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NOTE

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PREFACE

In December 2009, the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat convened an Expert Group Meeting on Recent and Future Trends in Fertility at United Nations Headquarters in New York. The purpose of the meeting was to discuss recent changes in fertility trends in the major regions of the world and in selected countries as well as their determinants. Such a discussion set the stage for the consideration of a new approach to the projection of fertility in the preparation of the official United Nations population projections.

The meeting took place from 2 to 4 December 2009. Its agenda and list of participants can be found on the website of the Population Division (www.unpopulation.org). The papers prepared by experts participating in the meeting will be issued as part of the newly launched Expert Paper series available as downloadable PDF files and accessible on the Population Division website (www.unpopulation.org).

This paper focuses on fertility levels and fertility desires in the Arab region. Other facilitators and constraints on fertility change are also considered; in particular, current nuptiality patterns and the availability of contraceptive methods. The paper concludes with a succinct assessment of the prospects for further fertility decline among countries in the region.

The Expert Paper series aims at providing access to government officials, the research community, non-governmental organizations, international organizations and the general public to overviews by experts on key demographic issues. The papers included in the series will mainly be those presented at Expert Group Meetings organized by the Population Division on the different areas of its competence, including fertility, mortality, migration, urbanization and population distribution, population estimates and projections, population and development, and population policy.

For further information concerning this series, please contact the office of Hania Zlotnik, Director, Population Division, Department of Economic and Social Affairs, United Nations, New York, 10017, USA, telephone (212) 963-3179, fax (212) 963-2147.

A. INTRODUCTION

The Arab region is conventionally defined as the twenty-two member States of the Arab League. These are listed in the left-hand column of table 1. The region consists of a diverse set of countries stretching from Mauritania and Morocco along the Atlantic Ocean of northern Africa, to Iraq and the small states in the Persian Gulf region in the East, to Djibouti and Somalia in the Horn of Africa, and finally the small Comoros Islands in the Indian Ocean. The bulk of the Arab population resides along the Mediterranean Sea in Northern African and Western Asia, to which one might add the Moroccan population on the Atlantic Ocean, Iraq in the Mesopotamian river plain, and Saudi Arabia with population concentrations along both the Persian Gulf and the Red Sea.¹ Throughout this geographic expanse annual rainfall is relatively light, and this explains the concentration of population along seas and rivers.

By simple demographic criteria (second column of table 1), Egypt is the dominant country in the region, with an estimated population in 2009 of 83 million, almost one-quarter of the total population of the twenty-two countries. Sudan, Algeria, Morocco and Iraq together contain 111 million, which is close to one-third of the regional total, and Saudi Arabia, Yemen and Syria contain a further 71 million, which is about one-fifth of the regional total. These eight countries, then, in demographic terms constitute about three-quarters of the Arab region.

The demography of the region was recently the subject of a comprehensive and authoritative overview by Tabutin and Schoumaker (2005). Rashad and Khadr (2002) and Eltigani (2005) have conducted region-wide analyses of fertility decline and its correlates. Other recent analyses have examined fertility in sub-sets of countries. These include four articles by Eltigani -- a five-country (Algeria, Egypt, Morocco, Sudan, Yemen) study (Eltigani 2001a), a comparison of Egypt and Morocco (Eltigani, 2000), a comparison of Oman and Yemen (Eltigani, 2001b), and a comparison of Egypt and Tunisia (Eltigani, 2009) -- and a recent comparison of Egypt and Morocco by el-Zeini (2009).

There have also been many country-specific studies published in the international literature, including Courbage on Syria (Courbage, 1994) and Kouaouci on Algeria (Kouaouci, 1992; Kouaouci, 1993). Egypt has been examined most closely, at least in the literature in English; in addition to the comparative analyses already noted, Fargues (1997), Eltigani (2003), Rashad and Eltigani (2005), Robinson and El-Zanaty (2006) and el-Zeini (2008) deserve mention. The many pieces on the Egyptian case can be attributed in part to the abundance of survey and other types of demographic data, but can also be justified by its demographic weight. Finally, fertility levels and trends in the Occupied Palestinian Territory have been the subject of a number of articles, including a series by Khawaja and co-authors (Khawaja, 2000; Khawaja, 2003; Khawaja et al., 2009), and one each by Courbage (1995) and Fargues (2000). The attention given to Palestine, despite its rather small population size, can be explained by its geopolitical significance and its distinctive demography (including high nuptiality and high fertility, as will be evident below).

The Occupied Palestinian Territory is hardly the only place in the region where reproductive policies and reproductive outcomes carry political significance and couple-level reproductive decisions are made in the shadow of civil conflict. While the same might be said of some sub-regions of Asia and sub-Saharan Africa, arguably the political salience of fertility is nowhere higher than in the Arab region, especially where it is also entangled with issues of international migration and internal population distribution.

The 2009 IUSSP General Conference in Marrakech (Morocco) was the occasion for an updated consideration of the demography of the Arab region. One can anticipate constructive additions during the next few years to the scholarly literature on fertility in the region.

