

Session S116 : Reproduction and politics

Fertility and Population Policy in Algeria: The Ironies of Planning

Zahia Ouadah-Bedidi* and Jacques Vallin**

* University of Paris Diderot/URMIS ; ** INED, Paris

Introduction

Over the last fifty years Algeria has undergone major political, socio-economic and not least demographic upheavals. In population terms, the current situation and the problems it raises are the very reverse of the position in the 1960s. Despite the toll of losses during the war of liberation, the first census taken in independent Algeria confirmed the extent of the country's population explosion. Between the 1954 and 1966 censuses the Muslim population had gone from less than nine million to twelve, an average annual increase of over 2.6%. At that rate, not only does a population double in 30 years, but the Algerian researchers of the period were further alarmed by certain studies (such as that published by AARDES¹) that indicated that this growth would accelerate and might come close to 4% a year by 1985. This would mean the country's population doubling in less than 20 years. Despite these warnings, far from introducing any family planning program, the Algerian government adopted on the contrary a discourse hostile to the very idea of family planning, seen as imperialist in nature.

Although the next census provided some evidence for the alarmist thesis, with an intercensal average annual growth rate of 3.2% for 1966-1977, the civil registration data showed that natural growth rates (balance of gross birth and death rates) began falling in the early 1970s. In fact, the predicted 4% rate was never reached. Even though officials and decision-makers were fairly quick to realise the economic and social challenge that a 3% population growth rate meant, these figures significantly lower than had been feared in the late 1960s tended to support the Algerian government's position and delayed discussion of the value of introducing family planning in Algeria. As a result, it was not until 1983 that the first *Programme national de maîtrise de la croissance démographique*² (PNMCD) was officially published.

¹ Algerian association for demographic, economic and social research.

² National programme to control population growth

By the first decade of the new century, twenty years after the start of this programme, Algeria's natural population growth rate had fallen to 1.5%, despite the sharp fall in mortality achieved since independence and the enormous potential for growth due to the arrival of large cohorts at childbearing age. Where the mortality rate per thousand had fallen from 21 in the years before the war of liberation (Negadi *et al.*, 1974) to 4.6 in 2001 (ONS, 2004a), the birth rate per thousand had fallen from 47.4 to 20.4. More precisely, the average number of children per woman, more than 8 in the early 1970s (Negadi and Vallin, 1974), had shrunk to 2.2 in 2000-2001 (ONS, 2004b). Ironically, the authorities were still haunted by the fear of unsustainable population growth and continued to state their determination to reduce the total fertility rate. For the second time, policy-makers were at odds with actual demographic developments, since the replacement level was already almost achieved. The 1998 census had even shown that in some Algerian cities fertility had fallen below that level as early as the mid-1990s and the 2002 Papfam survey even produced the figure of 1.4 children per woman in Algiers in 2001 (MSP *et al.*, 2004b).

It is true that since then Algerian fertility has risen again, to a total fertility rate (TFR) of 2.9 children per woman in 2010 (ONS, 2011a). But this only emphasises the two-fold gap between policy and population changes. In Algeria policy seems to have been applied in the wrong way at the wrong time, but this seems anyway to be irrelevant, since policy has had so little influence on the course of events.

I) The fall in fertility did not wait for family planning program

1. 1962-1975: a government deaf to the problems of a population explosion

As revealed by the civil registration statistics corrected for under-recording³, Algerian fertility peaked immediately after the end of the war of liberation, and even exceeded 8 children per woman in 1966. This extremely high figure was confirmed by the 1969-1971 multi-round survey, which found 8.1 children per woman for 1970 (CNRES, 1974b). This could easily be explained by family

³ Comparison of the data from the 1969-1971 multi-round survey (CNRES, 1974b) with those from civil registration showed that the latter recorded an estimated 89% of births. We have consequently corrected recorded births upwards to estimate fertility from civil registration sources from 1964 to 1969. The figures obtained are quite comparable with two estimates based on the 1966 census data, one combining legitimate fertility and proportion of unmarried women (Navelet and Nizard, 1972), the other dividing the number of children under the age of one by their estimated probability of survival (authors' estimate).

reunion after the war as well as by the euphoria of liberation and the return to peace. But since mortality was falling rapidly at the same time, the population's rate of natural increase shot up unexpectedly, probably to 3.5% by the mid-1960s, among the highest in the world at that time. In the opinion of AARDES, this explosive growth, due to sharply falling mortality together with rising fertility and the survival of ever larger cohorts, was likely to accelerate further. Algerian demography was like "a sports car with no brakes" (AARDES, 1968, p. 54). The need for a population policy began to be discussed as part of the preparation for the first development plan. Given the cost of training young people and the high rates of unemployment and under-employment, it appeared that "Algeria's economy is unable to meet the needs of all of its population and cannot form a sufficiently sound basis for proper economic development.... We cannot envisage without serious concern any further rapid increase in the population growth rate", as AARDES concluded (1968, p. 52).

Despite this wake-up call, the government remained deaf to the problems of population explosion. Although the 1966 call of the national union of Algerian women (UNFA) for the right to family planning received some support from President Boumédiène, who recognised that family planning was one way of liberating women and protecting their and their children's health⁴ and eventually approved the opening in 1967 of the first experimental centre for birth spacing at Mustapha Bacha hospital in Algiers⁵. Birth "spacing" rather than birth "control", because its justification was a matter of health and not of population.

