Fertility in Afghanistan: a study for the Capital city of Kabul and five other provinces

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Palabras-clave: fertility, marital fertility, Afghanistan
1. INTRODUCTION - FERTILITY IN THE DEVELOPMENT PROCESS

The recent review and assessment process of the ICPD Programme of Action and also of the 15 year implementation of the Millennium Development Goals has highlighted the importance of the framework of sexual and reproductive rights, the protection of women's rights and gender equality, including sub-goals such as eliminating child marriage in the world. The appreciation of these essential human rights and social development goals during those review processes has been such, that today there is a very strong consensus that these issues must be integral part of any emerging next global development agendas in the world, seeking to eliminate extreme poverty in the next few decades.

At the global level, as well as in Afghanistan, adolescent and child pregnancies are a serious concern. Adolescent pregnancy is “deeply rooted in poverty, gender inequality, violence, child and forced marriage, power imbalances between adolescent girls and their male partners and lack of education. All these reveal the failure of national systems and institutions to protect girl's rights”\(^1\).

High levels of fertility, under conditions of constraint resources may exacerbate poverty and environmental deterioration. Declining fertility and development interact; indications on how fertility levels are influenced by development are expressed in the approximations provided by a model relating key development indicators to fertility trends in 87 developing countries (Bryant, 2007). Certainly, fertility decline slows population growth, inducing beneficial changes in the age distribution of a population, which can generate a period when the number of potential workers grows faster than the number of dependants. These changes can boost savings, leading to a “demographic bonus”. Countries which used those savings to increase investment, investing more in the health and education of children and generating more jobs, have obtained remarkable benefits in terms of economic growth and human development. It is estimated that the medium term effects of fertility reductions on economic growth in both developed and developing countries accounted for about 20 per cent of per capita output growth between 1960 and 1995 (Kelley and Schmidt; 2005).

International statistics estimate that fertility in Afghanistan —whose level was over 7 children per woman (cpw) at the beginning of the current century—, has entered into an impressive transition toward lower levels. Hence forecasts produce a figure of 3.5 cpw —or

nearly 50% decline - by the period 2020-2025 (UN-DESA, 2015). It is believed that such forecast may be a highly probable scenario, based on current changes operating into the Afghan society.

A number of social programmes pursuing improvements in the social condition for the population in general and women in particular are on the way. These actions are taking place in a context where gender relations are very unequal; hence, it is reasonable to assume that both better living conditions and women empowerment may determine a faster fertility decline. Therefore data on fertility from the SDES would be expected to reflect somehow social improvements in Afghanistan and thus reveal some impact on fertility changes.

The Universe of this study - Data are from the Socio-Demographic and Economic Survey (SDES), a 50% sample size household survey applied in Kabul the capital city and other five Afghan provinces (Bamiyan, Dakundi, Ghor, Parwan and Kapisa) between approximately, 2011-2014. The SDES was conducted by the Afghan government via the Central Statistics Office (CSO) supported by UNFPA/Afghanistan and sponsored by the Japanese and British governments.

Apart for knowing that Afghanistan is one of the poorest countries in the world; specifically to the population surveyed, it is important, also, to consider that their surrounded social and environment context can be defined in general terms as a very vulnerable. More than two thirds of the women at reproductive age have no schooling, the main economic activity is agricultural subsistence and household conditions are rather precarious.

Objectives - Previously to the consideration on the quality of data to analyze the reproductive phenomenon in Afghanistan, this paper analyzes level and patterns of fertility for the total population and due to the marital exclusiveness of reproduction this study also focuses on marital fertility. Differential aspects of the process is also considered.

2. DATA AND METHODS

While it is known that Afghanistan has kept its fertility at a quite high level, this document reports on the fertility situation for six provinces Kabul, Bamiyan, Daykundi, Ghor, Kapisa and Parwan. It uses SDES data collected around 2012, applying a number of indirect techniques. Figures of the level and age pattern of fertility are given and because live births is sociable accepted to occur only into marriage, marital fertility is also measured. In an effort

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2 Details of the Afghanistan Social context at provincial level is well documented in: World bank (2011)
to identify fertility socioeconomic determinants, place of residence and education is considered. Finally, estimates for the short term using birth order information are given.

Demographic data collected through the SDES programme allows studying fertility levels and trends through W. Brass's P/F approach. This approach relies on information obtained through questions on the section H of the SDES questionnaire, where certain questions are made to women ever married, enumerated in each household:

- Has ... ever had a child born alive?
- Has ... had a child born alive during the past 12 months?
- How many children were born alive to ... during the last 12 months?

