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Benefit-Cost Analysis

# Costs and Benefits of Expanding Sexual Reproductive Health Services in Haiti



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Haiti Priorise

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## Background

Demographic trajectories are currently more diverse than in the middle and late 20th century. Wealthy countries of Europe, Asia and the Americas face rapid population aging, while Africa and some countries in Asia prepare for the largest cohort of young people the world has ever seen. And many of the world's poorest countries, particularly in sub-Saharan Africa, continue to face premature mortality, high fertility and often unmet need for contraception.<sup>1</sup> In light of these demographic transformations, the United Nations' *Report of the Global Thematic Consultation on Population Dynamics* (UNFPA, UNDESA, UN-HABITAT, IOM 2013) highlights three central aspects of how population dynamics affect the Post-2015 Development Agenda:

1. *Population dynamics are at the centre of the main development challenges of the 21st century, and must therefore be addressed in the post-2015 development agenda.*
2. *Mega population trends -- population growth, population aging, migration and urbanization -- present both important developmental challenges and opportunities that have direct and indirect implications for social, economic and environmental development.*
3. *Demography is not destiny. Rights-based and gender-responsive policies can address and harness population dynamics.*

Agreeing with these broad implications of population change for human and economic development, an earlier Copenhagen Consensus analysis for *Population and Demography* (Kohler and Behrman 2014) highlighted the expansion of sexual and reproductive health services ("**Make family planning available to everyone**") as a high priority, including achieving universal access to sexual and reproductive health (SRH) services by 2030, and eliminating unmet need for modern contraception by 2040. Benefit-cost ratios for expanding sexual and reproductive services are likely to be very high, possibly larger than 90 in high-fertility countries in sub-Saharan Africa. In other contexts, benefit-cost ratios are likely to be lower because the demographic transition has already progressed further, but benefit-cost ratios are likely to remain very favorable. Estimates of the benefits and costs of expanding sexual and reproductive health services in contemporary Haiti, discussed in more detail below, suggest that the benefits substantially exceed the costs of investing in these

services (Table 1): benefit-cost ratios exceed 23 if the future is discounted at 3% p.a., and remain above 17 if the future is discounted at 5% p.a.

Table 1: Benefit, costs and benefit-cost-ratios (BCRs) for expanding sexual reproductive health services in Haiti

Valuation of DALYs	Intervention	Discount	Benefit	Cost	BCR	Quality of Evidence
1 x GDP per capita	Fully meet demand for modern contraceptive methods	3%	543,593	23,638	23.00	Moderate
		5%	357,091	20,185	17.69	
		12%	105,585	12,905	8.18	
3 x GDP per capita	Fully meet demand for modern contraceptive methods	3%	556,036	23,638	23.52	Moderate
		5%	364,157	20,185	18.04	
		12%	107,346	12,905	8.32	
8 x GDP per capita	Fully meet demand for modern contraceptive methods	3%	587,145	23,638	24.84	Moderate
		5%	381,823	20,185	18.92	
		12%	111,747	12,905	8.66	

Benefits and costs are in million Gourdes

While our analyses focuses on “population quantity,” we emphasize that that “population quality” (or human capital), including aspects such as health and education, is an important further aspect of population dynamics that is essential for addressing the challenges of future population changes, for promoting gender equality and human rights, and for realizing the benefits of population dynamics for social, economic and environmental development. Population quality therefore needs to be seen as an inherent component of population dynamics, and in some areas -- for instance policies addressing population aging -- population quality-related policies to increase life-long learning and adaptability and to mitigate impacts of chronic diseases are primary policies. Because aspects of population quality are discussed in other Copenhagen Consensus papers, the discussion here focuses primarily on population quantity, including specifically aspects such population growth and population age structure.

## Population trends in Haiti

Haiti, with a current population of 10.8 million persons, is an important example for illustrating the Copenhagen Consensus Center's assessment of high-priority policy areas in the area of demography and population dynamics.<sup>2</sup> Haiti is the poorest country in the Latin America and Caribbean (LAC) region, with nearly 80 percent of the population living on less than US\$2 per day, and 54 percent living on less than US\$1 per day. Population density is approximately 390 people per square kilometer, and the population is concentrated most heavily in urban areas (52%) as well as in coastal plains and valleys.

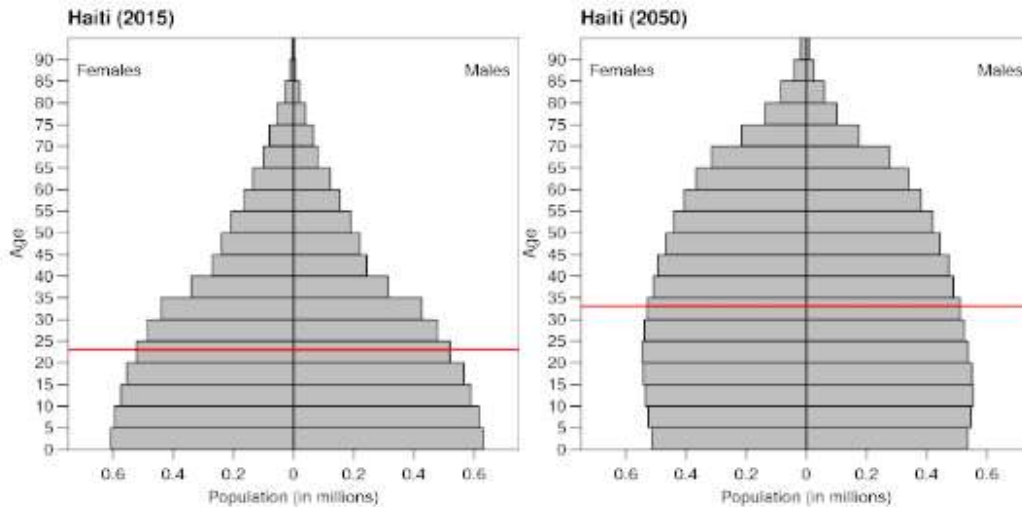
Haiti's demographic, economic and social developments during the last 50 years have been affected by extreme political instability, rampant violence, and high levels of gender-based discrimination, all of which had important implications for the country's ability to meet the health and family planning needs of the population (Bertrand et al. 2015; Ward et al. 2015). Haiti has also been immensely affected by ecological degradation in the countryside and vulnerability to national disasters, including earthquakes, hurricanes and flooding. The devastating earthquake of 2010, for example, killed approximately 250,000 people, injured 300,000 and left at least one million homeless. This earthquake was a recent watershed event that has had a major effect on Haiti's current situation (Kent 2010), including for reproductive health. Analyses of the earthquakes consequences, for instance, have shown that exposure to the earthquake reduced use of injectables -- the most widely used modern contraceptive method in Haiti -- and increased current pregnancy and current unwanted pregnancy because the earthquake significantly increased women's unmet need for family planning, reduced their access to condoms, and possibly also affected their ability to negotiate condom use in their partnerships (Behrman and Weitzman 2016).

