UNIVERSITY OF SOUTHAMPTON

Sustaining Fertility Control In Tunisia While Addressing Emerging Reproductive Health Needs: A Comparison With Algeria

By

Kamel Esseghairi

Master of Philosophy

Department of Social Statistics

Faculty of Social Sciences

June 2003

CONTENTS

LIST OF TABLES

Acknowledgments

I would like to express my sincere thanks and my utmost gratitude to Andrew Hinde (Andy) for supervising me and allowing me to carry on working on my thesis when I was almost going to give up.

I would also like to thank John MacDonald for his kindness.

This research would not have been possible without the help and the full support of the British Council. I would like to express my thanks and my gratitude to Sandra Bance and John MacKenzie.

To three nice little lovely brave British "*Mousquetaires*" and to their great parents, with friendship.

I would like to thank my wife and my two daughters for their continued support throughout my studies.

Finally, I express here my eternal love to my late mother and my great father, first foremost and indisputable teachers throughout all my live.

To her sweet memories.

To his unshakable commitment.

Chapter I

Introduction

I.1 Rationale

During the last decade, the Tunisian family planning and reproductive health (FP/RH) policy and programme (TNFPP) is in a stage of both suspension and pause. All of its original raisons d'être and landmarks have changed:

- Tunisian married couples do not want than more than two children on average;
- Tunisian women are as emancipated as European women;
- Tunisian women, not to mention men, marry very late (very often after 30) or not at all;
- Sexuality is practiced at much earlier ages, and – more decisively, outside wedlock;
- Fertility is declining and contraceptive prevalence is climbing;
- Contraceptive use among the elite and the educated is more of an individual decision than of a simple matter of compliance with the offered governmental birth control methods;
- With the rise of contraceptive use (60% according to international sources, 70% according to Tunisian officials) emerges the importance of length of protection and efficacy;

These dramatic changes in social behaviour and family building are the outcome of several factors: a cultural "earthquake" that is happening as a result of globalisation of communication, media and telecommunications; economic stress; unemployment among the 25-30 year old new graduates and an impressive amount of individual ambition and aspiration for a quick betterment not matched with the prospects offered by the Tunisian employment market. Tunisia is still a developing country while Tunisians, relatively highly educated, can not help acting as citizens of a developed economy.

This ambiguous Tunisian reality is reflected in all segments of the public and private sectors. The TNFPP is equally affected by this whole "Tunisian" stalled situation.

The "National Report on Population 94-98" is a merely a listing of statistics and statement gathered from a dozen of governmental institutions. It does not reflect the current situation of FP/RH in Tunisia and it does not address in any effective manner the current FP/RH service needs and the future evolving ones.

The current and future FP/RH situations in Tunisia are the outcomes of several type of transitions: some have just ended, others have been evolving and new ones have just been ignited. This situation deserves to be investigated in scientific, comprehensive and non-partisan manner.

The starting point of this investigation was an attempt to answer two issues addressed by Lee (1998):

- Do FP programmes succeed when people want to limit family size and formulate the demand of contraceptive means to achieve this? (Hernandez, 1984; Pritchett, 1994).
- Do FP programmes succeed because the FP services offered stimulate the demand of FP services which, in turn, leads to fertility control and reduction? (Mauldin and Rose, 1991).

The author of the thesis dares answering a straight "Yes" to both. The reason is that certain Tunisians were prepared to formulate the demands of FP services, and, many others were prepared to react positively to the provision of FP services. In fact, it is the attempt to reach a scientific explanation of these intuitive two "Yes" which constitutes the essence of our investigation, which, has a wider scope and deeper purpose than the demographic ones posed by Lee (1998).

The findings might be used and applied in other fields, they could also be relevant to neighbouring countries. Lee (1998) compared FP policies and programmes in Tunisia with Algeria. The comparison with Algeria is useful in the following respects:

- A comparison is instructive as it studies similarities and differences. Despite apparent similarities, the two countries have major differences which, by far, outweigh these similarities and better explain the FP/RH policy and programme outcome performance in each.
- A good achievement in one country would be expected to happen in the other one if the conditions of a replication are possible.

Lee chose the pair Tunisia/Algeria on the basis of several similarities, and, one striking difference: Tunisia has had much stronger population policies and FP programme than Algeria. In fact, there are rather fundamental differences in what she claims to be similarities. Besides, Lee's work has focused, like most previous demographers' work, on purely theoretical assumption departing from the fact that political developments and social and economic change and culture are held constant for the two countries. The author of this thesis believes that, for the pair Tunisia/Algeria, even if culture can be assumed to be constant to a certain extent, political developments and social and economic change are not. Political developments influence population policy and FP programme implementation. Social and economic change influence FP programmes and also directly affect fertility.

If Tunisia and Algeria are geographically neighbouring countries and if the two share historical links with France, these facts are of minimal impact on their population policies and FP programme for chronological and contextual reasons. The independence period (1956-1962) coincides with the launching and the spread of the anti-natalistic movement lead by American foundations and propaganda. Therefore what happen immediately at and after the independence in the two countries is of paramount importance compared with centuries of

"common Arab-Islamic background". While in Tunisia, a civilian, republican, tolerant and openly pro-western regime was leading the country, Algeria was run by a military, anti-western, pro-pan Arab regime. This single difference has created a series of conditions which contribute to explain most of the differences between the FP/RH situations in Tunisia and Algeria. A great reforming current appeared in Tunisia in favour of women emancipation in the 19th century, culminating in the 1920-30s with the publications of two essays of Haddad (1899-1935): women's rights defender, reformer and innovator. This never happened in Algeria and it is not expected to happen in the near future. If he was the first pro-women's rights movement advocator, the eventual implementer was President Habib Bourguiba. A daring, secular and manipulative leader, Bourguiba used the women issue to secure the country from disturbances from neighbouring conservative regimes by nurturing international support, especially from the capitalist West. He promulgated the well-known Code of Personal Status (CPS) on August the 13th 1956, 18 days after Independence. The CPS was a societal reform consisting of a series of laws and procedures aiming at the implementation in Tunisia of a gender equal-opportunity system. The CPS had a positive effect on the couple's sexual life, abolishing polygamy, and punishing marriage outside the legal forms, a practice, which was widespread in Tunisia before its enactment.

This most paramount Tunisian distinction has been totally absent from Lee's comparison. Another issue, far from being trivial, has also been totally absent from the Lee's analysis of fertility change: the changing context of age of marriage.

Unlike in the West where marriage is not necessarily the precursor of childbearing, any change in nuptiality would influence the fertility of women, as procreation is almost entirely within marriage in Algeria and Tunisia. Therefore, it is important to inquire whether the age at marriage is continuing to increase. As a result of the changes in nuptiality, the proportion

of unmarried youth continues to rise. Changing sexual behaviour and unwanted pregnancies of the unwed are emerging policy concerns in Tunisia.

Even though no direct information is available on the topic, the number of unwanted new-borns left in delivery hospitals is consistently raising.

In sum, therefore, the objectives of this thesis are:

1. To understand the interaction of different factors, which led to the current reproductive health and demographic situations in Algeria and Tunisia.
2. To analyse the success of the family planning programmes in Tunisia and Algeria in respect of contraceptive prevalence and discontinuation rates.
3. To understand and compare the factors which are associated with contraceptive prevalence and discontinuation in the two countries, and to assess the consequences of contraceptive failure.
4. To review emerging issues in reproductive health in the two countries, and to suggest how to address them.

I.2 Plan of the thesis

The first part of the thesis consists of a thorough study of the history and evolution of population policy, demographic indicator and FP/RH activities in Tunisia and Algeria.

Chapter II

Will address RH/FP in Tunisia. It will consist of a review of: the demographic background; the Tunisian National Family Planning Programme (TNFPP); contraceptive prevalence; reproductive health with emphasis on Tunisia's distinctive contraceptive method mix and its RH implications; and the current emerging issues.

Chapter III

Will address the same issues as in Chapter II but for Algeria. A comparative approach will be followed to point to existing differences and similarities between the two countries.

Chapter IV

This chapter is an introduction to the DHS and PAPCHILD data and the methods that will be use to analyse contraceptive use prevalence and failure. It describes the surveys and their limitations. In particular, it will provide the evidence about the defects of the Tunisian PAPCHILD. A discussion of what data are available on abortion will be included.

Chapter V

It contains the quantitative analysis of contraceptive prevalence and discontinuation in both Tunisia and Algeria. It will then address the consequences of contraceptive failure in both countries. Results will be drawn together for the two countries and then compared.

