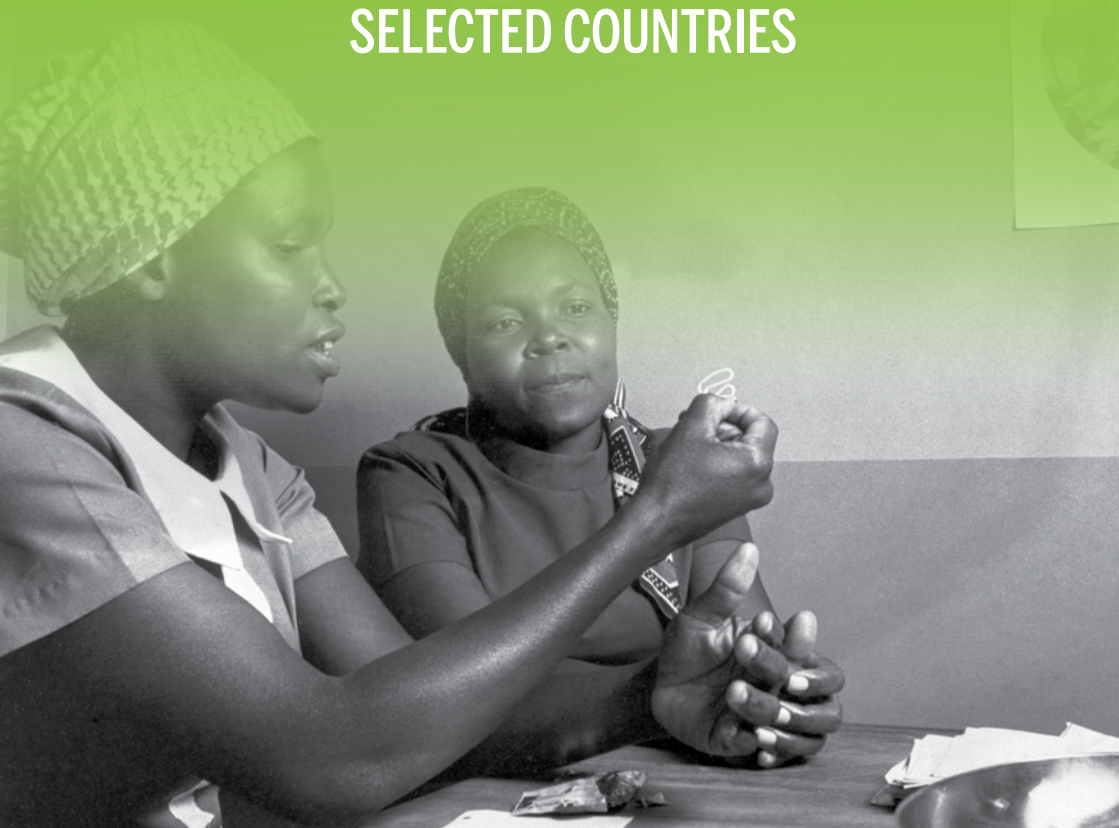




African Population and  
Health Research Center

# LAGGING FERTILITY TRANSITION IN SUB-SAHARAN AFRICA:

## TRENDS AND PATTERNS IN SELECTED COUNTRIES



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SUB-SAHARAN AFRICA:  
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SELECTED COUNTRIES**



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## Abbreviations

<b>APHRC</b>	African Population and Health Research Center
<b>CPR</b>	Contraceptive prevalence rate
<b>DHS</b>	Demographic and Health Surveys
<b>DRC</b>	Democratic Republic of Congo
<b>FP</b>	Family planning
<b>FP2020</b>	Family Planning 2020 (Global partnership to empower women and girls by investing in rights-based family planning and aims to ensure that 120 million more women and girls use contraceptives by 2020)
<b>HDI</b>	Human Development Index
<b>LARCs</b>	Long-acting and reversible contraceptives
<b>MVA</b>	Manual vacuum aspiration
<b>PIRSEF</b>	Programme intérimaire de relance du secteur de l'éducation et de la formation professionnelle (Interim national program for the development of education and professional training – Mali)
<b>PNSR</b>	Programme National de Santé de la Reproduction (National Reproductive Health Program – DR Congo)
<b>PSND</b>	Project National des Naissances Désirables (Project for planned births services or family planning services project – DR Congo)
<b>RH</b>	Reproductive Health
<b>SIPEA</b>	Stratégie Intérimaire Pour l'Éducation et l'Alphabétisation (Transitional Education and Literacy Plan – Chad)
<b>SSA</b>	Sub-Saharan Africa
<b>TFR</b>	Total Fertility Rate
<b>UN</b>	United Nations

## Executive Summary

The demographic transition— a shift from high fertility and mortality to low fertility and mortality— in sub-Saharan Africa (SSA) does not reflect trends in other parts of the world. The process has been both irregular and slow-paced, with stalls and even reversals in some countries. Despite SSA's generally sluggish demographic transition, the region has the potential to reap the 'demographic dividend': the sustained economic growth resulting from a change in the age structure of a country's population associated with the shift in fertility and mortality rates from high to low. Sustained declines in fertility and mortality produce a population with a larger working-age group (labor force) relative to the number of dependents, which can boost the economy if there are employment opportunities and effective policies. A smaller number of children in a household generally enables more investments per child and frees up women's time to participate in employment, thereby generating more household savings, which can facilitate economic growth.

This report focuses on key population indicators and trends in the five SSA countries – Burundi, Chad, Democratic Republic of Congo (DRC), Mali and Niger – where the total fertility rate remains high. The goal is to understand the drivers of high fertility in these countries, analyze key historic and current demographic developments and proffer potential explanations for some of the major demographic patterns in these countries. Evidence from this report has the potential to inform policy-making efforts for sustainable development. Data used are from the Demographic and Health Surveys (DHSs), United Nations (UN) population prospects and other secondary sources.

This analysis shows that fertility decline has begun— albeit slowly— in Burundi, but not in Chad, Mali, Niger or DRC. Fertility preferences in Mali, Chad, Niger and DRC are characterized by relatively high ideal family sizes. Moreover, contraceptive use in the five countries is low (ranging from 10%-21%) and far below the SSA average (28%). Such fertility indicators suggest delayed fertility transition. Contributing factors to these trends include gender inequality, low educational attainment, early and near universal marriage, early onset of childbearing and high fertility preferences.

The resultant population growth rate in these countries is higher than the SSA average: more pronounced in Niger (3.8%), followed by DRC (3.3%), Chad (3.2 %), Burundi (3.1%) and Mali (3.1%). By implication, the population in all five countries will continue to grow in the foreseeable future and will double in less than 30 years. Up to the late 1980s, all the focal countries (with the exception of Burundi) were unconcerned about their population growth rates and fertility

levels because they considered these too low or satisfactory. However, since 1996 they all view these rates as unacceptably high and have therefore enacted policies as well as initiated programs to lower them.

To harness the demographic dividend, demographic transition must be accelerated in these countries. Previous evidence from Asia shows that countries can reap the demographic dividend if their population has good health, quality education, decent employment and fewer dependent children. Implementing policy options that will result in rapid fertility decline and creation of high-quality human capital requires enhanced investments in health, family planning (FP) and education. It will also require an economic environment that attracts investments and the creation of jobs for the rapidly growing labor force.

## Chapter One: Introduction

While population growth slowed in many parts of the developing world, sub-Saharan Africa's (SSA) population continues to grow at a high rate (2.6% annually). It is estimated that more than half of future global population growth will occur in Africa and that by 2050, the number of people in SSA will likely double [1]. High fertility rates drive much of this population growth. The total fertility rate (TFR) — the average number of children per woman— was estimated at 4.7 in 2017 which is almost twice the estimate of 2.4 children per woman for the rest of the developing world. However, SSA has sub-regional and country-level variations in fertility patterns and trends. While several studies addressed the drivers of declining fertility, little research focused on countries where fertility continues to be persistently high. It is important to understand the fertility patterns, trends and determinants, because research shows that declines in fertility, and the right policies, can create conducive conditions for reaping the demographic dividend in SSA countries with high fertility.

This report focuses on SSA countries with the highest fertility levels. According to current UN estimates, these include: Niger (7.5), Somalia (6.2), Mali (6.0), Chad (5.8), Burundi (5.7) and Democratic Republic of Congo (DRC) (5.7)[2]. This report focuses on Burundi, Chad, DRC, Mali and Niger. It excludes Somalia as there are very limited data currently available. The average annual population growth rate in the focal countries remains high: Niger (3.8%), DRC (3.3%), Chad (3.2%), Burundi (3.1%) and Mali (3.1%). The population of these countries also nearly doubled in the past two decades (Table 1) and is projected to increase four to five-fold by the end of the century [1].

**Table 1: Total and projected population of selected countries, both sexes (thousands)**

Location	2000	2005	2010	2015	2020	2025	2050
Burundi	6,400	7,423	8,766	10,199	11,939	13,810	25,762
Chad	8,342	10,067	11,887	14,009	16,285	18,775	33,635
DRC	47,076	54,751	64,523	76,196	89,505	104,220	197,404
Mali	10,967	12,798	15,075	17,467	20,284	23,475	44,020
Niger	11,352	13,618	16,425	19,896	24,074	29,078	68,453

**Sources:** United Nations, Department of Economic and Social Affairs, Population Division (2017). World Population Prospects: The 2017 Revision, custom data acquired via website.

Based on the Human Development Index (HDI) (2016), the five countries are also ranked among the poorest in the world: Burundi, Chad and Niger appear among the bottom five. There is insufficient investment in the health and education sectors resulting in poor health indicators (life expectancy, maternal and childhood mortality) and education indicators (literacy rates) (Table 2). Reduction in fertility will contribute to reductions in mortality and subsequently increases in life expectancy.

*Table 2: Summary of key indicators*

Country	Current population (millions)	HDI	Maternal mortality ratio	Under 5 mortality rate	Major conflict in last 10 years	Life expectancy	Literacy rate (%) aged 15+	Urban population (%)
Burundi	10.8	0.40	500	96	Yes	57.1	85.6	12.4
Chad	14.8	0.40	860	133	Yes	51.9	40.2	22.6
DRC	81.3	0.44	543	104	Yes	59.1	77.3	43.0
Mali	18.5	0.44	368	95	Yes	58.5	38.7	40.7
Niger	21.4	0.35	535	127	Yes	61.9	19.1	19.0

**Source:** United Nations Development Program Human Development Reports (<http://hdr.undp.org/en/countries/profiles/BDI>) World Health Organization Global Health Workforce Statistics, Organisation for Economic Co-operation and Development (OECD), supplemented by country data (<https://data.worldbank.org/indicator/SH.MED.PHYS.ZS>); UNICEF Global databases 2016 based on MICS, DHS and other national household surveys; World Employment and Social Outlook 2016: Trends for Youth

## 1.1 Data sources

This report draws on data from secondary sources such as the Demographic and Health Surveys (DHS), United Nations (UN) population prospects 2017 revision, as well as published and unpublished literature on the target countries. The UN regularly produces country-specific population projections using medium-variant estimates. The medium variant is an illustrative scenario that plays out how the world population would change if the current fertility declines are maintained. Therefore, the **medium variant** is the projection that UN researchers see as the most likely scenario. We mainly used the medium variant estimates in order to enhance the utility of our findings for planners, policy analysts and researchers. However, it must be acknowledged that data for some of the variables of interest are not available for all countries, which limits comparison. Moreover, the report does not consider intra-country variations.

**Table 3: Data sources for this report**

<b>Country</b>	<b>Years</b>
<i>Burundi (DHS)</i>	1987, 2010
<i>Chad (DHS)</i>	1996-97, 2004, 2014-15
<i>DRC (DHS)</i>	2007, 2013-14
<i>Mali (DHS)</i>	1987, 1995, 2001, 2006, 2012-13
<i>Niger (DHS)</i>	1992, 1998, 2006, 2012
<i>UN estimates and projections</i>	2015 and 2017

## 1.2 Report objectives

This report aims to summarize key trends in population size, fertility rates and family planning (FP) in Burundi, DRC, Chad, Mali and Niger. It seeks to understand the drivers of high fertility in these countries, analyze key historic and current demographic developments and proffer explanations to some of the key demographic challenges in these countries to the realization of demographic dividend.