A recent report reviewing the achievements of 50 years of family planning in Haiti (Ward et al. 2015) outlines some of the enormous remaining challenges: Haiti's total fertility rate (TFR) remains the highest in the Latin America and Caribbean region, despite having decreased from 4.8 in 1994 to below 3 in 2015 (based on 2015 UN World Population Prospects; the 2012 DHS survey estimated a TFR of 3.5). As in other contexts, there is a strong gradient by schooling: women with



higher education (secondary education and above) have an average of 2.6 children compared with 5.4 children for those who have less than a secondary education; a similar gradient exists with respect to household wealth; women in the lowest wealth quintile have almost three times as many children (5.7) as women in the highest wealth quintile (1.9). While Haiti's modern contraceptive prevalence rate (MCPR) has increased substantially from 13.2 percent in 1994 to 31.3 percent in 2012, it remains the lowest in the LAC region. Unmet need for family planning thus remains at one of the highest levels in the world, with more than 35% being classified as having unmet need for family planning: 20% have a need for limiting births, and 16% for spacing births. Supply issues, socio-economic factors, and socio-cultural issues around fertility and childbearing have all been shown to contribute to this persistent elevated levels of unmet need. These high levels of unmet need, along with widespread poverty and continued lack of access to education and health care, have contributed to a high infant mortality rate of 59 deaths/1,000 live births. While this IMR reflects a significant improvement during the last decade, having declined from 79 per 1,000 births in 2007, it is more than three times the level prevailing in the LAC area overall and closely resembles the level prevailing in sub-Saharan Africa. Haiti's under-5 mortality rate is 88 deaths per 1,000 live births, and the estimated maternal mortality ratio (MMR) is 380 deaths/100,000 live births.

Figure 1: Population pyramid for Haiti, 2015 and 2050



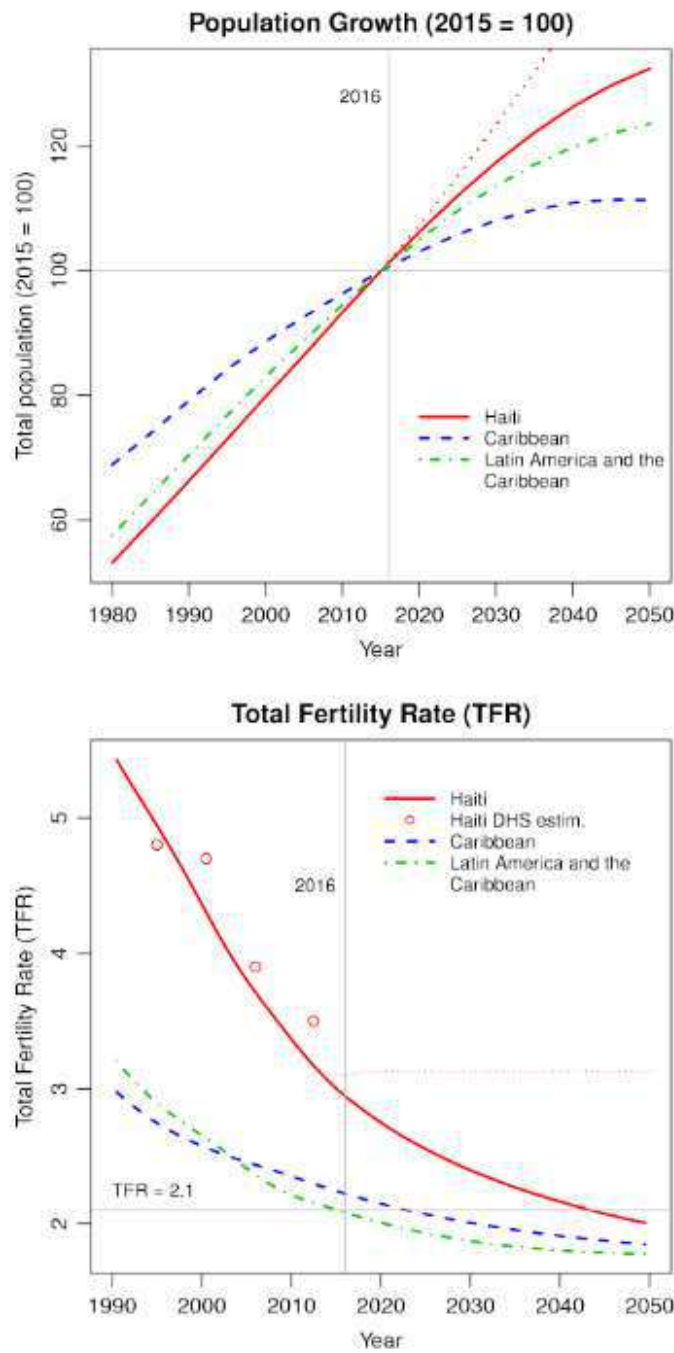
Source: United Nations World Population Prospects 2015 (Medium Variant)

Yet fertility and the demand for family planning are rapidly changing, especially among young women. For example, adolescent fertility has declined from 86/1000 births in 2000 to 66/1000 births in 2012, along with a significant threefold increase in the utilization of modern contraception among women 15—19 in union, from 7.1 percent in 2000 to 24.0 percent in 2012. Because of shifting fertility preferences, however, this increase in CPR has had little effect on unmet need among this age group, which has remained unchanged at more than 55% between the 2000 and 2012 DHS surveys. This persistence of high unmet need despite large increases in contraceptive use suggests that family-size desires have been shifting, while knowledge of methods and access to contraceptive methods have not kept pace.

Figure 1 shows Haiti's current and projected 2050 population pyramids, and Figure 2 shows the total population growth compared to both the Caribbean and combined Caribbean and Latin American regions global and South-Eastern Asia's population growth,<sup>3</sup> and the trend in Haiti's total fertility rate (TFR, a measure of the total number of children born to a woman during her life-time). Haiti's total, young and old-age dependency ratios are plotted in Figure 3.

As many other countries in the region, the next decades will bring about a transformation of Haiti's population with important implications for human and economic development. Life expectancy is likely to continue its fairly rapid increase: from 50.8 in 1980, to currently 63.1, and a predicted 71.3 by 2050. The population age structure will shift from a still relatively young population pyramid to one that is characterized by moderate population aging, with the share of the population above age 65 increasing from currently 4.6% to 10%, while the share of the population below age 15 will decrease from 34% to 23%. But clearly, even by 2050, Haiti will not yet have an "old" population age structure such as those that are expected by 2050 for many developed countries or several Latin American countries that are predicted to age rapidly and significantly in the next decades.

