Closing the deadly gap between what we know and what we do

Investing in women's reproductive health

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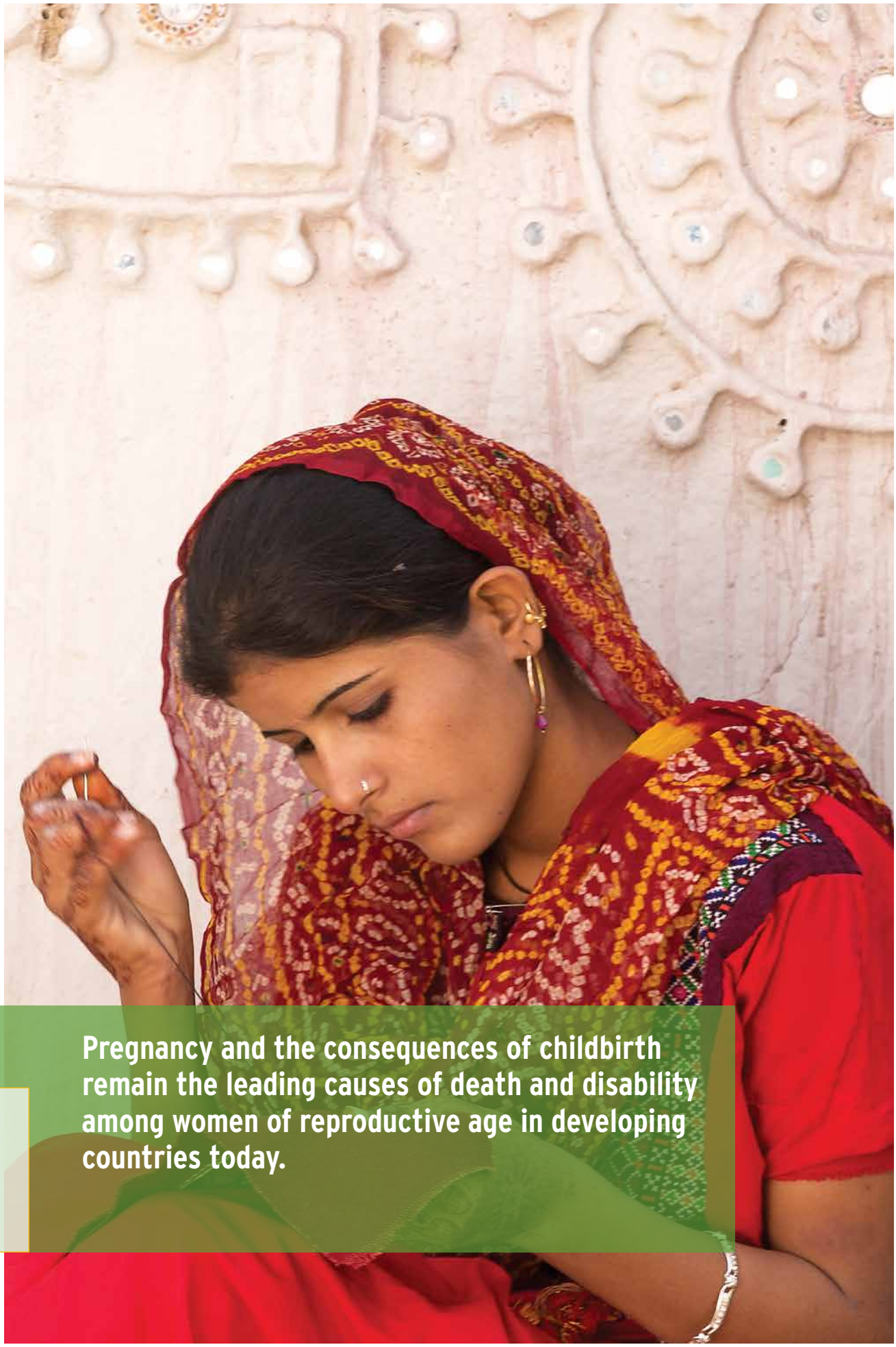


Pregnancy and the consequences of childbirth remain the leading causes of death and disability among women of reproductive age in developing countries today.

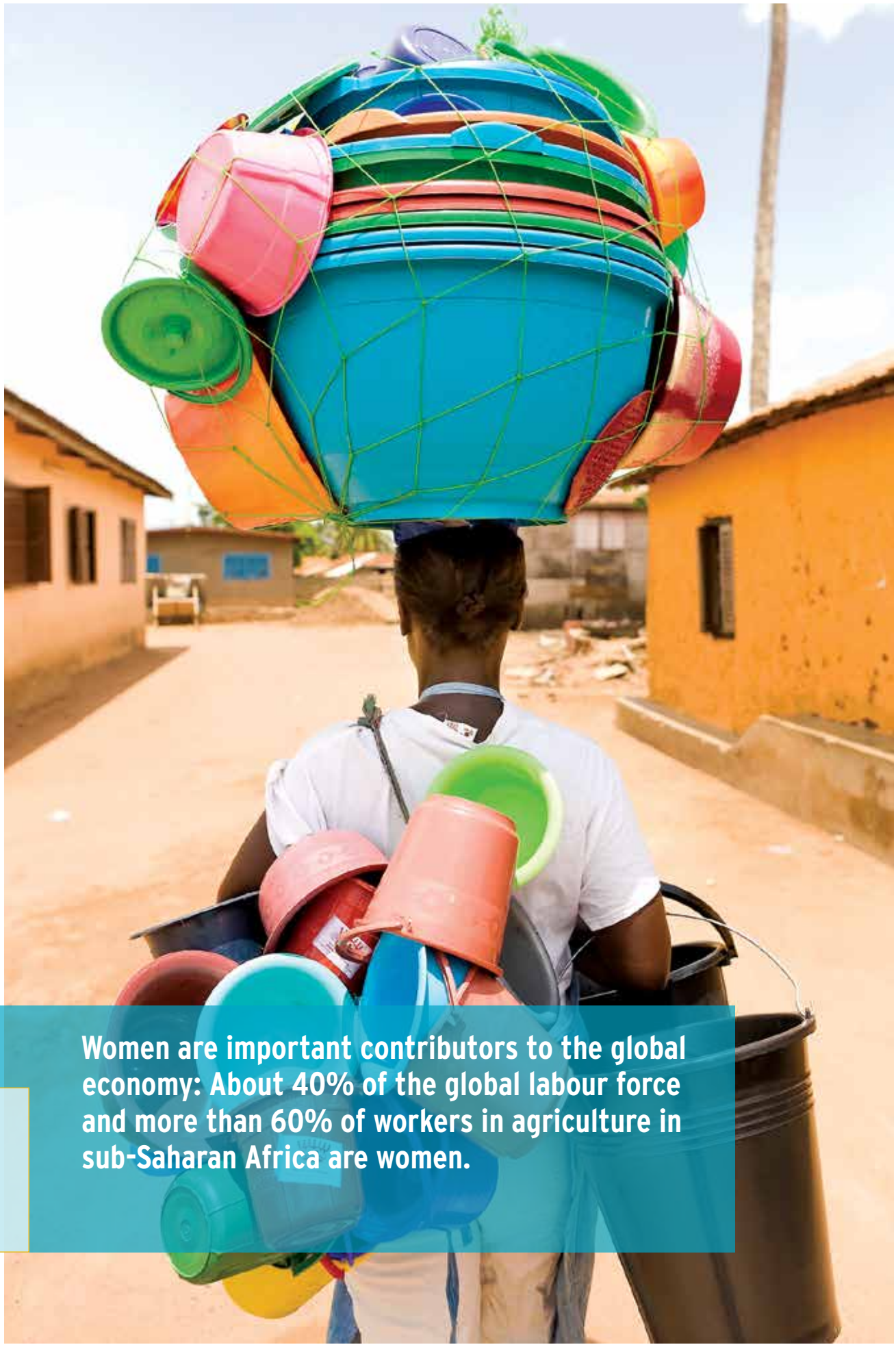
1 Introduction

Gender equality has moved to the forefront of development debates. A key message from the *2012 World Development Report* (WDR2012) is that gender equality is a core development outcome in its own right: Greater gender equality can enhance productivity, improve development outcomes for future generations, and make institutions function better.[1] Addressing the reproductive health needs of women is a prerequisite to achieving gender equality, but despite international commitments, actual progress on this front has been slow and remains a blight on global development.[2] Improving reproductive health outcomes and gender equality outcomes are inextricably linked.