The AARDES CAP survey⁶ in 1967-68 also revealed that the general public were favourable and attitudes were ready for family planning, especially among the young, city-dwellers and the literate. But it identified at the same time a certain reluctance about birth limitation, largely due to religious belief, supporting the importance a favourable public position by religious authorities could have (AARDES, 1968). And this occurred in 1968, when the High Islamic Council issued a fatwa encouraging birth spacing, a radical departure from the ideology of the 1950s and 1960s that had been hardened by seven years of a war of liberation against the colonial power.

In 1969, two more birth spacing centres were opened in other major cities, Oran in the west and Constantine in the east (Remili, 1972). But even as an awareness of the population issue appeared to be advancing, the President bluntly declared, at the opening of the El-Hadjar steelworks in 1969, "Our aim is to ensure for our

⁴ Interview in 2006 with Jeanine Belkhodja, professor of gynaecology and obstetrics at the University of Algiers.

⁵ The centre was also called CPMI (centre for mother and child protection).

⁶ *Connaissances, attitudes et pratiques en matière de contraception* (contraception knowledge, attitudes and practices).

masses... a standard of living equal to that of the most developed nations in the world of the future... we do not accept false solutions such as family planning, which amounts to removing difficulties rather than finding appropriate solutions. We prefer positive, effective solutions, namely, creating jobs for adults, schools for children and better social amenities for all” (Kouaouci, 1996).

Meanwhile Algeria asserted on the international scene its categorical refusal of any birth control policy, on the grounds that “the best pill is development”. At the 1974 World Population Conference in Bucharest, Algeria vied with China for the leadership of the movement firmly opposed to the idea that the control of population growth was a precondition for development.

However, the family planning movement of opinion did not give up. Discreetly, on the ground, things were changing. Training courses arranged in the United States went ahead⁷. Experience at the birth spacing centres in the three major cities of Algeria was that birth spacing was being integrated into mother-and-child protection, and in 1971 a proposal for a *Programme national d’espacement des naissances*⁸ (PNEN) was presented by the public health ministry to the World Health Organisation. Two years later, the programme was officially started, under Dr Malika Ladjali, head of the central office for mother-and-child protection, involving however only seven centres for the whole of Algeria⁹. Under the pressure of demand, this number did slowly increase but not until 1984 could it be said that even a sparse national coverage had been achieved, with 340 centres. It must also be remembered that this low-profile programme was exclusively devoted to birth spacing for health reasons (Paulet, 1994). Its contribution to the spread of contraception could only be a modest one.

2. 1975-1983: fertility begins to fall with no family planning policy

And yet, fertility did sharply decline. TFR fell from 8.1 children per woman in 1970¹⁰ to 5.3 in 1981-85¹¹, (Figure 1). So the official position hostile to any birth control policy did not prevent the start of a long downward trend greater than the expected ebb of fertility after the 1960s’ baby boom. Not only did contraception spread significantly further than what had been expected in the

⁷ Interview Belkhodja, 2006.

⁸ National birth spacing programme

⁹ See Ladjali, 1985, for more detail.

¹⁰ According to ENSP 1969-71 (Negadi, 1975).

¹¹ According to the 1986 Algerian national fertility survey (ENAF) (Kouaouci, 1992).

unambitious PNEN, but the rise in the marriage age, unrelated to that programme, was the prime factor in the fall in fertility.