From information collected through these questions, the tabulations required to apply the P/F method or some of its variations, like the Relational Gompertz Model, are generated:

- Number of women, classified by five-year age groups
- Total number of children born alive to those women in each five-year age group
- Children born alive to women in each five-year age group during the last year

The application of both these methods suggests that the number of live births occurred in the last 12 months has been under-reported in the six provincial SDES by more than 50 per cent. Adjustments using either methods result in relatively high fertility levels and a consistent fertility distribution by age of the women (See Table 1). Comparison of parity by age ($P_i$) – that is, mean number of live children ever born – and current cumulative fertility ($F_i$) through the quotient $P_i/F_i$ indicates that the pattern of errors are similar by age and that fertility has been very high in the past.

2. Fertility Estimates for Afghanistan, Kabul and the five selected provinces

In general, for most provinces the TFR is around 7 children per woman. Kabul and Daykundi are the exceptions, registering the lowest and highest values respectively (6.1 and 8.8). Comparison with national estimates (last column in Table 1) reveals an adequate level of consistency with the estimates obtained for the six provinces. UN DESA registers Afghanistan in the 10th rank among the countries with the highest fertility for the period 2005-2010, with a TFR of 6.3 children per woman. It is worth to note that UN DESA also estimates a sharp significant fertility decline for the recent years: reduction of 0.5 children in the quinquenia 1995-2000/2000-2005 and an additional reduction 0.6 child over the following period, which means a decline of 1.3 children in just a decade. In addition, national estimates

3 The P/F series for the six provinces can be seen in Annex, figure A-1
4 These estimates are representative of levels prevailing at the beginning of the second quinquenia of the previous decade i.e., 2005-2010.
from the 2010 Afghanistan Mortality Survey (AMS) also reveal a similar national fertility declining trend: AMS’s age specific fertility rates at the central ages of the reproductive period show that for the ten to fifteen years previous to the survey rates remained markedly constant (an ASFR around 350 per thousand among women aged 20-24 and 25-29). Those risks—or probability of having a live birth—decreased to below 300 per thousand over the five years previous to the survey (APHI/MoPH: 2011). The TFR estimated in the AMS was 5.1 for the period 2007-2010.

### Table 1
**Afghanistan: Kabul, Daykundi, Bamiyan, Ghor, Kapisa and Parwan (Circa 2005-2010)**

<table>
<thead>
<tr>
<th>Fertility Measures and age groups</th>
<th>Kabul</th>
<th>Bamiyan</th>
<th>Daykundi</th>
<th>Ghor</th>
<th>Kapisa</th>
<th>Parwan</th>
<th>Afghanistan (2005-2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TFR</strong></td>
<td>6.1</td>
<td>8.3</td>
<td>8.8</td>
<td>7.3</td>
<td>7.2</td>
<td>7.1</td>
<td>6.3</td>
</tr>
<tr>
<td>15-19</td>
<td>41.5</td>
<td>58.6</td>
<td>69.8</td>
<td>105.4</td>
<td>42.9</td>
<td>41.5</td>
<td>117.5</td>
</tr>
<tr>
<td>20-24</td>
<td>260.7</td>
<td>297.4</td>
<td>309.9</td>
<td>307.6</td>
<td>286.8</td>
<td>286.1</td>
<td>289.7</td>
</tr>
<tr>
<td>25-29</td>
<td>337.7</td>
<td>382.2</td>
<td>409.3</td>
<td>324.3</td>
<td>378.3</td>
<td>378.1</td>
<td>307.0</td>
</tr>
<tr>
<td>30-34</td>
<td>284.1</td>
<td>374.0</td>
<td>360.0</td>
<td>274.7</td>
<td>347.0</td>
<td>313.6</td>
<td>256.7</td>
</tr>
<tr>
<td>35-39</td>
<td>185.9</td>
<td>282.1</td>
<td>323.7</td>
<td>226.0</td>
<td>217.2</td>
<td>223.5</td>
<td>177.2</td>
</tr>
<tr>
<td>40-44</td>
<td>75.9</td>
<td>172.5</td>
<td>177.2</td>
<td>134.2</td>
<td>127.6</td>
<td>112.6</td>
<td>90.6</td>
</tr>
<tr>
<td>45-49</td>
<td>34.5</td>
<td>86.9</td>
<td>115.7</td>
<td>96.4</td>
<td>48.7</td>
<td>56.5</td>
<td>27.9</td>
</tr>
<tr>
<td><strong>Adjustment factor</strong></td>
<td>1.88</td>
<td>2.20</td>
<td>1.94</td>
<td>1.91</td>
<td>1.54</td>
<td>1.56</td>
<td>--</td>
</tr>
<tr>
<td><strong>Relative contribution of selected age groups to the total fertility (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 - 19</td>
<td>3.4</td>
<td>3.5</td>
<td>6.1</td>
<td>7.2</td>
<td>3.0</td>
<td>2.9</td>
<td>9.3</td>
</tr>
<tr>
<td>20 - 24</td>
<td>72.3</td>
<td>63.5</td>
<td>61.4</td>
<td>62.1</td>
<td>70.3</td>
<td>68.9</td>
<td>67.7</td>
</tr>
<tr>
<td>35 or more</td>
<td>24.3</td>
<td>32.6</td>
<td>32.4</td>
<td>31.3</td>
<td>27.3</td>
<td>27.6</td>
<td>23.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>9.3</td>
</tr>
<tr>
<td><strong>Mean age (years)</strong></td>
<td>30.3</td>
<td>31.6</td>
<td>31.1</td>
<td>31.1</td>
<td>31.1</td>
<td>30.7</td>
<td>29.5</td>
</tr>
</tbody>
</table>