The principal aim of this paper is to assess prospects for further fertility decline in the Arab region. No effort will be made to conduct a thorough demographic analysis of recent and current fertility; this would duplicate some of the research cited above (not to mention numerous survey reports) and would not in itself contribute to a better understanding of likely future developments. To this end, this analysis focuses on recent levels of fertility, from which one might draw inferences about the room for further change, and on fertility desires, which are revealing of the likelihood of further change. Other facilitators and constraints on fertility change—in particular current nuptiality patterns and the availability of birth control methods—are also considered.

Valid national-level estimates of both fertility desires and methods of birth control are provided only by demographic surveys. Two survey programs have been active in the Arab region during the past decade (table 1).² The Demographic and Health Surveys [DHS] has conducted surveys in Egypt, Jordan and Morocco. (There was also a DHS in Comoros in 1996 and in Yemen in 1997.) The Pan-Arab Project for Family Health [PAPFAM] has been more active, with surveys since 2000 in Algeria, Tunisia, Lebanon, Libya, the Occupied Palestinian Territory, Sudan, Syria and Yemen. The three DHS surveys and five of the PAPFAM surveys are analysed in this paper.³ (The three most recent PAPFAM surveys—Libya, the Occupied Palestinian Territory and Sudan—are not yet available for analysis.) While the eight countries for which survey data are available constitute a minority of the twenty-two countries, they contain almost two-thirds of the region's total population of 352 million. The most important omissions are Sudan, Iraq and Saudi Arabia. The 2006 PAPFAM survey in Sudan will rectify the recent absence of survey data on this country, which in any case has conducted a World Fertility Survey, DHS and PAPFAM surveys in the past. Clearly the largest gaps in knowledge of the demography of the Arab region are Iraq, Saudi Arabia and Somalia. In the cases of both Iraq and Somalia, severe civil strife has prevented routine survey data collection, including demographic surveys (although, to be sure, special surveys have been conducted in both countries, especially Iraq).

A final point concerns the organization of the twenty-two Arab countries for presentational purposes. Four groups are defined:

- (i) The Maghreb countries Algeria, Morocco and Tunisia;
- (ii) The eastern Mediterranean countries stretching from Libya to Syria, plus Iraq and Sudan;
- (iii) The countries of the Persian peninsula -- Saudi Arabia, Yemen, and the Gulf States Bahrain, Kuwait, Oman, Qatar and United Arab Emirates;
- (iv) A final set of outliers -- Mauritania in Sahelian western Africa, Djibouti and Somalia on the Horn of Africa, and Comoros islands in the Indian Ocean between Mozambique and Madagascar.

This grouping is based on historical linkages and contemporary cultural similarities; by no means is this grouping the only meaningful sub-setting of these twenty-two countries.

B. FERTILITY DECLINE TO DATE

As background to an assessment of future prospects, the fertility decline to date is first examined in some detail, relying on the 2008 Revision of the United Nations population estimates (table 2).

In the early 1950s, when the severe disruption caused by World War II was largely past, the total fertility rate [TFR] for the region was 7.2 births per woman. Virtually all countries were characterized by a TFR above 6.5 (18 countries) and a majority above 7.0 (15 countries). With the exception of Lebanon

(TFR = 5.7), these can be regarded as pre-decline levels of fertility. It is notable that pre-decline fertility in Arab society was higher than in other major regions: regional averages for sub-Saharan Africa, South-Central Asia and South-Eastern Asia are shown at the bottom of table 2 for comparison, and these averages are 0.6 to 1.2 births lower than the Arab average. This coincides with other quantitative and qualitative evidence of the fundamental pro-natalism of Arab society in the past: relatively early and nearly universal marriage, short post-partum abstinence and a high valuation placed on children and childbearing.

Five decades later in 2005-10, the average fertility has declined by more than one-half (56 per cent) to 3.1 births per woman. In the majority of countries the decline was concentrated in the twenty-five years between 1980-85 and 2005-10 -- exceptions are Lebanon and, to a lesser extent, the Maghreb States, Morocco and Tunisia, and the Gulf States, Bahrain and Kuwait. Indeed, through the 1960s and 1970s (and even into the 1980s), the Arab region appeared to be very reluctant to join in the gathering international movement towards lower levels of fertility (a fact frequently commented upon in the demographic literature and in policy forums; see Obermeyer, 1992). The twenty-five years since 1980-85 has been a different story, with fifteen of the twenty-two countries experiencing TFR declines of fifty per cent or greater.⁴ Of the more populous countries, only Sudan and Yemen were not caught up in a rapid fertility decline in this period (with, nevertheless, both of the latter countries experiencing TFR declines of one-third or more).

At present the estimated TFR falls below 2.5 births per woman in eight countries -- the three large Maghreb countries (Algeria, Morocco, Tunisia), Lebanon, and four Gulf States (Bahrain, Kuwait, Qatar and United Arab Emirates).⁵ Fertility is estimated as sub-replacement in Lebanon, Tunisia and U.A.E., and near replacement in Bahrain and Kuwait. At the other extreme, eight countries have TFRs in excess of 4.0 births per woman, including the populous countries Iraq, Sudan and Yemen.