## 1.3 Report structure

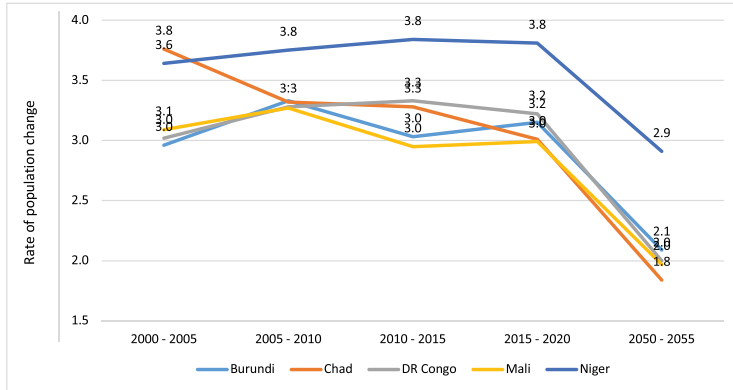
This report is organized in five chapters. In this first chapter, we introduce the subject matter, objectives, data sources and report structure. Chapter 2 introduces the countries under consideration, highlighting their population and other important health and development indicators. Chapter 3 outlines key trends in fertility behaviors. Some of the issues discussed include fertility intentions and trends as well as contraceptive use dynamics. Chapter 4 examines existing policies, programs and opportunities for sustainable population growth. The final chapter assesses implications of the emerging evidence for demographic development and offers some recommendations.



## Chapter Two: Population Growth and Age Structure

The annual population growth rate in the selected countries is higher than the SSA average. The growth rate is most pronounced in Niger (3.8%), followed by DRC (3.3%), Chad (3.2%), Burundi (3.1%), and Mali (3.1%) (Figure 1). If current fertility trends continue – all things being equal – the current populations of these countries will double in less than 30 years.

**Figure 1:** Average annual rate of population change: 2000-2050



**Sources:** United Nations, Department of Economic and Social Affairs, Population Division (2017), *World Population Prospects: The 2017 Revision*, custom data acquired via website

The age structure shows that close to 50% of the population of these countries is in the 0-14 age category (Table 4). People aged 65 years and older comprise about 3% of the population. The working age population (15-64) accounts for about half of the population of the countries. Interestingly, the size of the working age population has slowly increased in Burundi and Chad but remained virtually constant in DRC, Mali and Niger. The proportion of the working age population is largest in Burundi (53%) and lowest in Niger (47%) (Table 4).

**Table 4: Percentage of total population by broad age groups, both sexes**

Age	2000	2005	2010	2015	2025	2050
Burundi						
0-14	49.3	45.7	44.1	44.8	44.0	36.4
15-64	47.7	51.4	53.3	52.7	53.0	59.6
65+	3.0	2.9	2.7	2.5	3.0	3.9
Chad						
0-14	48.8	49.1	48.6	47.6	44.7	35.5
15-64	48.3	48.2	48.8	50	52.8	61.1
65+	2.9	2.7	2.6	2.5	2.6	3.5
DRC						
0-14	45.5	45.8	46.1	46.3	44.5	35.7
15-64	51.5	51.3	50.9	50.6	52.4	60.1
65+	3.0	3.0	3.0	3.0	3.1	4.2
Mali						
0-14	46.6	46.9	47.5	47.9	45.3	36.4
15-64	50.1	50.2	49.8	49.5	52.3	60.0
65+	3.3	2.9	2.7	2.5	2.4	3.6
Niger						
0-14	48.2	49.2	50.0	50.2	49.3	43.2
15-64	49.4	48.4	47.6	47.3	48.1	54.2
65+	2.4	2.4	2.5	2.5	2.7	2.6

**Sources:** United Nations, Department of Economic and Social Affairs, Population Division (2017), *World Population Prospects: The 2017 Revision*, custom data acquired via website

The age dependency ratio— the proportion of persons aged under 15 and over 64 years compared with the population aged 15-64 years— remains high. The dependency ratio remained stable for the past 15 years in Niger, DRC and Mali, declining slightly in Burundi and Chad (Table 5). The countries' high dependency ratio has negative implications for socio-economic development.

**Table 5: Total dependency ratio (ratio of population aged 0-14 and 65+ per 100 populations 15-64) of the five countries**

Location	2000	2005	2010	2015	2050
Burundi	109.9	94.6	87.8	89.6	67.7
Chad	107.1	107.4	104.7	100.2	63.7
DRC	94.2	95.1	96.6	97.5	66.3
Mali	99.4	99.2	100.9	101.9	66.7
Niger	102.5	106.5	110.2	111.6	84.5

**Sources:** United Nations, Department of Economic and Social Affairs, Population Division (2017), *World Population Prospects: The 2017 Revision*, custom data acquired via website

Total dependency ratio in all five countries is expected to decline between 2015 and 2050 (Table 5). A decline is favorable for harnessing the demographic dividend. If the right policies and programs are implemented to improve human capital, economic growth and job creation accelerate among the working age population and enhance good governance and accountability in the use of public resources. Chad is expected to experience the steepest decline in dependency ratio during the next three decades.

### Fertility, family planning and reproductive health

The countries are generally characterized by poor family planning (FP) and reproductive health status indicators (Table 6). In 2016, Niger had a total fertility rate (TFR) of 7.6 children per woman, the highest globally. TFR stands at 6.6 in DRC, 6.4 in Chad, 6.4 in Burundi and 6.1 in Mali. Fertility is likely to remain high in the countries because of the low contraceptive use. Gender inequality, low levels of education, early marriage and early onset of childbearing are among factors contributing to high population growth [3].

**Table 6: Key family planning and reproductive health indicators: 2010-2016**

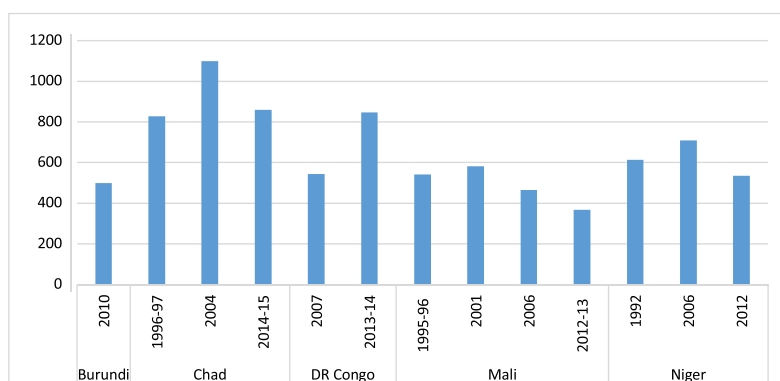
Indicator	Burundi	Chad	DRC	Mali	Niger	SSA
Total fertility rate	6.4	6.4	6.6	6.1	7.6	4.75
Married women currently using any method of contraception (%)	21.9	5.7	20.4	10.3	13.9	26.0
Married women currently using any modern method of contraception (%)	17.7	5.0	7.8	9.9	12.2	21.0
Unmet need for FP (%)	32.4	22.9	27.7	26	16.0	24.0
Unintended pregnancy (%)	30.6	12.1	28.8	13.4	8.2	41.0
Demand for FP satisfied by modern methods (%)	32.8	20.2	19.5	28.7	40.9	40
Median age at first marriage [Women]: 25-49	20.3	16.1	18.7	18	15.7	22.0
Under-five mortality rate (deaths before age 5 per 1,000 live births)	96	133	104	95	127	95
Maternal mortality ratio per 100,000 births	500	860	543	368	535	546

**Source:** The DHS Program STAT compiler (2017), UN (2015), PRB (2013) and Sedgh *et al* (2014)

Chad has the lowest contraceptive prevalence rate (CPR) among the five countries and globally at 5.7%. Burundi has the highest CPR among the five countries (22%), which is still way below SSA average (26%). Moreover, these countries have very low demand satisfied by FP; i.e. current contraceptive use is relatively low compared to the demand for FP (met need and unmet need combined).

Maternal mortality ratio is highest in Chad (860) and lowest in Mali (368) (Figure 2). These levels recently declined in Chad, Mali and Niger, following an upsurge during the war periods in the 2000s.

**Figure 2: Maternal mortality ratio in the selected countries: 1992-2015**

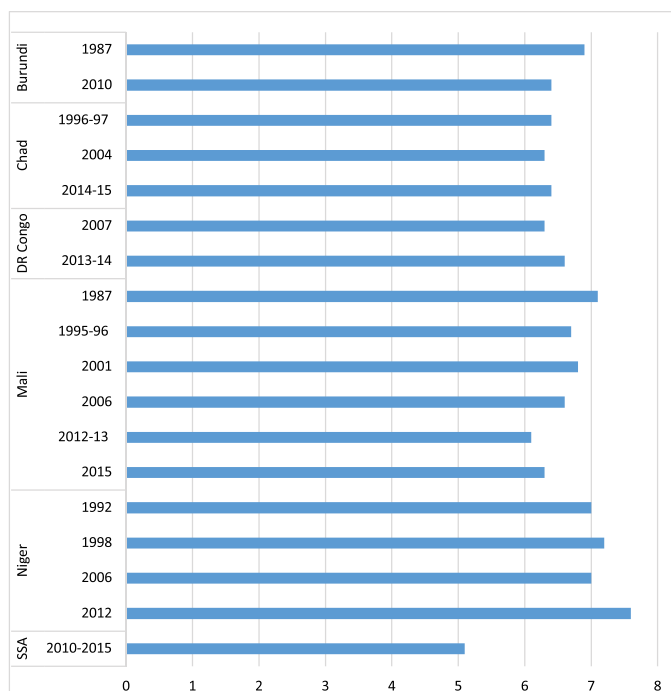


**Source:** Respective countries' DHSs; ICF International, 2015; Burundi (2010), Chad (2014-15, 2004, 1996-97), DRC (2007), Mali (2012-13, 2006, 2001, 1995-96), Niger (2012, 2006, 1992)

### Chapter 3: Fertility Transition in the Five Countries

Fertility transition in SSA is very diverse. It has been slow in some countries and fast in others, stalling in several, reversing in a few and not even occurring in others [4-6]. As noted previously, the TFR in all five countries exceeds 6 children per woman suggesting that the fertility transition is yet to begin. Trend data depict three interesting fertility scenarios (Figure 3). In the first, there are insignificant declines in fertility levels, as is the case in Burundi and Mali. In the second, exemplified by Chad, fertility levels have remained constant. In the third, which contains Niger and DRC, fertility levels are apparently rising.

**Figure 3: Trends in total fertility rate: 1992-2015**



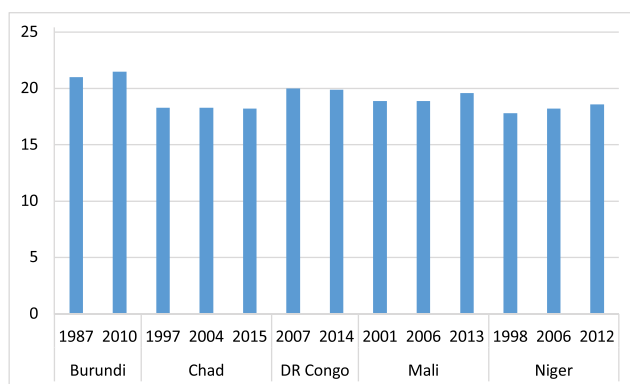
**Source:** Respective countries' DHSs; ICF International; Burundi (1987, 2010), Chad (1997, 2004, 2014-15), DRC (2007, 2014), Mali (1995-96, 2001, 2006, 2012-13), Niger (1998, 2006, 2012)

As highlighted in the subsequent sections, major reasons for the observed high fertility and slow decline in fertility in the selected countries, include: low contraceptive use, early and nearly universal marriage practices, and high fertility preferences. Less than 20% of married women between age 15-49 (ranging from 18% in Burundi to 5% in Chad) use a modern method of FP. The median age at marriage and the median age at childbearing is considerably low compared with the SSA average. These countries also have pro-natalist cultures, with more than half the women and men desiring to have more children and the ideal family size is higher than the actual family size.