**Source:**

- a) Provinces: SDES- (Circa 2012) UNFPA/Afghanistan and CSO of Afghanistan (Microdata)

* Estimated applying the P/F Brass’ method. This method presented, in general terms, more consistent results in these six provinces. Although alternative methods are available, as the Gompertz Relational Model (GRM), due to similarity in the results, the Brass' method was adopted.

** Age fertility pattern was smoothed applying the GRM

Consistency of the estimates for the six provinces can be evaluated looking at some similarities: ASFR at central ages 20-34, for instance, indicates very similar high values: around 300 live births per thousand women; furthermore, relative variation at age 20-24 in all provinces is always less than 10 per cent and almost equivalent in Kapisa and Parwan. The
exception is Kabul – that encompasses the capital city – where the ASFR at ages 20-24 is about 10 per cent lower than the national average; as Kabul is the most urbanized setting, this difference is expected.

Largest differences, on the other hand, correspond to the youngest women; in these cases, ASFR in the provinces are always lower than the national average. This apparent contradiction would merit some additional analysis and comments, since we would have expected higher values in the provinces relatively to Kabul, and closer in the provinces to the national average. A plausible explanation may lie in the data sources used to estimate the national figures. The national estimate, taken from UN DESA, derives from earlier data sources than the SDES. Hence, these national figures derived from older data sources might not have captured more recent changes. A prominent feature of development efforts in the last decade has been the strategic interventions targeting young people. These incorporated relevant efforts to increase female school attendance and legal rules to avoid child marriages. An important consequence of such policy interventions has been keeping young women in school and out of early marriage. Those results may have been captured in the SDES, which have registered the lower risk of having a child among young women in most of the six provinces, but did not yet feature in the results obtained from previous data sources.

The relative contribution to the total fertility by age (last panel in Table 1) indicates that the share of the very young women as a whole is rather small even among the provinces with an ASFR 15-19 above 100.0 where the contribution is 7.2 per cent. Other provinces with adolescent fertility risks around or below 50.0 per thousand contribute with less than 5 per cent. It is a comparatively small contribution if compared to the national figure and similar to other populations in the Region. Fertility from ages 15-19 contributes with less than 10 per cent to the total fertility in Iran and Iraq and with less than 5 per cent in Pakistan. This pattern is different to those observed in developing countries in Regions other than South-Central Asia, where the contribution of adolescents to total fertility can be as high as 15 per cent or even near to 20 per cent.⁵

Regarding the fertility schedule by age, plotted in Figure 1, although there are differences among Kabul and the provinces, in general, they follow a shape typical of populations where there is no fertility control associated with the parity level of women. In other words, any decrease or increase in fertility takes place without considering the number of children the woman already has, thus causing a concave shape, opposite to convex curves

⁵ Namely in Latin America and some specific African countries - Basic data are from DESA/UN (2013)
typical of populations with significant prevalence of family planning or modern contraception. This is not the case for Afghanistan. Note that the risk—or probability—of having a live birth may be high and similar at ages either 20-24 or 34-39 as it happen in Bamiyan and Daykundi.