What do current levels of fertility suggest about the potential for further change? Of course fertility in Western countries (in Europe, Northern America and Oceania) has been at or below replacement for multiple decades, and sub-replacement fertility in Eastern Asia and Latin America (Brazil) indicates that the capacity for fertility to fall below replacement is by no means confined to Western societies. Moreover, the average Arab TFR of 3.1 births per woman is substantially above the regional values for South-Central Asia (TFR=2.8) and South-Eastern Asia (TFR=2.3). Finally, the forerunners in the region, most notably Lebanon, already have fertility at or below replacement. All this argues for much potential for substantial further decline in most countries in the region. And yet it is important to be reminded that fertility at the societal level follows no one set of essential rules. Fertility declines can be surprisingly rapid and thorough-going (e.g., China, Thailand, Iran), but they can also be halting and selective (e.g., Philippines and Pakistan). Experience to date does not refute an assertion that the post-transition "equilibrium" level of fertility in some societies will be above replacement, perhaps as much as 0.5 births above replacement. At this historical juncture many countries have TFRs of 2.5 or higher, and thus have not yet demonstrated that their fertility decline will proceed all the way to replacement level.

For this reason it is important to examine closely, to the extent afforded by available empirical data, those factors that will bear most directly on the future of fertility decline in the region.

C. FURTHER FERTILITY DECLINE IN THE ARAB REGION: OPPORTUNITIES AND CONSTRAINTS

1. *Nuptiality*

Unquestionably, nuptiality change has made a substantial contribution to the fertility decline to date in the Arab region (Tabutin and Schoumaker, 2005). Because sexual activity in the region is confined to formal marital unions—probably less so than in the past, but to a larger extent than in most other regions (Tabutin and Schoumaker, 2005)—the timing of first marriage and the ultimate proportion marrying have marked effects on fertility.

Nuptiality change has been most dramatic in the Maghreb countries Algeria and Tunisia (and, to a lesser extent, Morocco) and in Lebanon. The most direct evidence of the nuptiality change underway is declines in the proportion of women of reproductive age, especially under age 30, who have ever married. Many of these declines are relatively recent, and hence it is too soon to determine whether the predominant phenomenon is delayed entrance to first marriage or an increase in celibacy (Rashad and Osman, 2002).⁶ This is an important distinction -- not necessarily from a mechanistic standpoint (lost reproductive exposure) but rather because of the societal implications, which in turn may indirectly bear on fertility. One might posit that an increase in celibacy is the more revolutionary of the two. If meaningful fractions of women (e.g. 10 per cent or greater) remain unmarried through the reproductive years, almost necessarily this must force an acceptance of primary roles for adult women other than motherhood. To the extent such acceptance occurs, this may affect the formulation of childbearing goals of women in marital unions.

Estimates of the fraction of women under age 30 ever married at the survey date are shown for eleven Arab countries in table 3. There is considerable cross-country variation. For example, while more than 10 per cent of women aged 15-19 have married in Morocco, Egypt, the Occupied Palestinian Territory, Syria, Yemen and Comoros, this figure is near zero per cent in Algeria, Tunisia and Lebanon. The cross-country differences are starker at ages 20-24 and 25-29. The percentage ever married at ages 20-24 ranges from 15 per cent in Tunisia to nearly 60 per cent in the Occupied Palestinian Territory and Yemen (and note 54 per cent in Egypt), while at ages 25-29 the percentages range from below 50 per cent in Algeria, Tunisia and Lebanon to above 80 per cent in Egypt and Yemen. To be sure, none of these countries is currently characterised by an early-marriage pattern (e.g. one-half or more of women ages 15-19 ever married); even in Yemen, less than 20 per cent of women are married at ages 15-19. But the difference in reproductive exposure between, say, Algeria (16 per cent married at ages 20-24) and Egypt (54 per cent married at ages 20-24) is enormous. These are the ages at which reproductive unions tend to be most fertile.

The Egyptian case is somewhat unusual but demands attention because of its demographic prominence. Why marriage remains distinctly younger and more universal in Egypt as compared to its peer Arab societies is as yet an unsolved puzzle (el-Zeini, 2009).

A conclusion from table 3 is that further nuptiality change has the potential to cause substantially more fertility decline in the region, especially in the populous countries Morocco, Egypt, Syria and Yemen. And further nuptiality change does indeed seem likely: Nuptiality change in the region appears to be driven by the (perceived) unaffordability of marriage, itself a function of heightened expectations about the material resources one must bring to marriage (including the wedding itself) simultaneous with declines in economic opportunities for young adults. Both could ease—the increase in expectations, the decline in economic opportunity—but this seems unlikely, at least in the short-run.

2. Fertility desires

The opportunity to measure fertility desires (broadly defined to include preferences, expectations and intentions) was a major motivation for the fielding of the first fertility surveys in the 1950s and 1960s. From that time to the present, controversy has surrounded the measurement and interpretation of fertility desires. Their predictive accuracy (individual-level and/or aggregate-level), in particular, has been the subject of long-standing debates that are very much alive today (see e.g. Lee, 1980; Morgan, 2001; Goldstein et al., 2003; Hagewen and Morgan, 2005). One point of contention over the decades has been whether fertility desires lead or lag behavior at the aggregate level; this is a crucial issue if one is contemplating incorporating fertility desires in an assessment of prospects for further fertility decline.