Chapter VI

It is a thorough study of emerging issues in reproductive health in Tunisia and Algeria: sexuality and reproductive health among the unmarried; adolescence and girl adolescents; abortion; gender issues; institutional issues;

Chapter VII

It is the concluding Chapter.

Chapter II

Reproductive Health and Family Planning in Tunisia

II.1 Introduction

II.1.1 Outline of chapter

This chapter consists of a thorough study of the history and the evolution of the Tunisian family planning programme.

After a review of the demographic background (from programme inception until 2001), we will address in-depth the Tunisian National Family Planning Programme (TNFPP).

First will be presented a comprehensive account of the history of the TNFPP starting by its antecedents and emphasising the determinant role of Bourguiba in implementing the Code of Personal Status, the keystone of TNFPP. Second, we will present the trends over time of contraceptive prevalence in Tunisia starting by its history, followed by the study the differentials in contraceptive prevalence. Third, we will give an account of the reproductive health situation in Tunisia starting by those classical aspects related to Tunisia's distinctive contraceptive method mix and its reproductive health implications. Finally, we will address the emerging issues by stressing that reproductive health is becoming a much broader issue than just a matter of family planning.

II.1.2 Tunisia

a. Introduction

Tunisia is a republic of North Africa, located on the northernmost point of the African continent only 85 miles across the Mediterranean Sea from Sicily, Italy. Tunisia is bounded on the north and the east by the Mediterranean Sea (the total coastline is about 1200 km or 750 miles), on the south by Libya, and the west by Algeria. The desert makes up about half of Tunisia's 63,200 square miles. Its capital and main port is Tunis.

b. A brief history

In the earliest known period of its history, the region now called Tunisia was part of the Carthaginian Empire. Phoenician traders founded the city of Carthage in 814 BC. Beginning in 264 BC Carthage clashed with the expanding Roman Empire in a series of bloody struggles known as the Punic Wars. Rome defeated the Carthaginians and completely destroyed their capital in 146 BC.

After a century of Vandal rule, from about 430 to 534 AD, the region was reconquered for Rome by the Byzantine. The region was overrun by Arab adherents of Islam in the seventh century. In 1881, a French army entered Tunisia from Algeria and made of it a French protectorate. In March 1956, a protocol was signed in Paris which recognized Tunisia as a completely sovereign monarchy On 25 July 1957, the National Assembly proclaimed Tunisia a republic, and Habib Bourguiba its first president. He remained in office until 7 November 1987 when he was declared by seven of his treating doctors to be unfit to govern, owing to senility and ill health. The prime minister Zine El-Abidine Ben Ali was sworn as president. He is still in office.

c. Economic and social background

Tunisia, an Arab and Muslim Third World country, has an estimated population of 9.3 million people (UNFPA 1997). It is divided into six main regions: Grand Tunis, the North East, the North West, the Centre, the Sahel, and the South. A rough distinction can be made between the coastal parts of these regions which constitute the wealthy, modern and westernised Tunisia, and the remaining remote rural areas, which can be referred to as "the other Tunisia". The coastal parts rely on tourism and industry and the "the other" is mostly reliant upon agriculture.

Tourists visit Tunisia to enjoy the warm climate, beautiful beaches, and historic sites as well as the mirages of Chott el Djerid. Many Roman ruins remain and artifacts are preserved in local museums. Tourism is the main source of hard currency.

Prior to 1881, Tunisia's only educational institutions were small, Moslem schools that exclusively taught Islamic subjects. The arrival of the French brought a better form of education. Two school systems were created one for French children modelled on schools in the homeland and one for Arab children with a similar curriculum, which served few students (Russof, 1986; Harris, 1990)

The literacy rate, defined as those people aged 10 or older who can read and write, was 15% in 1956, 32% in 1966, 45% in 1975, 53% in 1980 and 70% in 1989 (Institut National des Statistiques, 1984, 1989). In 1997, the percentage illiterate among those aged over 15 is 21 for men and 45 for women (UNFPA, 1997).

II.1.3 Demographic Background

Official figures indicate that the total population of Tunisia was 2.1 million in 1926, 2.6 million in 1936, 3.1 million in 1946 and 3.8 million in 1956. Table 2.1, which reports the main demographic indicators, documents the demographic evolution in Tunisia between 1966 and 2000.

Table 2.1 Main Demographic Indicators, Tunisia, 1966 to 2001

YEARS	1966	1975	1984	1989	1994	2001
Population (Millions)	4.58	5.61	7.03	7.91	8.78	9.72
% urban	*40.0*	*47.5*	*52.8*	*59.2*	*60.4*	*62.2*
% aged 0-14 years	*46.5*	*43.8*	*39.6*	*37.9*	*34.9*	*30.0*
% aged over 64 years	*3.60*	*3.5*	*4.3*	*4.9*	*5.4*	*6.1*
Women 15-49 years (Millions)	1.07	1.35	1.87	2.04	2.25	2.48
Crude birth rate (per 1,000)	45.1	36.5	32.1	25.2	22.7	19.2
Crude death rate (per 1,000)	15.0	10.0	6.5	6.0	5.22	6.1
Total fertility rate *	7.2	5.8	4.7	3.5	2.9	2.3

Sources: Office National de la Famille et de la Population, 1982; 1985a; 1985b; 1989a; 1989b; Institut National de la Statistique (INS), 1966-2000; Les Annuaires Statistiques, 1966-2000, Population Reference Bureau, 2001).

* Total Fertility Rate: number of alive births which would be born to a fertile woman during her reproductive years assuming ASFRs remained constant at that year's values.

According to the Population Reference Bureau (1992) the mid-1992 population was about 8.6 million. The population is growing rapidly despite the government's FP programme and the availability of modern methods of birth control. The mid-2001 population has reached 9.7 million and it is projected to reach 12.5 million in 2025 and 14.2 million in 2050 (Population Reference Bureau, 2001).

II.2 The Tunisian National Family Planning Programme (TNFPP)

II.2.1 Antecedents

As astonishing as it may seem, the Tunisian women emancipation and empowerment movement was advocated for and implemented by two men: Haddad and Bourguiba.

Tahar Haddad (1899-1935) was a peaceful freedom advocate who believed strictly in absolute rightness, especially in relation to worker rights and women emancipation and empowerment. Two personal commitments about which he wrote two books which still remain among the major references (Haddad, 1927, 1930; Bousnina, 1981; Bouthina, 1995).

Habib Bourguiba (1903-2000), first president of Tunisia (1957-1987). He was educated at the University of Paris. In 1934 he was a leader in the formation of the Neo-Destour (New Constitution) Party, which advocated the political independence of Tunisia from France. The party was outlawed by the French government, and Bourguiba was imprisoned until 1936. He was jailed again in 1938 for his political activities, was released in 1942, and continued to work for Tunisian independence after World War II (1939-1945). Arrested once more in 1952, he was by turns kept under surveillance and in prison until 1955. He was made premier of Tunisia in 1956, when the country became autonomous, and elected president in 1957, when Tunisia became a republic. At the Ninth National Congress of his party in September 1974, Bourguiba was proclaimed its president for life. The following March the National Assembly also unanimously voted him president of the republic for life.

Politician and visionary, Bourguiba was a shrewd leader who was able to understand and judge most of the conflicting situations in North Africa and the Middle East. The women "dossier" was one of his most risk-taking and winning cards. He dared putting in practice what Haddad called for, but he has recuperated all the merits. If the first pro-women's rights movement advocate was Haddad in the 1920s, Bourguiba certainly was and still remains (through his achievements) the main instigator and architect. First and only leader in the Islamic World, he promulgated the Code of Personal Status (CPS). This he did on 13 August 1956, 18 days after the Independence of the country and in the midst of a period of turmoil in the post colonial North African and Middle East world and a year before declaring himself all powerful Premier of Tunisia.

The CPS was not merely a set of laws and legislation, it was a full scale societal reform. Bourguiba set up a system aiming at gender equality and equal-opportunity. The implementation went hand in hand with the promulgation of the CPS and 13 August 1956 was celebrated as the first Woman's Day. He imposed on fathers equal access to education, to job opportunities, to career building and enhancement for their daughters. From 13 August 1956 onwards the individual integrity and human dignity of women were restored, through measures calling for the following:

- Abolition of polygamy -with no exceptions and full enforcement- (non compliance with which entails penal sanctions).
- Institution of legal divorce, prohibition of repudiation, and the granting to both spouses the right to divorce. When divorced, the woman has the right to keep the children to continue bringing them up.
- Marriage is subject to the woman's consent.
- Minimum age of marriage for women is 17 years.
- Minimum age of marriage for men is 18 years.