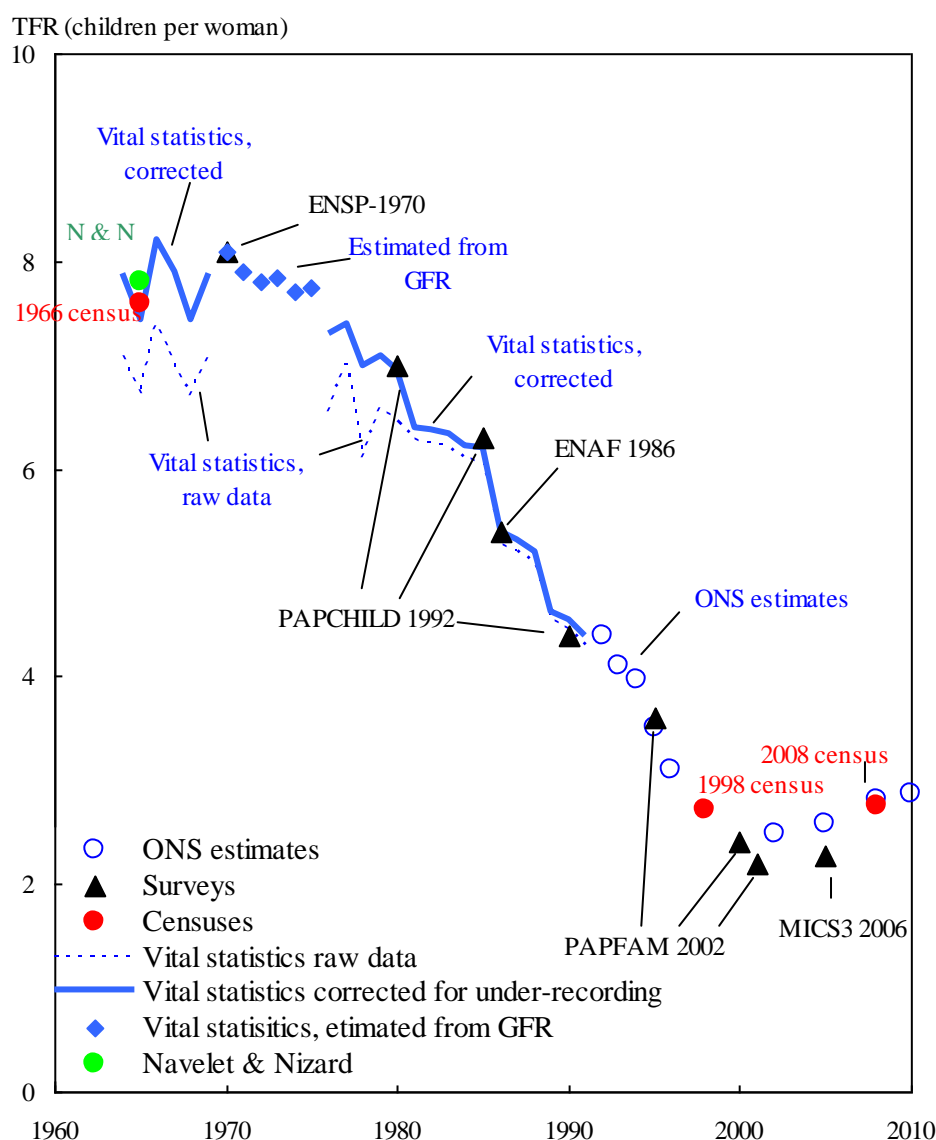


Figure 1. Total fertility rate, 1960-2010, from various sources

Sources for Figure 1.

Civil registration

1965-69: dotted line, rate by age published by the Sub-Directorate for Statistics (SDS, 1968; Negadi, 1975); solid line, same data corrected by the under-recording rate estimated from the 1969-71 multi-round survey.

1971-75: blue symbols, TFR estimated by applying to the GFR the average TFR/GFR ratio for 1970 and 1976 (Ouadah-Bedidi, 2005) and corrected for under-recording.

1976-1991: raw (dotted line) and corrected (solid line) TFR published by ONS (ONS, 1999).

Censuses

1966: children under one year of age and survival rate (authors' calculation); legitimate fertility and proportion of unmarried (Navelet and Nizard, 1972). 1998: most recent twelve months (Ouadah and Vallin, 2006). 2008: most recent twelve months (ONS, 2011b).

Surveys

ENSP (*Étude nationale statistique de la population*) 1969-71: fertility for 1970 (CNRES, 1974b),
ENAF (*Enquête nationale algérienne sur la fécondité*) 1986: fertility for 1985-1986 (Kouaouci, 1992),
Papchild 1992 (*Enquête algérienne sur la santé de la mère et de l'enfant*): fertility for 1988-92, 1983-87 and 1978-82 (MSP *et al.*, 1994),

Papfam 2002 (*Enquête algérienne sur la santé de la famille*): fertility for 1998-2002, 1993-97 and 1988-92 (MSP *et al.*, 2005),

MICS3 (*Enquête nationale à indicateurs multiples*): fertility for 2007-2008 (MSP and ONS, 2008).

« ONS estimates »

Sporadic estimates theoretically based on vital statistics but insufficiently documented (ONS, 2011a; ***).

In a society where contraception is hardly ever used and women are strictly kept apart from any sexual relationship outside marriage, a rise in the marriage age is automatically a factor for lower fertility. The mere fact of delaying a union by a few years reduces the duration of exposure to the risk of procreation and lowers TFR by several points. In Algeria, the 1969-71 ENSP¹² (CNRES, 1974) and 1986 ENAF¹³ (Kouaouci, 1992) surveys can be used to measure marital fertility by age and compare it with the general fertility rate (Table 1). From 1970 to 1981-85, marital fertility fell 19% as a result of contraception, but general fertility fell by more than 33%, which can only be explained by the rise in marriage age. The phenomenon is even more marked, naturally, for the fertility of young women: while the rise in marriage age lowered general fertility by 45% at age 20-24 and even by 78% at age 15-19, other factors (including contraception) lowered marital fertility at these ages by only 21% and 12% respectively.

Table 1. Algerian general fertility and marital fertility rates by age group during four periods 1970-2008

Age group	1970 ENSP 1969-71 (a)	1981-85 ENAF 1986 (b)	2000-01 Papfam 2002 (c)	2007-08 Census 2008 (d)	Change (%)		
					$\frac{b-a}{a}$	$\frac{c-b}{b}$	$\frac{d-c}{c}$
General fertility rate							
15-19	109	24	5	9	-78	-79.2	86.0

¹² *Étude nationale statistique de la population*, a complex operation that included a multi-round demographic survey among households and a deep event history survey among women.

¹³ *Enquête nationale algérienne sur la fécondité*, a retrospective survey on fertility.

20-24	330	181	51	75	-45.2	-71.8	47.3
25-29	378	252	111	139	-33.3	-56	25.2
30-34	345	259	126	149	-24.9	-51.4	17.9
35-39	272	218	102	118	-19.9	-53.2	15.4
40-44	144	110	40	51	-23.6	-63.6	28.0
45-49	37	31	8	8.0	-16.2	-74.2	0.0
TFR	8.1	5.4	2.2	2.7	-33.3	-59.3	24.7
Marital fertility rate							
15-19	412.8	308	290	354	-25.4	-5.8	22.0
20-24	455	413	296	347	-9.2	-28.3	17.4
25-29	430.4	353	237	297	-18	-32.9	25.2
30-34	385	312	183	239	-19	-41.3	30.4
35-39	316.4	251	123	163	-20.7	-51	32.7
40-44	176.8	129	47	64	-27	-63.6	36.4
45-49	48.4	39	10	10	-19.4	-74.4	-4.2
TFR	11.1	9	5.9	7.4	-18.9	-34.4	24.9
Sources: 1970: CNRES, 1974b and 1975; 1981-85: Kouaouci 1992; 2000-01: MSP <i>et al.</i> , 2004a and Ouadah-Bedidi, 2004; 2007-08: ONS, 2011b							