Pregnancy and the consequences of childbirth remain the leading causes of death and disability among women of reproductive age in developing countries today.[3] Millions of women lack the means to prevent unwanted pregnancies, and to prevent and address complications and disease during pregnancy. Despite some global progress in tackling maternal mortality, the risks remain unacceptably high: there were an estimated 287,000 maternal deaths in 2010—close to 800 per day on average—more than half of which occurred in sub-Saharan Africa, and just under a third in South Asia.[4] The maternal mortality ratio (MMR) in developing regions (240 deaths per 100,000 live births) is a massive 15 times higher than in developed countries. This comparison between the burden of maternal mortality in developed and developing countries has long been cited as the "widest disparity in all statistics of public health."[5] In several countries—Chad, Guinea-Bissau, Liberia, Niger, Sierra Leone, and Somalia—at least one of every 25 women will die from complications of childbirth or pregnancy. Moreover, maternal mortality is just the tip of the iceberg—for every woman who dies another 30 suffer long-lasting injury or illness.[6]

The main contributions of this report are fourfold: first, it brings together the evidence highlighting the economic benefits of investing in reproductive health, which confirms that addressing the reproductive needs of women is indeed smart economics; second, it explores the determinants of poor reproductive health outcomes by making a quantitative comparison across countries; third, it examines the multiplicity of factors that contribute to poor reproductive health outcomes at the country level, building on the insights of the analytical framework put forth in the WDR2012; and lastly, it reviews the evidence that demonstrates the effectiveness of key policy levers to accelerate reproductive health improvements in developing countries.

The basic message is that investments in reproductive health are a major missed opportunity for development. Effective and affordable interventions are available to improve reproductive health outcomes in developing countries,[7] and the challenge is less about identifying these interventions but rather in implementing and sustaining policies to put proven packages of interventions and reforms into practice.[8] This requires addressing women's agency, making improvements in the delivery of health services, and increasing accountability in health systems. However, the lack of reliable data and evidence continues to hamper progress and must be seriously addressed at the country and global levels. Only then can a virtuous cycle be initiated that will lead to sustained improvements in reproductive health.



Women are important contributors to the global economy: About 40% of the global labour force and more than 60% of workers in agriculture in sub-Saharan Africa are women.

Why investing in reproductive health is smart economics

2

To date, most research on the benefits of reproductive health programmes has focused on the health benefits—in terms of reducing maternal mortality and morbidity—which are substantial, and which alone justify greater investment.[7,9-11] The economic benefits of such investments, from the individual through to the economy-wide levels, are less well recognised. Below we review the evidence of how investments in reproductive health can generate economic benefits. Because there is likely to be feedback between these measures—in that improvements in economic status may improve reproductive health outcomes—we focus on studies that attempt to control for this potential endogenous response.[12] Measuring the economic returns on investments in reproductive health is difficult, and we do not attempt to aggregate the costs, given the scarcity of studies and the risk of double counting. It is nonetheless clear that the scope for economic gains should be a critical consideration for policy makers around the world.

Labour productivity effects

Women are important contributors to the global economy: About 40% of the global labour force and more than 60% of workers in agriculture in sub-Saharan Africa are women.[13] Poor health reduces labour supply and contributes to lost wages,[14,15] so improved reproductive health outcomes can increase female labour supply and productivity and therefore should be of great concern to policy makers.

For every maternal death, many more women suffer maternal morbidities, especially in developing countries.[16] Evidence from Bangladesh has documented the losses in productivity from maternal health conditions, in particular for severe complications of pregnancy.[17] Maternal mortality and morbidity imposes costs in terms of foregone earnings, and also means that family members need to absorb the work done by women inside the home, which might reduce their own ability to exploit outside economic and educational opportunities.

High fertility can also affect female labour supply. Over time, as fertility has declined, women have tended to become a larger share of the labour force, most notably in Latin America and the Caribbean where female labour force participation rates surged by 15% over the past decade, and at the same time the total fertility rate decreased by almost 11%.[18,19] Understanding the direction of causality between fertility and labour force participation is a challenge. To address this empirical problem, a recent cross-country analysis uses an instrumental variable approach. The paper finds that the effect of fertility on female labour supply is strongest during the fertile years. Globally, female labour force participation decreases with each additional child: by about 10 to 15 percentage points among women aged 25 to 39, and about 5 to 10 percentage points among women aged 40 to 49.[20]

Various factors help to explain this correlation, including rising levels of education. In Timor-Leste, for example, total fertility rates vary from 6·1 births per woman with no education to only 2·9 births for women with secondary schooling or above.[21] At the same time, some evidence suggests that the relationship between fertility and labour supply is at least partially causal. In the U.S., exogenous increases in fertility are associated with a 10% lower probability of the mother being in the labour force.[22] Qualitatively similar results have been found in Argentina and Mexico, countries with very different labour markets and institutions.[23] Legalisation of abortion, which leads to reduced total fertility, has also been linked to higher female labour force participation.[20]

It is not only the total level of fertility that affects labour supply but also the timing of births. Around 16 million adolescent girls aged 15 to 19 give birth each year—almost 95% of whom live in low- and middle-income countries. In Latin America there are almost 74 births per 1,000 girls aged 15-19, in South Asia around 77 and in sub-Saharan Africa there are as many as 120 births per 1,000 girls in that

age group.[24] An estimated three million girls in this age group undergo unsafe abortions each year, and in low- and middle-income countries, complications from pregnancy and childbirth are the leading cause of death among girls aged 15 to 19.[24] If women are able to better control their fertility through, for example, access to family planning, then as girls they can also stay in school longer, accumulate more skills, and eventually earn higher wages.

In Bangladesh, the age of menarche influences how long girls remain in school by delaying marriage.[25] In Colombia, when family planning programmes were expanded from the mid-1960s, women were able to delay their first birth, enabling more schooling and making them more likely to be employed in the formal sector.[26] Hence early pregnancies—especially among school-aged girls—may reduce future earning potential. However, studies that try to ascertain the causal effects of early pregnancy have had mixed results and conclusions seem to be sensitive to the methodological approach used.[27]

As noted above, the relations between fertility, schooling and economic opportunities run both ways. Not only does lower fertility potentially improve economic outcomes, but also better economic opportunities may reduce fertility rates. This is illustrated by a recent randomised experiment in India that helped to provide work opportunities for young women to enter the call centre industry. This led to fewer women getting married and to more women reporting wanting fewer children.[28]

Financial well-being of households

A large economics literature has studied the repercussions of poor health for household consumption and other measures of household's financial well-being around the world.[29,30] A key channel is the associated costs and consequences of paying for health care. It is well established that catastrophic health costs can impoverish families in developing countries —households frequently report having to borrow or sell assets to pay for health services.[31,32] Evidence is accumulating that poor maternal health imposes important economic burden on households.

A study in Bangladesh has documented large reductions in household resources associated with poor maternal health outcomes, most of which were driven by large health expenditures.[33] In Ghana and Benin, the costs of complications at delivery cost represented an estimated one-third of the annual household cash expenditures.[34] In Burkina Faso, women with more severe obstetric complications reported more frequent sale of assets, more borrowing, and slower repayment of debt in the following year.[35] In Yemen, in a survey of women who had suffered previous reproductive morbidity, 43% reported having to sell assets or take out a loan in order to pay for their care.[36] Qualitative research also in Bangladesh further supports the evidence that families bear significant financial burdens due to paying for maternal health care.[37]

While poverty is a contributing factor to maternal mortality, there is also evidence that it further impoverishes households. A study in three rural provinces of China compared households with a recent maternal death to matched households with a recent birth but where there was no maternal death.[38] The direct health expenditures of a maternal death were more than six times higher than those with a successful birth outcome. Families also had to pay funeral expenses, which were substantial. Affected families also had substantial indirect financial costs, including substantial days of missed work and lost wages and many reported having to borrow to fill the gaps. The total economic burden of a maternal death was estimated at more than a full year of household income.

Future generations

Poor reproductive health can adversely affect the economic prospects of the next generation. The most extreme impacts arise when a woman or her baby dies in childbirth, but maternal ill-health can also affect her children's well-being and schooling.

Many studies have investigated how the loss of a parent impacts human capital investments in children, and studies in low-income countries have generally found that orphans have worse health[39] and less schooling than other children.[40] Notably, the studies also find that the death of a mother tends to affect children more adversely than the death of a father.[41,42] In South Africa, when a mother dies, her children are less likely to be enrolled in school and complete fewer years of schooling than children whose mothers are still alive.[41] In Tanzania, the estimated effect of a maternal death could be as large as one full year of schooling.[43] However these studies have largely focused on the impact of deaths resulting from human immunodeficiency virus (HIV)/acquired immune deficiency syndrome (AIDS), which may differ from maternal illness, which is an area where more research is needed.

Families might also increase investments in their children if they expect them to live longer. In Sri Lanka between the 1940s and 1960s, in response to a major reduction in maternal mortality, rates of female schooling increased, suggesting that families increased their investments in their daughters in response to expected longer lifespans (Box 1).[44]

Poor maternal health can inhibit the development of children through a mechanism known as the *foetal origins hypothesis*.[45] Evidence suggests that children, even in wealthier countries, benefit greatly later in life if their mothers are well fed and receive adequate health care during pregnancy: benefits include their subsequent

health,[46,47] schooling,[48] and labour market outcomes.[49] A long-term study in Bangladesh found that children born to mothers who received tetanus vaccines during pregnancy subsequently received more schooling.[50] These studies suggest that investing in routine reproductive health services, in particular antenatal care and maternal nutrition, can also have long-term benefitsfor future generations.