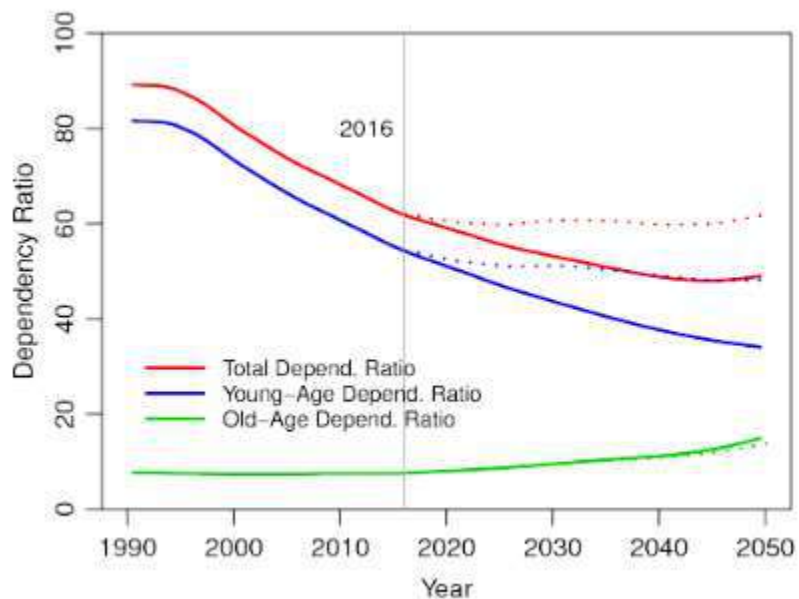
Figure 2: Population growth and total fertility rate (TFR) for Haiti 1980–2050



Source: United Nations World Population Prospects 2015 (Medium Variant)

Notes: Full lines: UN medium variant; dashed lines: UN constant fertility variant with Haiti's TFR remaining at 3.13 until 2050

Figure 3: Total, old-age and young-age dependency ratio for Haiti, 1990–2050



Source: United Nations World Population Prospects 2015

Notes: Full lines: UN medium variant; dashed lines: UN constant fertility variant with Haiti's TFR remaining at 3.13 until 2050

Population growth will slow; having peaked near 2.3–2.4% per year when Haiti's population was around 6 million in the late 1980s, it is currently estimated to be around 1.25% and it is projected to decline to below 0.5% by 2050 when the population is expected to exceed 14 million. By then, Haiti will have added an extra 30% to its current population, which, in relative terms, is about equal to the world population growth between now and 2050, but significantly more than the population growth in the Caribbean or LAC region in the same time period. An important factor contributing to this slowing of population growth is the decline in the TFR, which dropped from 5.5 in 1970 to about 3 in 2015, a drop of about 2.5 children per woman (based on 2015 UN World Population Prospects; the 2012 DHS survey estimated a TFR of 3.5). At the same time, investments in children increased, as is illustrated by an increase in the literacy rate of young women (aged 15–24) from about 50% in the early 1980s to 70–80% in recent years (World Bank 2017). While the UN Population prospects predict a further decline of the TFR to below replacement level by 2050, the current high levels of unmet need and poor reproductive health outcomes indicate that

achieving this trajectory of continued decline in the TFR continues to require significant investments in sexual and reproductive health services and family planning. If TFR were to stabilize at its current level around 3 children per women, future population would be significantly more rapid and the 2050 population would grow to more than 17 million, as compared to 14.1 million under the assumption of continued TFR decline (Figure 2)

These broad trends in population dynamics place in the top-center cell of the taxonomy of population quantity and quality in Figure 4: while Haiti has progressed substantially in the fertility transition, and population growth has thus peaked 2—3 decades ago, it still has relatively-high levels of human capital and lacks behind other countries in Latin America and the Caribbean with regard to fertility declines, health improvements and human capital increases.

Figure 4: Taxonomy of population quantity and quality: looking forward from 2016

		Late Stages in Demographic Transition and Population Quantity		
		High Fertility, High Population Growth	Potential "Demographic Dividend"	Post-Transition Older Population Structure
Population Quality (Health, Nutrition, Education)	Low	Much of Sub-Saharan Africa	Much of South Asia Haiti	
	Medium		Most of Latin America, Caribbean and parts of South-East Asia	Much of East Asia
	High			Most OECD countries

Adapted from: Behrman and Kohler (2014).

The current and future challenge for Haiti is to reap the benefits of the *demographic dividend* (Bloom et al. 2002), that is, the process by which a favorable age structure with a large fraction of the population in working ages can facilitate rapid economic development. Whether Haiti can do so effectively will depend on both population dynamics and changes in population quality during the next decades.

## Making family planning available to everyone

Haiti's experience is exemplary for understanding the importance of sustained investments in sexual and reproductive health (SRH) services. On the one hand, Haiti is widely credited for having had a successful family planning program that helped facilitate the decline of fertility during the 1970s and 1980s (Figure 2). This family program begun in the 1960s with strong private and public sector support for a national family planning program that is integrated in the nation's community health program (Ward et al. 2015). How much of Haiti's past fertility decline can be directly attributed to this program remains controversial, as is the case on this topic in other countries as well, but its key role in facilitating Haiti's path towards lower fertility is widely acknowledged.

Yet, the political instability and violence in the 1980s brought about a reversal of this commitment to family planning; the National Family Planning Council was dissolved, the public-sector family planning outreach project was terminated, and support for many sexual and reproductive health services shifted to international organizations. In addition, in the early 1980s, the first cases of HIV infection were diagnosed in Haiti, and by the late 1980s HIV/AIDS-related funding had outstripped family planning funding as the government and its NGO partners struggled to contain the rapidly-growing epidemic (Ward et al. 2015). While improvements have occurred more recently, Haiti's repeated political upheavals, continuing economic weakness in the decade of the 2000s continued to affect efforts to improve the health and lives of the Haitian people in general and reproductive health and family planning in particular. As a result, Haiti could not match the consolidation in population health and progress in sexual and reproductive health services that occurred during the 2000s in other LAC countries.

The 2010 earthquake and its aftermath provided a watershed moment, as Haiti's already fragile infrastructure and health system were severely impacted by the massive quake that struck in January 2010. More than 250,000 persons were killed, and more than 1 million were internally displaced. Destruction included the Ministry of Health, the national midwife school and nursing college, and half of all public-sector health facilities, rendering them severely and often completely

unusable. In addition, many medical providers and health administrators were killed, including 14 percent of Ministry of Health employees (Roberts 2010).