After the Second World War, women's mean age at first marriage fell to 18 in the early 1950s¹⁴, probably as a result of the return to traditional values as the nationalism advanced that would lead to the war of liberation and independence (Figure 2). However, the 1969-71 demographic survey showed that the trend reversed in the mid-1950s, probably due to the absence of young men because of emigration or the war of liberation. Since then, age at marriage has continued to rise rapidly, to 21 in the early 1960s (based on the 1977 census) and 23.7 in the early 1970s (1987 census). The trend is a broad one from the 1966 to 1987 censuses, with a higher proportion of unmarried women at all ages: from 53% to 90% at 15-19, from 11% to 52% at 20-24, from 4% to 22% at 25-29, etc. (Figure 2b). Most of this change occurred even before the 1984 law¹⁵ laid down

¹⁴ This mean age at first marriage figure, based on the 1966 census (Vallin, 1973), is calculated by applying Hajnal's method (1953) to the proportions of unmarried women. It is the only figure available for much of the period studied in the paper. Unfortunately, mean age at first marriage calculated in this way expresses a reality much earlier than the observation date, since it covers marriages occurring in the previous thirty years. By making special use of the individual data from the 1998 census, we have observed that the weighted mean of actual year of marriage occurred 13.5 years before the census. Consequently, the result taken from the 1966 census is attributed to 1952-53.

¹⁵ Law of 9 June 1984 (concerning the family code). Under *sharia* law the legal age had been puberty. A 1963 law first set it at 16 for women and 18 for men (Khemisti Law). The 1984

a minimum legal age for marriage (18 for women and 21 for men). The law only confirmed a trend due mainly to the expansion of education, which lengthened time at school and facilitated women's access to the labour market¹⁶, two developments that directly compete with early marriage.

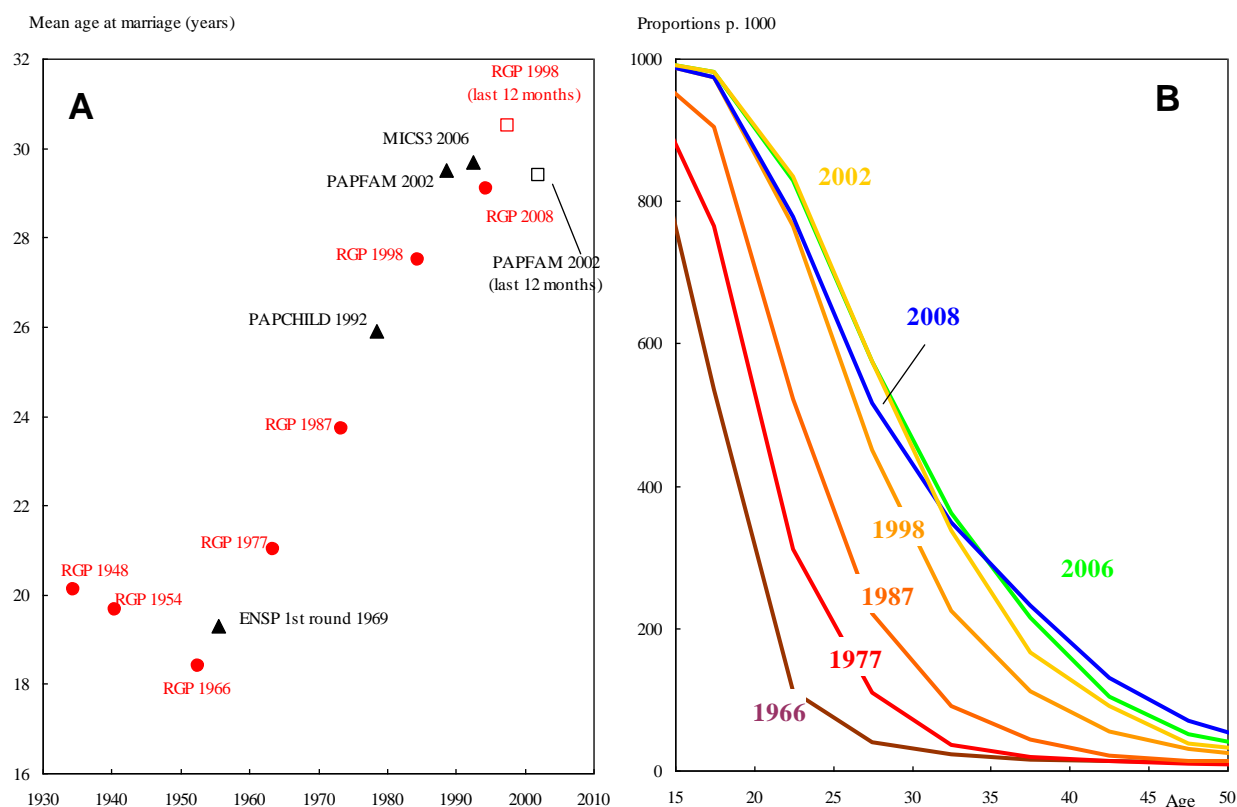


Figure 2. (A) Mean age at first marriage and (B) proportion of unmarried women by age according to various sources available since the Second World War.

Sources: see Table 3, column “reference”.

II) The ideological shift in 1983 is not the main reason for the accelerating drop in fertility

After much dithering, in 1983 the Algerian government finally launched an ambitious family planning programme. However, we shall soon see that it did not greatly contribute to lower fertility.

law was then slightly amended in 2005 by a decree setting the minimum legal age at 19 for both genders.