The stance in this paper is that while fertility desires are by no means fully determinative, they are essential elements in any model of fertility decision-making because fertility behavior, especially in mid- and low-fertility societies, is highly purposive. That is, most sexually-active reproductive-age adults are actively pursuing fertility goals of one kind or another at any given time. Yet pursuit of fertility goals always confronts constraints which can be substantial in magnitude. This stance allows for the possibility—indeed, high likelihood—that initial goals and eventual outcomes will be discrepant at both the individual and societal level. Unwanted fertility is one such discrepancy, and unrealized fertility is another. Hence evidence from the Arab region on current fertility desires is analyzed under the assumption that these desires are likely to be highly informative about fertility trends in the short-term but are unlikely to offer a simple window into the future.

The analysis of fertility desires begins with the conventional breakdown of the period TFR into unwanted and wanted components (table 4). The calculation of the percentage of births unwanted, and the resulting unwanted TFR, uses the method of Casterline and el-Zeini (2007) rather the method employed by the DHS which is known to generate downwardly-biased estimates. The Casterline and el-Zeini method relies on prospective preferences ("Do you want another child?") rather than the stated ideal number of children. In table 4, the estimate of the percentage of births unwanted (right-hand column) is straightforward to interpret (setting aside the underlying complexity of the notion of "unwanted birth"), as is the unwanted TFR. The latter is a synthetic cohort estimate of the average lifetime number of unwanted births per woman.

The wanted TFR is another matter. This measure has often been mis-interpreted and over-interpreted. It does not serve as a pure indicator of fertility desires, rather it is a composite of desires and behaviour. The wanted TFR is obtained by subtracting "unwanted" births from the numerator of the TFR. In most settings the wanted TFR falls short of desired fertility, possibly to a substantial extent: if the period TFR is depressed due to tempo effects (Bongaarts and Feeney 1998), the wanted TFR will suffer from the same; and when fertility desires are falling, the period TFR (and, accordingly, the wanted TFR) will be depressed in relation to cohort fertility patterns because many couples have over-shot their (revised-downward) desires and hence are not bearing children (Lee, 1980). In addition, some women are unable to reach their desired fertility because of infertility problems. For these reasons and more, the wanted TFR must be treated with caution and, in particular, should be taken neither as a pure indicator of fertility demand nor as an indicator of the expected level of fertility once change subsides and if unwanted births were eliminated.

The important columns in table 4, therefore, are the unwanted TFR and the percentage of births unwanted (from which the unwanted TFR is derived). Both indicate that unwanted fertility is relatively common throughout the region. Everything else being equal, fertility will decline further if women are more successful in avoiding unwanted births (see also Roudi and Monem, 2009.) The fraction of births unwanted ranges between 17 per cent (Lebanon) to 31 per cent (Yemen). The unwanted TFR (i.e.,

unwanted births over the entire course of the reproductive career) ranges from 0.3 births to 0.8 births per woman (putting aside the exceptionally high rate of 2.3 births in Yemen).

Simple subtraction of the unwanted TFR from the TFR yields the wanted TFR, and it is tempting to regard this as an estimate of the likely level of achieved fertility in the absence of unwanted births. But for reasons given earlier, the wanted TFR cannot be interpreted in this manner. In any case, other measures of fertility demand are provided by the surveys. Respondents are asked for their ideal number of children, and these data are examined in table 5 for ever married women aged 20 to 29 years. Because this item is known to be subject to "rationalization," a tendency to state an ideal that at least equals one's actual number of children, the analysis is confined to younger women, most of whom will not have attained their ideal (and thus are not yet at risk of "rationalization"). Younger women are also more relevant to an assessment of future fertility. There is a significant disadvantage of examining younger women, however, namely the likely selectivity on fertility ideals of women who marry at younger ages (the practice in the Arab region is to exclude never married women from in-depth fertility interviews).⁷

The summary measures of fertility ideals in table 5 suggest that these cohorts of Arab women continue to find families with three or more children appealing. The mean ideal number of children exceeds 2.5 in all eight countries and exceeds 3.0 in five of the eight countries. The mean ideals of 3.4 in Algeria, 3.1 in Lebanon and 4.3 in Syria are especially striking, as each is one child or more larger than the recent period TFR (table 2). (But in the cases of Algeria and Lebanon, note the risk of marriage selectivity -- the percentage married is low in both countries, see table 3.) Almost no women choose zero or one child as the ideal, and a majority choose three or more children as the ideal in all countries except Morocco and Egypt. (Note that Egypt has the highest percentages married and thus is less at risk of bias due to marriage selectivity.)