### Age at first birth

A woman's age at first birth influences her fertility behavior and eventually determines her ultimate parity. The earlier a woman starts giving birth, the longer her window of possible childbearing and hence the higher her ultimate fertility. While women's age at first birth is increasing in SSA [7], the median age at first birth remains relatively constant. The median age at first birth is highest in Burundi, followed by DRC, and lowest in Chad and Niger (Figure 4). This can partly be explained by differences in female education levels. Currently, literacy levels are highest in Burundi and lowest in Niger. Education is known to keep girls in school for longer periods, and may potentially delay marriage and subsequent childbearing.

**Figure 4:** Median age of childbearing among women aged 25-49 in the selected countries

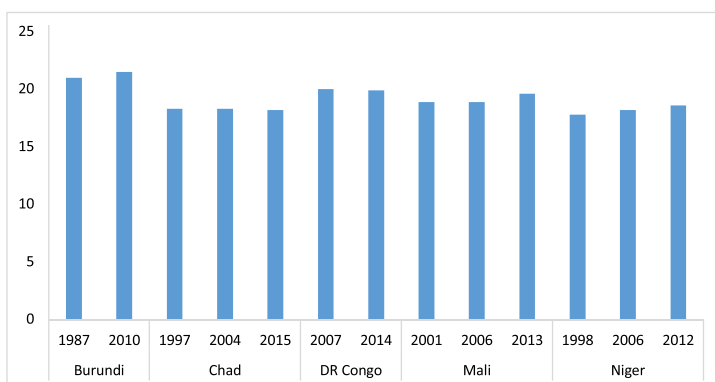


**Source:** Respective countries' DHSs, ICF International, Burundi (1987, 2010), Chad (1997, 2004, 2014-15), DRC (2007, 2014), Mali (1995-96, 2001, 2006, 2012-13), Niger (1998, 2006, 2012)

## Marriage

Marriage is one of the most important proximate determinants of fertility [8]. Age at first marriage, and the proportion of women in marital union, greatly influence changes in fertility levels over time. Age at first marriage influences fertility because married women are more frequently exposed to pregnancy, especially with a potentially long duration of marital life. The median age at marriage in the five countries is generally below the SSA average (20 years). The median age at first marriage is highest in Burundi (20 years) and lowest in Niger (15.7 years) (Figure 5). Figure 5 also shows that, with the exception of Burundi, there is no significant change in age at first marriage in these countries across the years.

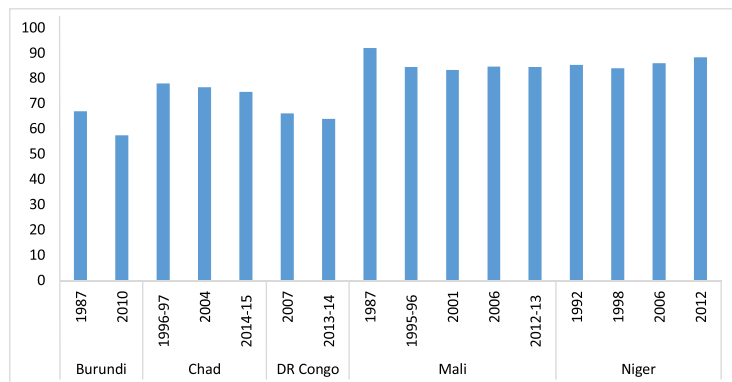
**Figure 5: Trends in the median age at first marriage in the selected countries**



**Source:** Respective countries' DHSs, ICF International, Burundi (1987, 2010), Chad (1997, 2004, 2014-15), DRC (2007, 2014), Mali (1995-96, 2001, 2006, 2012-13), Niger (1998, 2006, 2012)

Early marriage is very common in the five countries, with more than 50% of women being married by age 15, which also contributes to the high levels of fertility observed. Apart from Burundi, where the minimum legal age for a girl to marry is 18, the minimum legal age is 15 years in Chad, DR Congo and Niger and 16 in Mali (although a recently proposed law in Chad and Niger would raise the minimum legal age to 18). The proportion of women married by 15 is highest in Niger, followed by Mali while the lowest is in Burundi (Figure 6).

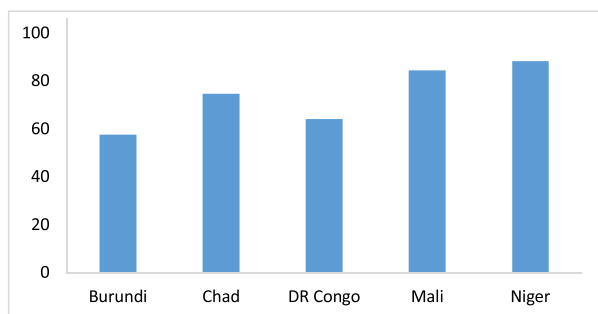
**Figure 6: Percentage of women first married by age 15 in the selected countries**



**Source:** Respective countries’ DHSs; ICF International, Burundi (1987, 2010), Chad (1997, 2004, 2014-15), DRC (2007, 2014), Mali (1995-96, 2001, 2006, 2012-13), Niger (1998, 2006, 2012)

The proportion of women in marital union influences fertility levels because marriage signals the onset of regular sexual activity and therefore increases the possibility of pregnancy [4]. All things being equal, the higher the marriage rate, the higher the fertility level of a country. The proportion of women who are currently married or in a union is highest in Niger (89%), followed by Mali (85%) and lowest in Burundi (58%) (Figure 7). The high marriage rates contribute to high fertility levels in these countries.

**Figure 7: Percentage of currently married women (or cohabiting) (15-49) in the selected countries**



**Source:** Respective countries’ DHSs; ICF International; Burundi (2010), Chad (2014-15), DRC (2014), Mali (2012-13), Niger (2012)

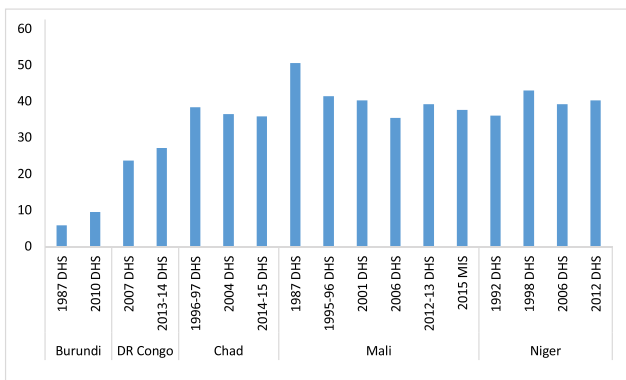


## Teenage pregnancy and motherhood

Childbearing during teen years has adverse health and social consequences, including mortality, morbidity and dropping out of school [9]. Childbearing among girls before they are physiologically mature exposes them to heightened risks of pregnancy-related complications such as fistula, resulting in maternal and child mortality [10].

Teenage pregnancy and motherhood is high in all the selected countries, except Burundi (Figure 8). Teen pregnancy remains high in the selected countries, with about one in three girls already mothers by age 19, which has potential for continued high fertility in the five countries.

**Figure 8:** Percentage of teens who began childbearing in the selected countries



**Source:** Respective countries' DHSs, ICF International, Burundi (1987, 2010), Chad (1997, 2004, 2014-15), DRC (2007, 2014), Mali (1995-96, 2001, 2006, 2012-13), Niger (1998, 2006, 2012)

## 3.1 Fertility preferences

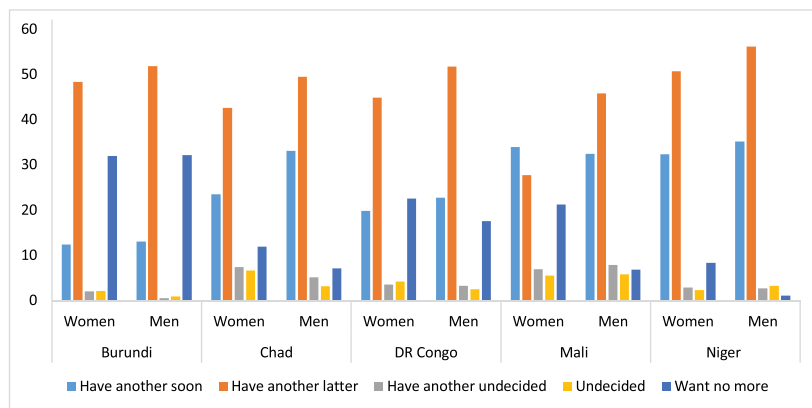
### 3.1.1. Fertility intentions

Fertility desires and intentions are important because they predict eventual fertility [11] and show demand for FP [12]. Figure 10 presents data on the desire for more children (about 50%), which is greater than the desire to stop further childbearing (about 30%) for both men and women in the five countries. Most would prefer to have another child later (after two years), suggesting that the demand for FP is mainly for spacing (Figure 9).

In all five countries, the desire for future childbearing is higher among men than women, which has potential for continued high fertility and undermines the demographic dividend. Niger has the highest desire for future childbearing (56% of

men and 51% of women) while Mali has the lowest (45% of men and 28% of women). The gap between the sexes' desire for more children is highest in Mali (18%) and lowest in Chad (2.8%). When men desire more children than their partners, women are likely to have excess fertility because in many African societies, fertility decision-making is controlled by men [13].

**Figure 9:** The desire for more children among men and women in the selected countries (%)



**Source:** Respective Countries' DHSs; ICF International; Burundi (2010), Chad (2014-15), DRC (2014), Mali (2012-13), Niger (2012)

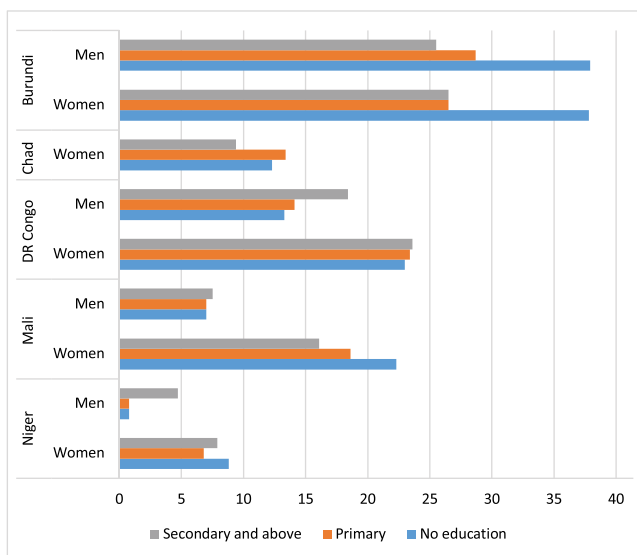
*Note: 'Have another soon' refers to those who want the next baby within two years; 'Have another later' refers to those who want to delay next birth for two or more years; 'Have another undecided' refers to those who want the next birth but are undecided on the timing; 'Undecided' are those who are unsure whether or not they want the next birth.*

The desire to limit childbearing is another way of looking at fertility preferences. A change in the demand for children is one of the important conditions for transition because of its potential influence on fertility levels and trends. The desire to limit fertility is highest in Burundi and lowest in Niger (Figure 9). Previous analysis shows that the proportion of women who desire to limit childbearing is rising in SSA and ranges from a low of less than 10% in Niger and Chad to a high of 53% in Kenya [14].

There is a link between education and the desire to cease childbearing among both women and men in all five countries (Figure 10). However, the results appear counter-intuitive, as the majority of women with the greatest desire to limit children are those with no formal education. This is unexpected, because studies show that the desire to limit childbearing increases with women's educational levels [15, 16] as education contributes to the weakening of traditional pro-natalist norms and

values in favor of smaller families. A probable explanation is that less educated women might already have more children than educated women, therefore are more likely to express the desire to limit childbearing. The inverse relationship between education and desire to limit childbearing changes when the analysis is done by considering the number of living children per woman. Niger has the lowest percentage of women and men who do not want more children, based on educational status (Figure 10).