- Guaranteeing of the right of guardianship of minor children to the mother, in the event of the father's death.

- With respect to inheritance, instituting obligatory legacy in favour of a daughter's children, should the daughter predecease her father.

II.2.1 History of the TNFPP

To the best of my knowledge there is no published history of the Tunisian national FP programme (TNFPP) except the official reports of the Tunisian national government agency for FP (Boukhris, 1991; Gueddana, 1994; ONFP, 1982, 1985, 1989, 1990, 1995, 1996, 1998). The following section is an attempt to synthesize these reports and the work of many others on TNFPP (The Population Council, 1963; Marcoux, (1975); Mauldin, (1975); Lecomte and Marcoux, (1976); Population Reference Bureau (1976); Brown, 1981; Deschampheleire, 1981, 1981a, 1981b, 1982; Russof, 1986; Coeytaux et al, 1987, 1989; Ayed et al, 1991; Ifaoui, 1992; Obermeyer, 1994, 1996).

During the last three decades, Tunisia has mounted one of Africa's most comprehensive population and FP programmes, which has grown from a limited pilot project to a nationwide Government programme.

In June 1962 representatives of the Ford Foundation and the Population Council reviewed the situation with regard to FP in Tunisia. In the autumn of 1963, a mission of Tunisian representatives went to the United States and certain Asian countries in order to observe activities related to FP and consult with appropriate experts. The mission consisted of an obstetrcian- gynecologist, a pediatrician, a midwife, a social worker, and the Under-secretary for Medicine in the Secretariat for Public Health and Social Affairs. These five highly-placed officers were to carry responsibility for the programme upon their return. The mission lasted six weeks and had three major purposes. First, to observe medical and clinical aspects of FP (the team visited health centers and university laboratories in which work was going forward

on modern contraceptive methods, including both the oral pill and the newly developed IUD); second, to observe a few FP programmes in action and talk with people experienced in this field; and, third, to talk generally about FP problems and programmes with specialists in the USA, at the Population Council and elsewhere. As a result of the mission, it was hoped that a firm background would be laid for subsequent developments in Tunisia and that a six-week review of the field in this way would bring the responsible Tunisian medical officers reasonably up to date on current developments in many parts of the world.

Some time after the return of the mission, a seminar of about four weeks' duration was held in Tunis for the 25 or 30 leading people who where to be involved in the TNFPP. This seminar considered two major topics. The first was medical, and consisted of training on modern contraceptive methods and their medical implications. In addition to conducting the seminar itself, the leaders met with representatives of the medical community, with leading obstetricians in the country, and with leaders of the women's movement and others who where to be brought into the programme at this phase, in order to develop understanding and support. The second topic of the seminar dealt with the social and demographic aspects of FP, and a similar programme of meetings was arranged in this regard (Population Council, 1963).

The TNFPP has grown from a pilot project during 1964 to a nationwide programme offering free FP services through some 2,000 Government and private health clinics and additional mobile units.

Since 1964, the programme has undergone a number of changes and reorganizations, including extension to a nationwide programme in 1968-69 under the responsibility of Direction du Planning Familial Ministère de la Santé Publique (1968), then Institut National de Planning Familial et de la Protection Maternelle et Infantile Ministère de la Santé Publique (1971). In 1973 the TNFPP gave its name to the newly created agency, L'Office National du Planning Familial et de la Population, a semi autonomous government agency under the

authority of the Ministry of Health. A further change was the decision in November 1974 to rely more heavily on midwives in carrying out fieldwork. In 1984 the agency name was changed to Office National de la Famille et de la Population (ONFP).

The primary responsibilities of ONFP are to promote population policies and standards of service; to develop adequate training programmes; and to provide central support for health and FP education, communications, research and evaluation, and certain administrative services.

Since the programme's extension nationwide, the number of new acceptors of contraception has risen five times during the 20 year from 1968 to 2000. Table 2.2 documents not only the overall increase in use, but also the changes that have been occurring in the method mix among new acceptors since 1968. The cumulative total has been estimated at 2,434,827 new acceptors during the 30 years from 1968 to 1997 (ONFP, 1992, 1998).

Current programme goals are to integrate fully all FP services into primary health care services and to concentrate most efforts, services and investments on rural and remote parts of the country where we observe unacceptably high levels of fertility, and of contraceptive failure and discontinuation, alongside unacceptably low levels of contraceptive use. The long-term objective was to reduce population growth from the current level of 1.8% per year (UNFPA, 1997) to 1% per year by the year 2001. In pursuit of these objectives, the Government has passed some milestone legislation aimed at encouraging smaller families.

Tunisia was, for instance, the first Moslem nation to legalize abortion (on request during the first 12 weeks of gestation). All FP services are free including abortion and Female Sterilisation. Since 1956 the Government also has outlawed polygamy, raised the legal marriage age to 17 years for women and 20 years for men, limited child support payments to a family's first four then three children, and legalized the import, sale, and advertising of

contraceptives. In 1975 the legal requirement for prescriptions for low-dosage oral contraceptives was lifted.

Table 2.2 Distribution of the Number of New Acceptors by Method Supplied by the National Agency for Family Planning, Tunisia, 1968 to 2000.

YEARS	IUD	Pill	Condom	Local Methods *	Female Sterilisation	Induced Abortion
1968	9304	4780	----------	----------	1627	2246
1973	16790	11194	8407	4237	4964	6547
1978	26273	27017	12304	4674	8832	20999
1983	43234	18073	7842	8285	9319	20347
1988	67958	28731	15196	13542	13043	23348
1990	66670	27168	19187	15330	8683	20539
1991	68767	26597	19168	8272	8767	20701
1992	69911	31265	20689	14767	7664	19748
1993	73701	31092	21338	17109	7504	19267
1994	75655	33125	25723	19492	8116	19999
1995	74309	32109	25161	17632	9124	20263
1996	74453	37552	23998	16367	9038	18961
1997	73825	39817	25190	16285	8466	17583
1999	69645	44428	23025	14567	7534	16709
2000	65259	46811	23150	15857	6448	15918

Source: ONFP Direction Générale, 1970-2001.
* Foams, spermicides, vaginal diaphragm other than CONDOM
NB: periodic abstinence is not collected by the TNFPP

In year 2001 the TNFPP is considered one of the most pre-eminent nationwide governmental programme offering mostly free FP services through some 2,000 government and 1,000 private health clinics and 50 additional mobile units. It is worth noticing the plethora of health personnel in Tunisia: 50,000 of which 6,400 physicians and 28,650 nurses and midwifes in the public sector, and, 10,000 of which 3,000 physicians and 6,000 nurses and midwifes in the private sector (Ministère de la Santé, 1998).

II.3 Contraceptive prevalence in Tunisia

II.3.1 History of Contraceptive prevalence

One of the most important determinants of fertility decline in Tunisia is the regular rise of contraceptive use as shown by the findings of the four national demographic surveys carried out by the *'Office National de la Famille et de la Population'* (ONFP) in 1978 (Tunisia World Fertility Survey (TWFS); ONFP, 1982), in 1983 (Tunisia Contraception Prevalence Survey (TCPS); ONFP, 1985), in 1988 (Tunisia Demographic and Health Survey (TDHS); ONFP, 1989) and in 1994-1995 (Tunisian Pan Arab Project for Child Development or Tunisian PAPCHILD (PAPC 95); ONFP, 1998). The following table shows the trend in contraceptive use prevalence from 1978 to 1995 drawn from these four comparable contraceptive use surveys.

Table 2.3 Percent distribution of currently married women 15-49 by contraceptive method currently used, Tunisia WFS 78, CPS 83, DHS 88 and PAPC 95

	TWFS 78	TCPS 83	TDHS 88	TPAPC 95
Any method	**31.4**	**41.1**	**49.8**	**59.7**
Any modern method	**24.8**	**34.1**	**40.4**	**49.4**
Pill	6.5	5.3	8.8	7.3
IUD	8.7	13.2	17.0	25.3
Injectables	0.1	0.4	0.8	1.3 *
Diaphragm / foam / jelly	0.7	1.5	1.0	1.3
Condom	1.2	1.3	1.3	1.6
Female sterilisation	7.5	12.5	11.5	12.6
Any traditional method	**6.6**	**6.9**	**9.4**	**10.3**
Periodic abstinence	-	-	6.3	7.3
Withdrawal	2.0	1.8	2.4	2.5
Breastfeeding	0.8	0.7	0.7	0.5
Not currently using	**68.6**	**58.9**	**50.2**	**40.3**
Total	**100**	**100**	**100**	**100**
Number of women	**3952**	**2168**	**4012**	**4157**

* Injections (1.0) + Norplant (0.3)

These contraceptive prevalence surveys (Table 2.3) document the period (1978-1995) during which a clear decision has been made to guarantee the use of efficient and sustainable contraception by relying on IUD and female sterilisation, two methods which use and efficiency depend exclusively on health professionals and not on women command, ability and aptitude.