The lack of attachment to small-family ideals apparent in table 5 is reinforced by the data on fertility preferences in table 6. In the DHS and PAPFAM surveys, currently married women are asked whether they would like to have another child. There is abundant evidence that this item yields the most valid and reliable information on fertility desires (see literature review in Casterline and el-Zeini, 2007). In table 6, the percentage of women responding that they did not want another child is presented by the woman's parity (1 . . . 4) and age (20-24 . . . 35-39). Of key interest is the preference to stop childbearing at parity two and at mid-career ages (25-29 and 30-34). Only in Egypt do more than one-half of the women express a desire to stop after two children, and only in Egypt do more than one-half of women aged 25-29 and 30-34 express a desire to stop (plus 52 per cent of women aged 30-34 in Morocco). Even at parity four and ages 35-39, substantial minorities of women indicate that they would like to have another child.

Tables 5 and 6 together are striking evidence of the limited appeal of small families (one or two children) in the Arab region. El-Zeini (2008) provides an in-depth and nuanced investigation of this phenomenon in Egypt, which ironically shows the highest level of attitudinal commitment to small families in tables 5 and 6 (although this may well be due to less marriage-selectivity bias). El-Zeini shows that while a majority of Egyptian women of reproductive age fully recognize the advantages of restricting childbearing to two children, most women are weakly attached to this goal and, indeed, perceive other advantages to having at least three children (including a higher probability of having at least one son and at least one daughter). The result is considerable indifference between two and three children as alternative fertility goals. The estimates in tables 5 and 6 suggest that analogous research in other Arab countries might well produce a similar picture.

In short, the survey data on fertility desires provides little grounds for projecting that fertility in the region as a whole will fall to replacement level (or below) any time soon. Commitment to a two-child goal is far from universal, and success in achieving existing goals is imperfect with 17 to 31 per cent of

all births unwanted To be sure, fertility desires do not operate in isolation. Reproductive decisions are informed by desires but also must take into account numerous significant constraints, including social and economic conditions. To some extent these constraints may have been taken into account when the women answered the survey items (on their ideal number of children, on their desire for another child). The calculus underlying the responses to these items is poorly understood.

3. Methods of birth control

There must be means to implement motives. One of the noteworthy developments in the demography of the Arab region during the past few decades has been the growing prevalence of contraception as a means of birth control (Tabutin and Schoumaker, 2005). The prevalence among currently married women according to the most recent survey is shown in the right-hand column of table 7. The majority of Arab women live in countries where at least one-half of currently married women are using contraception.

For the purpose at hand the main objective of table 7 is to consider method choice. As fertility declines, the method distribution looms larger in determining aggregate rates of unintended pregnancy. Contraceptive methods vary considerably in both their theoretical use-effectiveness and their practical use-effectiveness. The method distribution, in turn, is a product of various factors, including social norms (long-standing or recent) and the policies governing family planning service provision by the public or private sectors, policies that may well contain many idiosyncrasies and historical accidents.

Table 7 shows the method choice, in five categories, of current users of contraception. Two features of table 7 deserve some emphasis. First, ineffective "traditional" methods are relatively prevalent in some Arab countries. More specifically, withdrawal is popular in western Asia (Jordan, Lebanon, Syria), as has been evident in all fertility surveys in this sub-region since the 1960s. Secondly, and more germane to the concerns of this paper, small percentages of women are sterilized, with the exception of several Gulf States (Oman, U.A.E.). This is not surprising, as a common view in Arab society is that sterilization is contrary to Islam. This is popular opinion, and not a view actively propounded by Islamic scholars (although it is the case that sterilization is rare in most Islamic countries). Recourse to sterilization to terminate childbearing once a desired number has been achieved is, therefore, an unappealing solution for most Arab couples. It is difficult to know whether this view will relax anytime soon. At present, Arab women rely instead on the IUD and the pill, both of which are highly effective when used diligently but subject to deliberate discontinuation or, for the pill, user error.

Once an unintended pregnancy occurs, women and men may have to resort to induced abortion as a way to control fertility. Only in Bahrain and Tunisia is induced abortion legal on demand. The few conditions under which induced abortion is legal in other Arab societies may be consistent with the assumption that it is contrary to Islam (with possible exception for the early gestational period, up to 40 days). Even so, surely induced abortions occur in all Arab societies, although there are no sound estimates of incidence (see discussion in Tabutin and Schoumaker 2005). In all likelihood pregnancies to unmarried women are most likely to be aborted, but these are also most strenuously kept secret. Anecdotal evidence abounds, especially in larger metropolitan areas. It is hard to evaluate the true demographic impact of induced abortion in the region, but the impact is probably small at present in most countries; Tunisia is clearly an exception, and perhaps Lebanon as well. If increased demand for contraceptive methods is not met, then possibly more women and men will have to rely on induced abortion to control fertility in the future. But to this point there is little indication that social norms against induced abortion are substantially weakening, and, in the absence of concerted political efforts to legalize abortion, access to safe medical procedures will remain difficult and costly.

In sum, Arab societies lack both sterilization and induced abortion as readily-available ways to control fertility. Few societies have achieved low fertility without widespread recourse to one or the other, or both. Women who are sexually active through most of the reproductive years (whether in stable unions or otherwise) and who wish to limit childbearing to a few children (e.g. two children) confront many years of risk of unwanted pregnancy. Exceptional discipline in the use of methods such as the IUD and the pill is required if unwanted pregnancies are to be avoided entirely. But the recent incidence of unwanted births (see table 4) is itself evidence of the challenge of achieving perfect success in the practice of contraception.