**Figure 10:** Percentage of women and men who do not want more children, by educational status, in the selected countries



**Source:** Respective Countries' DHSs; ICF International; Burundi (2010), Chad (2014-15), DRC (2014), Mali (2012-13), Niger (2012)

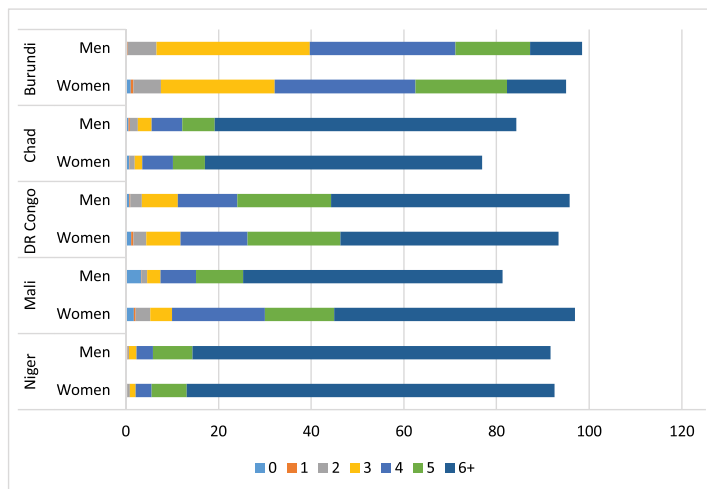
### 3.1.2 Ideal number of children

The 'ideal' number of children measures wanted and unwanted fertility which in turn serve as good indicators of excess fertility. Excess fertility is, childbearing that is beyond the desired number, which may indicate a lack of access to contraception or a lack of intention to use FP [17]. Excess fertility occurs because couples do not stop childbearing after attaining the desired family size.

Most people in the five countries are in favour of having many children. The majority prefer more than six, except Burundi, where three to four children is the ideal (Figure 11). In all the countries, men are more likely to prefer more children than women, which indicates the potential for continued high fertility in the foreseeable

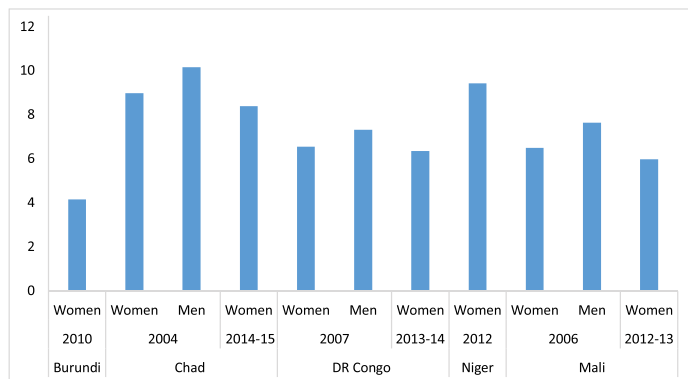
future. This is likely to slow down the fertility transition and concomitant realization of the demographic dividend. Very few say that having one or two children is ideal. However, in Mali, a considerable number of respondents said their ideal number of children is zero.

**Figure 11:** Distribution of the ideal number of children for women and men in the selected countries



**Source:** Respective countries' DHSs; ICF International; Burundi (2010), Chad (2014-15), DRC (2014), Mali (2012-13), Niger (2012)

Looking at the mean ideal number of children (Figure 12), men and women in the five countries still favor large family sizes. Men in Chad have the highest average desired family size (10) followed by women in Niger (9); women in Burundi have the lowest desired family size (4). In Niger and Chad, the ideal number is higher than TFR rates, suggesting that desired fertility is higher than actual fertility, which makes it unlikely that fertility will reduce in the foreseeable future. Although the ideal number of children is lower than TFR in Burundi, Mali and DRC, the gap is negligible, implying that there is no excess fertility in these countries, which is typical of pre-transitional fertility regimes. In the pre-transitional phase, excess fertility does not occur because both socio-cultural and socio-economic factors favor high fertility [4, 18].

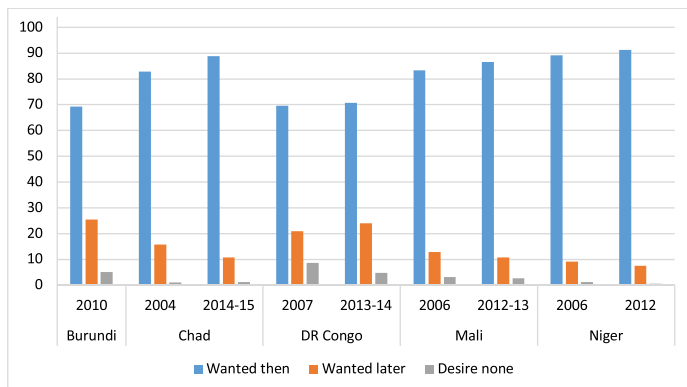
**Figure 12: Mean ideal number of children in the selected countries**

**Source:** Respective countries' DHSs; ICF International; Burundi (2010), Chad (2004, 2014-15), DRC (2007), Mali (2006, 2012-13), Niger (2012)

The high demand for children is attributable to the poor socio-economic conditions in the countries. Evidence suggest that socio-economic factors such as education, poverty and urbanization affect demand for children [18]. Studies show that the desired family size is negatively associated with economic position: the poor desire more children than the rich [20]. Education is the most prominent factor because it reduces pro-natal traditional beliefs [16]. Urban residence is also important because it is associated with higher costs of raising children, higher education, formal work, cultural diversity and openness to new ideas, which favors smaller families and use of FP [19].

### 3.1.3 Fertility planning status

In all target countries a higher proportion of pregnancies and births are intended. Less than a third of pregnancies and births in all the five countries were unintended (either mistimed or unwanted) at the time of their most recent survey. Among unintended pregnancies, the proportion of births that were mistimed remains higher than unwanted births across the years in all five countries. Niger has the lowest level of unintended pregnancies (8%), followed by Chad (12%), while Burundi (30%) has the highest level of unintended pregnancies, followed by DRC (29%) (Figure 13).

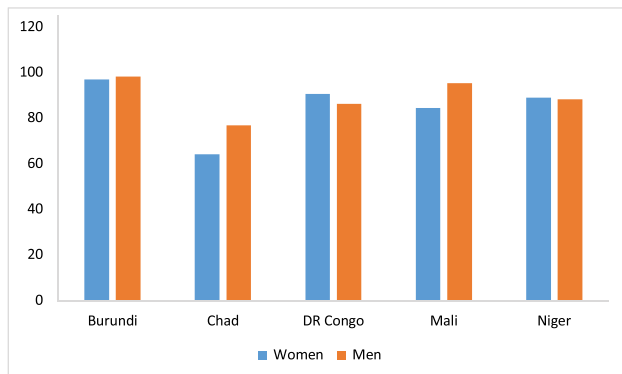
**Figure 13: Percentage distribution of FP status among women and men in the selected countries**

**Source:** Respective Countries' DHSs; ICF International; Burundi (2010), Chad (2004, 2014-15), DRC (2007), Mali (2006, 2012-13), Niger (2012)

### 3.2 Family planning knowledge and use

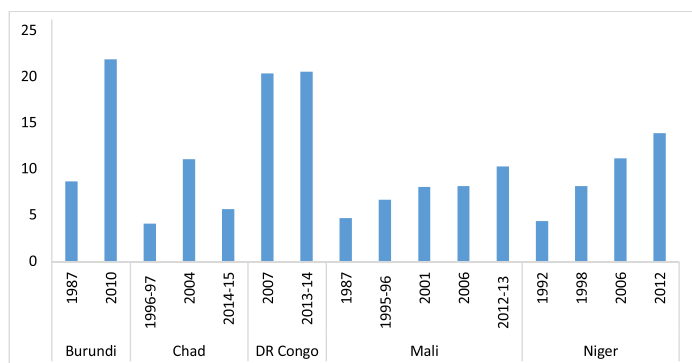
Knowledge of FP methods is essential to increase contraceptive uptake. Figure 14 shows the knowledge levels among all women aged 15-49 and men aged 15-55. Knowledge of at least one FP method is varied, ranging from as low as 64% for women in Chad to 97% of women and 98% of men in Burundi. Except for DRC and Niger, knowledge of contraceptive methods is slightly higher among men than women.

Contraceptive prevalence rate (CPR) refers to the percentage of women who are currently using, or whose sexual partner is currently using, at least one method of contraception, whether modern or traditional [21]. It is usually reported for women aged 15-49 who are married or in a union. Current use of contraceptives is the most widely employed and valuable measure of the success of FP programs. Current use of any contraceptive method in the five countries is very low, ranging from 5.7% in Chad to 22% in Burundi (Figure 15). Chad has the lowest CPR in the world, partly due to the fact that for a long time, the sale and promotion of FP was illegal, in addition to cultural, economic and structural barriers [22].

**Figure 14: Knowledge of any method of contraception in the selected countries (%)**

**Source:** Respective Countries' DHSs; ICF International; Burundi (2010), Chad (2014-15), DRC (2014), Mali (2012-13), Niger (2012)

During the past three decades, CPR generally improved in all the countries, although it remains far below SSA average (28%). Burundi and DRC are clear leaders with the most remarkable progress. In all five countries, contraceptive use is higher among the most educated, richest urban women, compared with their uneducated, poor, rural counterparts.

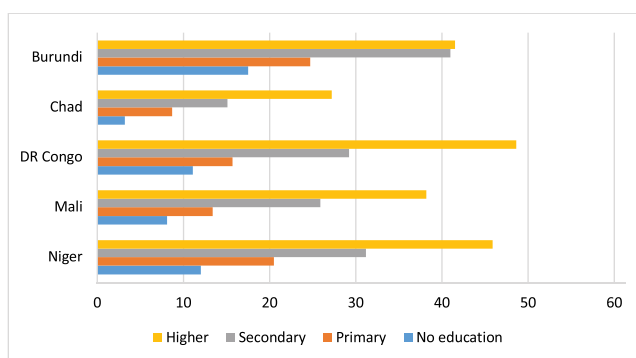
**Figure 15: Contraceptive prevalence rate in the selected countries (%)**

**Source:** Respective countries' DHSs; ICF International, Burundi (1987, 2010), Chad (1997, 2004, 2014-15), DRC (2007, 2014), Mali (1995-96, 2001, 2006, 2012-13), Niger (1998, 2006, 2012)

### 3.2.1 Family planning use and education

Women's educational attainment is a consistent predictor of FP use because it improves knowledge, empowerment, autonomy and access [23]. Use of contraception is *relatively high* among women with at least some education in all five countries (Figure 16). For example, in Niger and DRC, only 12% of currently married women with no education use a method of contraception, while about half of women with tertiary education use a method of contraception. The largest gap in the use of contraception between uneducated and tertiary educated women is *notable* in DRC and Niger while it is lowest in Burundi.

Figure 16: CPR by education status in the selected countries (%)

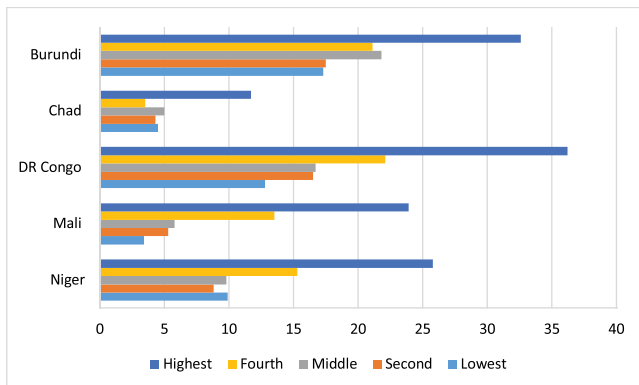


Source: Respective countries' DHSs; ICF International; Burundi (2010), Chad (2014-15), DRC (2014), Mali (2012-13), Niger (2012)

### 3.2.2 Family planning use and wealth status

There are wide inequalities in the contraceptive use between and within these countries, increasing in a step-wise manner from poorest to richest, and a noticeable gap in current use of contraception among women from different household wealth groups (Figure 17). A plausible explanation is that women from relatively wealthier households overcome access barriers more easily than their low-earning counterparts [20, 24]. The largest gap in contraceptive use between the poorest and richest is observed in Mali (seven times higher). The narrowest gap is in Burundi where it is less than double.