Achieving 59.7 contraceptive use prevalence rate in 1995 suggests that we should pay more attention to the efficiency aspect of contraceptive use. To this end we will be studying contraceptive failure and therefore we will not consider birth limiters (using induced abortion, or definitive contraception such as female serialization with theoretically no failure) and will restrict our work to birth spacers (using any means of temporary contraception) who experience different failure levels.

Using results from these four surveys, Table 2.4 documents the overall increase in use and the changes that have been occurring in the method mix among birth spacers since 1978.

Table 2.4 Percent Distribution of currently Married Non Sterilized Women by Method Currently Used, Tunisia WFS 78, CPS 83, DHS 88 and PAPC 95

Survey	IUD[1]	Pill	P.Abs.[2]	Other[3]	ALL[4]	Number of Women
TWFS 78	9.4	7.0	4.2	5.2	25.8	**3656**
TCPS 83	15.1	6.0	5.1	6.5	32.7	**1897**
TDHS 88	19.2	10.0	7.1	7.0	43.3	**3551**
PAPC 95	28.9	8.4	8.4	8.2	53.9	**3633**

1-Intrauterine Device **2**-Periodic Abstinence **3**-Withdrawal, injection, condom, Norplan and Local Vaginal Methods... **4**-All Birth-Spacing Methods: Pill +1 +2 +3

Comparing the levels of use of specific methods in the PAPC with those reported in the TWFS, the TCPS and the TDHS, it is apparent that much of the recent increase in contraceptive use can be attributed to the increased adoption of the Intra-uterine device (IUD). The percentage of currently married women relying on the IUD tripled between 1978 and 1995 (from 9.4% to 28.9%) while there was a fluctuation in the percentages using the pill (7.0%, 10.0% and 8.4%; respectively in 1978, 1988 and 1995) and an interesting steady increase in the percentages using the periodic abstinence (4.2%, 5.1%, 7.1% and 8.4%;

respectively in 1978, 1983, 1988 and 1995). All other birth spacing methods (injections, vaginal methods, withdrawal, condom) account only for the remaining 5.2% in 1978 and 8.4% in 1995. The different rates of increase in the use of IUD, pill and periodic abstinence between 1978 and 1995 have produced a change in the method mix among current users (Table 2.5).

Table 2.5 Percent Distribution of currently Married Women Birth Spacers by Method Currently Used, Tunisia WFS 78, CPS 83, DHS 88 and PAPC 95

Survey	IUD[1]	Pill	P.Abs.[2]	Other[3]	Spacers as % of currently married women	Number of birth spacers
TWFS 78	36.4	27.2	16.0	20.5	25.8	**943**
TCPS 83	46.2	18.5	15.4	19.9	32.7	**620**
TDHS 88	44.4	23.0	16.5	16.1	43.3	**1538**
PAPC 95	53.6	15.6	15.6	15.2	53.9	**1958**

1-Intrauterine Device **2**-Periodic Abstinence **3**-Withdrawal, injection, condom, and Local Vaginal Methods... **4**-All Birth-Spacing Methods: Pill +1 +2 +3

In 1978, around one in three users relied on the IUD, one in four on the pill, one in six on periodic abstinence and one in five on other methods. During the seventeen-year period between the 1978 TWFS and the 1995 PAPC the number of IUD users has increased so that they now comprise over one in two birth-spacers. There has been a simultaneous decline in the proportion using other methods to one in six (Table 2.5).

It is evident that the IUD, the pill and periodic abstinence are the three leading methods used in Tunisia, and it is important to notice at this stage that periodic abstinence use has risen steadily during the last two decades with no marketing whatsoever. It is most prevalent among educated couples and it is expected to rise even more as younger cohorts of increasingly well-educated people reach marriageable ages.

II.3.2 Differentials in Contraceptive prevalence

Introduction

In Tunisia, the increasing official commitment to FP has helped to stimulate the demand for demographic surveys. One of the most important determinants of fertility decline in Tunisia is the regular rise of contraceptive use prevalence as shown by the findings of the four national surveys described above (see Table 2.3).

Before addressing contraceptive use failure, it is crucial to study contraceptive use prevalence levels and differentials, since it is among the users that failure occur.

Using the 1988 TDHS dataset (the most recent reliable source of information on the topic, which is not the case for the PAPC, a survey planned and run in less than three months after a new head of the ONFP was appointed), we studied and calculated the contraceptive use prevalence by different relevant factors and combination of factors.

Levels and Differentials

The Study Sample. The TDHS collected information on 4,184 ever-married women aged between 15 and 49 years who were questioned on their reproductive history and behaviour, contraceptive knowledge and practice, maternity and child-care history, their own and their households' and husbands' characteristics. Among the 4,184 sample women only 4,012 were still married on the day of the survey.

Table 2.6 documents the distribution of their contraception and conception status when interviewed. Among the 4012 married women 460 were sterilized (11.5%) and 430 pregnant (10.7%). These women are not at risk of conception and therefore are excluded from any analysis. Also, and since this contraceptive prevalence analysis is a background to the main analysis of contraceptive failure, sterilized women's failure is not a sensible topic to study, and so there is a rationale for excluding the sterilized women. Our sample for the study of the contraceptive prevalence will be of the 3122 women left, i.e., married women, not pregnant

and not sterilized. They are, therefore, at risk of conception and then potential candidates for birth spacing contraceptive methods.

Table 2.6 Percent Regional Distribution of Currently Married Women By Contraceptive and Conceptive Status.

	Tunis	N.E.	N.W.	Centre	Sahel	South	Tunisia
Not using a method and not pregnant	25.4	32.9	40.7	56.4	40.2	45.8	**39.5**
IUD	22.2	15.2	21.0	8.9	20.6	11.9	**17.0**
Pill	13.5	10.9	9.1	5.6	3.6	10.1	**8.8**
Pd.Abs[1]	10.2	11.0	1.1	1.2	7.6	4.4	**6.3**
Withdw[2]	1.9	3.6	1.3	2.0	2.7	2.8	**2.4**
Condom	0.9	1.4	0.5	0.5	1.2	3.1	**1.3**
Local	1.7	1.0	1.3	0.2	0.3	1.6	**1.0**
Inject[3]	0.1	0.3	2.1	0.5	1.5	0.3	**0.8**
Other	0.3	1.1	0.0	1.0	0.5	1.6	**0.7**
F.Strs.[4]	13.1	12.6	14.9	11.6	10.8	5.4	**11.5**
Pregnt.[5]	10.6	10.0	8.0	12.1	11.0	12.8	**10.7**
Number	**743**	**699**	**624**	**587**	**748**	**611**	**4012**

[1] Periodic Abstinence [2] Withdrawl [3] Injections [4] Female Sterilization [5] Pregnant Source: Tunisian DHS, 1988.

Regional Distribution of Current Users by Method. Table 2.7 shows that IUD followed by pill and then by periodic abstinence are the most prevalent contraceptive methods used among birth spacers (respectively 22%, 11.3% and 8%).

Table 2.7 Percent Regional Distribution of Currently Married, Non Pregnant and Non Sterilized Women By the Contraceptive Method Currently Used.

	Tunis	NE	NW	Centre	Sahel	South	Tunisia
None	33.3	42.5	52.8	73.9	51.4	56.0	**50.8**
IUD	29.1	19.6	27.2	11.7	26.3	14.6	**21.9**
Pill	17.7	14.1	11.8	7.3	4.6	12.3	**11.3**
Pd.Abs.	13.4	14.2	1.4	1.6	9.7	5.4	**8.1**
Other	6.5	9.6	6.8	5.5	8.0	11.7	**7.9**
Number	**567**	**541**	**481**	**448**	**585**	**500**	**3122**

Source: Tunisian DHS, 1988.

The regional distribution shows clear method-specific contraceptive use differentials. Thus, for instance, the Centre has the highest rate of non-use followed by the South. This is important to consider alongside with their rate of IUD use, the lowest in the country, and, in the case of the Centre, of pill use, the second lowest in the country.