**Figure F1**

Afghanistan, Kabul, Bamiyan, Daykundi, Ghor, Kapisa and Parwan (Circa 2005-2010): Total Fertility Rate (TFR) and relative distribution of the Age Specific Fertility Rates (per cent)


3. **Marital Fertility Levels**

Since fertility is estimated using information on the number of live births occurred in the last year prior to the survey, we refer to currently married women (CMW) rather than ever married. Furthermore, it is important to remember that data were adjusted using the same factor found for the total population once the information on life births was collected from
ever married women only. Since the event (or numerator) is the same, for total fertility as well as marital fertility, then the adjustment factor should be the same. Table 2 presents the ASMFR and Total Marital Fertility Rate (TMFR). Remember also that in this case, TMFR assumes that women enter marriage at age 15 and remain married up to the end of the reproductive period.

Table 2
Kabul, Daykundi, Bamiyan, Ghor, Kapisa and Parwan (Circa 2005-2010): Total marital fertility rate (TMFR) and age specific marital fertility rates(‰)

<table>
<thead>
<tr>
<th>Province</th>
<th>Fertility Measures and age groups</th>
<th>Kabul *</th>
<th>Bamiyan</th>
<th>Daykundi</th>
<th>Ghor</th>
<th>Kapisa</th>
<th>Parwan</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TMFR</td>
<td>9.5</td>
<td>10.9</td>
<td>11.5</td>
<td>8.4</td>
<td>10.8</td>
<td>10.1</td>
</tr>
<tr>
<td>15-19</td>
<td></td>
<td>405.2</td>
<td>366.2</td>
<td>484.9</td>
<td>226.0</td>
<td>420.2</td>
<td>403.7</td>
</tr>
<tr>
<td>20-24</td>
<td></td>
<td>474.6</td>
<td>446.5</td>
<td>450.0</td>
<td>365.4</td>
<td>515.8</td>
<td>485.0</td>
</tr>
<tr>
<td>25-29</td>
<td></td>
<td>399.1</td>
<td>411.7</td>
<td>379.2</td>
<td>335.4</td>
<td>435.9</td>
<td>419.7</td>
</tr>
<tr>
<td>30-34</td>
<td></td>
<td>310.5</td>
<td>381.6</td>
<td>331.2</td>
<td>279.9</td>
<td>373.7</td>
<td>325.7</td>
</tr>
<tr>
<td>35-39</td>
<td></td>
<td>197.2</td>
<td>287.9</td>
<td>187.6</td>
<td>231.3</td>
<td>292.2</td>
<td>224.0</td>
</tr>
<tr>
<td>40-44</td>
<td></td>
<td>83.2</td>
<td>183.8</td>
<td>116.4</td>
<td>139.8</td>
<td>139.0</td>
<td>112.8</td>
</tr>
<tr>
<td>45-49</td>
<td></td>
<td>39.6</td>
<td>95.7</td>
<td>356.1</td>
<td>101.5</td>
<td>55.3</td>
<td>53.3</td>
</tr>
</tbody>
</table>

Relative contribution of selected age groups to the total fertility (per cent)

<table>
<thead>
<tr>
<th></th>
<th>15-19</th>
<th>20-24</th>
<th>25-29</th>
<th>30-34</th>
<th>35-39</th>
<th>40-44</th>
<th>45-49</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19</td>
<td>21.2</td>
<td>16.8</td>
<td>21.0</td>
<td>13.5</td>
<td>19.4</td>
<td>19.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-24</td>
<td>62.0</td>
<td>57.0</td>
<td>50.3</td>
<td>58.4</td>
<td>61.1</td>
<td>60.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-29</td>
<td>16.8</td>
<td>26.1</td>
<td>28.6</td>
<td>28.1</td>
<td>19.5</td>
<td>19.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35 or more</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

* An ASFR of 105.8 estimated for the age group 10-14 in Kabul was not considered in the summary measures.
Source: SDES- (Circa 2012) UNFPA/Afghanistan and CSO of Afghanistan (Microdata)

Marital fertility is relatively high; CMW in most of these provinces have a TMFR in the interval of 10 to 11 children. The exception is Ghor -with a level about 8.4 children- still very high but lower than other provinces. Considering the age specific risk, particularly at young ages, almost half of the CMW are giving birth every year. This is the case, for instance, of the women aged 20-24; in Kapisa the ASMFR is above 500.