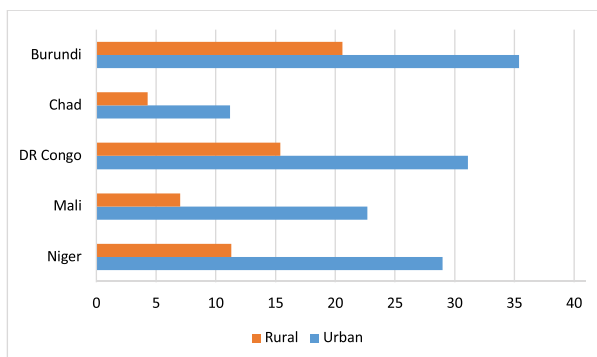


**Figure 17: CPR by wealth quintile in the selected countries (%)**

**Source:** Respective countries' DHSs; ICF International; Burundi (2010), Chad (2014-15), DRC (2014), Mali (2012-13), Niger (2012)

### 3.2.3 Family planning use and residence

There is a clear association between urban residence and contraceptive use as women in urban areas have better access to FP facilities and services [18, 20]. In all five countries, contraceptive use is two times higher among urban than rural women (Figure 18). The largest gap between urban and rural contraceptive use is observed in Niger and Mali, while the smallest gap is in Burundi.

**Figure 18: CPR by residence in the selected countries (%)**

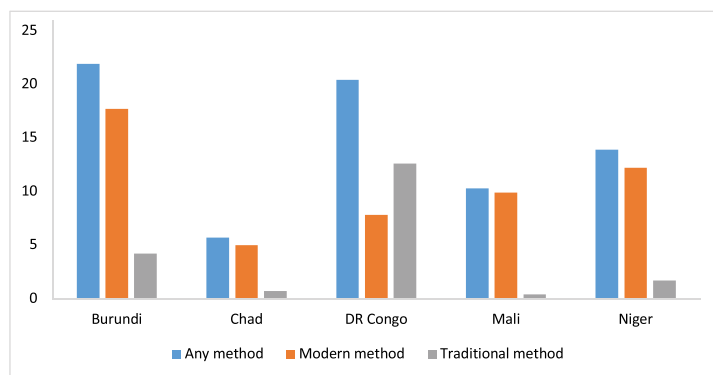
**Source:** Respective countries' DHSs; ICF International; Burundi (2010), Chad (2014-15), DRC (2014), Mali (2012-13), Niger (2012)

### 3.2.4 Contraceptive method choice

Modern contraceptive methods, such as oral pills, female and male sterilization, IUD, injectables, implants, diaphragms and male and female condoms are generally more effective than traditional methods, such as periodic abstinence, withdrawal and folk methods. Choice of contraceptive method is therefore an important indicator of FP quality of care, program planning and management [25].

Data on contraceptive method choice shows that current use of modern contraception, although generally low, is higher than traditional contraception methods in all countries, except DRC (Figure 19). The use of modern contraception in DRC is very low, with only 7.8% of married women of reproductive age nationally using modern contraception. Reported barriers to modern contraceptive use in DRC include fear of side effects, cost, social-cultural norms, partner and social disapproval, lack of knowledge and misinformation [26]. The highest use of modern methods is in Burundi (18%), while the highest use of traditional methods is in DRC (13%).

**Figure 19:** Married women currently using contraception in the selected countries (%)



**Source:** Respective countries' DHSs; ICF International; Burundi (2010), Chad (2014-15), DRC (2014), Mali (2012-13), Niger (2012)

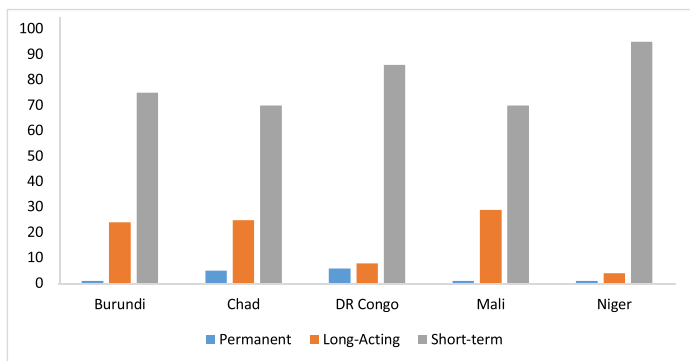
### 3.2.5 Use of long-acting and short-acting methods

Contraceptive methods can also be grouped into two broad categories. One of these consists of long-acting and reversible contraceptives (LARCs) and permanent contraceptive methods (intrauterine devices and implants, female and male sterilization). The other category consists of short-term methods (pills, condoms, spermicides, injectables, other modern methods and all traditional methods). Long-acting and permanent contraception methods are mostly used to limit childbearing,

whereas short-acting methods are important for birth spacing and delaying childbearing [27].

Data show that the contraception methods currently used by women in the selected countries are mainly short-acting (Figure 20). The predominant use of short acting methods, which are less effective, has implications for continued high fertility and poor reproductive health outcomes in the selected countries. If more effective long-acting and permanent contraceptive methods were used, unintended births and induced abortions could be substantially reduced to help families and countries achieve their health goals [28]. Nearly 6% of women who are using contraception practiced permanent methods of FP in DRC, the highest compared with the other four countries (Figure 20).

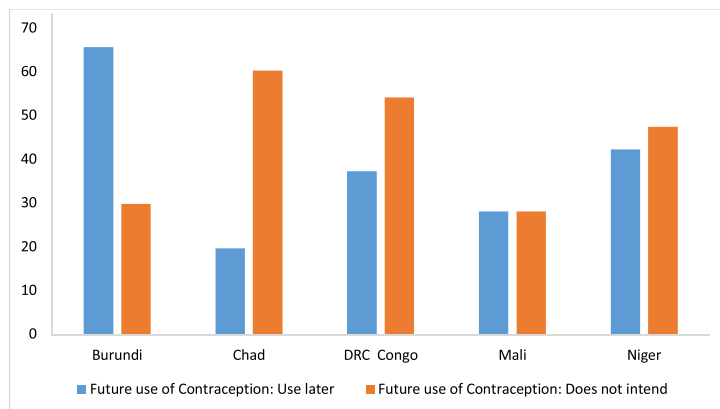
**Figure 20: Percentage of women using each modern contraception in the selected countries**



**Source:** Respective countries' DHSs; ICF International; Burundi (2010), Chad (2014-15), DRC (2014), Mali (2012-13), Niger (2012)

### 3.2.6 Contraceptive use intention

Contraceptive use **intention** measures the willingness of current non-users to use a contraceptive method in the future. It is an important indicator of the potential change in demand for FP [29]. Figure 21 shows that higher proportions of women who are not using contraception intend to use contraception in Burundi (66%) compared with the other four countries. The lowest intention to use contraception in the future is expressed by women in Chad (20%).

**Figure 21: Intention to use contraception in the selected countries (%)**

**Source:** Respective countries' DHSs; ICF International; Burundi (2010), Chad (2014-15), DRC (2014), Mali (2012-13), Niger (2012)

Women who do not intend to use a contraceptive method in the future were asked to state the most common reason (Table 7) behind this intention. The most common reason for not intending to use contraception is fertility-related (the desire for more children), reiterating the pro-natalist fertility attitudes in the selected countries. This reason was mainly given by women in DRC (26%) and Niger (25%). Other prominent reasons include self-opposition and lack of knowledge on contraceptive methods. Lack of knowledge was frequently cited by women in Chad (19%) and Niger (12%).

### 3.3 Unmet need for family planning

Unmet need measures the percentage of sexually active women who either do not want children soon or do not want any more children, but are not using any FP method [28]. It is a good indicator of the gap between demand for and use of FP, particularly the demand for FP services, which is not being met.

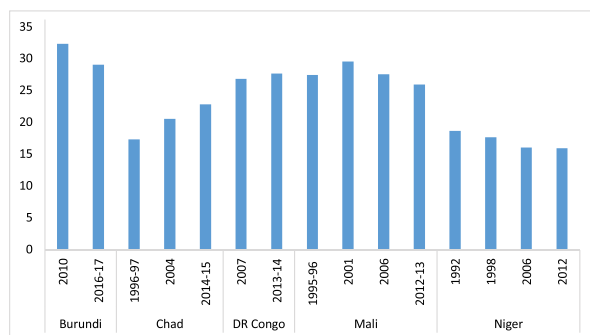
Unmet need remains high in Burundi, DRC and Mali (Figure 22), suggesting a high demand for FP services that is satisfied. This implies a window of opportunities for FP programming in these countries. Unmet need for FP continues to decline slowly in Burundi and Niger, but remains stable in Mali and DRC. However, Chad experienced an increase in unmet need from 1997-2015 in the face of a drop in CPR (Figure 22).

**Table 7: Reasons for not intending to use contraception in the selected countries: most recent DHS data**

Reasons	Chad	DRC	Mali	Niger
Wants more children	19	25.9	17.6	24.6
Respondent opposed	15.5	10.1	22.1	15.9
Knows no method	19.3	8.7	8.6	11.7
Sub-fecund, infertile	13.7	14.9	9.2	7.3
Religious prohibition	8.2	5.6	4.9	6.3
Knows no source	7.5	2.3	4.5	4.5
Spouse opposed	2.5	4.8	9.0	6.4
Fear of side effects	2.2	6.2	4.1	2.4
Menopausal, hysterectomized	2.1	4.0	2.7	1.6
Health concerns	1.8	2.7	5.5	3.0
Infrequent sex	1.1	5.9	2.7	4.8
Others	5.1	5.9	6.2	8.3

**NB:** Data not available for Burundi

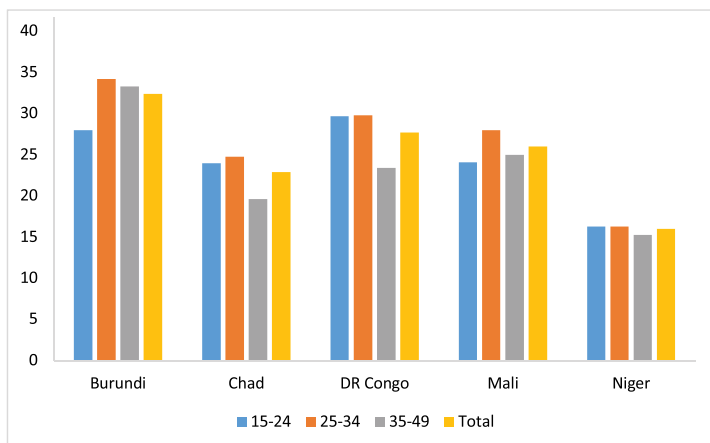
**Source:** The DHS Program STAT compiler (2017)

**Figure 22: Unmet need for FP in the selected countries (%)**

**Source:** Respective countries' DHSs; ICF International; Burundi (2010, 2016/17), Chad (1996/17, 2004, 2014-15), DRC (2007), Mali (1995/96, 2001, 2006, 2012-13), Niger (1992, 1998, 2006, 2012)

Unmet need is highest among young adults aged 25-34, followed by women aged 35-49 in all the selected countries, implying high unmet need for spacing among young adults (25-34) and unmet need for limiting among women aged 35-49. The unmet need for spacing is slightly higher than the unmet need for limiting. In Niger, the unmet need for FP is almost the same across all age groups (Figure 23).

**Figure 23:** Women's unmet need for FP by age group in the selected countries (%)



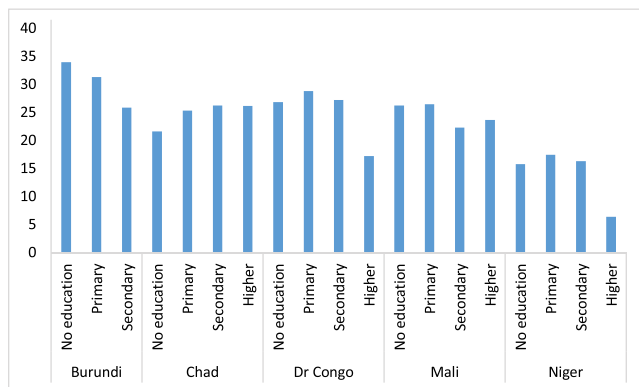
**source:** respective countries DHS; ICF International; Burundi (2010), Chad (2014-15), DRC (2014), Mali (2012-13), Niger (2012)

### 3.3.1 Unmet need and educational status

The association between unmet need for FP and women's educational attainment is unique among the selected countries (Figure 24). Three scenarios exist: the first is Burundi, where unmet need reduces with increased educational attainment — it is highest among women with no education (34%) and lowest among women with secondary and higher levels of education (22%). Higher education is associated with lower unmet need because it contributes to the socio-economic empowerment of the women. Socio-economically empowered women are expected to use contraception because they have more access to contraceptives, are less concerned about side effects and probably encounter less opposition from their husbands [20, 23].