Table 2.8 Percent Regional Distribution of Currently Married, Non Pregnant and Non Sterilized Women Using a Birth Spacing Method By the Method Currently Used

	Tunis	NE	NW	Centre	Sahel	South	Tunisia
IUD	43.6	34.1	57.6	44.8	54.1	33.2	**44.3**
Pill	26.5	24.5	25.0	28.0	9.5	30.0	**23.1**
Pd.Abs.	20.1	24.7	3.0	6.1	20.0	12.3	**16.3**
Other	9.7	16.7	14.4	21.1	16.5	26.6	**16.3**
Number	**378**	**311**	**227**	**117**	**284**	**220**	**1537**

Source: Tunisian DHS, 1988.

Periodic abstinence is much more widely used in the most developed regions such as Tunis, the North East and the Sahel, due to the concentration of well educated and informed people. The North West, the region in which the TNFPP began, records the lowest rate of periodic abstinence (1.4%) despite the high IUD (27.2%) and pill (11.8%) use rates. The North West remains an experimental zone for the TNFPP where the IUD and the Pill are almost the only methods advertised and offered. This is well documented by Table 2.8 which reports the regional distribution of the method mix.

Residential Distribution of Current Users by Method. Table 2.9 presents the City-Town-Countryside distribution of contraceptive prevalence by method used. Residence constitutes a very strong differential of contraceptive use. Indeed, IUDs are more than twice as widely used in urban than in rural areas while periodic abstinence is 5.6 times more prevalent in urban than rural areas.

Table 2.9 Percent Residential Distribution of Currently Married, Non Pregnant and Non Sterilized Women By the Contraceptive Method Currently Used.

	City	Town	Countryside
None	32.1	43.4	70.0
IUD	30.5	24.8	13.2
Pill	14.7	13.3	7.5
Pd.Abs.	14.6	8.8	2.6
Number	**938**	**919**	**1265**

Source: Tunisian DHS, 1988.

Distribution of Current Users by Educational Level. Table 2.10 presents the distribution of contraceptive method prevalence by educational level of the user (expressed in number of years of attending different schools which are in Tunisia primary "6 years", secondary "7 years", and universities "4, 6 or 7 years"). Educational level also constitute a very strong differential of contraceptive use. Indeed, IUDs are twice as widely used among highly educated women than among the non-educated ones. Periodic abstinence use is also well documented in Table 2.10. Among highly educated women its prevalence rate is as high as 22.8%, higher than that of the pill (12.6%) and slightly lower than that of the IUD (30.6%).

Table 2.10 Percent Distribution of Currently Married, Non Pregnant and Non Sterilized Women By the Contraceptive Method Currently Used, and, By Their Education

	None	1 to 6 years	Higher
None	64.3	37.3	26.9
IUD	16.9	26.6	30.6
Pill	9.0	15.0	12.6
Pd.Abs.	2.8	11.0	22.8
Number	1715	995	412

Source: Tunisian DHS, 1988.

Distribution of Current Users by Parity. Table 2.11 presents the distribution of contraceptive method prevalence by the parity of the user. Parity is known to be a very strong determinant of contraceptive use (Ayed, Sayed and Way, 1991), which is confirmed by our finding. Table 3.8 shows that, for all methods, contraceptive use increases drastically from parity "0" to

"2/3" then starts to decrease afterwards. If we restrict attention to IUD use, we notice that it reaches a peak of 30% at parity "2/3" then decreases.

Table 2.11 Percent Distribution of Currently Married, Non Pregnant and Non Sterilized Women, By Parity, By the Contraceptive Method Currently Used

	None	Pill	IUD	PerAbst.	Other	Total
0	95.7	0.9	0.0	1.4	1.4	**211**
1	55.5	9.7	19.1	8.3	7.4	**350**
2	35.8	14.0	32.4	9.8	8.0	**528**
3	39.3	12.8	29.6	13.4	4.9	**524**
4	41.6	14.3	24.1	10.9	9.1	**440**
5+	57.1	10.8	16.9	4.6	10.6	**1069**

Source: Tunisian DHS, 1988.

II.4 Reproductive health in Tunisia

II.4.1 Tunisia's distinctive contraceptive method mix

The data on the current use of family planning is among the most important information. As shown previously (Tables 2.3, 2.4 and 2.5) documents the overall increase in use and the changes that have been occurring in the method mix among birth spacers since 1978. The shift toward more effective methods (IUD and female sterilisation), which was evident in the early 1980s, continued steadly in the 1980s and the 1990s for the IUD. The stagnation of the female sterilisation use around 12 (1983-1995) is highly satisfactory when taking into consideration the tripling of IUD use from 1978 to 1995. Trend over time of periodic abstinence use constitute another distinctive feature of contraceptive use in Tunisia among the young eductaed and elite whether female or male. Being totally occulted and dismissed from FP service provision routine collection, periodic abstinence use could be interpreted as the "democratic" opposition to the governmental TNFPP IUD and female sterilisation, preferred and for many Tunisians (whether users or researchers) imposed methods .

These trends are worthy to compare with those of Egypt and Morocco, two populated countries who are striving to achieve efficient and sustainable fertility control.

Table 2.12 Percent distribution of currently married women 15-49 by the main contraceptive method currently used 1978-2000.
Egypt WFS 1980, DHS 1988, DHS 1992 and DHS 2000
Morocco WFS 1979, DHS 1987, DHS 1995 and PAPCHILD 1997
Tunisia WFS 1978, DHS 1988 and PAPCHILD 1995

	Tunisia			Morocco				Egypt			
	1978	1988	1995	1979	1987	1995	1997	1980	1988	1992	2000
Any Method	31.4	49.8	59.7	19.0	35.9	50.0	58.8	24.2	37.8	47.1	56.1
Pill	6.5	8.8	7.3	11.6	22.9	32.0	41.2	16.6	15.3	12.9	9.5
IUD	8.7	17.0	25.3	1.0	2.9	4.5	4.3	4.1	15.7	27.9	35.5
F.Strs.[1]	7.5	11.5	12.6	0.8	2.2	4.0	3.8	0.7	1.5	1.1	1.4
T. Method [2]	6.6	9.4	10.3	5.6	6.7	8.0	8.8	1.4	2.4	2.3	2.2

[1] Female Sterilization [2] Traditional Methods

In Egypt, the dramatic shift from pill to IUD that occurred over 1980-2000 is clearly shown in Table 2.12 and even more in Table 2.13. In 1980, almost 70% of current users relied on the pill, more than four times the percentage of users who relied on the IUD. By 2000, nearly two-thirds of current users relied on IUD, about four times the percentage that were using the pill. Not shown in Table 2.13, but of evident significance, is the relatively rapid expansion of the use of injectables: 11% of current users in 2000 compared with 5% in 1995 and with only 1% in 1992.

Table 2.13 Percent distribution of currently contraceptive user married women by Method Currently Used (Trends in the method mix among users)
Egypt WFS 1980, DHS 1988, DHS 1992 and DHS 2000
Morocco WFS 1979, DHS 1987, DHS 1995 and PAPCHILD 1997
Tunisia WFS 1978, DHS 1988 and PAPCHILD 1995

	Tunisia			Morocco				Egypt			
	1978	1988	1995	1979	1987	1995	1997	1980	1988	1992	2000
Pill	21	18	12	61	64	64	70	69	40	27	17
IUD	28	34	42	5	8	9	7	16	42	59	63
F.Strs.[1]	24	23	21	4	6	8	6	3	4	2	2
T. Method [2]	21	19	17	29	19	16	15	6	6	5	4

[1] Female Sterilization [2] Traditional Methods

Moroccan trends in the method mix among users reveals that the family planning programme is stagnant since the main method used remains the pill (growing from 61% in 1979 to 70% in 1997): widely "distributed" and "not regularly prescribed" estro-progesterin drug. No wonder we record a high pill use failure rate in Morocco compared with the other countries which have a similar pill use prevalence rate. The following are cumulative 24-month probabilities of discontinuation per 100 episodes of method use (Ali and Cleland, 1995).

Morocco	**Tunisia**	**Egypt**	**Indonesia**	**Thailand**
16.3	**9.0**	**16.5**	**3.4**	**4.5**

The Moroccan trend in traditional methods among users hints to the same evidence than in Tunisia: educated and elite do not trust the Governmental Family Planning establishment and rely more on what the perceive as being the best and safest for their needs and health.