In addition to the general challenges of maintaining the provision of health services after the disaster, providing key sexual and reproductive health (SRH) and family planning services to displaced people living in internally displaced persons (IDP) camps was a major challenge. While Family planning is frequently ignored during the aftermath of disasters, however, this was not the case Haiti; USAID-supported organizations and the IPPF member associations were providing family planning services within days of the quake, and a coordinated effort by international organizations worked to ensure ongoing provision of family planning services despite the prevailing challenges (Ward et al. 2015).

Yet, despite these efforts, there is evidence based on comparisons of the 2005 and 2012 DHS surveys that the earthquake had significant direct and indirect negative consequences on reproductive health. Specifically, Behrman and Weitzman (2016) show that exposure greater earthquake intensity had a negative effect on use of injectables, the most widely used modern contraceptive method in Haiti, and a positive effect on current pregnancy and current unwanted pregnancy. While some aspects of reproductive health -- such as overall use of modern contraception -- continued to improve during the broader period around the 2010 earthquake, this hides important heterogeneity. These increases in contraceptive use could reflect upward trends in modern contraceptive use that were occurring prior to the earthquake or they could be due to the large presence of NGOs following the earthquake.

The pathways through which the earthquake affected reproductive health were often indirect. Behrman and Weitzman (2016) show that reduced access to contraception and family planning services likely played a role in the decreased use of injectables and other modern methods following the earthquake. However, heightened exposure to the earthquake also increased unmet need for contraception and significantly decreased knowledge about where to obtain condoms. The earthquake also had negative effects on partnership dynamics related to women's ability to nego-



tiate condom use, highlighting the importance of promoting the use of long-acting reversible contraceptive methods that women can control independently of their partners. There is no evidence, however, that the earthquake affected fertility preferences in a way that would be consistent with observed pregnancy increases. Overall, the analyses in Behrman and Weitzman (2016) thus suggest that the post-earthquake fertility increase and reduction in contraceptive use in Haiti was more likely attributable to related decreases in contraceptive availability and in women's ability to negotiate condom use or contraceptive use.

In response to the above trends, Haiti is reviving its family planning program and is trying to leverage the cooperation of international organizations. The recent report on 50 years of family planning in Haiti summarizes the perspective for next decades as follows: *“Much remains to be done in reproductive health and family planning. The unmet need of 35.3 percent for all women and 56.6 percent for adolescents in union reported in the 2012 DHS is evidence of a profound need for expanded [family planning] services. Qualitative studies with women indicate that accessing affordable contraceptives and general healthcare remain a major concern for many”* (Ward et al. 2015). Efforts towards alleviating these concerns for instance include a 2013 policy stating that the provision of free family planning services is required in all health institutions, including workplace infirmaries. In addition, health providers are required to encourage women with more than two or three children to consider a long-acting contraceptive method, and various family planning education and media programs have been devised and implemented. The National Strategic Plan for Reproductive Health and Family Planning for 2013—16 has also integrated family planning as a central component in achieving two objectives.

- Reduce, by 2016, the maternal mortality ratio (to 400 per 100,000 live births) and neonatal mortality rate (to 20 per 1,000 live births) by offering basic obstetric and neonatal services to approximately 2.6 million women of reproductive age, especially the 250,000 to 300,000 pregnant women of whom 30,000 suffer from obstetric complications and who would benefit from appropriate care and supervision by qualified personnel.

- Offer integrated reproductive health services provided by qualified personnel, including information and advice on family planning issues, prevention of maternal-child HIV transmission, treatment for gender-based violence against women and girls, all of which is to be undertaken with gender and cultural sensitivity.

Haiti is thus hoping to revive some of its past success, both in terms of reducing fertility but also in terms of creating the individual, social and economic benefits that would arguable stem from improved sexual and reproductive health, including reductions in maternal mortality, infant and child mortality and morbidity, increased levels of human capital, improved sexual health (particularly also with respect to HIV), and possibly contributions towards broader economic development aims. This paper provides some evidence as to whether such efforts are likely to be effective, and what are the likely benefit-cost ratios one could possibly hope to attain with such investments in family planning programs in Haiti.

It would be wrong to evaluate family planning programs primarily with respect to population growth. Broader human-rights-based and gender-responsive perspectives are required. The UN Secretary General, for example, highlighted that *“protecting and fulfilling the human rights of young people and investing in their quality education, effective livelihood skills, access to sexual and reproductive health services and information, including comprehensive sexuality education, as well as employment opportunities, are necessary for the development of their resilience and create the conditions under which they can achieve their full potential”* (UNFPA 2014). Expanding access to family planning is an important component of such a broad human-rights-based and gender-responsive policy agenda. Specifically, a recent literature emphasized that family planning programs -- besides reducing fertility and, related, maternal and child mortality -- are likely to result in higher levels of female education, improvements in women’s general health, increases in female labor force participation and earnings, increased child health (up and beyond the effect on reducing child mortality) and increased child human capital (Kohler 2013; Miller and Babiarz 2016). In context like Haiti, where fertility has already declined substantially from its peak, these benefits in terms of children’s and women’s well-being are likely to be dominant ones. Somewhat less important are the effect on population growth, but over the long term, the potential contributions

towards a demographic dividend can nevertheless importantly contribute to the benefits from continued investments in sexual and productive health services.

Our prior analyses for the Copenhagen Consensus project suggest benefit-cost ratios (BCRs) in excess of 90 for family planning programs in high fertility countries, about one third of which can be attributed to reduced infant and maternal mortality and two thirds to increased income growth resulting from the demographic dividend. Most of these high-fertility countries to which this estimate applies are located in sub-Saharan Africa, and while unmet need is not necessarily higher than in Haiti, these countries often have higher levels of maternal and infant mortality and experience much more rapid population growth than Haiti.

In high fertility countries, these high BCRs occur because reduced population growth as a result of expanded family planning programs can importantly help countries to benefit from the demographic dividend. But in terms of age structure, Haiti -- along with other countries in the region -- is already relatively well-positioned (Figures 1 and 3), and is poised to benefit further from a declining total dependency ratio (and thus increasing the share of the population in working ages) if its fertility trends follow the trajectory assumed under the UN median forecast (Figure 2). Yet, one should not necessarily take the unfolding of the trajectory assumed under the UN medium fertility projection for granted, and if fertility levels were to remain constant at around 3 children per women, these potential benefits from a demographic dividend would be substantially reduced (dotted lines in Figure 3). Sustained and possibly even expanded investments in sexual and reproductive health services will be required, and family planning will have to be integrated as part of the broader health and development agenda for Haiti. One should also not be mistaken about the magnitude of these aggregate demographic dividend effects in terms of closing substantial the income gap between the least developed countries and other developing or even developed countries. While these aggregate effects of family planning programs are likely to contribute substantially and favorably to the benefit-cost ratio of family planning programs, the aggregate effects are too small for these programs to significantly reduce global income inequalities or to provide a substitute for other development policies. More likely, a convincing case can be made for integrat-

ing family planning programs with other development policies, including those that target reproductive-health concerns such as HIV/AIDS or other infectious diseases (including specifically also those reducing infant/child mortality) and/or development policies that would help create the institutional environment to capture the demographic dividend from reduced population growth and changes in the population age structure that are likely to occur in the next decades.