The second scenario is in Chad, where contrary to expectations, the unmet need seems to increase with increased educational levels (Figure 24). The third scenario is observed in DRC, Mali and Niger, where there is no clear relationship between educational level and unmet need, meaning that there are socio-cultural barriers to contraceptive use in these countries.

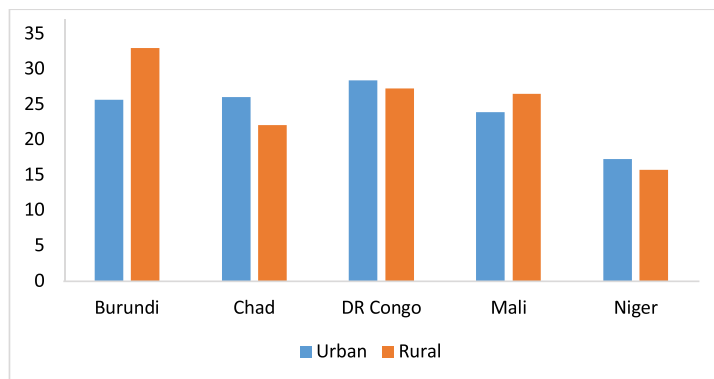
**Figure 24: Unmet need for FP by education status in the selected countries (%)**



**Source:** Respective countries' DHSs; ICF International; Burundi (2010), Chad (2014-15), DRC (2014), Mali (2012-13), Niger (2012)

### 3.3.2 Unmet need and place of residence

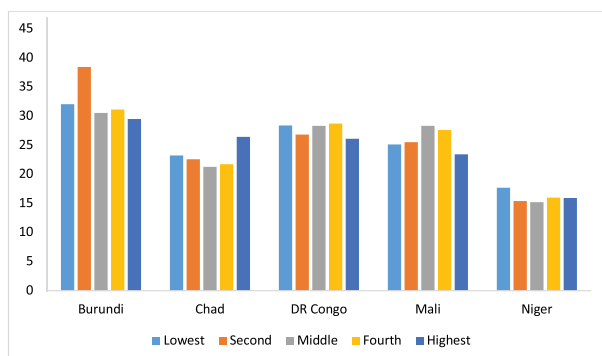
There is some association between women's place of residence and unmet need for family planning in the selected countries. The proportion of women with unmet need in urban areas is lower than rural areas (Figure 25). Urban residence is associated with lower unmet need because of higher contraceptive use, not just because of higher tolerance towards the use of contraceptives, but also because of the improved access to FP and health facilities [18, 20].

**Figure 25: Unmet need for FP by residence in the selected countries (%)**

**Source:** Respective countries' DHSs; ICF International; Burundi (2010), Chad (2014-15), DRC (2014), Mali (2012-13), Niger (2012)

### 3.3.3 Unmet need and wealth status

There is no clear indication of a relationship between the different categories of household wealth and unmet need for FP in the selected countries (Figure 26). However, the level of unmet need for FP among the poorest populations is higher than among the wealthiest in all the countries except Chad. This finding implies that women from the wealthiest households can overcome access barriers to contraceptive use more easily than their low-income counterparts.

**Figure 26: Unmet need for FP by wealth quintile in the selected countries (%)**

**Source:** Respective countries' DHSs; ICF International; Burundi (2010), Chad (2014-15), DRC (2014), Mali (2012-13), Niger (2012)

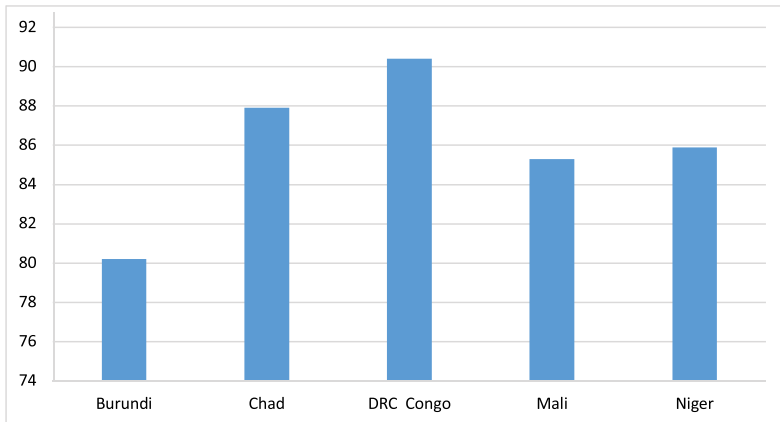


### 3.3.4 Family planning non-use and contact with service providers

Information on contact with FP services is useful for ascertaining if non-users are reached by FP programs. The DHS obtains this information by asking non-users of FP whether, in the 12 months preceding the survey, they discussed FP matters during the field worker's visit or at the health facility.

There is a very low level of non-users contact with FP providers in the five countries: more than 80% of non-users reported that they did not discuss FP with a fieldworker or at a health facility. Burundi has the highest level of non-user contact with FP providers (20%), while DRC has the lowest (10%), according to the latest DHS survey (Figure 27).

**Figure 27:** Percentage of non-users who did not discuss FP with a field worker or at a health facility in the selected countries



**Source:** Respective countries' DHSs; ICF International; Burundi (2010), Chad (2014-15), DRC (2014), Mali (2012-13), Niger (2012)

## Chapter 4: Policies, Programs and Opportunities for the Demographic Dividend

For a long time, few governments in SSA expressed concerns about the nexus between population dynamics and development. However, this has been changing over the past two decades and policies are being sought to reduce excessive fertility in order to effect a decline in the rate of population growth [31, 32]. The selected countries have come up with various policies and programs in response to the high fertility-based population growth as described below:

### 4.1 Burundi

Population growth was a concern in Burundi from as early as the 1980s (Table 8). The current government's policy response to the challenge of high population growth is contained in pillar 5 (demographics) of the Vision Burundi 2025, which aims to reduce population growth rate from 2.5% to 2% by the year 2025 [33]. Vision Burundi 2025 is a planning instrument i.e. current roadmap for its economic and social development.

In addition, the policy includes objectives to reduce the fertility rate, from six children to three, by 2025 and accelerate the decline in under-five and maternal mortality rates, which will increase the current life expectancy from age 49 years to 60 by 2025 [33]. The high population growth and maternal and childhood mortality rates are caused by the high fertility rate which is the result of low modern contraceptive use.

To increase contraceptive use, Burundi joined FP2020 ([www.familyplanning2020.org/](http://www.familyplanning2020.org/)) in 2014, as part of its support for the Every Woman Every Child Initiative ([www.everywomaneverychild.org/](http://www.everywomaneverychild.org/)). Consequently, Burundi's government pledged political will and financial commitments towards repositioning family planning [34]. The global objective is to foster sustainable development by addressing population growth and ensuring equal access for all women to the contraceptives of their choice and to quality services. One of the outcome indicators is the achievement of a CPR of 50% by 2020 [34].

Abortion is prohibited in Burundi, except in circumstances that cannot otherwise be avoided, which threaten the life of the mother, or may cause serious and permanent injury to maternal health (Table 8). Abortion is permitted to: (1) save a woman's life; (2) preserve a woman's physical health; and, (3) preserve a woman's mental health.

The 2025 vision also targets development of human capital by providing universal primary school education and an 80% adult literacy rate [33]. Pillar 2 envisions a better standard of living for the people of Burundi with the help of a well-educated populace who also enjoy good health.

Burundi's policy statements, if effectively implemented, are generally promising for achievement of the demographic dividend. However, implementation is compromised by insufficient financial and budgetary allocations. Although expenditure on health (7.5%) as a proportion of gross domestic product (GDP) in Burundi is the highest of the five countries, it falls below the recommended Abuja Accord Goal of 15% [35]. The education expenditure as a percentage of GDP (6.1%), although highest among the selected countries, is modest and insufficient to ensure universal, equitable, quality education [36].

**Table 8: Burundi government's view on population growth, fertility level, reproductive health and FP:**

View	1986	1996	2005	2013
<b>Population growth and structure</b>				
View on growth	Too high	Too high	Too high	Too high
Policy on population growth	Lower	Lower	Lower	Lower
Level of concern about size of working age population	--	--	--	Major concern
<b>Fertility level</b>				
View on fertility level	Too high	Too high	Too high	Too high
Policy on fertility level	Lower	Lower	Lower	Lower
Level of concern about adolescent fertility	--	Not a concern	Not a concern	Minor concern
Policies to reduce adolescent fertility	--	No	No	Yes
<b>Reproductive health and FP</b>				
Government support for FP	Direct support	D i r e c t support	Direct support	Direct support
Grounds on which abortion is permitted**	--	1,2	1,2,3	1,2,3
Views on current life expectancy	Unacceptable	Unacceptable	Unacceptable	Unacceptable
Views on under-5 mortality	--	Unacceptable	Unacceptable	Unacceptable
Views on maternal mortality	--	--	Unacceptable	Unacceptable
<b>Education and Employment</b>				
Policy on highly skilled workers	--	--	--	--

\*\* Grounds on which abortion is permitted: (1) to save a woman's life; (2) to preserve a woman's physical health; (3) to preserve a woman's mental health; (4) in case of rape or incest; (5) because of fetal

impairment; (6) for economic or social reasons; (7) on request.

-- Data not available; Data not separately reported

Source: UN, Population Division: World population policies 2013

## 4.2 Chad

From the late 1990s, population growth and high fertility were viewed as issues of great concern in Chad (Table 9). Consequently, several policies were adopted to stem the related tide of high fertility, maternal and child mortality and high population growth. Important policies include Reproductive Health Law 2002; 2009-2015 Roadmap for Reduction of Maternal and Neonatal Mortality 2008; Reproductive Health Policy and Norms 2011; and the National Family Planning Policy. The Reproductive Health Law underscores individuals' rights to determine the number and frequency of their children and to obtain FP services without consent from husbands or service providers [37]. The 2009-2015 Roadmap for Reduction of Maternal and Neonatal Mortality prioritized access to sexual and reproductive health as well as set targets to increase contraceptive prevalence [38]. Reproductive Health Policy and Norms 2011 established norms for the provision of sexual and reproductive health services, which includes restriction of LARCs and manual vacuum aspiration (MVA) to hospital settings [39].

**Table 9: Chad government's view on population growth, fertility level, reproductive health and FP:**

View	1986	1996	2005	2013
<b>Population growth and structure</b>				
View on growth	Satisfactory	Too high	Too high	Too high
Policy on population growth	No intervention	Lower	Lower	Lower
Level of concern about size of working age population	--	--	..	Minor concern
Fertility level				
View on fertility level	Satisfactory	Satisfactory	Satisfactory	Too high
Policy on fertility level	No intervention	No intervention	No intervention	Lower
Level of concern about adolescent fertility	--	..	Minor concern	Major concern
Policies to reduce adolescent fertility	--	..	Yes	Yes
<b>Reproductive health and FP</b>				
Government support for FP	No support	Indirect support	Direct support	Direct support
Grounds on which abortion is permitted **	--	1	1,2,5	1,2,5
Views on current life expectancy	Unacceptable	Unacceptable	Unacceptable	Unacceptable

Views on under-5 mortality	--	..	Unacceptable	Unacceptable
Views on maternal mortality	--	--	Unacceptable	Unacceptable
<b>Education and employment</b>				
Policy on highly skilled workers	--	--	..	Raise

\*\* Grounds on which abortion is permitted: (1) to save a woman's life; (2) to preserve a woman's physical health; (3) to preserve a woman's mental health; (4) in case of rape or incest; (5) because of fetal impairment; (6) for economic or social reasons; (7) on request.

-- Data not available; Data not separately reported

Source: UN, Population Division: World population policies 2013

The above policy environment did little to change the slow progress of poor sexual and reproductive health indicators in Chad, necessitating a revision. Consequently, in 2014, the Ministry of Health adopted a new National Family Planning Policy [40], which contained changes that facilitate high-quality service provision of FP services. The changes introduced include: allowing nurses and midwives to provide LARCs and MVA; broadening the scope of FP services to include behavior change communication; and targeting men, adolescents, vulnerable and migrant groups as well as people living with HIV/AIDS for family planning [40].

Abortion in Chad is prohibited except (Table 9): (1) to save a woman's life; (2) to preserve a woman's physical health; and (5) instances of fetal impairment.