The expansion of family planning services in Morocco has not been random. Activities have typically started in urban areas and spread to rural ones. As far as is clear, the development of family planning services has been based on logistical and practical considerations rather than on demand factors (for example. placing facilities where demand is high, or conversely, where it is low to stimulate it). The large majority (84%) of women of reproductive age live within 10 km. of a health centre that provides family planning, whereas 54% live within 5 km. of a pharmacy, and 63% live in a community with some sort of family planning outreach services. Private sector family planning services are less widely available; fewer than 30% of women live within 30 km. of a private family planning clinic or an AMPF (Association Marocaine de Planning Familial) clinic. The distribution of communities (clusters) in the 1995 DHS sample shows a similar picture. 87% of communities are within 10 km. of a health centre. Pharmacies and outreach services are also available in most communities, but private-sector facilities are less widely available. Despite this wide coverage, exploratory analysis (Steele, Siân and Choe, 1999; Magnani et al. 1999) revealed that the socio-economic status of

a community is linked to the type of facilities available. Outreach services tend to be in socio-economically poorer areas, whereas heath centres and pharmacies tend to be located in more urban, better-off areas. As mentioned above, the majority of Moroccan women who practice contraception use the pill. A current objective of the Morocco family planning program is to diversify the range of modern contraceptives available. The program is promoting the IUD by training providers and by means of information, education, and communication activities. The coverage of services is now high in Morocco. But what services? and by whom?

II.4.2 Reproductive health implications of Tunisia's method mix

Contraceptive choices are influenced by several medical and social considerations. The interaction of age, parity, fertility, and psychosexual make up determines the preference of those seeking advice. The role of the providers of contraception is to identify women with risk factors and advise them accordingly, helping them to choose the optimal method according to their own criteria.

The ideal contraceptive has yet to be found. The choice of contraceptives, however, is wider today than at any other time. Among the reversible methods the choice often lies between two types of "package deals". The methods which are most effective and most independent of intercourse are least free of health risks.

Conversely, less effective methods closely associated with intercourse have fewer health risks. Hence, the final choice of method depends on the relative importance to the individual of conflicting attributes.

It is worthwhile to review the literature on the use of the three leading methods in Tunisia.

The next sections outline the main methods currently in use in Tunisia.

1. Periodic abstinence

There is increasing interest in the so-called "natural" methods of family planning. They are based on the premise that ovulation takes place 12 to 16 days before the next period and that the ovum is viable for a maximum of only 12 to 24 hours after ovulation.

Spermatozoa, on the other hand, are less predictable and can remain viable in the upper genital tract of the female for up to seven days.

The cervical mucus method (CM), promoted by Drs. John and Evelyn Billings of Australia, and the sympto-thermal method (STM) are now often called Natural Family Planning (NFP). The World Health Organization (WHO) defines NFP as "a term used to describe methods of planning or preventing pregnancy based on observation of naturally occurring signs and symptoms of the fertile and infertile phases of the menstrual cycle" (WHO, 1987, 1996). These NFP methods do not depend on regular menstrual cycles but rather rely primarily on signs and symptoms of fertility. With training and experience, many women can use these methods to gain a better understanding of their reproductive functions and to identify their fertile period. Thus, these methods can be practiced by couples trying either to achieve pregnancy by identifying the fertile phase and using it to maximize the probability of pregnancy or to avoid or delay pregnancy by abstaining from intercourse on such potentially fertile days.

The NFP method thus requires a period of abstinence from intercourse at the time the woman is fertile, if conception is to be avoided. The length of abstinence varies depending on the length of the woman's cycle, the signs and symptoms in the cycle, and the method used. The longest period of abstinence is required in the strict application of the basal body temperature method (BBT), which requires that a couple have intercourse only during the postovulatory infertile phase. In the sympto-thermal method, the length of the period of abstinence varies according to whether the couple uses the calculation of the fertile period, the observation of

the characteristics of the cervical mucus, changes in the cervix, or a combination of signs to identify the beginning of the fertile period (Hatcher, 1994; Blumenthal and McIntosh, 1996; WHO, 1996; Huezo and Carignan, 1997).

There are four different forms of periodic abstinence, the calendar rhythm method, the basal body temperature method, the cervical mucus method and the sympto-thermal method.

Calendar Rhythm Method

In the calendar rhythm method the probable days of fertility are estimated from the cycle records of the previous 6-12 months. The method was developed by Ogino and Knaus, but Ogino's version was preferred to Knaus's since his formula called for several more days of abstinence to allow for a longer fertile life-span of sperm and ovum, it was thus considered more effective than Knaus's (Rock, 1970; Huezo and Carignan, 1997). The earliest day on which a woman is likely to be fertile is computed by subtracting 18 days from the length of her shortest cycle: the latest day on which she is likely to be fertile is determined by subtracting 11 days from the length of her longest cycle.

The Basal Body Temperature (BBT) Method

The The Basal Body Temperature (BBT) Method was the first scientific method based on periodic abstinence to be developed. Essentially, a women records on a chart her temperature immediately on waking each morning to get a basal reading. During the early part of the menstrual cycle the BBT is roughly constant.

At ovulation it rises by about 0.2-0.4 degrees centigrade, and then maintains a higher level or plateau until the onset of the next menstruation. The shift of temperature to a higher level is the marker of ovulation. Once three consecutive daily temperatures at the higher level have been recorded, the woman can start intercourse with very little risk of conception. This is because of the short life of the ovum. The post-ovulatory infertile phase continues until the next menstruation.

The Cervical Mucus Method

The Cervical Mucus (CM) Method monitors changes in cervical mucus in order to identify the fertile phase of the menstrual cycle. The CM method is more recent than the BBT method. The changes in the cervical mucus may be described as follows. Following the end of menstruation there may be a number of 'dry days'. During this time the cervical mucus consists of a thick plug at the cervix, with none flowing down the vagina. The woman experiences a positive sensation of dryness at the vaginal entrance. Under the influence of the rising level of estrogen (Moghissi, 1972, 1981; Morishita et al., 1979; Renaud et al., 1980), the mucus changes first to a thick, sticky substance which reaches the vaginal entrance and can be detected there, either by the sensation it produces or by visual observation. The change continues until the mucus is thin, clear and slippery, giving rise to a sensation of 'wetness' and 'lubrication'. On the last day of ovulation this type of mucus reverts to a thick, dry state or disappears entirely. The last day on which the mucus is most slippery and lubricative, though not necessarily most abundant, is known as 'peak' day (Hatcher et al., 1990, 1994, 1997).

Under the rules of the CM method, abstinence should start on the first day after menses that mucus is observed and continue until the fourth day after the peak symptom. All subsequent days until menstruation begins again are considered infertile.

The Sympto-Thermal Method

The Sympto-Thermal Method (STM) Combines the BBT and the CM methods has the obvious advantages of using two markers of ovulation, which should increase the chance of accurately identifying the fertile period.

Advantages There are six advantages of periodic abstinence as a method of contraception:

1) the methods have no physical side effects for users (Hatcher, 1990; World Health Organization, 1987; Lanctot, 1979);

2) acceptors can be trained by paraprofessionals and lay volunteers without assistance from physicians;

3) training in the methods increases awareness and knowledge of reproductive functions and thus may help couples to achieve pregnancy (Flynn and Lynch, 1979);

4) responsibility for family planning is shared by both partners, which may lead to increased communication and cooperation;

5) periodic abstinence is approved by the Islamic law and therefore is morally acceptable to couples who want to adhere to teachings of Islam (Sachedina, 1990);

6) the methods may be aesthetically more acceptable to some than co‹tus-related methods such as condoms or spermicides (Flynn and Lynch, 1979).

Disadvantages Periodic abstinence has its disadvantages as well. We can list six:

1) the methods are less effective in preventing pregnancy than most other family planning methods (Flynn and Lynch, 1979; Lanctot, 1979; Timby, 1976; Hatcher, 1994, 1997; Blumenthal and McIntosh, 1996; WHO, 1996; Huezo and Carignan, 1997);

2) an extended period of initial instruction and ongoing counselling are required (Bernstein et al., 1978);

3) the methods require daily monitoring of bodily functions with possible charting of symptoms and this may be bothersome, distasteful, or difficult for some women (Lanctot, 1979).

4) the methods will not be successful without strong commitment and cooperation from both partners (Timby, 1976).

5) sexual abstinence may cause marital difficulties and psychological stress (Flynn and Lynch, 1979; Lanctot, 1979; Timby, 1976; Shepard, 1980).

6) women with irregular menstrual cycles may have difficulty using the methods (Hatcher, 1990, 1994, 1997).

