Prevention of Opthalmia Neonatorum	$0.02	$57,460	$60,347	$62,940	$65,247	$67,286	$69,017	$65,290	$313,280		$324,837		$86,147
27	Neonatal Complications	$24.89	$4,262,744	$4,407,702	$4,532,696	$4,637,725	$4,722,790	$4,787,891	$4,248,838	$22,563,657		$23,088,804		$6,390,921
28	PMTCT	$42.25	$126,976	$132,559	$137,712	$142,435	$146,728	$150,593	$144,281	$686,410		$710,026		$190,369
TOTAL		**$4,447,180**	**$4,600,608**	**$4,733,347**	**$4,845,407**	**$4,936,805**	**$5,007,501**	**$4,458,409**	**$4,458,409**	**$23,563,347**	**2.6%**	**$24,123,668**	**2.6%**	**$6,667,437**
Sexually Transmitted Infections														
29	Chlamydia	$0.86	$100,148	$148,324	$204,927	$270,168	$344,257	$427,405	$986,378	$1,067,824		$1,395,081		$218,902
30	Gonorrhea	$0.54	$481,445	$503,034	$516,253	$520,861	$516,615	$503,273	$291,644	$2,538,210		$2,560,038		$1,052,340
31	Syphilis	$2.24	$3,183,129	$3,240,598	$3,222,885	$3,127,880	$2,953,472	$2,697,551	$121,379	$15,727,963		$15,242,385		$6,957,659
32	Trichomoniasis	$0.59	$1,403,075	$1,482,532	$1,541,448	$1,579,217	$1,595,230	$1,588,882	$1,200,448	$7,601,502		$7,787,309		$3,066,831
33	Pelvic Inflammatory Disease	$0.55	$260,754	$275,477	$286,372	$293,327	$296,228	$294,962	$222,170	$1,412,159		$1,446,367		$569,954
TOTAL			**$5,428,551**	**$5,649,964**	**$5,771,886**	**$5,791,453**	**$5,705,803**	**$5,512,073**	**$2,822,020**	**$28,347,658**	**3.1%**	**$28,431,180**	**3.0%**	**$11,865,686**
OVERALL TOTAL			**$165,425,825**	**$173,270,155**	**$180,771,437**	**$187,968,077**	**$194,878,936**	**$201,462,935**	**$212,312,045**	**$902,314,429**	**100%**	**$938,351,540**	**100%**	**$255,098,323**
TOTAL PER CAPITA			**$0.74**	**$0.77**	**$0.79**	**$0.82**	**$0.84**	**$0.86**	**$0.86**	**$0.79**		**$0.82**		**$1.15**
Number of WRA			**61,768,977**	**62,353,917**	**62,938,857**	**63,523,797**	**64,108,737**	**64,693,677**	**67,618,377**	**314,694,285**		**317,618,985**		**61,768,977**
Total per WRA			**$2.68**	**$2.78**	**$2.87**	**$2.96**	**$3.04**	**$3.11**	**$3.14**	**$2.87**		**$2.95**		**$4.13**

TOTAL NUMBER OF STAFF REQUIRED

TOTAL NUMBER OF STAFF TIME HOURS REQUIRED

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Auxiliary/Attendant	11,527,264	12,768,081	13,970,534	15,134,943	16,263,071	17,349,383	17,625,828	17,883,981	18,126,537	18,355,910	18,355,910
Nurse/Midwife	35,223,649	36,550,008	37,772,073	38,905,354	39,956,044	40,913,504	41,164,787	41,353,474	41,484,591	41,562,419	41,562,419
General Physician	451,041	474,822	491,862	501,960	504,920	500,543	488,631	468,986	441,410	405,704	405,704
Obstetrician	3,571,145	3,863,378	4,145,588	4,418,310	4,682,507	4,936,314	5,007,679	5,074,003	5,136,296	5,195,453	5,195,453
Paediatrician	142,748	147,602	151,788	155,305	158,153	160,334	157,297	153,974	150,363	146,466	146,466
Anaesthesist	201,500	252,720	301,183	346,702	389,213	428,346	436,677	443,472	448,857	452,953	452,953
Lab Technician	776,485	779,698	780,435	778,998	775,748	770,321	759,278	747,066	733,933	720,091	720,091

AVERAGE ANNUAL WORKING HOURS

Auxiliary/Attendant	1,440
Nurse/Midwife	1,440
General Physician	1,440
Obstetrician	1,440
Paediatrician	1,440
Anaesthesist	1,440
Lab Technician	1,440

TOTAL NUMBER OF STAFF REQUIRED

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Auxiliary/Attendant	8,005	8,867	9,702	10,510	11,294	12,048	12,240	12,419	12,588	12,747	12,747
Nurse/Midwife	24,461	25,382	26,231	27,018	27,747	28,412	28,587	28,718	28,809	28,863	28,863
General Physician	313	330	342	349	351	348	339	326	307	282	282
Obstetrician	2,480	2,683	2,879	3,068	3,252	3,428	3,478	3,524	3,567	3,608	3,608
Paediatrician	99	103	105	108	110	111	109	107	104	102	102
Anaesthesist	140	175	209	241	270	297	303	308	312	315	315
Lab Technician	539	541	542	541	539	535	527	519	510	500	500

STAFFING GAP

	2005 Required	2005 Actual	GAP
Auxiliary/Attendant	8,005	8,867	9,702
Nurse/Midwife	24,461	**1,000**	**23,461**
General Physician	313	**10**	**303**
Obstetrician	2,480	**50**	**2,430**
Paediatrician	99	**25**	**74**
Anaesthesist	140	**10**	**130**
Lab Technician	539	**50**	**489**

	2015 Required	2005 Actual	GAP
Auxiliary/Attendant	10,510	11,294	12,048
Nurse/Midwife	28,863	**1,000**	**27,863**
General Physician	282	**10**	**272**
Obstetrician	3,608	**50**	**3,558**
Paediatrician	102	**25**	**77**
Anaesthesist	315	**10**	**305**
Lab Technician	500	**50**	**450**

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