The education policy in Chad under the guidance of the Transitional Education Plan (Stratégie intérimaire pour l'éducation et l'alphabétisation- SIPEA) 2013-2015, which was extended to cover 2017, prioritized delivery of universal primary education and intended to ensure gender and geographical equity [41].

Although the policy environment in Chad is favorable for achievement of the demographic dividend, implementation is ineffective because of inadequate financial commitments and budgets. For example, although the education policy aims to provide free, quality compulsory primary education for all children, the government spends only 2.6% of its GDP on education [36]. Chad's health expenditure as a percentage of GDP (3.6%) is also the lowest among the five countries [36].

### 4.3 Democratic Republic of Congo

Although the DRC established the national FP program *Project des Services des Naissances Désirables* (PSND) in the early 1980s, it was largely ineffective especially in the wake of the wars in the 1990s. After the wars, the government established the *Programme National de Santé de la Reproduction* (PNSR) in 2001 to address maternal mortality, FP and related issues, which again drew little attention or support from the government. Serious efforts to reposition FP can be discerned from the two FP conferences that occurred in 2004 and 2009 [42].

The renewed interest in population growth culminated in the adoption of the Plan Stratégique Nationale de Planification Familiale 2001-2020 to further strengthen the momentum for FP in DRC. The plan aims to increase modern contraceptive prevalence rates to at least 19% in 2020 and promote access to modern contraceptives for 21 million women in 2020 [42].

**Table 10: DRC government's view on population growth, fertility level, reproductive health and FP:**

View	1986	1996	2005	2013
<b>Population growth and structure</b>				
View on growth	Satisfactory	Satisfactory	Satisfactory	Satisfactory
Policy on population growth	No intervention	No intervention	No intervention	No intervention
Level of concern about size of working age population	--	--	..	..
<b>Fertility level</b>				
View on fertility level	Satisfactory	Satisfactory	Satisfactory	Too high
Policy on fertility level	No intervention	No intervention	No intervention	Lower
Level of concern about adolescent fertility	--	Minor concern	Minor concern	Major concern
Policies to reduce adolescent fertility	--	Yes	Yes	Yes

<b>Reproductive health and FP</b>				
Government support for FP	Indirect support	Direct support	Direct support	Direct support
Grounds on which abortion is permitted **	--	1	1	1
Views on current life expectancy	Unacceptable	Unacceptable	Unacceptable	Unacceptable
Views on under-5 mortality	--	Unacceptable	Unacceptable	Unacceptable
Views on maternal mortality	--	--	Unacceptable	Unacceptable
<b>Education and employment</b>				
Policy on highly skilled workers	--	--	..	Raise

\*\* Grounds on which abortion is permitted: (1) to save a woman's life; (2) to preserve a woman's physical health; (3) to preserve a woman's mental health; (4) in case of rape or incest; (5) because of fetal impairment; (6) for economic or social reasons; (7) on request.

-- Data not available; Data not separately reported

Source: UN, Population Division: World population policies 2013

Abortion is prohibited in DRC, except in circumstances that cannot otherwise be avoided, which threaten the life of the mother or cause serious and permanent injury to her health (Table 10). Abortion is only permitted to save a woman's life.

Education rates in DRC have improved, with primary education completion rates increasing from 29% in 2002 to 70% in 2014, although the proportion of children out of school (26.7%) remains one of the highest in the world. To remedy this, DRC developed the Education Sector Plan for 2016-2025, which would improve quality and expand access and equity. It aims to provide all children in the DRC with free primary education [43].

On paper, DRC's population and education policy statements are promising for creating conditions of rapid fertility decline and the demographic dividend. However, implementation does not match the policy rhetoric. For example, although the National FP Strategic Plan aims to almost triple modern contraceptive rate by 2020, only 4% of GDP is allocated to health [44]. The health budget is insufficient to provide access to modern contraceptives for 21 million women in 2020, as anticipated in the plan. Similarly, although the current education sector plan provides for free and universal primary education, only 2.5% of the GDP [36] is allocated to education. This expenditure, which is the lowest in the world, cannot guarantee universal primary education.

## 4.4 Mali

Mali's population size has more than tripled since independence in 1960 and continues to grow at 3% annually [2]. Its fertility rate of 6.1 is among the highest in the world [45]. The high population growth and fertility rates became an issue of concern in the late 1990s (Table 10). Several policies were adopted in Mali to help manage population growth, including: 1990 Population Policy, 2002 Reproductive Health Law and the National Action Plan for FP (2011-2015). The 1990 Population Policy authorizes any woman, regardless of marital status or age, to have FP access eliminating the requirement for parental or spousal permission/consent[46]. The 2002 Reproductive Health Law outlines the right to FP services and provides implementing texts. The National Action Plan for FP (2011-2015) provides operational guidelines for FP service implementation throughout Mali. The components of the FP program outlined in the Action Plan include: reproductive health communication (RH); engagement of adolescents, youths and male engagement; and, RH product security [47].

Abortion is prohibited except in circumstances that cannot otherwise be avoided, that threaten the life of the mother or may cause serious and permanent injury to her health (Table 11). Abortion is only permitted in Mali to save a woman's life or in case of rape or incest.

Mali's education policy is under the guidance of the interim education sector plan, the *Programme intérimaire de relance du secteur de l'éducation et de la formation professionnelle* (PIRSEF) 2015-2017 that aims to ensure improved access and equity to quality education in the wake of decreased enrollment rates and completion rates between 2011-13. The government pledges to reduce gender disparities, establish disaster mitigation measures and improve reading and writing in the early grades [43].

The policy environment in Mali is generally favorable for achieving the demographic dividend. However, implementation is compromised by insufficient financial and budgetary allocations. Despite the 6.9% health expenditure as a proportion of GDP – the second-highest of the five countries – it falls below the recommended Abuja Accord Goal of 15% [35, 44]. Similarly, education expenditure as a percentage of GDP is 4.7% [36] which is the second-highest of the five study countries. However, it is insufficient to ensure universal, equitable and quality education, as envisioned by the education policy.



**Table 11: Mali government's view on population growth, fertility level, reproductive health and FP**

View	1986	1996	2005	2013
<b>Population growth and structure</b>				
View on growth	Satisfactory	Too high	Too high	Too high
Policy on population growth	Maintain	Lower	Lower	Lower
Level of concern about size of working age population	--	--	Major concern	Major concern
<b>Fertility level</b>				
View on fertility level	Satisfactory	Too high	Too high	Too high
Policy on fertility level	Maintain	Lower	Lower	Lower
Level of concern about adolescent fertility	--	Minor concern	Minor concern	Major concern
Policies to reduce adolescent fertility	--	Yes	No	Yes
<b>Reproductive health and FP</b>				
Government support for FP	Direct support	Direct support	Direct support	Direct support
Grounds on which abortion is permitted **	--	1,	1,4	1,4
Views on current life expectancy	Unacceptable	Unacceptable	Unacceptable	Unacceptable
Views on under-5 mortality	--	Unacceptable	Unacceptable	Unacceptable
Views on maternal mortality	--	--	Unacceptable	Unacceptable
<b>Education and employment</b>				
Policy on highly skilled workers	--	--	..	No intervention

\*\* Grounds on which abortion is permitted: (1) to save a woman's life; (2) to preserve a woman's physical health; (3) to preserve a woman's mental health; (4) in case of rape or incest; (5) because of fetal impairment; (6) for economic or social reasons; (7) on request.

-- Data not available; Data not separately reported

Source: UN, Population Division: World population policies 2013

## 4.5 Niger

Niger, the fastest-growing country in the world, gave little priority to population growth and FP until recently (Table 12) when a favorable policy environment for FP was created due to growing concerns on food insecurity, health and extreme poverty [48]. The key policies in place include: 2006 Reproductive Health Law; the National Reproductive Health Program (2005-2009) and the 2007 National Population Policy. Niger's government has supported (or encouraged) the provision of free FP methods at all public health facilities since 2006 [48].

Repositioning of FP gained momentum in 2012 with the adoption of the 2012-2020 Action Plan (Family Planning 2020), which stems from the 2011-2015 National Health Development Plan. It aims to regulate population growth through FP promotion, increasing the contraceptive prevalence rate to 50% by 2020 [49]. Following the plan, the political will changed for the better, evidenced by a quadrupling of the government's FP budget in 2013. The government adopted measures aimed at promoting contraceptive use in various ways, such as allowing community health workers to provide the all-in-one injectable contraceptive, Sayana Press; creating new mobile clinic services for isolated communities, and integrating FP into the school health curriculum [34].

**Table 12:** Niger government's view on population growth, fertility level, reproductive health and FP

View	1986	1996	2005	2013
<b>Population growth and structure</b>				
View on growth	Too high	Too high	Too high	Too high
Policy on population growth	Lower	No Intervention	Lower	Lower
Level of concern about size of working age population	--	--	Major concern	Major concern
<b>Fertility level</b>				
View on fertility level	Too high	Too high	Too high	Too high
Policy on fertility level	Lower	Lower	Lower	Lower
Level of concern about adolescent fertility	--	Not concern	Major concern	Major concern
Policies to reduce adolescent fertility	--	No	Yes	Yes
<b>Reproductive health and FP</b>				
Government support for FP	Direct support	Direct support	Direct support	Direct support
Grounds on which abortion is permitted**	--	1	1	1, 2, 3, 5
Views on current life expectancy	Unacceptable	Unacceptable	Unacceptable	Unacceptable
Views on under-5 mortality	--	Unacceptable	Unacceptable	Unacceptable
Views on maternal mortality	--	--	Unacceptable	Unacceptable
<b>Education &amp; employment</b>				
The policy of highly skilled workers	--	--	..	Maintain

\*\* Grounds on which abortion is permitted: (1) to save a woman's life; (2) to preserve a woman's physical health; (3) to preserve a woman's mental health; (4) in case of rape or incest; (5) because of fetal impairment; (6) for economic or social reasons; (7) on request.

-- Data not available; Data not separately reported

Source: UN, Population Division: World population policies 2013

Abortion in Niger is prohibited except in circumstances that cannot otherwise be avoided and which threaten the life of the mother or may cause serious and permanent injury to her health (Table 12). The grounds on which abortion is permitted in Niger include: (1) to save a woman's life; (2) to preserve a woman's physical health; (3) to preserve a woman's mental health; or (5) because of fetal

impairment.

The education policy in Niger, under the guidance of the education and training sector plan for 2014-2024, aims to improve access and equity in the wake of low enrollment and high dropout rates, especially among girls in rural areas and children in nomadic areas [43]. However, universal primary education coverage and completion is hindered by a high population growth rate [43].

On paper, the policy environment in Niger is advantageous for creating conditions for rapid fertility decline and demographic dividend. However, implementation does not usually match policy pronouncements. For example, although the current policy aims to increase the contraceptive prevalence rate to 50% by 2020, only 5.8% of GDP is allocated to health expenditure [44]. The health budget is insufficient to ensure adequate contraceptive commodity supplies to meet the target. Similarly, although the current education sector plan aims to improve access and equitable education, only 4.5% of the GDP [36] is allocated to education expenditure, which is too modest to guarantee quality, equity and universal education. However, Niger's abortion policy is the most liberal among the selected countries and if implemented might help accelerate the fertility transition.

## Chapter 5: Implications for the Demographic Dividend

The five focus countries are among the world's poorest, but also with the highest fertility and population growth rates. With current TFRs of six or more children per woman, these countries defy the typical global pattern of fertility transition—a shift from high to low fertility. The population of these countries is growing at more than 3% a year, which implies a doubling of the population every 20 years [2]. The population structure of these countries is predominantly young, with about two-thirds of its people aged 25 or younger (Table 2). Without drastic reduction in fertility levels and consequent reduction in the share of children, these countries risk failing to achieve the demographic dividend.

If the prevailing fertility levels continue in these countries, the numbers of young dependents will increase, exacerbating existing economic health and nutrition problems and thereby triggering conflict and other social risks. Persistently high fertility rates in these countries will drive hunger, malnutrition and unnecessary deaths of mothers and children, as well as create environmental pressures leading to overfishing and/or, over-farming and desertification of agricultural land. As resources are squeezed, periodic conflicts inevitably break out.