In classic economic models of fertility, since families have limited resources and it is costly to raise children, the more children a family has, all else being equal, the fewer resources that are available per child.[51] It follows that family planning might help families have fewer children and to invest more in each child. Family planning can also influence the ability of families to better control the spacing between births. Evidence from the U.S. suggests that increases in birth spacing between siblings can improve test scores of older siblings, possibly for physiological reasons or by allowing families to devote more resources and time to individual children during childrearing.[52]

Broader economic returns

Even if economic benefits can be generated at the individual and household levels, it remains to be seen whether population-level programmes produce economic gains in the aggregate when general equilibrium effects are taken into account.[15] In sub-Saharan Africa at least, it has been shown that there is a negative relationship between high levels of maternal mortality and gross domestic product.[53] One mechanism that has been shown to link population-level improvements in reproductive health to broader economic returns is the *demographic dividend*. This suggests that countries can benefit economically from rapid shifts in the agecomposition of the population, triggered by improvements in population health and fertility decline.[54] This effect has been empirically documented in countries from Asia to Europe.[55,56] Where fertility rates remain high and there is a large unmet need, greater access to voluntary family planning programmes might help countries speed up the demographic change to capture the benefits from the demographic transition.

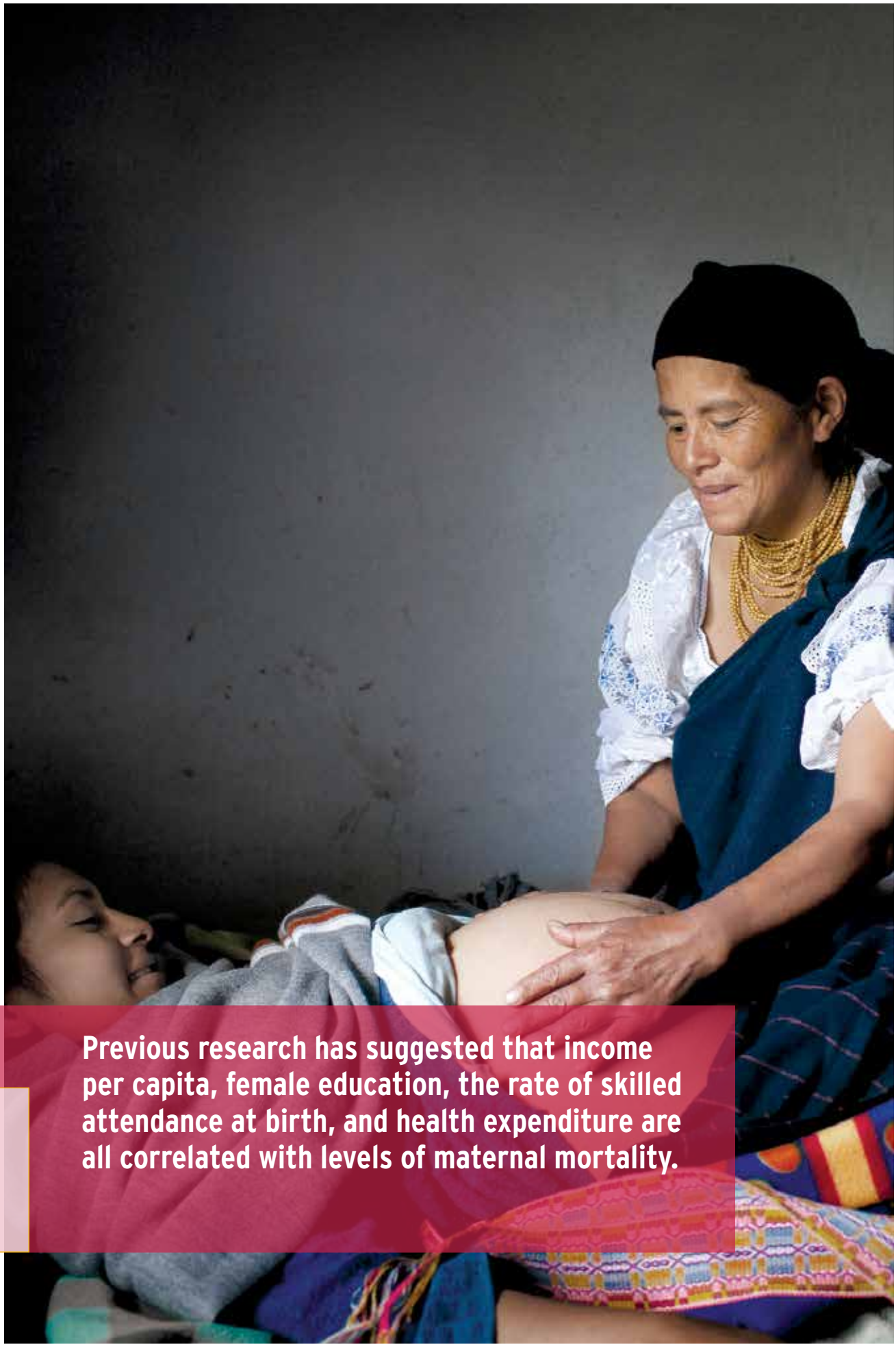
IMPACT OF MATERNAL MORTALITY DECLINES ON FEMALE SCHOOLING IN SRI LANKA

BOX 1

The case of Sri Lanka is well known as a success story for improving maternal health, proving that with the proper investments dramatic and quick improvements can be made even in a poor country.[57] Sri Lanka was able to reduce its maternal mortality from over 2,000 deaths per 100,000 live births in 1930 to just 35 today. The government achieved this through a comprehensive strategy to expand universal coverage of health services, including to rural areas. By 1948 the government-funded health care delivery system had reached the entire island.[58] Malaria and hookworm control, together with modern medical advances, contributed to declines in maternal mortality during this period. The government meanwhile invested heavily in the training of midwives and development of a country-wide delivery network, such that by 1950, 58% of births had skilled attendants.[58] During the 1960s and 1970s the government turned towards improving the quality of care through improvements in obstetric care and family planning programmes. By 1999, 66% of births occurred in an institution staffed with an obstetrician.[58]

The case of Sri Lanka also shows that improving maternal health has important benefits for future generations. From 1946-1953, one of the most dramatic declines in maternal mortality that has ever been recorded took place and maternal mortality declined by 70%.[44] As maternal health improved, families invested more in the education of girls as they would now be expected to live longer and more productive lives. This is shown empirically by looking at districts with different levels of initial maternal mortality and comparing changes in girls' enrolment to boys' (who did not benefit directly from the improvement in life expectancy). For every year of increased life expectancy, female literacy improved by 0.7 percentage points (2%) or 0.1 years of schooling (3%) relative to males.

Notably, we are able to learn from the case of Sri Lanka because—from the very beginning—the government prioritised the collection of high quality data on maternal mortality and good monitoring and evaluation of its programmes. Administrative data on maternal mortality in Sri Lanka during the 1940s still exceeds the quality of data available in most developing countries today.



Previous research has suggested that income per capita, female education, the rate of skilled attendance at birth, and health expenditure are all correlated with levels of maternal mortality.

What factors contribute to poor reproductive health outcomes?

3

This section explores the determinants of the maternal mortality ratio (MMR) across countries. We focus on this measure as a proxy, albeit the most extreme manifestation of, poor reproductive health outcomes. Previous research has suggested that income per capita, female education, the rate of skilled attendance at birth, and health expenditure are all correlated with levels of maternal mortality.[59–62] Methodologically, we improve upon these models by analysing reproductive health outcomes in a wider set of countries and over time, and exploring the contributions of gender inequality.

For this analysis we use the most recent estimates of MMR produced by the UN Maternal Mortality Estimates Inter-agency Group (May 2012 estimates). These estimates have been generated from 1990–2010 and are available at five-year intervals. Data on gross domestic product per capita, the female primary education completion rate, the total fertility rate, the percentage of parliamentary seats in a single or lower chamber held by women, and the proportion of the population living in urban areas are from the World Bank's World Development Indicators (WDI). Data on adult HIV prevalence is from the Joint United Nations Programme on HIV/AIDS (UNAIDS).[i] We also utilise the Gender Inequality Index, a composite measure of the inequality between men and women in terms of education, political representation, labour force participation, and reproductive health outcomes produced by the United Nations Development Programme (UNDP).[ii] The sample of 158 countries includes all countries with population greater than 500,000 for which data is available.

First, to visualise the relationship we plot MMR in 2010 and measures of income per capita, female primary education completion rates, and the gender inequality index during roughly the same time period.[iii] These plots are shown in Figure 1 (page 10). We can see that all three of these factors appear to be associated with MMR in similar ways: Countries with higher levels of income, higher female education, and higher gender equality all have lower MMR, higher skilled birth attendance rates, and lower total fertility rates. However, none of these factors alone are sufficient to fully explain the variation in reproductive health outcomes—at any given level of income, education, or measured gender inequality, large differences in reproductive health outcomes remain. The impact of these factors also appears to level off at higher levels of income and education and in countries with greater gender equality.