Use-Effectiveness Pregnancy rates with periodic abstinence have been high, generally ranging from 5 to 40 pregnancies per 100 woman-years of use. In the most recent studies about 15% of women using the sympto-thermal method became pregnant within a year and about 25% using the cervical mucus method.

2. The estro-progesterin pill

Introduction The pill is still the most widely used method of contraception worldwide. In 1990 14 million women in the USA and 60 million women in the world used it (Hatcher, 1990). In addition to its excellent efficacy, the combined pill has several other benefits not related to contraception (Population Report, 1988). The most important of these are that it alleviates problems related to the menstrual cycle, reducing the risk of pelvic inflammatory disease, and that it protects women against ovarian and endometrial cancer (CDC and Steroid Hormone Study, 1983, 1983a).

Mechanisms of action The most popular pill today is the low-dose estrogen progesterin combined pill. The way in which estrogens and progesterins act as contraceptives is as follows (Benson, 1976; Morris, 1973).

Estrogens act as a contraceptive through two mechanisms: first, ovulation is inhibited through the effect of estrogen on the hypothalamus, and, second, the implantation of the fertilized egg is inhibited. Progestins act as a contraceptive through three mechanisms: they decrease the ability of the sperm to penetrate the cervical mucus, they inhibit the implantation of the egg, and they inhibit the ovulation by a subtle disturbance of the hypothalamic-pituitary-ovarian function.

Benefits associated with the pill

Fertility Related Benefits. The most important benefit of the pill is its highly effective and reversible protection against unwanted pregnancy. Beside preventing pregnancy the use of the pill reduces risk of pelvic inflammatory diseases and prevents ectopic pregnancy. Large-

scale studies have also shown that the fertility-related benefits include a better maternal and child survival by preventing unwanted pregnancies and enabling women to space births (Population Reports, 1988).

Menstrual Benefits. The menstrual benefits of the pill were the first to be recognized. The main benefits of this type are: less non-deficiency anemia due to lighter menstrual bleeding, the relief of pelvic pain during menstruation, and the reduction in the severity of the symptoms of premenstrual syndrome (Guillebaud, 1987).

Protection from Cancer. The combined pill protects women from two cancers of the reproductive organs, namely endometrial cancer and epithelial ovarian cancer. Large studies in the United States and United Kingdom suggest that these cancers are about half as frequent among users of oral contraceptives as they are among other women (Cancer and Steroid Hormone Study Group 1987; Jones, 1988; Robertson, 1987).

Other Benefits. The combined pill lowers the risk of fibroadenoma and fibrocystic disease by 50 to 75% (Kendrick and Ory, 1984). It also protects women from functional ovarian cysts (Ory, 1984).

Contraindications to the combined oral contraceptive pill

Pregnancy, undiagnosed genital tract bleeding, past or present circulatory disease including focal migraine, known hyperlipidaemia or known thrombogenic abnormality of haemostasis, current liver disease or past liver disease with continuing abnormal liver function and pill related hypertension constitute the major contraindications to the combined oral contraception.

Use-Effectiveness Failures can be due either to the method or to the way the pill is taken by the user. Method failures range from 0.2 to 1 per 100 woman-years. User failure rates can be much higher owing to non-compliance (not taking pills consistently), but individual variation in absorption and metabolism would account for a minority. It seems that the modern low-

dose combination may fail in those women where the bio-availability of steroidal hormones is reduced. In these cases minor errors of compliance may have an adverse effect on efficacy. The weight of the woman probably does not influence efficacy, in other words overweight women are not at a higher risk of pregnancy when using a low-dose Pill, although some data do suggest the reverse (Kleinman, 1989, 1990).

Missing pills in such a way as to lengthen the pill-free interval (by not finishing the previous packet to the last pill or by starting the new packet late) may lead in some women to breakthrough ovulation and result in pregnancy. After any type of pill omission, women should therefore be advised to return to regular pill taking, but to use extra precautions for seven days. If these seven days continue to beyond the end of the current 21-day packet then the next packet should be started without the normal break (since the woman has already made her own 'break' by missing pills). Vomiting and/or diarrhea imply the same potential loss of efficacy, during and for seven days after the attack. Various studies estimate the Estro-Progesterin Pill failure rates from non-clinical representative fertility surveys at about 3% (Grady et al, 1986), in the United States this rate reached after standardization the level of 7.3% in 1988 (Jones, 1992), in developing countries it fluctuated from 2.8% in Thailand in 1987 to 11.8% in the Dominican Republic in 1986 (Moreno, 1991).

Clinical follow-up studies yield failure rates as small as 0.12% (Woutersz, 1981) and as large as 10.45% (Preston, 1974). These estimates are Pearl indices measured over different durations of oral contraceptive use (12 cycles to 110 cycles) and for different estrogen and progestin doses (Trussell and Menken, 1987).

3. The intra-uterine device (IUD)

Introduction The intra-uterine device acts as a contraceptive by preventing the implantation of the fertilized ovum and by inhibiting fertilization of the ovum by the sperm (Kleinman, 1989; Hatcher, 1990, 1994; WHO, 1996; Huezo and Carignan, 1997). It is estimated that at

present about 60 million women are using IUDs throughout the world. The number of IUD users is steadily increasing, owing perhaps to the perceived disadvantages of alternative methods of contraception and the implementation of effective low-cost IUD family planning programmes. The IUD is an attractive method of contraception, since it requires very little in the way of user participation. Once the device is fitted sexual intercourse becomes unrelated to the method: it does not require pre-planning or daily pill taking. Its further attraction is that the IUD can be left in the uterus for at least five years in the case of a copper-bearing IUD and indefinitely in the case of an inert plastic IUD. IUDs have some disadvantages. They require a trained person (not necessarily a doctor) to insert them and to provide follow-up care for women who use them. The failure rate with IUDs is around three per 100 woman-years. They also produce side-effects in some women. Research continues into the development and design of the IUD to improve its ability to prevent pregnancy and to deal effectively with the occasional problems of expulsion and bleeding. This research is concerned mainly with the testing of medicated devices (copper-bearing or hormone-continuing) and those which are designed to 'fit' the particular uterine configuration of the woman. However, epidemiological findings in many parts of the world suggest that factors associated with the person fitting the IUD may be of more importance in the continued use of the IUD than its shape, composition or size. The relationship between whoever fits the device, the IUD user, and the IUD model itself is a complex one, and if effective IUD provision is to be attempted then this relationship must be understood. Care and sensitivity in fitting and follow-up are now seen to be of much more importance, and this, in part, explains the emphasis on adequate training for those responsible for providing an IUD service (Alvarez, 1988).

Design and Choice The design of an IUD should fulfill three basic requirements. First, the device must provide protection against pregnancy. Second, it should be fitted easily and with

minimal discomfort. Third, it should remain in place in the uterus until the woman wishes it removed. Unfortunately, devices that fulfill any one of these requirements are often unsatisfactory in relation to one or both of the other aspects (Hatcher et al., 1990).

All the IUDs available at present have advantages and disadvantages that must be weighed up when making a choice for the individual woman to be fitted. There are, however, certain general points that can be made. First, the newer copper-bearing IUDs have been shown to be safe and effective and to have a long duration of use. The trend nowadays is to recommend these devices rather than the inert ones. Second, the smaller copper-bearing IUDs usually cause less menstrual blood loss than the bulkier inert ones.

Hormone-releasing IUDs have been shown to induce less bleeding than non-hormone-releasing IUDs . Other factors to be considered include the IUD models available, the size and shape of the uterus, and the age and parity of the woman. Every effort should be made to tell her what IUD she has had fitted. This would help not only at follow-up, but also when removal is requested.

Who should fit and remove IUDs? Not only doctors, but also midwives, nurses and trained ancillary staff fit and remove IUDs in several countries from many parts of the world. The pregnancy, expulsion and removal rates following these insertions show little or no variation with the status of the person fitting the device. Adequate training is essential before the insertion of IUDs is undertaken. For an effective family planning service, the use of trained non-doctor personnel has obvious advantages. In many communities such personnel are more readily available than doctors, and women who have problems after insertion can contact them more easily. When the work of IUD fitting is divided within the health team, doctors have more time to examine and treat the more difficult cases. The timing and technique of insertion of an IUD play a critical part in its subsequent performance. There is no substitute for adequate training and maintained experience. Insertion during the heavy days of the

period should be avoided. The optimal time for this is between the end of the menses and the calculated time of implantation. An intrauterine contraceptive device should not be removed in midcycle unless the couple have used an additional contraceptive for the previous seven days; otherwise a fertilized ovum could become implanted.