The age pattern defined by the ASMFRs is consistent with those high levels: differently from the TFR, the contribution of every age group to the TMFR is very high - the only youngest age group (15-19) with about 20 per cent share of the TMFR is in Ghor. The shape of these age patterns, plotted in Figure 2, appears very similar to the iconic shape of the Hutterites that used to hold a natural fertility regime at the beginning of the past century6 (Coale and Trussell, 1978). (See Figure 2).

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6 Religious community located in western Canada and the northwest US.
The Hutterites’ TMFR was around 10 children, similar to the figures recorded in these six provincial surveys. The main difference between these Afghan provinces and the Hutterites – with the exception of Ghor – is the larger relative participation of young women already mentioned, which indicates a start of the reproduction process as soon as the girl goes into marriage.

Figure 2
Kabul, Bamiyan, Daykundi, Ghor, Kapisa and Parwan (Circa 2005-2010) and Hutterites (1921-30)
Total Marital Fertility Rate (TMFR) and relative distribution of the Age Specific Fertility Rates (per cent)

Source: SDES (Circa 2012) UNFPA/Afghanistan and CSO of Afghanistan (Microdata) and Coale&Trussel (1978).

The similarity indicates the absence of fertility control among CMW which is indirectly measured comparing ASMFRs at central ages of the reproductive period (primarily, ages 20 to 29). The Hutterites’ ASFR was around 400 per thousand, which is very similar to the values found for the six surveys. In general, marital fertility has extremely high levels that are reflected in the total population fertility as long as women are into marriage; as there are indication that young women may be delaying this passage, fertility in the total population appears to be relatively low. From a policy perspective, any efforts to reduce the total population fertility level should address issues of increasing contraceptive acceptance and utilization among married women.

4. Differentials in Fertility Levels

Fertility, as most of the demographic phenomena is strongly associated the sociocultural and economic contexts, where the more traditional the population the more common
is to bear children; at the same time, the hardest the life conditions the scarcest the access to family planning or reproductive health services in general. As a first approach to identify differences in the fertility two dimensions are considered here: place of residence (urban/rural) and educational level from the woman, the head household and the member of the household with the highest educational attainment.

4.1. Fertility and place of residence

As seen in previous lines, observed TFR are not by any means at low or intermediary levels; this is true even when women are classified considering the place of residence. Whatever the classification, TFR is in most of the cases above 5 cpw (See Figure 3).

Place of residence, for instance, reproduces the expected differential of fewer cpw in urban than rural areas in most of the cases. Notwithstanding TFR, is well above 5 in all cases, and differences between urban and rural areas are rather small (around 10-12 per cent) with two outlier situations: Daykundi has a difference of about 20 per cent and Kapisa with almost no differences.

**Figure 3**

Kabul, Bamiyan, Daykundi, Ghor, Kapisa and Parwan (Circa 2005-2010)

Total Fertility Rate (TFR) according to place of residence

(*) Data were adjusted using the same adjustment factor estimated for the total population. It was assumed that coverage on live births is the same in each province, regardless of any individual condition.  
Source: SDES-Circa 2012 UNFPA/Afghanistan and CSO of Afghanistan (Microdata) and data in table A in Annex.

The scarce differences in fertility levels when place of residence is considered is also observed in the age pattern. In general, because of the population composition according this characteristic, where the vast majority of the population live in the rural area in these provinces, the pattern is given by the fertility behaviour in those areas. As an example of this, Figure 4 shows the relative distribution of the ASFR in Kabul and Ghor, the former—although
with important percent of rural population – holds also important share of urban population as opposite to Ghor which is eminently rural.

Fertility in Kabul, as seen, is relatively more concentrated at the central ages of the reproductive period, the population either urban or rural presents a very similar shape. The peculiarity in Kabul is that at extreme older ages, the urban ASFR is slightly higher than in rural areas when, very often trends are different: urban women would tend to finish the childbearing process earlier than rural women. The anyway high fertility regime present in Afghanistan or different reliability on the answers may explain this sort of unexpected trend at this extreme age; in general, however, no strong differences between urban or rural population is registered. Similar situation corresponds to Ghor, where again, there are no differences between the two populations being compared.