Next, we improve upon these simple relationships and develop a multivariate model to explore the determinants of MMR across countries and over time. None of the previously mentioned studies employed panel data to investigate the determinants of maternal mortality. For each country, we observe MMR in those countries at five-year intervals from 1990 to 2010. Since we are using estimates of MMR where some of the data have been generated from regression models that use some of the same variables we are interested in, we first develop a base model that includes these variables (per capita income, total fertility rate, skilled birth attendance, and HIV/AIDS prevalence) since it is not surprising that they are at least partially correlated. We also include a dummy variable in

i HIV prevalence data were missing for a small number of countries. Where possible additional sources of data were used to estimate prevalence but in the absence of other estimates, it was assumed that the HIV prevalence was 0.1% in approximately 30, largely Middle Eastern, countries.

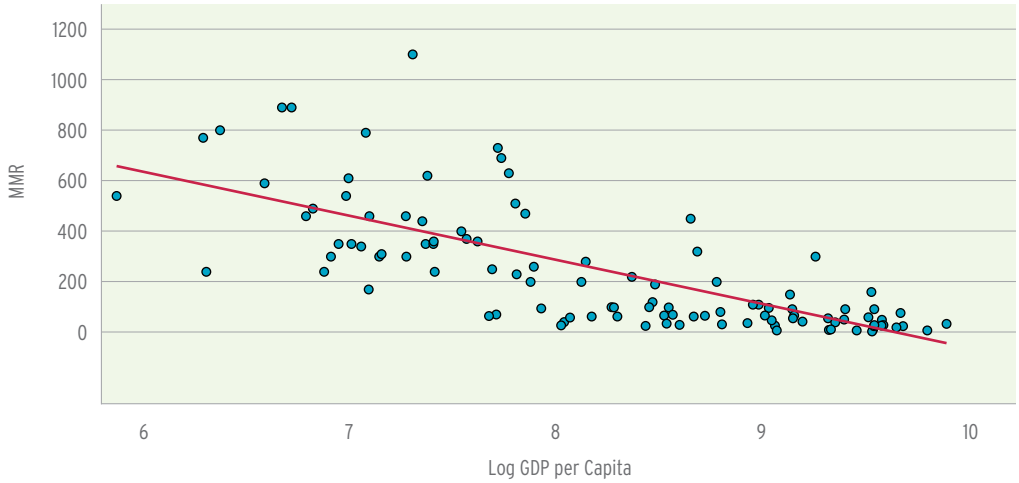
ii The gender inequality index includes three dimensions of gender disparities: labour market (women's labour force participation), empowerment (share of parliamentary seats held by women and the secondary and higher educational attainment of women), and reproductive health (maternal mortality and adolescent fertility). It varies between zero (full equality) and one.

iii We use the most recent measure of the gender inequality index, which was based on 2011 data. In order to facilitate the comparisons, we compare reproductive health outcomes to the inverse of the gender inequality index. Measures of income per capita and female education are from 2010.

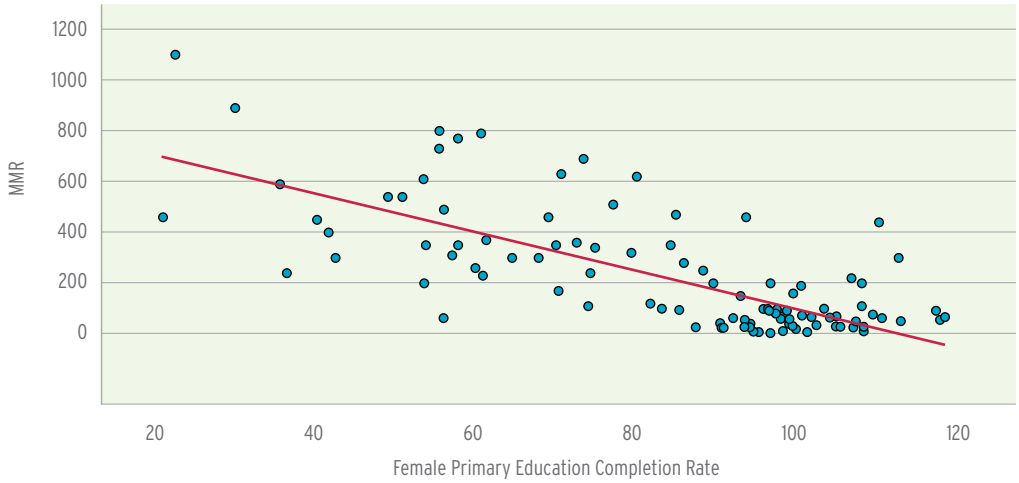
Source: Authors' analysis based on World Development Indicators and UNDP data.

RELATIONSHIP BETWEEN MMR AND INCOME, EDUCATION, AND GENDER INEQUALITY FIG.1

MMR AND INCOME



MMR AND EDUCATION



MMR AND GENDER INEQUALITY

our models for countries with incomplete vital registration systems in order to capture the effect of model-based estimates. We then augment the models with additional variables, including data on female education and the share of seats in parliament held by women, a commonly used measure of gender equality that has good internationally comparable data since the early 1990s.

The results of these regressions are presented in Table 1. In column 1 we see that income per capita, skilled birth attendance, total fertility rate and adult HIV prevalence are all associated with maternal mortality, consistent with previous studies. When we also include girls' primary education completion rate and women's parliamentary representation, we see that these factors are also important determinants of maternal mortality. Countries with a higher proportion of female legislators and where more girls complete primary school also have lower maternal mortality rates. Interestingly, when education is included in the model, the effect of income is no longer significant, suggesting that the association between income and MMR is largely driven by investments these countries make in education. When both the percentage of women parliamentarians and female education are included into the model, both effects remain significant and relatively unchanged from the earlier specifications suggesting that both have an important effect on maternal mortality.

Many factors are associated with MMR in our cross-country models. Similar to previous studies, this analysis confirms that across the countries included in our sample, countries with higher levels of income, more urban populations, higher levels of utilisation of skilled birth attendants, and lower fertility rates have lower levels of maternal mortality. In addition, this study also finds that countries where women hold a higher proportion of seats in parliament and where a higher proportion of girls complete primary education we also see lower levels of maternal mortality. Although it is impossible to rule out other factors that might be confounding this relationship, it does suggest that the processes of improving gender equity and reproductive health outcomes are inextricably linked. Below we further expand on these finding by reviewing micro-level evidence that also supports these findings.

DETERMINANTS OF MATERNAL MORTALITY, 158 COUNTRIES WITH COMPARABLE INTERNATIONAL DATA, 1990–2010 TAB.1

VARIABLES	(1) BASE	(2) PARLIAMENT	(3) EDUCATION	(4) BOTH
Parliament Seats Held By Women (%)		-2.41** (0.643)		-1.86** (0.587)
Female Primary Education Rate			-2.92** (0.381)	-2.88** (0.377)
Log GDP Per Capita	-50.55* (19.624)	-55.24** (19.491)	-15.66 (19.711)	-15.58 (19.512)
Urban Population (%)	-4.90** (1.515)	-5.10** (1.503)	-3.69** (1.397)	-3.85** (1.384)
Skilled Birth Attendance Rate	-2.47** (0.561)	-2.34** (0.557)	-1.89** (0.522)	-1.81** (0.517)
Total Fertility Rate	72.37** (10.883)	74.01** (10.797)	42.88** (10.279)	43.82** (10.179)
Adult HIV Prevalence (%)	13.74** (1.994)	14.50** (1.986)	12.30** (1.746)	12.90** (1.738)
Lacks Vital Registration Data	-408.59** (128.835)	-403.66** (127.659)	-295.01* (119.236)	-280.48* (118.120)
Constant	990.01** (206.566)	1,050.78** (205.324)	873.74** (204.181)	889.76** (202.181)
Observations	661	657	585	585
R-squared	0.951	0.952	0.959	0.960

Standard errors in parentheses ** p<0.01, * p<0.05 All models also include country and year fixed-effects

The pervasiveness of child marriage, and its association with high fertility, reflect the crucial need for expanding comprehensive sexual and reproductive health services that reach married adolescents.

Understanding underinvestment in reproductive health

4

Despite advances in gender equality, potential major economic gains, manifest health benefits and intrinsic value of investments in reproductive health, alongside the well documented technical solutions, too little progress has been made in addressing reproductive health needs. Why do these gaps persist?

Women's agency

Agency emerges as a very important part of the story. In the capabilities approach, as conceived and developed by Nobel Prize-winning economist Amartya Sen, agency is the ability to pursue goals that one values and has reason to value,[63]and an agent is "someone who acts and brings about change".[64] The concern is with both *processes* (intrinsic) and *outcomes* (instrumental). Agency, as defined in the WDR2012, is the ability to use endowments to take advantage of opportunities to achieve desired outcomes. Constraints on this ability can include social and cultural norms, lack of services, institutional discrimination, and so on. Given measurement challenges, the focus tends to be on the institutional conditions for the exercise of agency, a practice that we follow in this paper. Concepts of agency and constraints on its exercise help to cast useful new light on observed patterns of reproductive health outcomes, and the performance of various types of programmes.

The WDR2012 highlighted women's voice and agency as a critical area where progress over time has been especially slow—and underlined the critical links between agency and reproductive health. In Papua New Guinea, for example, almost three out of every ten women cite lack of knowledge as the main reason for not using contraception. In 37 countries with recent data, 12% of women state that violence is justified when a wife refuses to have sex with her husband—and was as high as 45% in Burkina Faso.[65] In Bangladesh, less autonomous women were less likely to receive antenatal services or to have deliveries attended by a medically trained provider than those with more autonomy.[66] Policies promoting women's awareness, knowledge and autonomy, linked to efforts to promote economic opportunities, are therefore crucial to improving reproductive health outcomes.