¹⁶ Although access to the labour market does not necessarily mean finding gainful employment, women systematically become job-seekers on completing or interrupting their education.

1. An ambitious programme to manage population growth

The 1974 PNEN, as we have seen, only really took off in 1983-84 and, furthermore, was intended not to limit births but only to enable couples to space them. Although it had no major direct effect on fertility, it did contribute to spreading a more positive image of modern contraception. Furthermore, by the early 1980s the political authorities no longer feared any hasty reaction from religious authorities, since a new fatwa from the High Islamic Council in 1982 had reasserted the lawfulness of contraception, on condition that it was voluntary, un-coerced and reversible. In political terms, public opinion was ready indeed eager for a change in the official position, especially since the death of President Boumédiène¹⁷.

It was more than a policy change, it was an ideological shift. In the General Report for the 1980-84 Five-year Plan, the population issue had been identified once more as a crucial one, since the country's potential resources were considered inadequate for the needs generated by population growth and increased by social demands. Economic and social development would be impossible without some control of population growth (Paulet, 1994). As the State secretariat for social affairs wrote at the time, "Much more than in the past, demographic constraints will continue to largely dominate the conduct of economic policy. Action to actively reduce the birth rate has become an essential way of improving efficiency in constructing our economy and hoping to meet the population's social needs in a satisfactory and sustainable fashion" (SEAS, 1983). In February 1983, the government adopted the *Programme national de maîtrise de la croissance démographique*¹⁸ (PNMCD). In the same year, *Information et éducation sociales*, a review published by the State secretariat for social affairs, reported, "The population explosion in Algeria has only just begun. Most of it has yet to come. Examination of the balance between births and deaths (natural growth) reveals an average annual increase in the resident population of 404,000 people per year in 1965-70, approximately 675,000 people per year in 1980-85 and a projection of as much as 1,114,000 per year in 2000-20065" (SEAS, 1983).

Shortly afterwards, at the second World Population Conference in Mexico City in 1984, the Algerian delegation reversed its position on the international stage, even asking the international community for support for the country's new population policy, since it considered population growth as "the main obstacle to development". Now the line was, "The repercussions of excessive population

¹⁷ Interview, Belkhodja, and with Mustapha Benzine, Director of the Social Studies Division of the Algerian national economic and social council (CNES), 2006.

¹⁸ National programme for controlling population growth.

growth, both individual and collective, on the welfare and self-fulfilment of the family, the quality of life and social environment, and the ability of the country's economic fabric to satisfactorily meet basic social needs, urgently require widespread, concerted action to ensure the right conditions for controlling population growth" (SEAS, 1983).

This new position, radically opposite to the one advanced in Bucharest in 1974, was issued against an economic and social background different from that of ten years earlier. In addition to the death of President Boumédiène, now criticised for his "sudden reversal" in 1974, the objectives of full employment, due to be achieved in 1980, were far from being met and the country was under increasing pressure from all sides: housing shortage, unemployment, problems in the healthcare system, cost of schools and universities, etc. Population was now the scapegoat for all these failures, to such an extent that it was used to justify the inability of economic policy to meet citizens' basic needs.

The 1983 PNMCD was actually inspired by experience with the 1974 PNEN. Its main agent was the midwife because of her strategic position as intermediary between the healthcare structure (supply of contraception) and the individual woman (demand for contraception). More emphasis was placed on training healthcare staff. In 1988, a contraception module was included in the initial training for midwives and retraining courses were held into the 1990s. Priority was also given to developing primary infrastructure. The number of birth spacing and mother and child protection (EN/PMI) centres went from 260 in 1980 to 340 in 1983, 1,955 in 1988 and 2,500 in 1994. Contraceptives were made available free of charge. In 1985, the programme was supported by an initial national awareness campaign (16-22 February), presenting clear messages in favour of family planning through lecture-discussions, posters, films, brochures, calendars, stickers and commercials (Oussedik *et al.*, 1988). However, this publicity campaign does not seem to have got through. It was quickly dropped.

In the late 1980s, the PNMCD was subjected to an assessment. Its record was not considered to be satisfactory. In addition to problems with contraceptive supply due to stock-outs, other difficulties in management, information and awareness were reported. The effectiveness of the policy was challenged (Hadjidj and Khodja, 1988; Paulet, 1994; Mokkadem and Bouisri, 1998; Benkhelil, 1999; Boumghar, 1998). Steps to strengthen the policy were taken in the early 1990s: in 1991, midwives were authorised to prescribe contraceptive products and methods. In addition, following the Cairo Conference in 1994, population policy was intended to include the notion of reproductive health, a new concept based on international recommendations (Mokkadem and Bouisri,

1998) and, in 1995, a national committee for reproductive health and family planning was set up¹⁹.

To no avail; with a few years the assessment was even more severe: it all had to be totally revised. “Services were better structured under the birth spacing policy. Once a population policy was adopted, grassroots work became less effective” (Belkhodja, quoted by Kouaouci, 1996).

In 1995, an attempt was made to boost the PNMCD. Its national character was reasserted: central government provided its organisation, regulation and funding. The principle of voluntary adoption of family planning was preserved. Emphasis was placed on improving access to family planning services integrated with reproductive health and reducing the cultural and social obstacles preventing the adoption of family planning. To meet these objectives, the population directorate established in 1994 within the ministry of health and population was strengthened by setting up a national population committee in 1996 (MSP, 2000). The creation in 1995 of the *Pharmacie centrale des hôpitaux*²⁰ (PCH) was designed to secure the public sector’s supply of medical products including contraceptives. Funding for contraceptives, previously supplied from the social security budget and then from planned grants, was transferred in 1996 to the healthcare sectors, allocated specific budgets for purchases from the PCH. An overall budget of 161 million dinars was allocated in the 1996 finance law, and an exemption from tax and duty for oral contraceptives in order to lower their cost (MSP, 1998).