Even in a best-case scenario in which an expected demographic change takes place in the near future in these countries, reaping the demographic dividend would need education, employment and health policies for a skilled employable workforce to tap their potential. The Asian Tigers experience of demographic dividend is attributed to a stronger focus on human (education and health) and physical capital. Their labor-intensive, export-led growth created employment opportunities. Increased employment opportunities and higher labor participation rates, including for women, helped absorb the large share of their working population [50]. In the absence of similar transformations, such a demographic transition in the target countries would simply translate into an army of unemployed youth and significantly increase economic and social risks and tensions.

Key reasons for the observed high fertility in the selected countries are low contraceptive use and high fertility preferences. Less than 20% (ranging from 18% in Burundi to 5% in Chad) of married women aged 15-49 use a modern method of FP. Trends in contraceptive method choice show that in the selected countries, use of traditional methods remains substantial. The use of traditional methods, which are less effective, tends to be higher in contexts where acceptance of FP is low and use of FP programs is weak. These countries have pro-natalist pressures, in which the desired family is sizeable and/or cultural incentives to have more children is common. Therefore, low contraceptive use is not really due to lack of access, but also because the desired family size is higher than the actual family size.

The compiled demographic indicators reveal that the decline in fertility in selected countries will be slower, except for Burundi. The populations are likely to continue growing at current rates and have the same young age structure and thus fail to realize the demographic dividend in the very near future. To reduce fertility levels and reap demographic dividends, these countries need to focus not only on investments in FP to slow population growth via fertility decline, but also on wise investments that develop an educated labor force and create jobs to increase economic growth. Population polices should focus more comprehensively on FP and fertility, as well as on human capital, including education and health. Above all, implementing policy options that will result in rapid fertility declines and creation of high quality human capital will require enhanced investments and budgets in health, FP and education.

Based on the findings, the following recommendations are suggested to address issues and tackle challenges in the selected countries:

### **Investing in FP**

Given the low modern contraceptive use in the selected countries, a strong FP program is a critically important policy strategy. Although all the countries have policies that promise to reposition FP, the implementation is hindered by insufficient budgets, resulting in constrained supplies of contraceptives or reproductive health commodities, poor health infrastructure and extreme shortages of health personnel at all levels, which limits the range of contraceptive options that can be offered. Increasing FP funding would strengthen programs, avoid contraceptive shortages and accelerate progress toward attaining the FP2020 commitments.

Programs should focus on reducing barriers to FP uptake. Women's health concerns and fears of side-effects can be reduced by improving counselling services. The socio-cultural barriers can be overcome through a series of initiatives, including involvement of men in FP and engagement of key gatekeepers, such as religious and traditional leaders, in FP advocacy campaigns. Accurate FP information should be expanded and contraception misinformation addressed through a variety of dissemination channels.

FP service provision should adopt innovative strategies such as task shifting and integration of sexual and reproductive health services with HIV/AIDS. Some aspects of FP services could be allocated to communities and lower levels of the health system, thereby enabling access to a broader range of contraceptive methods. This would involve the careful recruitment, training and supervision of community health and extension workers to provide a range of quality FP services to rural areas. Providers must integrate FP counselling and other services to reach women, such as HIV and post-abortion care services, among others.

**Preventing unsafe abortions**

Contraceptive use is limited in the selected countries, so unintended pregnancies are common and consequently, a considerable number of women seek to end them. However, since abortion is illegal in the five selected countries and legally permitted in only a few circumstances, they are more likely to resort to unsafe methods to end such pregnancies or jeopardize their future by carrying these to term. This calls for expansion of grounds on which legal abortion is permitted and improving access to quality post-abortion care.

**Increase age at first marriage and initiation of childbearing**

The early age at first marriage as well as the minimum legal age and therefore age of sexual debut and initiation of childbearing in the five countries is a key factor for the high fertility levels. The mean age of marriage is close to 15 in countries like Niger, which coincides with the minimum legal age for a girl to marry. Delaying marriage would reduce fertility lifespans and population growth rates. Additionally delaying childbearing would increase the time between generations and slow population growth.

Strategies for postponing marriage age must involve more investment in women's education, which enhances their autonomy and power to manage childbearing and benefits the next generation, as educated mothers invest in their own children. Other innovative efforts to fight teen marriage should also be undertaken.

**Universal education and healthcare**

Although the selected countries have policies to improve access to, equity and quality of education, implementation faces several challenges, including insufficient funding. Investments in universal education and healthcare lead to development of human capital. A well-educated population that also enjoys good health is a necessary condition to achieve the demographic dividend. A well-trained, qualified and healthy workforce will help diversify the economies by modernizing agricultural production and developing a service industry.





## References

1. United Nations. *World Population Prospects: The 2017 Revision*. 2017.
2. United Nations. *World Population Review: Crude Birth Rate by Country 2017*. 2017 [cited 2017 15 December ];  
Available from: <http://worldpopulationreview.com/countries/birth-rate-by-country/>.
3. Cleland, J., et al., (2006). Family planning: the unfinished agenda. *Lancet* 368(1810-1827).
4. Bongaarts, J. (2008). Fertility Transitions in Developing Countries: Progress or Stagnation *Studies in Family Planning*. 39(2): p. 105-110.
5. Bongaarts, J. (2017). Africa's unique fertility transition. *Population and Development Review*. 43(Suppl.): p. 39-58.
6. Schoumaker, B., (2009). Stalls and reversals in fertility transitions in sub-Saharan Africa: Real or spurious?. *Département des Sciences de la Population et du Développement*. Université catholique de Louvain (Belgique).
7. Harwood-Lejeune, A. (2001). Rising age at marriage and fertility in southern and eastern Africa. *European Journal of Population*. 17(3): p. 261- 280.
8. Carole, L.J. and Gribble, J. (1993). The proximate determinants of fertility. *Demographic change in sub-Saharan Africa*, H.K. In: Foote KA, Martin LG, eds.,, Editor.: Washington DC.
9. Marrie, M. O. and Omondi, M., (2008). *Down the Drain: Counting the Costs of Teenage counting the costs of teenage pregnancy and school drop- out in Kenya*. Centre for the Study of Adolescence,. 31.
10. Boden, J.M., D.M. Fergusson and Horwood, L.J. (2008). Early motherhood and subsequent life outcomes. *Journal of Child Psychology and Psychiatry*. 49(2).
11. Kodzi, I., Johnson, D. and Casterline, J.(2010). Examining the predictive value of fertility preferences among Ghanaian women. *Demographic Research*, 22(30): p. 965-984.
12. Casterline, J.B. and Sinding, S.W. (2000). Unmet Need for Family Planning

- in Developing Countries and Implications for Population Policy. *Population and Development Review*. 26(4): p. 691-723.
13. Gebreselassie, T. (2008). Spousal agreement on reproductive preferences in sub-Saharan Africa. *DHS Analytical Studies*. 10. Macro International Inc: Calverton, MD, USA.
  14. Casterline, J.B., (2009). Fertility Desires and the Prospects for Fertility Decline in Africa. *C.o.P. National Research Council, Editor*. National Academy Press: Washington D.C.
  15. Kim, J. (2016). Female education and its impact on fertility. *IZA World of Labor*. 228.
  16. Basu, A.M. (2002). Why does Education Lead to Lower Fertility? A Critical Review of Some of the Possibilities. *World Development*. 30(10): p. 1779-1790.
  17. Casterline, J.B. and El-Zein, L.O. (2007).The estimation of unwanted fertility. *Demography*. 44(4): p. 729-745.
  18. Ndaruhuye, M.D., A. Broekhuis and Hooimeijer, P. (2014). Variations in Desired Family Size and Excess Fertility in East Africa. *International Journal of Population Research*. p. 11.
  19. Garenne, M. and Joseph, V. (2002). The timing of the fertility transition in sub-Saharan Africa. *World Development*. 30(10): p. 1835-1843.
  20. Gwatkin, D.R., et al. (2007). Socio-economic differences in health, nutrition and population in developing countries: An overview. *Country Reports on HNP and Poverty*. The World Bank: Washington, DC, USA.
  21. United Nations (2015). *World Contraceptive Use: The 2015 update*.
  22. Kodindo, G. (2010). Family Planning in a Fragile State: Overcoming Cultural and Financial Barriers Situation of Chad. *Mailman School of Public Health*. Columbia University.
  23. Moursund, A. and Kravdal, Ø. (2003). Individual and Community Effects of Women's Education and Autonomy on Contraceptive Use in India. *Population Studies*. 57(3): p. 285-301.
  24. Haider, T.L. and Sharma, M. (2013). Barriers to family planning and contraception uptake in sub-Saharan Africa: a systematic review. *International Quarterly of Community Health Education*. 33(4): p. 403-13.
  25. Magadi, M.A. and Curtis,S.L. (2003). Trends and determinants of

- contraceptive method choice in Kenya. *Studies in Family Planning*. 34(3): p. 149-59.
26. Muanda, M., et al. (2016). Barriers to Modern Contraceptive Use in Kinshasa, DRC. *PLoS ONE*, 11(12).
  27. Creanga, A.A., et al. (2011). *Low use of contraception among poor women in Africa: An equity issue*. World Health Organisation. 89(4): p. 258-266.
  28. Bradley, S.E.K., Croft, T.N. and Rutstein, S.O. (2011). *The Impact of Contraceptive Failure on Unintended Births and Induced Abortions: Estimates and Strategies for Reduction*. *DHS Analytical Studies*. 22.
  29. Ross, J.A. and Winfrey, W.L. (2001). Contraceptive Use, Intention to Use and Unmet Need During the Extended Postpartum Period. *International Family Planning Perspectives*. 27(1): p. 20-27.
  30. Bongaarts, J. and Casterline, J. (2013). Fertility transition: is sub-Saharan Africa different? *Population and Development Review*. 38(Suppl.): p. 153-168.
  31. May, J.F. (2017). The Politics of Family Planning Policies and Programs in sub-Saharan Africa. *Population and Development Review*. 43(Suppl 1): p. 308-329.
  32. United Nations (2013). *World Population Policies*, P.D. Department of Economic and Social Affairs, Editor..
  33. Ministry of Planning and Communal Development (2011). *Vision Burundi 2025*. Republic of Burundi
  34. FP2020 (2014). *Archived Commitments for Scale-up*. Available from: <http://www.familyplanning2020.org/topics/264/commitments>.
  35. World Health Organization (2011). *The Abuja Declaration: Ten Years on*.
  36. World Bank (2013). Expenditure on Education (total (0% of GDP). *World Bank Open Data*. [cited 2018 April 5].
  37. Ministry of Health- Chad (2002). *Loi sur la Santé de la Reproduction au Tchad*.
  38. Ministry of Health- Chad (2008). *Feuille de Route pour l'Accelération de la Réduction de la Mortalité Maternelle et Neonatale au*. 2008: Tchad.
  39. Ministry of Health- Chad (2011), *Politiques et Normes des Services de Santé de la Reproduction*. 2011.

40. Ministry of Health- Chad, *Politiques et Normes des Services de Santé de la Reproduction*. 2014.
41. Ministry of Education- Chad (2013). *Plan sectoriel de l'éducation. 2013-2015*. 2013: Tchad
42. Mukaba, T., et al. (2015). Family Planning Policy Environment in the Democratic Republic of Congo: Levers of positive change and prospects for sustainability. *Global Health: Science and Practice*. 3(2): p. 163-173.
43. *Global partnership for education for DRC, Chad, Niger and Mali*. (2018). Available from: <https://www.globalpartnership.org>.
44. World Bank (2015). *Health Expenditure, total (0% of GDP)*. World Bank Open Data.
45. République Du Mali (2014). *Enquête Démographique et de Santé (EDSM-V) 2012-2013*: Bamako, Mali and Maryland, USA.
46. Dabo, K. (1992). *A comparative presentation of the population policies of Burkina Faso, Mali and Senegal...*. Special issue.(Jul): p. 28-32.
47. Maiga, M., et al (2012). *Repositioning family planning in Mali: A baseline*. Available from: <https://www.popline.org/node/573781>.
48. McDavid, E. and Kodjo, A. (2012). *Repositioning Family Planning in Niger: A Baseline*. Futures Group, Health Policy Project. : Washington, DC.
49. Ministry of Public Health (2012). *Family Planning In Niger: 2012—2020 Action Plan*.
50. Bloom, D.E., Canning, D. and Malaney, P.N. (2000). Population Dynamics and Economic Growth in Asia. *Population and Development Review*. 26: p. 257-290.







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