The constraints on younger women's agency may be more severe and thus may require special attention. Child marriage remains common, with an estimated 60 million women globally aged 20–24 years being married before they were 18 years old.[67] This represents a global average of around 36% of all girls marrying before they turn 18, but regionally the rates are as high as 45% in South Asia,[68] with a peak of more than 82% of girls in Bangladesh.[68] Child marriage has been linked to psychological and health risks, including vestico-vaginal fistulae and a higher likelihood of acquiring HIV.[68] However, the practice has also been linked with increased risk of violence and decreasing rates of schooling, and with increased risk of teenage pregnancy, which can have a range of detrimental impacts as discussed below.

Recent work in India has confirmed extremely high rates of child marriage—almost half of women aged 20–24 years had been married before 18 years of age, almost 23% were married before age 16, and almost 3% were married before 13 years. Among women aged 20–24, the study found that child marriage is significantly associated with decreased use of contraceptives prior to the birth of the first child, high fertility (three or more births), multiple unwanted pregnancies, short birth spacing and female sterilisation.[69] The pervasiveness of child marriage, and its association with high fertility, reflect the crucial need for expanding comprehensive sexual and reproductive health services that reach married adolescents.

Mutually reinforcing constraints

Figure 2, adapted from the WDR2012, illustrates how good reproductive health outcomes result from the interplay of a number of factors. It shows that the key outcomes of gender equality—in terms of endowments, agency and opportunities—are inter-related, and are influenced by the interplay of markets, formal institutions (like public health systems) and informal institutions (including norms and attitudes), as well as decision making within the household. These factors interact in important ways: for example, poor women have lower access to high quality health care services than wealthier women,[70-72] while low quality of maternal health services often deters utilisation.[73,74]

Sometimes these factors move in the wrong direction and vicious cycles can impede progress, but the implementation of innovative policies can help to break and reverse their direction, beginning virtuous cycles that can improve reproductive health. This visualisation helps to underline that women often face dual or compounding disadvantages where poor reproductive health is associated with other sources of disadvantage.

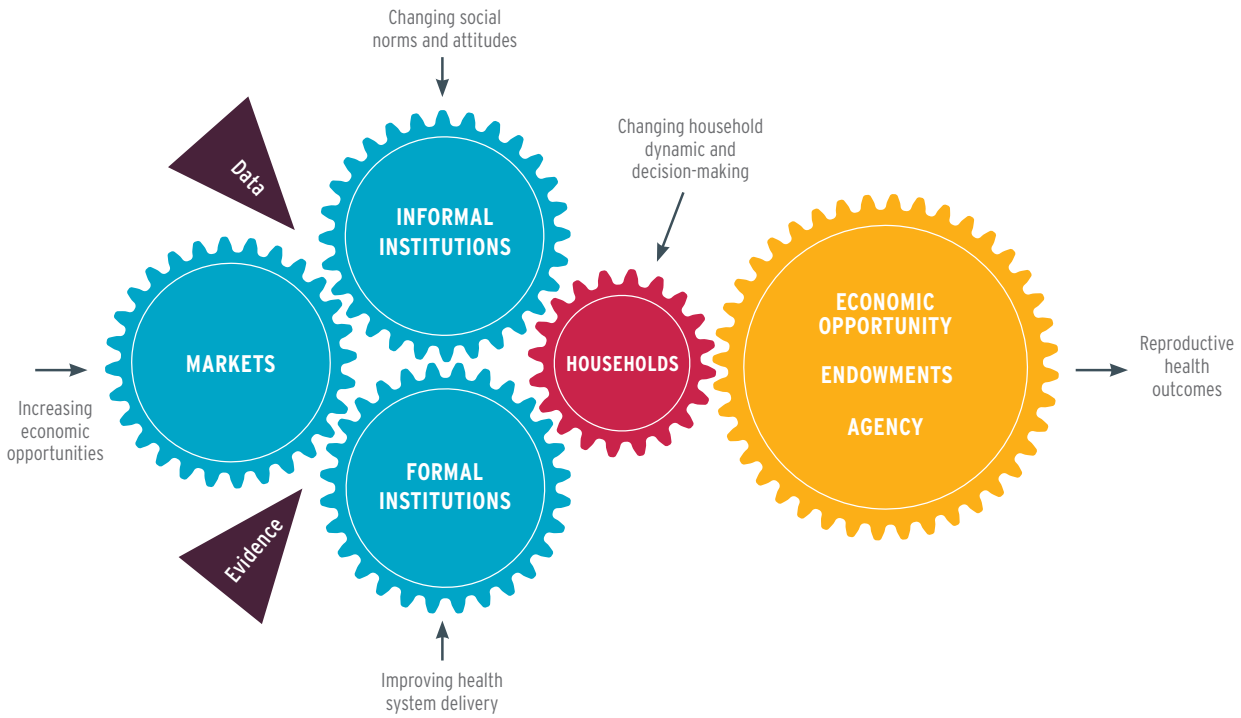
Economic growth is necessary, but not sufficient to improve reproductive health outcomes: There is great variation in reproductive health outcomes at similar levels of income at the country level (as shown in Figure 1). There are also large gaps in outcomes within countries.[75] Women disadvantaged by class, caste, location and ethnicity experience far worse reproductive health outcomes than other women.[72,76,77] In Viet Nam, for example, 60% of women from ethnic minorities give birth without prenatal care, twice the rate as that for the majority Kinh women.[1]

Formal institutions matter a lot and poorly functioning health services contribute to poor reproductive health outcomes. In 2008, fewer than two thirds of births globally and less than 47% in Africa had skilled birth attendants.[78] In Nepal, only 44% of pregnant women receive antenatal care, and fewer than one in five deliver with the assistance of skilled health personnel.[75] Here, as elsewhere, there are major differences across the distribution—in India, nearly nine out of ten women in the richest quintile have assistance during delivery while only two out of ten in the poorest quintile do.[75]

Barriers to accessing health care vary across countries and regions, but financial and physical barriers, inadequate transportation options, low quality health services, and the lack of knowledge about where to deliver are frequently cited as reasons for not seeking care.[79-82] Unaffordability was cited by three out of four Cambodian women with problems

Source: Adapted from World Bank 2012.

LIMITED PROGRESS IN REPRODUCTIVE HEALTH IS EXPLAINED BY MUTUALLY REINFORCING CONSTRAINTS FIG.2



accessing maternal health care and 38% of women in Pakistan. In Burkina Faso, 46% of women cited long distances as a main barrier in accessing health care, and another 40% cited lack of transportation.[75]

Part of the institutional challenge is the lack of resources, in particular human resources, in the health system. In a cross-section of countries, low density of health-related human resources was found to be correlated with high levels of maternal mortality.[83] Tanzania has extremely low numbers of health workers (only 0·008 physicians and 0·24 nurses/midwives per 1,000 people) and Chad, the country with the highest MMR globally, has only 0·28 nurses/midwives per 1,000 people.[75] This is exacerbated by low quality of care from health care providers and high rates of absenteeism.[84,85]

Limited accountability

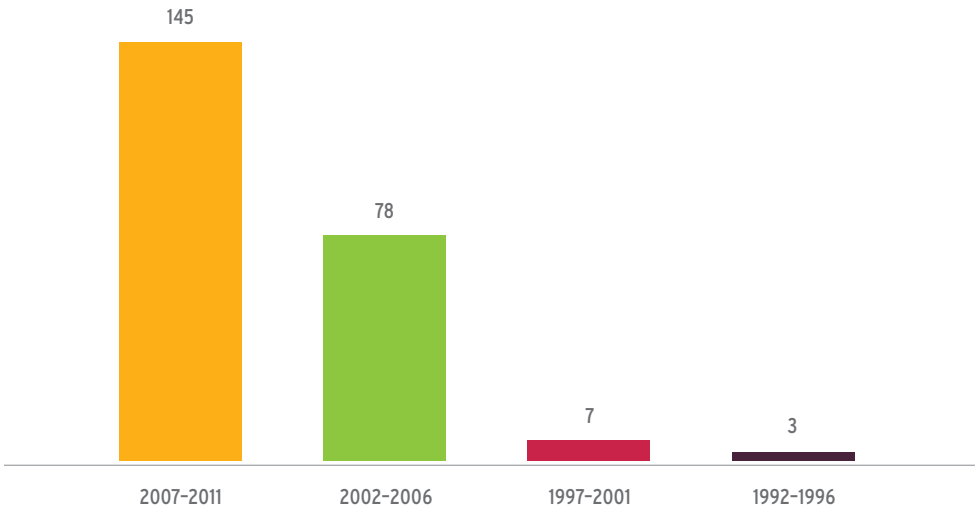
Another part of the problem is lack of accountability for improvements in reproductive health, which is exacerbated by the paucity of quality data to measure, monitor and track maternal mortality. A recent report suggests that only 11 of 75 high priority maternal and child health countries have data on 11 core maternal and child health indicators and many have no data at all.[86] Without strong data systems and better evidence on the effectiveness of programmes, there is little accountability in the system to reinforce the momentum towards better reproductive health outcomes.[87] We see better data and evidence as oil that can help grease the wheels of both the administrative and political systems, to help achieve better outcomes.