**Figure 4**

Kabul and Ghor (Circa 2005-2010) - Age Specific Fertility Rate (ASFR) according to place or residence (Per cent)

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Source: SDES- (Circa 2012) UNFPA/Afghanistan and CSO of Afghanistan (Microdata) and data in table B in Annex.
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### 4.2. Fertility and educational level

Research on of fertility transition in developing countries concluded in most of the cases that gender equality and female education tend to depress fertility. There are copious literature about how education, and above all, women education facilitates the way to more equilibrated gender relationships and the onset of the fertility transition cited for instance in
Basu (2002). This is the reason to incorporate the educational characteristics of the population in this analysis from different perspectives:

- The woman education

- The head of the household education, on the assumption that due to the very often fragile situation of the women regarding decisions on childbearing, the household head may have an active role to define the fertility behaviour of the family.

- The household highest educational attainment, on the assumption that the higher the educational attainment of any member in the household offers change opportunities for the whole family, including women, thus, influencing fertility behaviour.

5.2.1. Fertility and women education

Educational level is known to be rather low in Afghanistan and SDES reveals that educational composition of the six provinces has a quite large share of population with no schooling. Women – particularly those out of the age interval for attending school – hold a precarious situation where, on average, more than half of them did not attend school.

Considering three large groups for women's years of schooling (no schooling, 1 to six years of education and 7 or more years), fertility levels are plotted in Figure 5.

**Figure 5**
Kabul, Bamiyan, Daykundi, Ghor, Kapisa and Parwan (Circa 2005-2010)
Total Fertility Rate (TFR) according to women educational level

Source: SDES (Circa 2012) UNFPA/Afghanistan and CSO of Afghanistan (Microdata) and data in table A in Annex.

Education as opposed to place of residence does present fertility levels below 5 cpw, though in only one group. This is in Kabul, for women with 7 or more years of schooling, where the estimated TFR is 4.6 cpw. Association between fertility and educational groups
bears an inverse relationship in four out of the six provinces. The two cases where differential follows unexpected trends are Parwan and Ghor (See Table A in Annex). In these two provinces more than 80 per cent of the women at reproductive age are in the "no schooling" category, thus the estimates for the other categories are affected by random fluctuations. Hence, the TFR was measured for the whole group of women having at least 1 year of education; the results in these two provinces where the vast majority of women have no education show relevant differences even for such broad two categories. Those with no schooling have 1 child more than those with at least one year of schooling.

5.2.2. Fertility and the role of education in the household

Fertility differentials by women education do present the expected inverse association between both dimensions. The general low educational prevalent, however, thwarts a deeper analysis of the education effect in the fertility. Hence, education of the household head and the highest education attained are considered here; it should be regarded that for the first case, the educational composition is different relatively to the women since the head of the family is very often a man that, on average, has higher education than the woman. Composition considering the household highest education attainment is also different due to, mainly, the recent improvements in education, where, the youngest people are benefited.

Fertility differentials according both categories are presented in Figure 6, where TFR for the six provinces is plotted according either household head education or household highest education attainment. Association is not clear in the first case, where on average, women living in a household where the head has no schooling, have less children that those living with a head at intermediary educational levels. It is worth to note Kabul, where the TFR is similar in the two lowest educational groups (TFT of 6.5 and 6.9 among those with no schooling or with 1 to six years of education respectively). Ghor, one of the provinces with lowest educational levels, is the only exceptional case that clearly reproduces a trend opposite to what it is expected between education and fertility: the higher the education of the head, the higher the number of children the woman has (Figure 6a). Whether education is a proxy of wealth, this unexpected trend allows to hypothesized that in very poor settlements, TFR tends to be high due to relatively better environment, facilitating marriage and a high family size.

Fertility levels according the household highest education attainment, in contrast, show that perhaps recent improvements in the educational system may indeed motivate changes in the reproductive behaviour. Figure 6b shows that the higher the educational
attainment of whatever member in the family, the lowest the fertility of the woman. The trend is clearest when the highest level is attained and less evident between the no schooling and the intermediary level.

**Figure 6**
Kabul, Bamiyan, Daykundi, Ghor, Kapisa and Parwan (Circa 2005-2010)
Total Fertility Rate (TFR) according specific educational levels (Household head and highest educational level).