## **Benefit-cost considerations for expanding sexual and reproductive health services in Haiti**

Research in the last two decades has substantially strengthened the case for family planning programs -- documenting for example significant effects of these programs towards reducing fertility, increasing female (mother's) education, improving women's general health and longer-term survival, increases in female labor force participation and earnings, increased child health and increased child human capital (Bongaarts 2016; Ezeh et al. 2012; Kohler 2013; Miller and Babiarz 2016). Nevertheless, the attempt to obtain reasonably reliable estimates of the benefits, costs and benefit-cost ratios of these programs remains very challenging given a plethora of estimation problems, a limited knowledge of program costs, and an even more difficult task of assessing the micro- and macro-level benefits of these programs. And, of course, in the implementation of family planning programs many questions related the optimal design of such programs are important (Mwaikambo et al. 2011; Population Council 2012; Prata 2009), including the appropriate integration of family planning programs with other health interventions, the adjustment to specific local contexts, the potential needs for health-systems strengthening, and the combination of family planning programs with information campaigns, behavioral change communication and interpersonal counseling.

The benefits of expanded sexual and reproductive health services considered as part of our analyses are based on the following considerations:

First, benefits that result from the fact that family planning programs may reduce expenditures on social programs as a result of a less rapidly growing size of birth cohorts, with savings including a reduced need for expanding the school system, providing education, implementing immunization

programs or providing health care for children. However, these savings may potentially be misleading as in terms of reductions in social costs if family planning programs also result -- as is suggested by much of the recent literature -- in shifts in the demand for child quality (including for instance child health and schooling) and increases in female education. Because the net effect is unclear, we do not consider these benefits in our benefit-cost calculations. Expansions in sexual reproductive health service are also likely to make important contributions towards reducing sexual transmitted infections, and in particular, help stem the HIV/AIDS epidemic in countries like Haiti. However, these benefits of family planning programs beyond the scope of these analyses, and are considered as part of Copenhagen Consensus analyses that focus on HIV/AIDS.

Second, benefits of family planning programs occur because reduced fertility, increased child spacing and possible reductions in unwanted fertility are likely to reduce both infant and maternal mortality, importantly by increasing birth spacing and reducing births that are at high risks of adverse child and/or maternal health outcomes (for a detailed review, see Kohler 2013). Some caution, however, is necessary in assessing these benefits as it is often difficult to disentangle the extent these changes in child and maternal mortality and health reflect the causal impact of expanding family planning programs on child/maternal mortality.

Third, our analyses have emphasized that family planning programs -- in addition to reducing fertility and, related, maternal and child mortality -- are likely to result in higher levels of female education, improvements in women's general health, increases in female labor force participation and earnings, increased child health (up and beyond the effect on reducing child mortality) and increased child human capital. Several of these factors will affect economic growth, and will therefore be considered as part of the benefits considered below. And while these consequences are likely to be desirable from a policy perspective up and beyond their contributions to economic growth, we will not consider these additional life-cycle, distributional and intergenerational benefits of family planning program due to the difficulties in evaluating them within the framework of this paper.

Fourth, and finally, benefits of large-scale family planning programs may result from changes in population dynamics, and in particular, from reductions in population growth rates, increases in the proportion of the population at working ages, and increases in levels of human capital and female labor force participation that result from reduced fertility over the next decades. It is important to emphasize that these aggregate effects of family planning programs -- as of many other health interventions (Bleakley 2010) -- are likely to be small in light of the vast differences in income levels among less developed countries, or between the least developed and more developed countries. Several recent studies suggest that reductions in population growth rates by 1 percentage point in current high fertility countries may result in increases of the growth rate of per capita GDP by approximately 1 percentage point (Ashraf et al. 2013; Karra et al. 2017; Kohler 2013). This effect of reduced population growth on economic development is about twice as large as the effect that was suggested in the National Research Council (1986) report on *Population Growth and Economic Development*. Given the uncertainty in the underlying models, the still limited knowledge about population—development interactions, and the limitations of existing empirical estimates, all of which have been subject to a long and at times heated discussion, this finding is hardly more than a rule of thumb or back-of-the-envelope calculation. Nevertheless, if this estimate that reductions in population growth rates by 1 percentage point in current high fertility countries may result in increases of the growth rate of per capita GDP by approximately 1 percentage point is broadly accurate, it would suggest substantial benefit-cost ratios for family planning programs as this modest increases in economic growth are sustained over long periods. A convincing case can thus be made for integrating family planning programs with other development policies (Behrman and Kohler 2014), including those that target reproductive-health concerns such as HIV/AIDS or other infectious diseases (specifically also those reducing infant/child mortality) and/or development policies that would help create the institutional environment to capture the demographic dividend from reduced population growth and changes in the population age structure that are likely to occur in the next decades.

Specifically, our estimation of the benefit-cost ratios in Table 1 are based on the following assumptions:

- Unmet need for family planning in Haiti is estimated at 35% (Haiti DHS 2013)
- In the absence of country-specific estimates, the costs of meeting current unmet need for family planning are obtained from Table 2.1 in Singh et al. (2014) *Adding It Up: The Costs and Benefits of Investing in Family Planning and Maternal and Newborn Health*, which provides a comprehensive model-based assessment of the total costs of expanding family planning services. The analyses suggest that expanding sexual and reproductive health services to meet 100% of unmet in developing countries need requires expenditures of US\$9.1 billion per year, as compared to currently US\$4.1 billion. This yields an annual cost of US\$23.60 per woman with an unmet family planning need.
- Multiplying with the number of women with unmet need in Haiti provides an annual cost of 1,543 million Gourdes for covering unmet family planning need in Haiti. Costs in future years depend on changes in fertility desires and thus demand for family planning, changes in the population size and age structure, and changes in marriage and human capital levels. These factors interact, and in the absence of detailed estimates of unmet family planning need in Haiti, we assume that the same expenditures are devoted for a 20-year period to meet unmet family planning need during 2016–35.
- The infant mortality and maternal mortality benefits from meeting the unmet need for family planning were derived through two alternative calculations, both yielding relatively similar BCRs. The first method is used for the calculations in Table 1.
  1. Infant mortality and maternal mortality benefits from meeting the unmet need for family planning are derived by assuming that expanded sexual and reproductive health services primarily affect birth spacing, and through longer birth spacing, affects under-five mortality. Maternal mortality is reduced because of fewer births and abortions. The effect of increased birth spacing on under-5 mortality is obtained via the observed gradient in under-5 mortality in the 2012 Haiti DHS (e.g., under-5 mortality is 145 per 1000 live births for children born within less than 2 years of the previous child, as compared to 102 per 1000 live births for children born within 2 years of the prior birth). It is assumed that women who express a need for family planning for birth-spacing reasons would delay fertility, thereby

benefiting from reduced under-5 mortality rates. Unmet need would also reduce fertility because women who express a need for family planning to stop childbearing would not have additional children. Reduced under-5 mortality among children who are delayed is included in the benefits for the BCR calculations in Table 1, while under-5 mortality that results from fewer births are not considered.