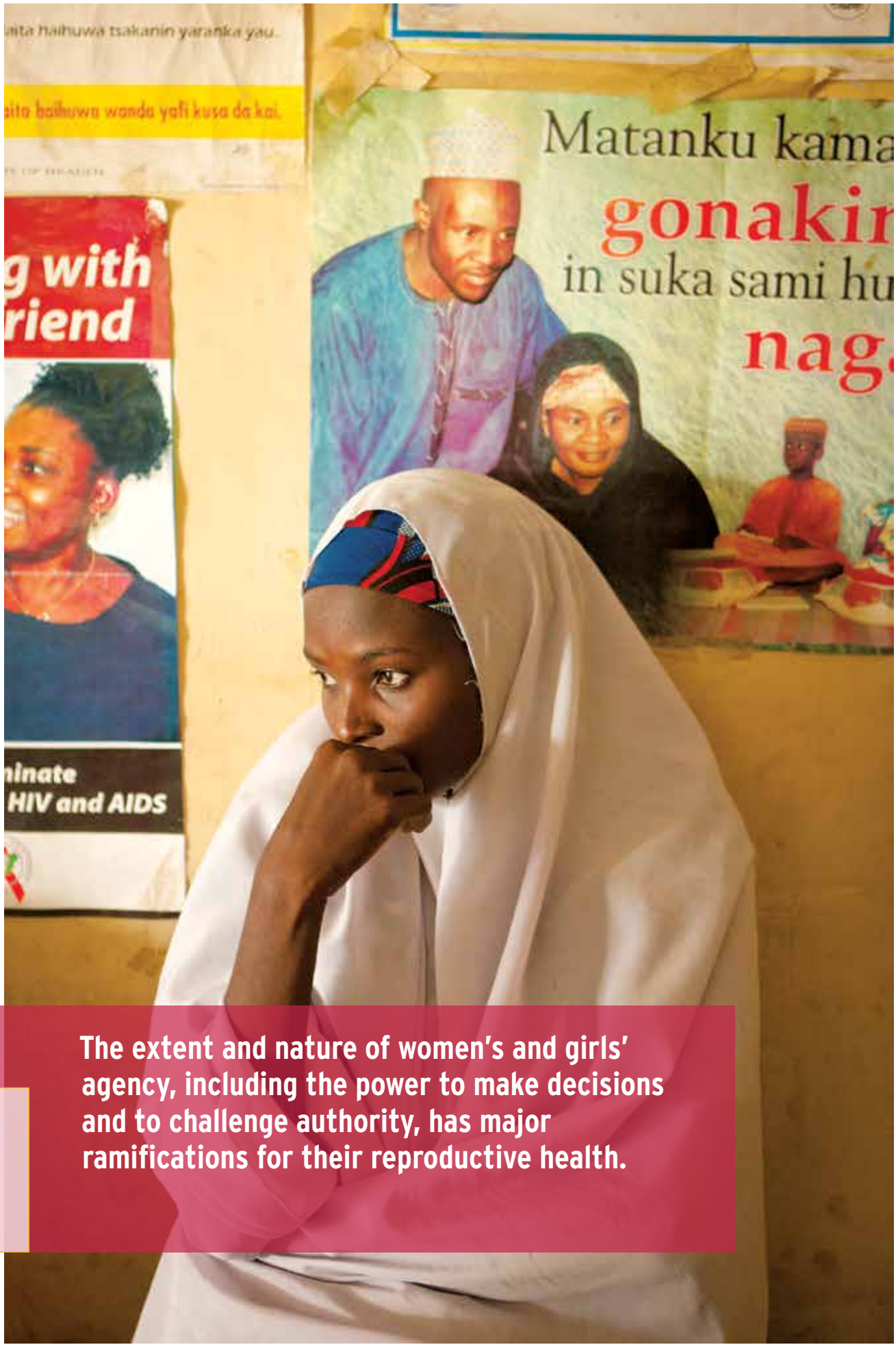
Fortunately, there have been some improvements on the data front. Data on skilled birth attendance, for example, is available for the past five years for about 145 countries—compared to fewer than 80 countries in the preceding five years and fewer than ten countries in the 1990s (Figure 3). However, reporting frequency is low for many countries, since only about half of those countries update annually. Cross-country comparisons also remain an issue, given the variability across countries in data sources. There needs to be a much greater investment in collecting accurate and timely data on reproductive health.

Source: Authors' analysis based on World Development Indicators and UNDP data.

NUMBER OF COUNTRIES WITH DATA ON SKILLED BIRTH ATTENDANCE, FIVE-YEAR INTERVALS

FIG.3





The extent and nature of women's and girls' agency, including the power to make decisions and to challenge authority, has major ramifications for their reproductive health.

What are the policies that can improve reproductive health outcomes?

5

A number of policies have been shown to be effective in improving reproductive health outcomes. Below we review some of the most promising policy options that can be used to initiate more virtuous cycles in reproductive health outcomes. We group these interventions into those that expand women's agency, those that target improvements within the health sector, and those that increase accountability for reproductive health outcomes.

Measures to expand women's and girls' agency

The extent and nature of women's and girls' agency, including the power to make decisions and to challenge authority, has major ramifications for their reproductive health. While the effect of interventions tends to be highly context specific, some policies and programmes have expanded agency effectively, either by expanding opportunities, or through increased awareness, knowledge and aspirations. Education is a primary vehicle for delivering both such opportunities and knowledge, and indeed mothers' education and maternal and child health are robustly correlated.

Educational gains for women can be directly linked to reproductive health: In the U.S., in areas where women gained access to colleges, women were more likely to use antenatal care.[88] Female education also appears to affect subsequent fertility: In Indonesia, increases in female education was associated with falls in both fertility and child mortality,[89] and in Nigeria, one additional year of female schooling lowered fertility by 0·26 births.[90] More schooling among teenage girls in Malawi has been linked to lower rates of teenage pregnancy.[91] While most studies have focused on primary education, it is likely that post-primary education is also important. This points to the potential for tremendous future gains, since the gap between boys and girls at the secondary level is more stark.[92]

Greater economic opportunities can alter traditional definitions of gender roles, duties and responsibilities, and girls' and women's aspirations. In Bangladesh, the expansion of job opportunities for women in the garment sector was associated with a rapid increase in girls' schooling—between 1983 and 2000, those villages within commuting distance to garment factories saw a 27% increase in girls' school enrolment rates.[93,94] Similarly, reforms to inheritance laws in India, which gave women greater economic power, similarly resulted in delays in marriage for girls, an increase in years of schooling by 11–25%, and lower dowry payments.[95]

In many developing countries, women's lack of agency, while exacerbated by limited education, can be traced to how the formal legal system is designed and administered. Even in the 21st century, legal barriers—such as laws requiring parental notification of their daughters' intended abortion or laws that allow husbands or partners to veto wives' or girlfriends' use of contraception—prevent girls and women from accessing family planning programmes and necessary safe delivery services.[96] These barriers contribute to delays in accessing essential maternal health services.[97]

As a result, legal reforms can play an important role in improving reproductive health outcomes, particularly with respect to access to abortion services. Nearly 22 million unsafe abortions occurred globally in 2008, many of them in developing countries—over half of all abortions in developing countries are unsafe, compared with just 6% of abortions in developed countries.[98] While highly restrictive abortion laws do not tend to lower abortion rates, they typically do make it unsafe. The 82 countries with the most restrictive abortion legislation are also those with the highest incidence of unsafe abortion and abortion mortality rates.[99] By contrast, where abortion is permitted on broad legal grounds, it is generally safer.[100] In Bangladesh, Romania and South Africa, for example, abortion policy liberalisation, coupled with implementation of safe abortion services and other reproductive health interventions led to dramatic declines in abortion-related mortality. In Romania, following policy reform in 1989, the abortion-related

mortality ratio dropped from a high of 148 deaths per 100,000 live births in 1989, to 5 deaths per 100,000 live births in 2006.[101] Similarly in Bangladesh the proportion of maternal deaths due to abortion dropped by more than half from 24% in 1976–1985 to 11% in 1996–2005 in areas receiving specific interventions in addition to legal liberalisation. In South Africa, the annual number of abortion-related deaths fell by 91% between 1994 and 2001 following liberalisation of the abortion law.[102]

Data suggests that the incidence of child marriage has fallen over time, however this has taken place relatively slowly, and the drivers of those reductions are not well known.[68] Child marriage is prohibited by law in many countries, but often with limited effect. In India for example, marriage before the age of 18 has been illegal for about three decades, yet about half of all girls still marry before the age of 18. Similarly in Nigeria, legal limitations on the age of marriage have not fundamentally altered the practice.[68] As explored further below, policies targeting education—such as conditional cash transfers (CCT)—may also be effective in reducing child marriage.