![Graph showing Total Fertility Rate (TFR) for different educational levels in various provinces.](image)

<table>
<thead>
<tr>
<th>Year of Education</th>
<th>Kabul</th>
<th>Bamiyan</th>
<th>Daykundi</th>
<th>Ghor</th>
<th>Kapisa</th>
<th>Parwan</th>
</tr>
</thead>
<tbody>
<tr>
<td>No schooling</td>
<td>10.0</td>
<td>9.5</td>
<td>9.0</td>
<td>8.5</td>
<td>8.0</td>
<td>7.5</td>
</tr>
<tr>
<td>1 to 6 years</td>
<td>9.5</td>
<td>9.0</td>
<td>8.5</td>
<td>8.0</td>
<td>7.5</td>
<td>7.0</td>
</tr>
<tr>
<td>7 or more</td>
<td>9.0</td>
<td>8.5</td>
<td>8.0</td>
<td>7.5</td>
<td>7.0</td>
<td>6.5</td>
</tr>
</tbody>
</table>

*Source: SDES (Circa 2012) UNFPA/Afghanistan and CSO of Afghanistan (Microdata).*

Finally, age pattern reinforce these findings: education has no strong influence in the reproductive behaviour by age if the household head education is considered; the role of the household highest education attainment, on the other appears to be important. Figure 7 with Kabul and Ghor used to illustrate the association is used.

Shape of fertility by age, considering household head are similar for any given educational group (Figure 7a). In the case of Ghor, the shape corresponding to the more educated household heads is consistent with the higher TFR mentioned in the previous lines.
ASFR remains high even at older women's age. Shapes from other educational groups are similar to each other.

However, when the highest level attained in the household is considered, fertility shows different behaviour by age. (Figure 7b). Households where there is a member with 7 or more years of schooling present a fertility more concentrated at the central ages of the reproductive period relatively to the other educational levels. The same pattern corresponds to Ghor; shapes are quite different if compared with the previous situation, with the head of the household criteria. Fertility in those households where the highest level reached in the family is no schooling, present the highest probabilities of having a live birth at young ages.

**Figure 7**
Kabul and Ghor (Circa 2005-2010) - Age Specific Fertility Rate (ASFR) according to place or residence and specific educational levels (Household head and highest educational attainment - Per cent

a) Household head education

![Graph of Kabul](image1)

![Graph of Ghor](image2)

b) Household highest educational attainment

![Graph of Kabul](image3)

![Graph of Ghor](image4)

*Source: SDES- (Circa 2012) UNFPA/Afghanistan and CSO of Afghanistan (Microdata)*
Synthesising, on the use of the two proxies known as influential in the reproductive behaviour, area of residence does not present a significant diversity in the fertility level. Educational level appears as an influential determinant for women to have fewer children. This potential is clearer when the household education is considered. Women's or household head education seems to have less impact on fertility changes, due to perhaps the generalized low educational level among adult population. When the highest educational level reached inside the household is considered, an attribute than is changing towards a better education among the young population, role of education is clear in both: the level, and the age pattern of the reproductive behaviour.

5. Discussion

Initial lines in this paper mention the strong inverse association between development and fertility level due to the influence of the former on the latter or vice versa or even a mutual interaction forming a virtuous/vicious circle. Moreover, whatever the relationship, fertility decline certainly decelerates population growth, inducing beneficial changes in the age distribution of a population favouring development conditions. Results from SDES data shows with scarce doubt that fertility level has been very high in the recent past, always higher than 7 or 8 children per woman, on average; it also shows that a decline trend may be on the way due to behaviour among young women.

The probability of having a child appeared high at any age of the reproductive span thus designing a pattern found, for instance, among the Hutterites at the beginning of the past century. This pattern has been nested by the rather vulnerable Afghan environment characterized by a fragile economy, political conflicts, lack of adequate health care and difficulties for access to the educational system. Although none of these characteristics has been analysed in this paper, results demonstrate the association above mentioned where women from provinces like Bamiyan and Daykundi have extremely high probabilities of having a live birth whatever the age they have over their reproductive life.

Data signal shy fertility decline among young women which is probably due to delay of entrance at marriage; it is true that social policies oriented to eliminate traditional women disrespect are as a consequence, avoidance of child and early marriage seems to be successful which in itself is a good news and a strong indicator of improvements in the gender relationships agenda. Relating to fertility, although the risk of bearing a child by a child is
decreasing because child/early marriages are decreasing, no significant changes has been detected in the data in marital fertility. In other words, once married, number of children the woman have is very high. Data on married girl's fertility have not been presented in this paper due to scarce numbers, they however, point to extremely high fertility risks; adolescent fertility is a very urgent research agenda thus, social policies may have more solid evidences.