In 1997, the government decided to reorient the programme. Population policy was now to be part of a multi-sector approach within a strategy for comprehensive sustainable development. Certain fields were added to fertility and mortality (internal migration, urbanisation and spatial planning, protection of the environment, promotion of women, youth issues, protection of the elderly, preservation of the family, poverty reduction). The action programme now had three basic strands: development of family planning, intensification of communication action, improvements to capabilities for the collection and analysis of demographic data.

2. The accelerating fall in births had little to do with the program of family planning

Despite the severe assessments made of the PNMCD, its introduction was followed almost immediately by a sharp acceleration in the fall in fertility. TFR fell from 6.2 children per woman in 1985 to 3.5 in 1995 and 2.2 as early as

¹⁹ Ministry of Public Health decree n° 121 of 21 November 1995.

²⁰ Central hospital pharmacy.

2000-2001, a fall of 60% in 15 years (Figure 1 and Table 1). Actually neither the authorities nor researchers attribute most of this fall to the PNMCD. The programme certainly helped to spread the use of contraception from 25% among married women of childbearing age in 1984 to 57% in 1995. But this figure levelled out at roughly 60% (Table 2) and, not least, the accelerating fall in fertility was only partly due to marital fertility control because age at marriage continued to rise and probably counted at least as much if not more.

Table 2. Contraceptive prevalence rate (%) 1968-2002 by method used

	1968	1984	1986	1992	1995	2000	2002	2006
Use some method	8	25	36	50.7	56.9	64.3*	57	61.4
Modern, of which			31.5	42.9	49	50.1	51.8	52.0
<i>Pill</i>			26.8	38.7	43.2	44.3	46.8	45.9
<i>IUD</i>			2.1	2.4	4.1	4.3	3.1	2.3
Traditional	8		4.5	9.7	7.5	13.9	5	9.4
Use no method	92	75	64	49.3	43.1	35.7	43	38.6

Sources: CAP 1968, MOD 1984, ENAF 1986, PAPCHILD 1992, MDG 1995 and EDG 2000 and PAPFAM 2002, MICS3, 2006.

* The health ministry's 2000 survey probably overestimated total contraceptive use by overestimating the use of traditional methods, where the prevalence rate doubled from the 1995 figure and fell even more sharply in the 2002 survey.

The rise in the marriage age even accelerated in the 1980s and 1990s, from 23.7 in the mid-1970s to 30.5 in the late 1990s (Table 3 and Figure 2), an increase of nearly 7 years in 24 years, whereas from the mid-1950s to the mid-1970s the rise was only 4 years in 20. Figure 2B clearly shows that it was in 1987-1998 that the proportion of unmarried women by age group rose most sharply.

Table 3. Mean age at first marriage of women from 1930s to 2000s

Date of calculation	Mid-point of reference period	Mean age	Source	Method	Reference
1948	1934.5	20.0	1948 census	Hajnal	SDS, 1968
1954	1940.5	19.4	1954 census	Hajnal	SDS, 1968
1966	1952.5	18.4	1966 census	Hajnal	Vallin, 1973
1969	1955.5	19.3	ENSP-1969-71	Hajnal	CNRES, 1974a
1977	1963.5	21.0	1977 census	Hajnal	Ouadah-Bedidi 2004,
1987	1973.5	23.7	1987 census	Hajnal	ONS, 1989
1992	1978.5	25.9	Papchild 1992	Hajnal	MSP <i>et al.</i> , 1994

1998	1984.5	27.5	1998 census	Hajnal	Ouadah-Bedidi 2004
2002	1988.5	29.5	Papfam 2002	Hajnal	MSP <i>et al.</i> , 2004a
2006	1992.5	29.7	MICS3 2006	Hajnal	MSP <i>et al.</i> , 2008
2008	1994.5	29.1	2008 census	Hajnal	Ouadah <i>et al.</i> , 2012
1998	1997.5	30.5	1998 census	Period first marriage probabilities	Authors' calculations
2002	2001	29.4	Papfam 2002	Period first marriage probabilities	Authors' calculations

Contraception accounted for much of this fertility control. It largely contributed to bringing TFR down to near the replacement rate by the turn of the century. With no contraception, this would have required a much greater rise in marriage age than what actually happened, which itself would have been unimaginable twenty years earlier. From 1981-85 to 2000-2001 (Table 1), marital fertility fell 35% and that was most certainly mainly due to contraception. But general fertility fell nearly 60%. The difference clearly comes from the rising age at marriage. And this difference is even more striking when one examines the fertility of young women: for example, for the 20-24 age group, general fertility fell 72% while marital fertility only fell 28% (Table 1).

The Bongaarts model (1978, 1993) summarises the situation (Table 4). In 1970, fertility in Algeria differed from theoretical maximum fertility by 25% as a result of breastfeeding alone. This gap has barely altered since then. However, the marriage age effect rose from 27% in 1970 to 32% in 1985 and 63% in 2001. The effect of contraception, only 3% in 1970, rose to 32% in 1985 and 51% in 2001. In other words, before the PNMCD, the contraception effect increased faster than the marriage effect, whereas after the PNMCD it increased less fast. In fairness, it was largely because its initial rate was so low that the contraception effect rose so fast in the earlier period, but this still puts the specific role of the PNMCD into perspective. In the end, although the effect of contraception was significantly less than that of marriage age, it did play a major part in the spectacular reduction of TFR from 8.1 to 2.2 children per woman.