In Latin America, the risk of adolescent pregnancy has been addressed through policy interventions that focus on increasing education, health and employment prospects. These interventions include targeted information and access to contraceptives, which in turn directly increase the range of choices teenagers have available to them.[27] In Peru, CCTs increased school attendance, which was identified as a mechanism for reducing fertility among beneficiaries of *Juntos*.[27] In Chile extended school-hours programmes were found to reduce teen pregnancy.[103]

Because teenage pregnancy is negatively correlated with a number of socioeconomic outcomes, understanding the causal effect of early childbearing is challenging. Part of the negative outcomes attributed to teenage pregnancy might be due to the poor educational and economic opportunities that young women (and young men) face. In this sense, early pregnancy can be a consequence rather than a cause of socio-economic disadvantage. Knowing that poverty and lack of opportunities are key determinants of early child-bearing confirms the importance of focusing holistically on expanding young women's range of available opportunities and strengthening their agency to make effective choices.[27] While fertility is often associated with school dropout, for example, other factors such as marital status, aspirations and anticipated economic returns to education, and family and social attitudes, are also related to school continuation and

the likelihood of experiencing adolescent pregnancy.[104] In this light, a more holistic approach to reducing adolescent fertility may be needed that focuses on addressing the underlying causes as well as providing reproductive health services. A recent review of interventions found that those that encouraged school attendance proved more effective in reducing overall adolescent fertility, while those that focused on increasing knowledge and changing attitudes about sexual and reproductive health—such as through peer education or school-based workshops—were successful in the short term (within the first year), but with no sustained change in attitudes over the longer term (two years post-intervention).[104]

Experience is accumulating around the world about the ways in which programmes designed to promote education, can have positive benefits in terms of delaying pregnancy. In Kenya, for example, the provision of free uniforms to students was found to decrease the likelihood of dropping out of school and reduced the probability of being pregnant by 17%, and these effects persisted for years after the subsidy programme ended.[105] In Malawi, a programme that provided cash transfers to current schoolgirls and recent dropouts conditional upon staying in school or returning to school reduced early marriage, teenage pregnancy, and self-reported sexual activity after just one year of programme implementation.[91] Similarly in Chile and Peru increased school attendance and extended school-hours programmes respectively were found to reduce teen pregnancy.[103] Meanwhile evidence from Bogota, Colombia suggests that performance-based incentives are critical to the success of a given CCT programme in reducing teen pregnancy.[106] The study finds that the *Subsidio educativo* programme, for which renewal is conditioned on the beneficiary girl being enrolled in the following year, causes a sizeable reduction in teenage pregnancy, while the *Familias en Accion*, which does not contain a performance condition, has no effect.

Efforts within the health system

Both history and contemporary patterns of maternal health suggest that improvements within the health sector can translate into improvements in reproductive health.[107] Major reductions in maternal mortality in what are now developed countries did not generally occur until the late 1930s to the end of the 1960s, primarily as a result of new technologies and pharmaceuticals such as sulfonamides, as well as changes in the organisation and delivery of maternal health services.[107,108]

Over the past decade, many governments have sought to reduce the financial barriers to accessing maternal health services. Although some results are mixed, and no studies have investigated the direct impacts on health outcomes, there is sufficient evidence to conclude that these policies are promising, especially in contexts where demand-side constraints are major barriers to service utilisation.

A number of countries, responding to concerns about the regressive impact of user fees, have exempted pregnant women or certain maternity services. Such policies have been introduced in Ghana, Senegal, Mali, Morocco, Sierra Leone, and elsewhere.[109-113] Evaluations do generally find increased utilisation among targeted populations, although many of these studies lacked strong control groups, and a recent review found that their overall quality is too poor to draw firm conclusions.[114] The poor implementation of these policies,[115]and a lack of accountability to the beneficiaries,[116] has likely limited the effectiveness of these approaches.

Vouchers to encourage the use of maternal health services in Bangladesh, Cambodia Kenya,Pakistan, Tanzania and Uganda have been evaluated more rigorously, and with more encouraging results.[117] In Bangladesh, women who gave birth in areas targeted by the vouchers were more likely to use an accredited provider and were 13 percentage points more likelyto give birth in a facility than those in comparison areas.[118] In rural Kenya, women living in voucher areas were more likely to give birth in health facilities and with skilled health care providers,[119]and similar results were found in the urban slums of Nairobi.[120]

Another approach involves cash payments to women conditional upon their use of maternal services. A systematic review has shown that CCTs can effectively improve health outcomes, including maternal health.[121] The most rigorously evaluated CCT programme, known as the *Progresa/ Oportunidadeds* programme in Mexico, targeted the health-seeking behaviour of poor households.[122] Women exposed to the programme, especially younger mothers, were more likely to both access antenatal care and select more skilled health care providers for delivery.[123,124] India has also recently introduced the *Janani Suraksha Yojania*

Data suggests that the incidence of child marriage has fallen over time, however this has taken place relatively slowly, and the drivers of those reductions are not well known.[68]

programme, a CCT to promote the use of maternal health services through financial incentives for women to deliver in health care facilities. A recent evaluation found that the programme increased rates of institutional delivery,[125] however, the quality of care delivered has been questioned and the impact of the programme on mortality rates is not yet known.[126,127] Nonetheless, if well implemented, as in the Mexican case, CCT programmes can be an effective route to increase the utilisation of maternal health services.

Some countries have also experimented with policies that target the supply side—that is, providers. For example, result-based financing schemes are a relatively recent innovation that has been tried in several countries. In Rwanda, small incentives were paid to providers conditional on ensuring that their patients received prescribed maternal and child health services.[128] After 23 months, the study found a 23% increase in institutional deliveries and increases in the quality of prenatal care. In Zimbabwe, a similar scheme provides subsidies to rural health clinics and hospitals based on their performance in delivering a package of free health services to pregnant women and children under five years of age. While the programme is still in its infancy, initial results are promising: the number of women who had four or more prenatal visits increased by 65% from a year before.[129]

Efforts to scale-up the availability of human resources, in particular less qualified health workers who can be more rapidly trained and more easily deployed into rural communities, also hold promise but require more evaluation. Ethiopia, a large and mostly rural country with one of the lowest ratios of physicians per population in the world, undertook a massive expansion of health human resources, targeting improvements in maternal and child health. Some studies have shown that the programme has been well received by women and suggested that the use of family planning and antenatal care have increased.[130,131] However, other evaluations found the impact of the programme on maternal health indicators to be limited.[132] Evaluations suggest that in rural Pakistan, the Lady Health Worker—local female residents who have receive a short pre-service and in-service medical training to deliver a range of health services from immunisations to family planning, to provide basic health education and to identify and refer more complicated cases—programme led to increases nationally in the use of contraceptives.[133]

Survey evidence suggests that a large unmet need for family planning persists, suggesting the scope for the expansion of these programmes. In sub-Saharan Africa, a quarter of women report an unmet need for family planning, and this has remained relatively constant since the early 1990s.[134] However, studies also underline the importance of understanding household preferences and constraints on female autonomy in the design of family planning programmes. A randomised controlled trial in Zambia found that a programme was effective at reducing unwanted pregnancy when women were able to access family planning without their husbands present.[135] In Ethiopia, a lack of high quality, concealable forms of contraception was thought to be a reason why a randomised intervention to increase the uptake of family planning programmes failed to increase utilisation.[136] Recent work in Peru found that where machismo, or strong male stereotyping, is present, reaching out to men may be a prerequisite for programmes targeted at women.[137]

At the same time, as underlined by Figure 1, it is unlikely that any single intervention is sufficient to make significant improvements in reproductive health outcomes. In Sri Lanka, where rapid maternal mortality declines were documented from the 1940s tothe 1960s, numerous health system improvements were implemented (see Box 1).[44] Similar strategies have been adopted in Morocco, where maternal mortality has also dropped rapidly. More recently, the *Saving Mothers, Giving Life* programme has piloted a 'whole of health systems' approach to dramatically reduce maternal mortality in eight districts in Zambia and Uganda. While the official evaluations are still underway, preliminary evidence suggests that the programme has influenced key indicators such as institutional delivery rates.

Improving accountability for reproductive health outcomes

Increasing accountability to patients can help improve health service delivery and health outcomes.[138] Options include creating community participation mechanisms,[139] enhancing the quality of health information for consumers, establishing community groups to empower consumers to take action, and including non-governmental organisations (NGOs) to expand access to care.[138] Information, dialogue and negotiation have been widely identified as important elements that enable accountability mechanisms to address problems and to foster better service provision, in particular in the context of reproductive health services. But power relations, social contexts and the policy and service delivery systems within which they are applied must be taken into account in determining how any accountability mechanisms should be applied.[140,141]

Evidence from Uganda suggests that introduction of a local accountability mechanism, which included efforts to stimulate beneficiary control alongside provision of information about staff performance, resulted in 21% fewer births over the period 2006–2009 and a drop in the rate of stillbirths by almost one percentage point. By contrast when the community lacked information about performance, the same type of intervention had no measurable impact on the quality or uptake of medical care.[142] In Peru, a citizen surveillance programme increased the number of births in health facilities by almost one-third over one year, and dramatically increased access to culturally appropriate delivery options. The programme centred on training of indigenous women to visit health centres, hospitals and pharmacies to monitor the quality and acceptability of care provided. Through the reports that were shared and

discussed with health providers, the process promoted accountability of the local health authorities and increased awareness of rights and responsibilities between health service providers and users.[143] Box 2 reviews the additional reforms implemented to strengthen accountability in Peru.