2. As a robustness test for the above calculations, which are used for the BCRs in Table 1, we also obtained the infant mortality and maternal mortality benefits from meeting the unmet need for family planning based on assessments in Singh et al. (2014) about the benefits and costs of expanding sexual and reproductive health services. These calculations are not specific to Haiti and pertain to less-developed countries overall (UN Population Division 2015, as defined by). The advantage of these calculations is that they are based on an integrated methodology that relates contraceptive use to both fertility and mortality outcomes, reflects the prevailing contraceptive method-mix, and uses cause-of-death information to estimate the effects of expanding family planning on infant and maternal mortality. The analyses in Singh et al. (2014) suggest that satisfying the family planning need for one woman with unmet need averts 0.0022 child and 0.00031 maternal death, on average, in less-developed countries. Assuming these rates pertain to Haiti, which is a plausible assumption in light of the prevailing population and health trends in Haiti and less-developed countries overall, the corresponding DALYs and monetary evaluation of these benefits are calculated based on the Copenhagen Consensus guidelines. Benefits are assumed to remain constant during 2016–35. The resulting BCRs are reported in the Appendix Table A.1.
- The demographic-dividend-related benefits from expanding sexual and reproductive health services are inherently difficult to assess. Several recent analyses have investigated the relationship between unmet need and the total fertility level (e.g., Casterline and El-Zeini 2014; Garrido and Quiroga 2016), indicating a strong correlation between reducing unmet need and declining fertility. Yet, these estimates are unlikely to reflect the causal



relationship. In our analyses we make the somewhat conservative assumption that meeting unmet family planning need in Haiti would reduce fertility (TFR) by about .5, that is, to an extent reflecting the difference between the medium and low fertility forecast (or between the high and medium forecast) in the UN World Population Prospect projection for Haiti. Under this assumption, population growth during the next 50 years in Haiti would be reduced by .5 percentage points during the next 20 years. Because Haiti fertility has declined significantly as compared to the countries for which detailed analyses of demographic dividends have been obtained (Ashraf et al. 2013; Karra et al. 2017), we assume that the effect of reduced population growth on the demographic dividend will be less prominent than in higher-fertility countries. Our analyses are based on the assumption that satisfying unmet need for family planning in Haiti would increase per capita economic growth by .25 percentage points as compared to the baseline assumption, with the additional growth being due to the acceleration of the change in the population age structure and faster behavioral responses to reduced fertility that would otherwise occur.

- Our estimates suggest that the benefits substantially of expanding sexual reproductive health services in Haiti substantially exceed the costs of investing in these services (Table 1): benefit-cost ratios exceed 23 if the future is discounted at 3% p.a., and remain above 17 if the future is discounted at 5% p.a. These benefit-cost-ratios would be reduced, but remain  $\gg 1$ , even if the benefits operating through the demographic dividend mechanism are ignored.
- Some additional benefits not considered as part of our calculations, such as contributions to reducing HIV infections, would tend to further increase the benefits and benefit-cost ratios of investing in sexual and reproductive health.
- While the evidence on the positive benefits through multiple pathways and mechanisms resulting from the expansion of family planning and related sexual and reproductive health services has significantly strengthened in recent years (Kohler 2013; Miller and Babiarz 2016), the specific calculations underlying the BCRs in Table 1 rely on strong assumptions as Haiti or related context-specific evidence is often absent. Also, while several studies have documented causal contributions of improved sexual and reproductive health

services on child and maternal health outcomes, the specific assumptions made in the calculations above are based on observational studies and may not necessarily reflect causal relationships. Overall, the evidence for the calculations in Table 1 should therefore be considered to be, at best, of *moderate* quality.

## Notes

1 Unmet need is a concept used by demographers to measure the number or proportion of women who are fecund and sexually active, but are not using any method of contraception despite the fact that they report not wanting any more children or wanting to delay the next child.

2 Population trends, fertility and family planning indicators reported in this section are obtained from UN Population Division (2015) and Ward et al. (2015).

3 The Caribbean region includes Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, British Virgin Islands, Caribbean Netherlands, Cayman Islands, Cuba, Curacao, Dominica Dominican Republic, Grenada, Guadeloupe, Haiti, Jamaica, Martinique, Montserrat, Puerto Rico, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Sint Maarten (Dutch part), Trinidad and Tobago, Turks and Caicos Islands, and the United States Virgin Islands. Latin America includes Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, South America, Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Falkland Islands, French Guiana, Guyana, Paraguay, Peru, Suriname, Uruguay, and Venezuela.

## References

- Ashraf, Q. H., Weil, D. N. and Wilde, J. (2013). The effect of fertility reduction on economic growth. *Population and Development Review* 39(1): 97—130. doi:10. 1111/j.1728-4457.2013.00575.x.
- Behrman, J. A. and Weitzman, A. (2016). Effects of the 2010 Haiti earthquake on women’s reproductive health. *Studies in Family Planning* 47(1): 3—17. doi:10. 1111/j.1728-4465.2016.00045.x.
- Behrman, J. R. and Kohler, H.-P. (2014). Population quantity, quality, and mobility. In: Allen, F., Behrman, J. R., Birdsall, N., Fardoust, S., Rodrik, D. et al. (eds.), *Towards a Better Global Economy: Policy Implications for Global Citizens in the 21<sup>st</sup> Century*, Oxford, UK: Oxford University Press, 2014.
- Bertrand, J. T., Ward, V. and Santiso-Gálvez, R. (2015). Family planning in latin america and the caribbean: The achievements of 50 years. Measure Evaluation, Chapel Hill, NC, URL [https://www.measureevaluation.org/resources/publications/tr-\\_15-\\_101](https://www.measureevaluation.org/resources/publications/tr-_15-_101).
- Bleakley, H. (2010). Health, human capital, and development. *Annual Review of Economics* 2(1): 283—310. doi:10.1146/annurev.economics.102308.124436.
- Bloom, D. E., Canning, D. and Sevilla, J. (2002). *The Demographic Dividend: A New Perspective on the Economic Consequences of Population Change*. Santa Monica, CA: RAND Corporation.
- Bongaarts, J. (2016). Development: Slow down population growth. *Nature* 530(7591): 409—412. doi:10.1038/530409a.
- Casterline, J. B. and El-Zeini, L. O. (2014). Unmet need and fertility decline: A comparative perspective on prospects in sub-saharan africa. *Studies in family planning* 45(2): 227—245. doi:10.1111/j.1728-4465.2014.00386.x.