Table 4. Role of contraception and marriage age as estimated by Bongaarts model

Variable	Indicator	1970	1985	1990	2001
Observed fertility (children per woman)	TFR	8.1	6.1	4.4	2.2
Effect of breastfeeding	Ci	0.75	0.73	0.77	0.77
Effect of contraception	Cc	0.97	0.68	0.56	0.49

Effect of marriage	Cm	0.73	0.68	0.53	0.37
Estimated fertility (children per women)	TFR*	8.2	5.2	3.5	2.1
Difference between estimated and observed fertility	TFR-TFR*	-.0.1	0.9	0.9	0.1
* Estimated by the model.					
Source: Ouadah-Bedidi, 2004					

However, it would be unwise to attribute the increasing use of contraception to the PNMCD alone. The programme admittedly encouraged it by providing unrestricted access free of charge to modern contraceptives (mainly the pill) for the entire population but women and couples had also to intend to practise contraception. It was obviously not the brief awareness campaign in 1996, so rapidly ended, that could have made such a change in behaviour and attitudes. The change was due much more generally to the profound transformation of Algerian society brought about by three major and closely inter-connected phenomena: the development of education, particularly for women, access for women to the market for gainful employment and urbanisation. These are standard features of demographic transition (Joshi and David, 2002) and fertility theories (de Bruijn, 2002), but particularly true for developing countries, especially Algeria (Ouadah-Bedidi, 2004, Ouadah-Bedidi and Vallin, 2006). These powerful factors in modernising demographic behaviour would most likely have caused Algerian women to limit their childbearing even without the PNMCD, just as they had begun to do before the programme was introduced. This can be seen, for example, in the even sharper fall in fertility in Libya over the same period in the complete absence of any government action in favour of family planning (Ouadah and Vallin, 2012). Furthermore, Algeria, like many developing countries, underwent the severe effects of the economic and social crisis of the 1980s, exacerbated by the civil war of the 1990s. The crisis Malthusianism (Lesthaeghe, 1989) combined its effects with those of the preceding development (Ouadah-Bedidi, 2004).

So there is not necessarily a contradiction between the severe judgement made of the PNMCD in the mid-1990s and the real acceleration in the fall in fertility. What is more surprising is that in the early years after 2000 the Algerian authorities continued to consider that fertility was too high and call for a further decline in TFR when that figure had reached the strict generation replacement rate by 2001.

III. Fertility has been rising again for ten years despite reinforced family planning policy

As irony would have it, of the two quantitative objectives set when policy changed in 1995 (2.5 children per woman by 2005, and 2.1 by 2010), the first was achieved shortly after 1997, a year for which the 1998 census gave 2.7, and the second was nearly achieved almost ten years ahead of time as the new century began, since the 2002 Algerian family health survey reported 2.2 children per woman in 2001 (Table 1 and Figure 1). Despite this success, in 2001 the Algerian authorities still considered that fertility was too high and was an obstacle to development, nor indeed have they changed their view since then (Table 5).

Table 5. Official government positions and population policies, 1976-2006

	1976	1986	1996	2001	2005	2009
Growth and fertility indicators						
Natural growth rate	3.1	2.7	1.7	1.5	1.7	2.0
Total fertility rate	7.3	5.4	3.1	2.2	2.3	2.8
Official government position						
Population growth	Satisfactory	Too high	Too high	Too high	Too high	Too high
Fertility	Satisfactory	Too high	Too high	Too high	Too high	Too high
Policy applied						
Population growth	No action	Reduce	Reduce	Reduce	Reduce	Reduce
Fertility	No action	Reduce	Reduce	Reduce	Reduce	Reduce
Support for contraception	Direct support	Direct support	Direct support	Direct support	Direct support	Direct support

Sources: United Nations, 2001, 2006 and 2010

In the first decade of the century, therefore, further steps were taken to reinforce the family planning program. In 2011, the organisation chart of the Ministry of Health and Population was revised and a report on the demographic situation and trends for 2010 was submitted to the Council of Ministers on the basis of the 1998 census results. To allow for the regional variations observed, a readjustment of the population policy's strategies and objectives had become necessary. A process of devolution of national population programmes to local level was started. Population Committees were formed in each *wilaya*²¹ with the mission of helping implement national population policy in the *wilaya* according to nationally set objectives and local conditions (MSP, 2003).

²¹ Executive decree n°02-312 of 2 October 2002.

It may well be that at that time the Algerian authorities' perception of fertility trends was influenced more by indicators like the birth rate or even the natural growth rate than by TFR. The growth rate is clearly the figure to consider at a given point in time to assess the problems that population growth may pose for economic development policies. But this figure does not reflect fertility alone, since it is the difference between the gross birth and death rates, and even the birth rate does not necessarily shadow fertility variations because of the time required for the population's age structure and consequently the proportion of women of childbearing age to adapt to the new pattern of fertility they have adopted.