D. CONCLUDING COMMENTS

The Arab region has experienced a substantial and rapid decline in fertility during the past two decades that serves as a refutation of much of the expressed pessimism about the prospects for Arab fertility decline in the research literature and public discourse of the 1970s and 1980s. This recent history qualifies any confident statements one might make about prospects for further decline, and in particular skepticism that fertility will proceed down to replacement level (or below). Nevertheless, the factors acting against low fertility in the Arab region are significant and, it would seem, relatively robust:

- A two-child norm is by no means firmly and widely established. There is recognition of the many advantages of stopping at two children, and of the various costs of having three or more children. Even so, many women, even among the younger cohorts, desire to have three (or more) children.

In-depth data that might shed light on these desires are generally unavailable (an exception is el-Zeini (2008)). The fertility desires may reflect a sense that family life is incomplete and less satisfying when reproduction is limited to two births—fewer children, fewer siblings, fewer cousins, and so forth. In addition, the lack of firm and widespread commitment to a two-child norm may reflect a recognition that stopping at two children can leave one without either a son or a daughter.

- Neither sterilization nor induced abortion is readily available as methods of fertility control. Bahrain, Tunisia and (probably) Lebanon are exceptions, with induced abortion available on request in Bahrain and Tunisia. Fertility rates at replacement level (or below) are almost never achieved without heavy reliance on one or the other of these two methods of fertility control.

These two pieces of empirical evidence inspire a skepticism about whether fertility in the Arab region will stabilize at replacement level (or below) in the short-term (i.e., within 15-20 years). Both the motives and the means for married couples to limit childbearing to just two children appear to be lacking.

Arguing to the contrary are the dramatic changes in nuptiality that occurred in recent decades: the fraction of women in their 20s never married has surged, with a resulting substantial loss of reproductive exposure, given that sexual activity outside of marriage is still relatively limited. This change accounts for a major portion of the rapid fertility decline in the period since the 1980s. (Tabutin and Schoumaker (2005) attribute about equal weight to nuptiality change and increased contraception as proximate determinants of the Arab fertility decline.)

Looking ahead, there are two important unknown factors about the ongoing nuptiality change: First, is this a matter of women postponing marriage (and, hence, the onset of childbearing) into their 30s,

or will large fractions of women not marry at all? Second, how many Arab countries will experience the dramatic nuptiality change already witnessed in Algeria, Lebanon and Tunisia? In answering this latter question the crucial case will be Egypt, with its current pattern of relatively early marriage and high proportions of women married in their 20s. One can make plausible arguments on either side, i.e. that Algeria, Lebanon and Tunisia are exceptional or that they are the leading edge of a change that will spread through the region. On this point, while no Gulf States are shown in table 3, these countries too have experienced sharp increases in the fraction never married in their 20s (Rashad and Osman, 2001).

Whether or not fertility in the Arab region continues a decline to low levels within a decade or two may be determined, then, by whether or not spending many years outside marriage becomes a common experience for adult women. If this does indeed emerge as a stable demographic feature of these societies, then the individual and societal benefits of low fertility may be realized but via a mechanism (low nuptiality) that runs counter to cherished and deep-seated norms about what makes for satisfying adult life. Of course such norms too can change.

A more general point that emerges from this assessment of fertility prospects in the Arab region is that low fertility is a more logical and comfortable outcome for some societies than for others. Each society confronts the stresses generated by rapid population growth with its own legacy of institutions and cultural and social systems (governance, religion, kinship and so forth) (Nunn, 2009; McNicoll, 2009). Societal legacies are by no means eternal, but they set important constraints on what change can occur relatively effortlessly and painlessly. In demographic research in recent decades, a common error has been to assume that instances of early and rapid fertility decline are indicative of the pathway other societies will follow. Assuming that most of the Arab region will follow Lebanon or Tunisia would be to adopt this view. A more valid and constructive stance assumes that the factors that facilitate or obstruct transition to low fertility decline vary across societies. This is not an assertion that each society is *sui generis*, although careful case-by-case assessment is preferable to an (implicit) assumption that all countries will follow the same pathway of those countries with the earliest and most rapid declines.⁸ Rather, this is a call to approach the scientific problem of fertility decline with an assumption of persistent societal distribution rather than an expectation of societal convergence.

NOTES

¹ Some of the countries in the Arab region contain substantial sub-groups that are non-Arab, as might be determined by criteria such as past and present culture (including language), historical patterns of migration and marriage, and self-identification. These include the Berber population in Morocco and Algeria, the Kurdish population in Iraq, African ethnic groups in southern Sudan, and Asian labor migrants in the Persian Gulf States. In the interests of simplicity of text, this paper will refer to the population of these twenty-two countries as "Arab".

² The most recent round of Gulf Family Health Surveys was conducted from 1995 - 1998. Hence there is no regionally-comparable information for the Persian Gulf States, including large and populous Saudi Arabia.