Age pattern of marital fertility with equally high probabilities of childbearing at any given age while in the reproductive period points to a scarce contraception practices. Although studies previous to the SDES find contraception prevalence among married women, these practices correspond to a minority, mainly located in the most and almost unique urbanized Kabul area. Access to family planning and contraception is therefore, another dimension in need of more and precise information if fertility levels are desired to be decreasing among married women.

Specific conditions known as potential and powerful determinants of fertility trends as urbanization and/or education shows that indeed, also in the population studied, they have influence but the TFR is still high because of the compositional effects in the population: vast majority lives in rural areas and have no schooling—mainly adult and female population.

Findings about relationship between educational attainment and fertility should be a point of reflection and further research:

- There is no clear trend in fertility levels as the household head improves. Furthermore in the most precarious context, as Ghor, for instance, the highest the household head educational attainment. Is it because of the high value attributed to children? Is it because the most educated can afford marriage and to raise more children?
- There is a clearer trend when highest educational attainment in the household is considered. If it is assumed that young people are the most benefited from current educational reforms, is this a signal that relatively low fertility levels are to a large extent of the educational improvements?

Changes in fertility towards low levels are in process in any case; the recent improvements in the educational system may have had an important role: fertility in those household where a member has high educational attainment is lower and with a consistent age pattern. The finding is a robust indicator that Education for both girls and boys, may became the initial strong mechanism for accelerating the fertility transition in Afghanistan.

Marital fertility as mentioned, does not signal relevant changes, thus, next to educational improvements, policies about access to reproductive health care and contraception
need to be strategically implemented. By "strategically", it is meant to plan also, women participation in this process.
6. Bibliographical References:


ANNEX: Figure A 1 - Kabul, Bamiyan, Daykundi, Ghor, Kapisa and Parwan (Circa 2012)

**P/F Series by age**

![Graph showing P/F series by age for Kabul, Bamiyan, Daykundi, Ghor, Kapisa and Parwan](image)

**Source:** SDES - (Circa 2012) UNFPA/Afghanistan and CSO of Afghanistan (Microdata)

### Table A

**Kabul, Bamiyan, Daykundi, Ghor, Kapisa and Parwan (Circa 2012)**

**Total Fertility Rate (TFR) according to place of residence and women’s years of education**

<table>
<thead>
<tr>
<th>Place or residence and years of education</th>
<th>Kabul</th>
<th>Parwan</th>
<th>Kapisa</th>
<th>Ghor</th>
<th>Daykundi</th>
<th>Bamiyan</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Urban</td>
<td>6.0</td>
<td>6.1</td>
<td>7.1</td>
<td>8.0</td>
<td>7.1</td>
<td>7.4</td>
</tr>
<tr>
<td>b. Rural</td>
<td>6.9</td>
<td>7.0</td>
<td>7.2</td>
<td>7.2</td>
<td>8.8</td>
<td>8.2</td>
</tr>
<tr>
<td>c. No Education</td>
<td>6.8</td>
<td>7.2</td>
<td>7.6</td>
<td>7.4</td>
<td>9.2</td>
<td>8.4</td>
</tr>
<tr>
<td>d. 1 to 6 years</td>
<td>6.6</td>
<td>7.5</td>
<td>7.0</td>
<td>5.3</td>
<td>8.8</td>
<td>7.3</td>
</tr>
<tr>
<td>e. 7 or more</td>
<td>4.6</td>
<td>5.0</td>
<td>5.1</td>
<td>7.4</td>
<td>7.4</td>
<td>5.2</td>
</tr>
<tr>
<td>f. At least 1</td>
<td>-</td>
<td>5.8</td>
<td>-</td>
<td>-</td>
<td>6.5</td>
<td>-</td>
</tr>
</tbody>
</table>

*Adjustment factor* | 1.88 | 1.56 | 1.54 | 1.91 | 1.94 | 2.20 |

Differences (per cent) between extreme values into:

- Place of Residence: 12.7, 12.1, 2.3, -10.7, 19.5, 9.5
- Years of education: 49.7, 43.7, 48.8, -0.1, 23.4, 60.5

* It refers to the same adjustment factors estimated for the total population

** Estimated between categories (c) and (e).

**Source:** SDES - (Circa 2012) UNFPA/Afghanistan and CSO of Afghanistan (Microdata)