- Ezeh, A. C., Bongaarts, J. and Mberu, B. (2012). Global population trends and policy options. *Lancet* 380(9837): 142—148. doi:10.1016/S0140-6736(12)60696-5.
- Garrido, J. F. and Quiroga, D. E. (2016). Fertility decline and changes in unmet need in countries of Latin America and the Caribbean. Unpublished conference presentation, URL [http://www.ipops.fr/fichier/rte/9/MUTADEMO%2022%20-%2023%20SEPTEMBRE%202016/PRESENTATIONS/session%201/Presentation\\_Fertility%20decline\\_FantaQuiroga.pdf](http://www.ipops.fr/fichier/rte/9/MUTADEMO%2022%20-%2023%20SEPTEMBRE%202016/PRESENTATIONS/session%201/Presentation_Fertility%20decline_FantaQuiroga.pdf).
- Haiti DHS (2013). *Haiti DHS, 2012 - Key Findings (English, French)*. Measure DHS. URL <http://dhsprogram.com/publications/publication-SR199-Summary-Reports-Key-Findings.cfm>.
- Karra, M., Canning, D. and Wilde, J. (2017). The effect of fertility decline on economic growth in Africa: A macrosimulation model. *Population and Development Review* doi:10.1111/padr.12009.
- Kent, M. M. (2010). Earthquake magnifies Haiti's economic and health challenges. Population Reference Bureau, Washington, D.C., URL <http://www.prb.org/Publications/Articles/2010/haiti.aspx>.
- Kohler, H.-P. (2013). Population growth. In: Lomborg, B. (ed.), *Global Problems, Smart Solutions: Costs and Benefits*, Cambridge, MA: Cambridge University Press, 510—580. Working paper version available at [http://repository.upenn.edu/psc\\_working\\_papers/34](http://repository.upenn.edu/psc_working_papers/34).
- Kohler, H.-P. and Behrman, J. R. (2014). Population and demography: Benefits and costs of the population and demography targets for the post-2015 development agenda. Copenhagen Consensus Project: Post-2015 Consensus, URL <http://www.copenhagenconsensus.com/post-2015-consensus/populationanddemography>.
- Miller, G. and Babiarz, K. S. (2016). Family planning program effects: Evidence from microdata. *Population and Development Review* 42(1): 7—26. doi:10.1111/j.1728-4457.2016.00109.x.

- Mwaikambo, L., Speizer, I. S., Schurmann, A., Morgan, G. and Fikree, F. (2011). What works in family planning interventions: A systematic review. *Studies in Family Planning* 42(2): 67—82. doi:10.1111/j.1728-4465.2011.00267.x.
- National Research Council (1986). *Population Growth and Economic Development: Policy Questions*. Washington, D.C.: National Academy Press.
- Population Council (2012). *Family Planning Programs for the 21st Century: Rationale and Design*. New York: The Population Council.
- Prata, N. (2009). Making family planning accessible in resource-poor settings. *Philosophical Transactions of the Royal Society B: Biological Sciences* 364(1532): 3049—3065. doi:10.1098/rstb.2009.0162.
- Roberts, R. (2010). *Responding in a Crisis: The Role of National and International Health Workers -- Lessons from Haiti*. London: Merlin.
- Singh, S., Darroch, J., Ashford, L. and Vlassoff, M. (2014). Adding it up: The costs and benefits of investing in family planning and maternal and newborn health. Guttmacher Institute Report, URL <http://www.unfpa.org/adding-it-up>.
- UN Population Division (2015). World Population Prospects, the 2015 revision: Key findings. United Nations, Department of Economic and Social Affairs, Population Division, URL <http://esa.un.org/unpd/wpp/>.
- UNFPA (2014). *ICPD Beyond 2014 Global Report*. New York, NY: United Nations. URL <http://www.unfpa.org/public/home/sitemap/ICPDReport>.
- UNFPA, UNDESA, UN-HABITAT, IOM (2013). *Population Dynamics in the Post-2015 Development Agenda: Report of the Global Thematic Consultation on Population Dynamics*. United Nations. URL <http://www.worldwewant2015.org/file/313464/download/340868>.

Ward, V., Santiso-Gálvez, R. and Bertrand, J. T. (2015). Family planning in haiti. the achievements of 50 years. Measure Evaluation, Chapel Hill, NC, URL [https://www.measureevaluation.org/resources/publications/sr-\\_15-\\_118h](https://www.measureevaluation.org/resources/publications/sr-_15-_118h).

World Bank (2017). World Bank Open Data: Free and Open Access to Global Development Data. Accessed March 2017, URL <http://data.worldbank.org/>.

Popularization of cycle beads, a  
traditional contraception method,  
through social marketing in order to  
increase the number of women  
participating in family planning in Haiti

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Haiti Priorise

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## Introduction

Haiti currently has a population of 10.8 million people, 76% of which live on less than 2 US dollars (USD) per day, and 54% of which live on less than 1 USD per day. The country's demographic, economic and social development in the last thirty years has been affected by extreme political instability, which has allowed a diverse set of religious groups to step in.

The earthquake on January 12, 2010 caused more than 300,000 deaths, but it did not ease the demographic weight of the country. Analyses on the aftermath of the earthquake, for example, have shown that exposure to the earthquake caused a reduction in the use of injectables – the most widespread contraception method in Haiti – and increased pregnancies as well as the number of unwanted pregnancies. This is because the earthquake significantly increased the unmet needs of women in terms of family planning, reduced access to condoms, and may have also affected their ability to negotiate the use of condoms in their relationships (Behrman et Weitzman, 2016). There was a recent report on the results of 50 years of family planning in Haiti (Ward et al., 2015).

## The problem

With the population explosion, family planning has been the ideal field in which to test, study and evaluate social marketing. In the 2012 Haiti Mortality, Morbidity, and Service Utilization Survey (EMMUS-V), the data reveals that a little less than one out of three women (35%) reported using a contraception method. Of these, 31% reported using a modern method and 3% reported using a traditional method. The female condom (82%), male sterilization (44%), the IUD (35%) and especially the morning after pill (19%) are the least known.

In terms of traditional methods, a smaller proportion of women reported having heard about them than modern methods (89% vs. 100%). The withdrawal method is the most well known (83%), followed by the rhythm method (69%).