³ The author acknowledges, with gratitude, access to the PAPFAM data granted by Dr. Ahmed Abdel Monem, PAPFAM Manager, Cairo Egypt. PAPFAM is a project of the League of Arab States [LAS], and receives funding from AGFUND, UNFPA, WHO, UNICEF, IPPF, IOMS, OPEC Funds, ESCWA and UNIFEM.

⁴ In this sentence Egypt's 48 per cent decline is rounded to 50 per cent.

⁵ An important feature of the demography of the Gulf States is the presence of a large immigrant population whose sex ratio is predominantly male and who have low levels of fertility. The fertility of the Arab segment of these countries is appreciably higher.

⁶ Because nuptiality is in transition, the singulate mean age at marriage [SMAM], a popular measure of the timing of first marriage, is difficult to interpret meaningfully. This measure assumes that the prevalence of never marriage among older cohorts (e.g. ages 45-54) will also typify younger cohorts. This assumption is difficult to defend as the fraction of younger women ever married declines rapidly. For this reason SMAM is not examined in this paper.

⁷ A test of the extent of selectivity is offered by Morocco which, in a departure from the standard practice in the region, interviewed women of all marital statuses. Among women aged 20-29, the mean ideal number of children is 2.9 among married women and 2.6 among never married women. Two children is the modal choice for both groups, although to a greater degree among the never married. This comparison suggests that the figures in table 5, as estimates of the ideal family size of all women, are upwardly biased, but only to a rather modest extent. The extent of bias is a function of the difference between the ideals of ever-married women and never-married women (those who will eventually marry are of more interest) and the fraction of women ever-married. Where the latter is low—in Algeria, for example—the risk of bias is greater. One clear recommendation for survey design follows from this: it would be helpful if data on fertility desires were collected from women of all marital statuses.

⁸ For a predecessor of the present meeting, the author served as co-author of a systematic examination of the Philippines and its prospects for further fertility decline (Costello and Casterline, 2002). Both motives and means were considered. The principal conclusions were that (i) the Filipino fertility decline was likely to continue to proceed relatively slowly, and (ii) there were significant and multiple obstacles to the attainment of low fertility (i.e., replacement level or below). Experience since this paper was written has borne out conclusion (i); it is too soon to pass judgment on conclusion (ii).

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TABLE I. ARAB REGION: CURRENT POPULATION SIZE (2009) AND AVAILABILITY OF SURVEY DATA

Country	Population size (millions)	Most recent survey	
		Date	Program
Algeria	34.9	2002	PAPFAM
Morocco	32.0	2003	DHS/PAPFAM
Tunisia	10.3	2001	PAPFAM
<i>Total</i>	<i>77.2</i>		
Egypt	83.0	2008	DHS
Iraq	30.7	-	
Jordan	6.3	2007	DHS
Lebanon	4.2	2004	PAPFAM
Libya	6.4	2007	PAPFAM *
Occupied Palestinian Territory	4.3	2006-07	PAPFAM *
Sudan	42.3	2006	PAPFAM *
Syria	21.9	2001	PAPFAM
<i>Total</i>	<i>199.1</i>		
Bahrain	0.8	-	
Kuwait	3.0	-	
Oman	2.8	-	
Qatar	1.4	-	
Saudi Arabia	25.7	-	
U.A.E	4.6	-	
Yemen	23.6	2003	PAPFAM
<i>Total</i>	<i>61.9</i>		
Comoros	0.7	1996	DHS
Djibouti	0.9	2002	PAPFAM
Mauritania	3.3	-	
Somalia	9.1	-	
<i>Total</i>	<i>14.0</i>		
<i>Arab Total</i>	<i>352.2</i>		

* not available for this analysis

Source: United Nations (2009). *World Population Prospects: the 2008 Revision*. New York: United Nations.

TABLE 2. TRENDS IN THE TOTAL FERTILITY RATE 1950-55 - 2005-10, ARAB COUNTRIES AND SELECTED OTHER SUB-REGIONS

Country	Total fertility rate			Decline in total fertility rate (%)		
	1950-55	1980-85	2005-10	1950-1985	1980-2010	1950-2010
Algeria	7.3	6.5	2.4	11	63	67
Morocco	7.2	5.4	2.4	25	56	67
Tunisia	6.9	4.9	1.9	29	62	73
<i>Median</i>	7.2	5.4	2.4	25	62	67
Egypt	6.4	5.5	2.9	13	48	55
Iraq	7.3	6.4	4.1	13	35	44
Jordan	7.4	6.8	3.1	8	54	58
Lebanon	5.7	3.9	1.9	32	52	68
Libya	6.9	7.2	2.7	-5	62	60
Occupied Palestinian Territory	7.4	7.0	5.1	5	27	31
Sudan	6.7	6.3	4.2	5	33	36
Syria	7.3	7.2	3.3	2	54	55
<i>Median</i>	7.1	6.6	3.2	7	50	55
Bahrain	7.0	4.6	2.3	34	51	67
Kuwait	7.2	4.9	2.2	33	55	70
Oman	7.2	7.2	3.1	0	57	57
Qatar	7.0	5.5	2.4	22	55	65
Saudi Arabia	7.2	7.0	3.2	2	55	56
U.A.E	7.0	5.2	2.0	25	63	72
Yemen	8.2	8.7	5.3	-6	39	35
<i>Median</i>	7.2	5.4	2.4	22	55	65
Comoros	6.0	7.1	4.0	-18	43	33
Djibouti	7.8	6.6	4.0	15	40	49
Mauritania	6.3	6.3	4.5	1	28	29
Somalia	7.3	6.7	6.4	8	5	12
<i>Median</i>	6.8	6.6	4.3	4	34	31
<i>Arab median</i>	7.2	6.4	3.1	10	53	56
Sub-Saharan Africa	6.6	6.6	5.1	-1	23	23
South-Central Asia	6.0	4.9	2.8	19	42	53
South-Eastern Asia	6.0	4.2	2.3	29	45	61