Recent work from Orissa, India identifies three processes that underpin the effectiveness of social accountability: generating demand for rights and better services; leveraging intermediaries to legitimise the demands of poor and marginalised women; and sensitising leaders and health providers to the needs of women. In this context, social accountability mechanisms such as public hearings provided new ways for women to collectively voice their concerns and demands in a supportive environment. These demands are then reinforced and legitimised by intermediary partners such as local elected officials and the media, who also participate in the hearings, leading to increased receptivity to women's needs.[144] Evidence suggests that some accountability mechanisms may address beneficiaries' needs appropriately in the short term in the absence of direct representation, but continuation may be threatened if those who need and use the services are not directly involved. This was demonstrated in Brazil, where the incoming Mayor of Santa Barbara d-Oeste saw no benefit in continuing a vasectomy programme introduced by the former Health Secretary. Community representatives on the executive committee of the project strongly defended the programme and its services, and ultimately changed the Mayor's mind.[145]

Social accountability mechanisms can also empower marginalised groups when they are encouraged as active participants in the accountability mechanisms. This was the case among Sangha women in Andhra Pradesh, India, who were given training on gender, health and social action as part of a pilot project to make the health system more accountable by improving interactions between providers and lower caste women.[141]

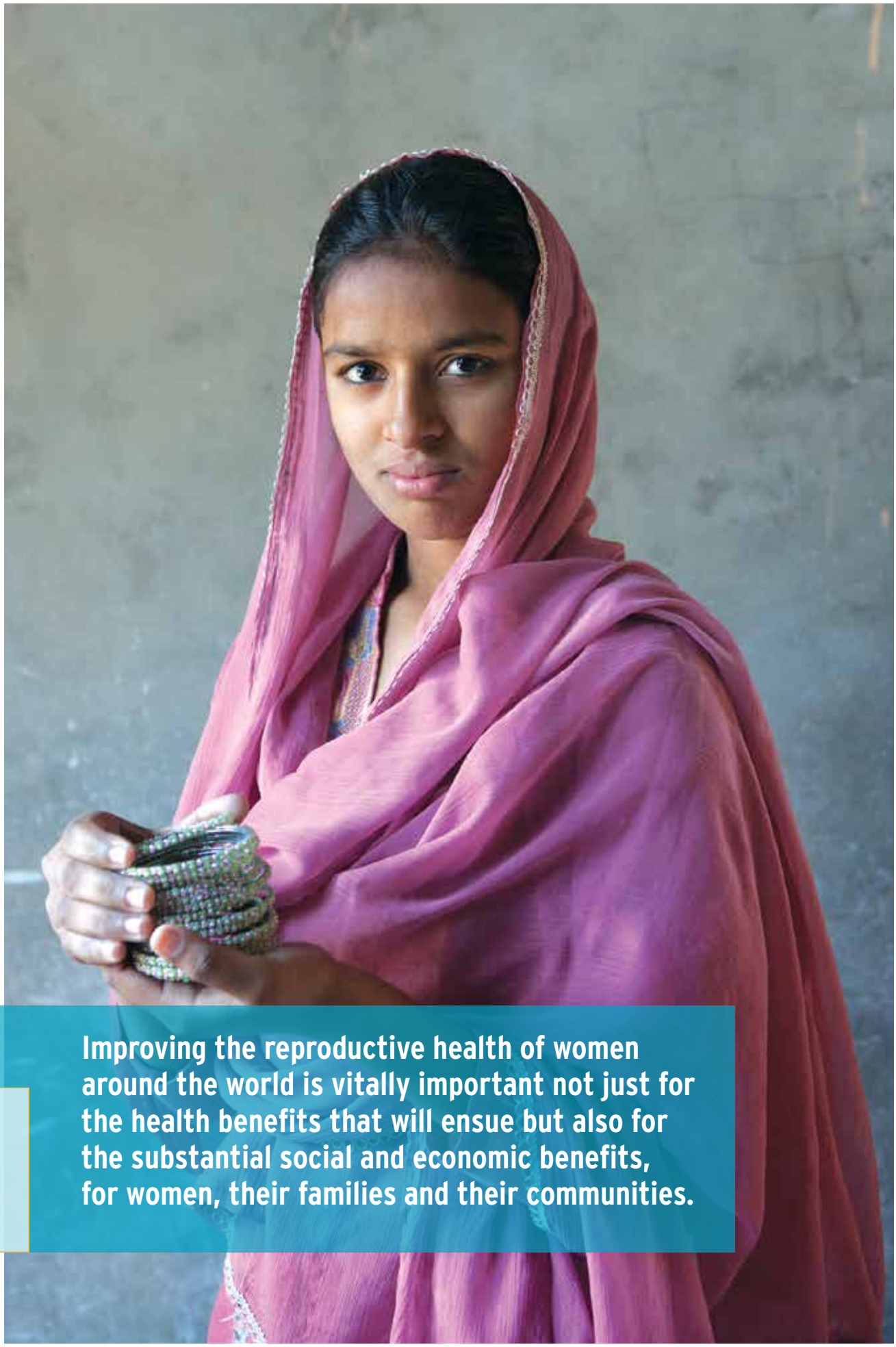
HOW PERU IMPROVED REPRODUCTIVE HEALTH OUTCOMES THROUGH EXPANDING ENTITLEMENTS AND STRENGTHENING PUBLIC SECTOR MANAGEMENT[146]

BOX 2

By the early 2000s, although an improvement from the previous decades, the rates of perinatal and maternal mortality in Peru were high by regional standards and institutional delivery rates had plateaued at a national average of only about 70% but with less than half of all births in rural areas taking place in a clinic or hospital. As part of a broader set of reforms aimed at improving health services throughout the country, the government specifically targeted institutional delivery rates as the key indicator of progress towards improving maternal and perinatal health. The government undertook a series of reforms that targeted the entitlements of women to health services and strengthened public sector management.

In 2002, through the creation of the *Seguro Integral de Salud* (SIS), pooled funding was provided to allow poor households to be exempt from health user fees and entitlements to specific services were provided conditional on particular health conditions. The proportion of births covered by SIS increased dramatically. The Ministry of Health also attempted to address non-financial barriers to institutional deliveries by developing and promoting culturally-informed birth practices in government facilities, which included allowing for more culturally sensitive birth practices and passing a law ensuring that health workers respect cultural diversity. On the supply side, facilities and human resources were strengthened to provide more and higher quality health services, in particular in previously underserved regions. There were also efforts to monitor and improve the quality of health services delivered at government facilities notably through the creation of a new standards process. Public sector management reforms were also undertaken in order to improve institutional birth rates. A performance-based budgeting process was put in place that was contingent on meeting certain institutional birth targets across districts.

Although these efforts have not been rigorously evaluated, and identifying which particular interventions were effective would be challenging, there have been significant increases in institutional birth rates across the country, particularly among poor rural women. There was a more than 50% increase in institutional delivery rates among women in the bottom income quintile from 2005 to 2009 (32% to 48% of all births). This case study demonstrates that increased rates of institutional deliveries through policy reforms in challenging contexts are feasible but that multi-pronged solutions that address overall financing, demand-and supply-side factors are likely to be essential.



Improving the reproductive health of women around the world is vitally important not just for the health benefits that will ensue but also for the substantial social and economic benefits, for women, their families and their communities.

6 Conclusions

Improving the reproductive health of women around the world is vitally important not just for the health benefits that will ensue but also for the substantial social and economic benefits, for women, their families, and their communities. To date, most discussions about improving reproductive health outcomes have focused on making improvements from within the health sector. Our analysis suggests that measures of gender inequality are important predictors of poor reproductive health and therefore addressing these sources of inequality is critical to improve reproductive health outcomes. Proven policy options are available to realise those gains, although what works and doesn't work will be very much driven by the country's institutional, political and cultural context.

Context is important, not only because of how this shapes the technical and financial possibilities of the interventions, but because social norms and attitudes are so important. More broadly, the recognition of agency underlines the need to engage both women and men in reproductive health interventions.

Here, as elsewhere, the lack of data constrains our understanding, and possibilities for holding ourselves to account for results. Because only a third of countries have complete civil registration systems, our ability to understand the burden of disease associated with maternal mortality is limited.[4] Without such systems, too much energy is spent on the estimation, and debating estimates of mortality, than actually addressing the problems and monitoring progress.[87] Recent global commitments to redress this situation—including the Interagency and Expert Group on the Development of Gender Statistics[147] and the high-level Commission on Information and Accountability for Women's and Children's Health recommendations—are encouraging, and need to be followed through with efforts on the ground.

The other broad point that emerges is that while evaluations have shown that many reproductive health policies are potentially effective, efforts can be plagued by poor implementation. Proper monitoring and evaluation are critical to ensure performance and ongoing support. This in turn requires major investments in statistical capacity building, open access to data and utilisation of evidence to improve accountability and performance.

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