The modern methods most used by women in relationships are, in descending order: injectables, condoms, the pill, female sterilization, and implants. Withdrawal is the most used traditional method.

A brief analysis of the target demographic seems to indicate that taboos, religion, and the side effects of modern methods would allow for the promotion of natural methods with proven efficiency and which would meet the needs of the target group.

Despite the high level of knowledge about modern contraception in Haiti (99.8%), its use remains relatively low. The prevalence of modern contraception use amongst women has only increased from 22% in 2000 to 31% in 2012. This shows that Haiti is lagging in terms of average

rate of use of modern contraception in comparison to Latin America and the Caribbean (67%). The theory is that for a large part of the population, this is because of their beliefs.

Thus it would be interesting, given the importance of churches in Haitian society, to launch a social marketing campaign promoting « cycle beads », a natural family planning method. This method would be in line with the churches' mission, and be useful to those of the targeted group whose religious beliefs prevent from using modern family planning techniques and for whom the fertility rate is quite high.

Thus we propose to increase the number of people in relationships that use the Standard Days Method (SDS) for family planning. With the goal of arriving at a point where 15% of people in relationships use the SDS, we propose to build awareness and train 80% of religious leaders on the method, and to also ensure that 100% of contractors propose this method to their clients.

## What factors explain the current situation? What are the facts?

The level of knowledge of users of contraceptive methods was very high (100%) no matter the category of women. In terms of knowledge rates by specific method, we noticed that women cited traditional methods less frequently than they did modern methods (83% vs. 100%). The better known of the three traditional methods remains withdrawal (76%), followed by periodic abstinence (64%). Popular methods were only cited by 16% of women. Regardless of sociodemographic characteristics, over 99% of women in relationships know at least one modern method of contraception (Source: EMMUS 4).

The finding is that, despite women's high level of knowledge about contraception methods, particularly traditional methods, their use remains relatively low – only 3% of women use a traditional method.

## Factors explaining the current situation

Men's involvement in reproductive health is low in Haiti, which contributes to the limited use of traditional contraceptive methods.

Religious beliefs, religious interdicts, prejudices and taboos linked to contraception methods seem to be inescapable barriers to more widespread use. When religious leaders forbid family planning, they often forget to say that they accept traditional methods or to promote these methods. And so this is where the opportunity lays – by acting on this fact, we can increase the number of women who use family planning and reduce fertility rates.

Existing national programs tend not to make traditional methods available and contractors generally do not promote them.

But it's important to understand that traditional methods are demanding and their improper use is linked to high pregnancy rates. Opponents of traditional methods sometimes use this in order to discourage their use. Natural methods require a learning period to plan your sex life around your cycle and your desire for kids. This is why a social marketing campaign is really needed to make this the method of choice for women.

In any society, accepted but perhaps not stated rules must be respected by all individuals. Haiti is not an exception to this rule. And we must understand the weight of family especially in terms of the saying « *pitit se riches* » which means that kids guarantee wealth. This sometimes determines choices made.

Religion also dictates behavior. Religious leaders are seen as representatives of God and have a significant amount of power. They can influence behaviors and decisions in one direction or another. And they have no problem with the use of traditional contraception methods. In contrast, managers of national programs barely use these methods.

The decision power is often in the hands of the man. This works against us because generally periodic abstinence is not well perceived by Haitian men. The common perception is that «the woman does not have the right to deny her husband her body unless she is sick or greatly fatigued.» But there has been a lot of progress in the fight for women's rights in Haiti, which increases the chances of such a strategy working.

There is a possibility of reducing funding originally planned for modern contraception methods, as natural methods, and particularly cycle beads, cost less. This will allow us to break the cycle of poverty.

75% of the Haitian population lives on less than 2.5 USD per day, and women who use family planning tools are of a high socio-economic background (between 29 and 30% in the last two quintiles). Most women were excluded from being able to use modern methods, as opposed to the cycle beads method.

There is a political will to control demographic growth in order to stimulate economic growth. The Public Health and Population minister has taken steps to reposition family planning and has even launched a family planning campaign. There is even a presidential order requiring all public institutions to offer free family planning services to all women. Unfortunately this is only possible when the necessary resources are available.

## Lessons learned from current and previous campaigns

The country often organizes campaigns to promote family planning, but unfortunately these have never produced the expected results. This is because they don't consider natural methods,

which are not prohibited by churches. The other programs are often done with no context analysis and simply to appease funding partners. Thus, in order to promote better reproductive health, it is crucial that we are able to integrate natural methods, particularly the cycle beads method.

In our country accurate information about natural birth control is not available or well disseminated, especially by health professionals. Instead of encouraging the use of these cheaper methods, health professionals discourage it, focusing on what they learned in their training, which is that these methods are unreliable. This is what we want to change by encouraging contractors to propose natural methods recognized by the WHO. We think that educating teenagers on the physiology of the menstrual cycle, on how to identify the cervical mucus or the sensation at the vulva and its characteristics, will allow them to better understand their body and their sexuality. They will then be able to determine their fertile periods and behave more responsibly. This will then allow us to increase the number of women who use the cheapest family planning method and thus break the cycle of poverty.



Haiti faces some of the most acute social and economic development challenges in the world. Despite an influx of aid in the aftermath of the 2010 earthquake, growth and progress continue to be minimal, at best. With so many actors and the wide breadth of challenges from food security and clean water access to health, education, environmental degradation, and infrastructure, what should the top priorities be for policy makers, international donors, NGOs and businesses? With limited resources and time, it is crucial that focus is informed by what will do the most good for each gourde spent. The *Haiti Priorise* project will work with stakeholders across the country to find, analyze, rank and disseminate the best solutions for the country. We engage Haitians from all parts of society, through readers of newspapers, along with NGOs, decision makers, sector experts and businesses to propose the best solutions. We have commissioned some of the best economists from Haiti and the world to calculate the social, environmental and economic costs and benefits of these proposals. This research will help set priorities for the country through a nationwide conversation about what the smart - and not-so-smart - solutions are for Haiti's future.



# Haiti Priorise

Un plan de **développement** alternatif

**For more information visit [www.HaitiPriorise.com](http://www.HaitiPriorise.com)**

## C O P E N H A G E N   C O N S E N S U S   C E N T E R

Copenhagen Consensus Center is a think tank that investigates and publishes the best policies and investment opportunities based on social good (measured in dollars, but also incorporating e.g. welfare, health and environmental protection) for every dollar spent. The Copenhagen Consensus was conceived to address a fundamental, but overlooked topic in international development: In a world with limited budgets and attention spans, we need to find effective ways to do the most good for the most people. The Copenhagen Consensus works with 300+ of the world's top economists including 7 Nobel Laureates to prioritize solutions to the world's biggest problems, on the basis of data and cost-benefit analysis.