Source: United Nations (2009). *World Population Prospects: the 2008 Revision*. New York: United Nations.

TABLE 3. CURRENT MARITAL STATUS, WOMEN AGED 15 - 29: PERCENTAGE EVER MARRIED BY AGE

Country	Percentage ever married		
	15-19	20-24	25-29
Algeria (2002)	2	16	43
Morocco (2003)	11	38	59
Tunisia (2001)	1	15	47
Egypt (2008)	13	54	82
Jordan (2007)	6	37	69
Lebanon (2004)	3	19	47
Occupied Palestinian Territory (2004)	13	58	77
Syria (2001)	11	43	62
Yemen (2003)	17	59	85
Comoros (1996)	11	48	77
Djibouti (2002)	5	26	50

Source: DHS and PAFAM surveys. For Palestine, Khawaja et al., 2009, Table 7.

TABLE 4. WANTED AND UNWANTED TOTAL FERTILITY RATES

Country	Fertility rate			Percentage of births unwanted
	TFR	Wanted TFR	Unwanted TFR	
Algeria (2002)	2.21	1.62	0.59	24
Morocco (2003)	2.48	1.75	0.73	27
Tunisia (2001)	2.10	1.66	0.44	19
Egypt (2008)	3.02	2.18	0.84	23
Jordan (2007)	3.59	2.84	0.75	18
Lebanon (2004)	1.72	1.42	0.30	17
Syria (2001)	3.69	2.88	0.81	20
Yemen (2003)	5.81	3.55	2.26	31

Source: DHS and PAFAM surveys.
Aggregate prospective estimator (Casterline and el-Zeini, 2007)

TABLE 5. IDEAL NUMBER OF CHILDREN, EVER MARRIED WOMEN AGED 20-29

Country	Mean ideal number	Percentage ideal number equals:		
		0 - 1	2	3+
Algeria (2002)	3.4	2	29	69
Morocco (2003)	2.8	4	51	45
Tunisia (2001)	2.8	4	44	52
Egypt (2008)	2.7	2	51	47
Jordan (2007)	3.7	4	19	77
Lebanon (2004)	3.1	3	31	66
Syria (2001)	4.3	0	12	88
Yemen (2003)	4.1	3	22	76

Source: DHS and PAFAM surveys.

TABLE 6. DESIRE TO STOP CHILDBEARING, BY PARITY AND AGE

Country	Percentage wanting no more children			
	Parity			
	1	2	3	4
Algeria (2002)	3	26	46	64
Morocco (2003)	12	42	62	75
Tunisia (2001)	11	43	66	71
Egypt (2008)	6	59	86	91
Jordan (2007)	5	22	38	63
Lebanon (2004)	9	46	68	77
Syria (2001)	5	24	47	55
Yemen (2003)	8	16	28	40
Country	Age			
	Age			
	20-24	25-29	30-34	35-39
Algeria (2002)	7	17	36	59
Morocco (2003)	16	30	52	66
Tunisia (2001)	16	29	48	62
Egypt (2008)	23	51	74	86
Jordan (2007)	13	21	42	67
Lebanon (2004)	14	43	44	66
Syria (2001)	17	28	46	61
Yemen (2003)	19	32	49	59

Source: DHS and PAFAM surveys.

TABLE 7. CONTRACEPTIVE METHOD DISTRIBUTION, CURRENT USE: CURRENTLY MARRIED WOMEN

Country	Current method						Percent using
	Sterilization	IUD	Pill	Traditional ^a	Else	Total	
Algeria (2002)	2	5	81	9	3	100	56
Morocco (2003)	5	9	64	13	11	100	63
Tunisia (2001)	0	44	18	15	24	100	63
Egypt (2008)	2	60	20	1	18	100	60
Jordan (2007)	7	39	15	26	14	100	57
Lebanon (2004)	6	25	23	35	11	100	54
Syria (2001)	3	43	26	24	3	100	47
Kuwait (1996)	4	14	57	18	7	100	50
Oman (1995)	19	9	26	24	22	100	24
Saudi Arabia (1996)	3	21	62	10	4	100	32
U.A.E. (1995)	15	14	43	11	17	100	28
Yemen (2003)	8	15	27	41	9	100	23
Comoros (1996)	12	2	14	40	33	100	25
Djibouti (2002)	0	4	49	32	16	100	9

a. Rhythm, withdrawal and breastfeeding.

Source: DHS, PAPFAM and Gulf Family Health surveys.