It is true that with 1.5% annual growth the population is likely to double in 47 years. But for that, the rate must persist for at least 47 years... A hypothesis that no demographer would reasonably have bet on in 2001 (Ouadah and Vallin, 2000). On the contrary, a continued fall in fertility below the replacement rate was much more likely and consequently a slowdown in population growth. This was all the more likely because that was then happening in all the developing countries that had already reached replacement rate after a rapid fall in fertility. As early as the mid-1990s, for example, Thailand was down to 1.8 children per woman, Cuba and Singapore to 1.6, South Korea to 1.5, while Hong Kong at 0.8 had even exceeded the one-child objective of Communist China. And in all these countries, except for the extreme case of Hong Kong, fertility has continued to fall, while other countries in the global South have seen fertility fall below 2.1: Iran, United Arab Emirates, Lebanon, Chile, Brazil, Vietnam and finally China itself. So why should not Algeria? Especially if its government continued to encourage family planning.

Against all expectations, the reverse happened. Not only did Algerian fertility stop falling once it reached replacement rate but has continued to rise since (Figure 1): 2.3 children per woman in 2005²², 2.8 in 2007-2008²³, and even 2.9 in 2010²⁴. The least that can be said is that this is yet another reason to reconsider the ability of the PNMCD to have any great effect on fertility trends. But what can explain this unexpected reversal?

Admittedly, as stated above, it appears that since 1995 the contraceptive prevalence rate has stuck at about 60%, and, even more, modern contraceptive practice barely exceeds 50% (Table 2). That might explain why the fall in fertility has ceased, if at the same time mean age at first marriage had also stopped rising. Until the late 1990s, that did not happen (Figure 2A) and so TFR

²² Based on 2006 MICS-3 survey (MSP *et al.*, 2008).

²³ Based on 2008 census (ONS, 2011b).

²⁴ Based on an estimate of the national statistics office (ONS, 2011a).

continued to fall, from 3.6 children per woman in 1995 to 2.2 in 2001²⁵. But from the 2002 Papfam survey individual data we have been able to calculate, as from the 1998 census, the period mean marriage age for the previous year and between these two observations the mean marriage age actually fell more than a year from 30.5 to 29.4 (Figure 2A). Unfortunately, the comparison of two figures taken from the data of two quite different operations (a census and a demographic survey) may lead to a large margin of error. However, the comprehensive data on weddings provided by civil registration do support it, since the annual crude marriage rate (all ages) nearly doubled from 2000 to 2010, which could hardly occur without lowering the marriage age. We must await more detailed findings from the MICS-3 survey for full confirmation and to see how far the new trend is holding up. At all events, this sudden reversal in marriage practices may be the prime cause of the rising fertility observed since 2001. It might even explain it entirely.

But the hypothesis cannot be excluded of increased marital fertility due to lower use of contraception. The 2006 MICS-3 survey shows no sign of this (Table 3), but most of the rise occurred after 2006. We need therefore to wait for the results of the current MICS-4. If this hypothesis does not hold and the lower marriage age is the only factor, then the recent rise in fertility might well only be temporary and the fall will resume when the marriage age stabilises.

It is instructive to note that this recent rise in fertility happened first in cities and the trend in rural areas was later and less marked, so that in 2007 fertility was for the first time higher in rural than in urban areas. Similarly, the rise occurred first among more educated women and only later among the illiterate. The same social classes that once pioneered lower fertility are now leading the upward trend.

Conclusion

After long rejecting any idea of any birth control policy at a time when fertility was extremely high and excessive population growth was raising serious problems for economic and social development, the Algerian government finally decided in 1983 to establish a national programme to control population growth (PNMCD), when fertility had for some time begun to fall. This fall reached replacement level as the 21st century opened, yet, strangely, the government continued to assert the necessity of pursuing its birth control policy, even as fertility risked falling, as in other countries, below replacement level. Ironically, not only did fertility stop falling but it rose again sharply.

²⁵ Based on 2002 Papfam survey (MSP *et al.*, 2004a)

This story of mismatched correlation between fertility transition and the measures taken by the Algerian government obviously casts doubt on the ability of family planning program to have a decisive impact on reproductive behaviour: fertility may fall in spite of a government hostile to family planning; the adoption of a programme does not necessarily drive a fall in fertility and its continuation does not necessarily prevent a further rise.

In fact this merely confirms what was already known: family planning policies are in no way the key for lowering fertility in those countries where it is considered to be too high (Vallin and Locoh, 2001; Vallin, 2011). They have only ever accompanied basic changes in attitudes, at best anticipating them slightly but mainly by providing some support for changes in behaviour. The basic causes of changes in fertility, whether upwards or downwards, are to be found elsewhere, in economic, social and cultural transformations in society. Consequently, the effectiveness of family planning programs depends closely on those policies directed at encouraging other social changes favourable to controlling fertility: improvements in health, development of education, improved status for women, women's access to gainful employment and economic and social responsibility, etc.

Clearly this does not mean that family planning programmes are pointless. Far be it from us to consider that the Algerian government should have refrained from establishing the PNMCD; rather they should have done it earlier. They did at least liberalise and facilitate access to modern contraception, providing moral and material support to couples who wanted to limit the number of their children. We would only emphasise that the programme would have made no sense nor probably have had any effect if it had not been part of developments that were already favourable to fertility due to changes in society and mentalities, largely as a result of the economic, health, welfare and cultural policies undertaken by the government.

Note too that in the particular case of Algeria, the fall in fertility was largely due to a rise in the marriage age that was not openly encouraged by any policy. At present young adults, especially young women, pay the price for this. Rather than changes in fertility, is not the major question for policy-makers now more the unhappy lives of young adults? The young are the ones who have to cope with the main consequences of the demographic upheavals Algeria has undergone in the past forty years. Not only are they hit by the full force of unemployment and the housing shortage, but, unable to marry, they are suffocated by the social norms and taboos that forbid any sexual relations outside marriage. Of course, this taboo is often evaded. But at what personal and social cost?

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