Side effects and complications Approximately 15% of IUD users will have their IUD removed because of side effects associated with bleeding or anemia. Serious complications from IUDs are rare and preventable, these are haemorrhage, severe anemia, perforation of the uterus, uterine or extra uterine pregnancy. A good patient selection, management, follow-up and counselling represent the best means to avoid such complications.

Efficacy and effectiveness of IUDs Copper IUDs remain effective for at least four years; some are effective for up to 10 years. Inert devices can remain in situ up to the menopause. The Progestasert hormone-containing IUD must be replaced annually, but longer-lasting hormonal devices are being developed. Inert devices and the older copper-bearing IUDs (Cu7 and CuT200) have failure rates above two per 100 woman-years. The lowest rates of pregnancy are among the newer copper-bearing devices. The Progestasert failure rate is about two per 100 woman-years. (Moreno and Goldman 1991).

II.4.3 Emerging issues

From its inception the TNFPP has received overwhelming support from USA, Europe and Japan. However, and more and more, the Tunisian government is investing in population control as it has always considered it the prerequisite of development. By doing so (Population Conferences of Bucharest 1974, Mexico1984 and Cairo 1994) Tunisia has set up the precedent in fertility control sustainability in the Muslim and African. Fertility control sustainability comprises family planning services provision, and the set of social, economic, financial and political actions necessary to unsure that the targeted couples will use correctly and consistently the FP services in order to avoid any unwanted pregnancies, and to

contribute to the overall goal of maintaining fertility stabilisation at community, national and world wide levels (Coburn, 1990; 1992; Kelly et al., 1996).

The TNFPP has, however, several impediments and the major one is its failure, and hence, its unsuitability to tackle emerging reproductive health issues.

The most striking disregarded emerging reproductive health issue is contraceptive use continuation and efficacy of the natural contraceptive methods and the pill (each representing 15.6% of the method mix among birth spacers, see Table 2.5), their 24-month probabilities of discontinuation and failure per 100 episodes of use are respectively 42.6 and 24.4 (natural methods) and 58.5 and 9.0 (natural methods) as shown in Table 2.14. By relying on IUD and female sterilisation, the TNFPP has totally ignored that growing fraction of the married couples who use from their own will natural contraceptive methods (growing from 6.6 to 10.3 in 1995 and at least 12% in 2001). This is simply irresponsible when we notice that this represent one feature of "democratic reaction", mainly among elites and educated, which will develop further in the coming years with more "democratic life practice" in Tunisia.

Another unnoticed emerging issue is the growing reproductive health needs of adolescents and unmarried. In Tunisia, according to the 1994 census, the population of adolescents aged 10-19 was 1.974 million, (22.5% of the population). It is worth noticing that the proportions of unmarried persons have risen greatly between the 1984 and the 1994 censuses. Tunisian data show that early marriage -and sometime any marriage- is less feasible now than previously for both men and women (INS, 1994). Marital postponements and in some cases permanent celibacy have been increasingly necessary throughout the country because of unemployment and other factors. The changes in Tunisia's socio-economic and cultural environment have become exceptionally significant and have made a great impact on adolescents, particularly with regard to preparations for marriage. As a result of the changes

in nuptiality, the proportion of unmarried youth continues to rise. Changing sexual behaviour and unwanted pregnancies of the unwed are emerging policy concerns in Tunisia.

A female median age at marriage as high as 28 years (in 1994) means a lengthy period of exposure to potential sexual activity before getting married. Therefore, the national family planning programme should strongly consider including services for the unmarried portion of the adolescent and young adult population (De Silva, 1997). This group should seriously be considered as one having unmet needs for family planning. Sexuality outside wedlock is one of the most acute and emerging reproductive health and reproductive rights issues in Tunisia. Adolescent sexuality is even more taboo than sexuality outside wedlock and the consequences are even more striking and dangerous.

Table 2.14 Cumulative 24-month probabilities of discontinuation per 100 episodes of method use, by country and method, according to cause

		No. of episodes	All causes	Method failure	Health concerns
Morocco	**All methods**	**2,914**	**53.5**	**20.5**	**18.6**
	Pill	2,050	53.5	16.3	22.8
	IUD	182	34.5	9.4	17.1
	P. abstinence	237	65.0	45.9	1.5
Tunisia	**All methods**	**2,289**	**45.6**	**13.0**	**18.7**
	Pill	662	58.5	9.0	36.3
	IUD	855	30.2	4.9	16.2
	P. abstinence	322	42.6	24.4	0.0
Egypt	**All methods**	**4,496**	**48.8**	**14.2**	**21.3**
	Pill	2,285	59.4	16.5	30.8
	IUD	1,486	23.8	4.1	12.1
	P. abstinence	134	63.7	41.9	1.3

Source: Ali and Cleland, 1995

The neglect of these two major reproductive health emerging issues (contraceptive failure and hidden sexuality, whether among adolescents and unwed) lead to the third major reproductive health emerging issue in Tunisia : new contexts and features of abortion.

Very little, if anything at all, has been done in the field of tackling abortion issues. Of course Tunisia is a safe place to have an abortion and there are in 1998 hundreds of governmental and private clinics where abortion can be done.

II.5 Conclusion

This chapter has contained two parts in which was addressed two very important aspects in Tunisia:

1. The historical accounts of the Tunisian population policy. Special attention was given to the "Tunisian exception" in the field of women emancipation and empowerment.

This latter constitute the most important determinant precursor of pro FP/RH policy and programme in a mostly Islamic and anti FP/RH services and pro-natalistic context. The governmental TFPP has heavily marketed IUD and female sterilisation but has never marketed or even wanted to her about "sexual abstinence" or natural methods. Until now many Tunisian continue to react positively to the provision of IUD and female sterilisation, but more and more -especially educated- couple rely on abstinence as first time and first choice contraception.

Even though considered as a leader of FP and population control policy among Islamic and Third World countries, Tunisia has not yet achieved at the national level a sizable control over population growth despite three decades of immense efforts, huge investments and a strong commitment of its political and social leaders. The population of Tunisia is growing rapidly at a rate of 1.3% despite the widespread availability of modern birth control for no charge whatsoever.

2. The crucial period of 1978-95 during which has occurred a transition from high fertility rate and low contraception use to low fertility rate and high contraception use. The section has also outlined the main methods currently in use in Tunisia. The essentials of contraceptive technology review was done with emphasis on the pragmatic issues.

The evolution and the change of the method mix over the last two decades dictate that an urgent review of family planning services must be take place in Tunisia. The main reason is that only high numbers of abortions are preventing an important number of births from rapid

growth in unplanned pregnancies. This growth, which had been maintained over a number of years is especially pronounced among periodic abstinence and pill users, and among teenagers (ONFP, 1996). Family planning services are seen to be failing to perform their tasks adequately, perhaps due to the politicisation of health care and family planning services. It becomes an urgent necessity for family planning services managers to contract provision from different sources which means that a set of quality measures of family planning is required which identify the best ways of providing family planning so as to enhance consumer satisfaction. Informing such policy requires scientific information on the attitudes and experiences of users and potential users, on current provision and on the potential for providing an improved service. Unfortunately there have been few recent studies in Tunisia to inform such policy.

Chapter III

Reproductive Health and Family Planning in Algeria

III.1 Introduction

III.1.1 Outline of chapter

This chapter consists of a thorough study of the history and the evolution of the Algerian family planning programme.

We review of the demographic background with emphasis on the Algerian leadership policy of non-population policy.

First will be presented a comprehensive account of the history of the TNFPP starting by its antecedents and emphasising the absence of the equivalent to the Tunisian Code of Personal Status (officially authorized and implemented by Bourguiba) or rather the Algerian "Code de l'Infamie" (infamy) as it has been described by the late assassinated President Mohammed Boudiaf (see ANNEX I).

Second, we will present the trends over time of contraceptive prevalence in Algeria starting by its history, followed by the study of the differentials in contraceptive prevalence. Finally, we will give an account of the reproductive health issues related to the Algerian context and specificity while pointing out to those shared with Tunisia and stressing that reproductive health is becoming a much broader issue than just a matter of family planning.

III.1.2 Algeria

Algeria is the largest of the three countries (including Morocco and Tunisia) which form the region of western North Africa known as Al Maghrib (the West). It is also the second largest country in Africa and the tenth largest country in the world in terms of land area, equal in size to Western Europe. It covers a total area of 2,381,740 km and has a land border of 6,343 km which it shares with several countries (Libya 982 km, Mali 1,376 km, Mauritania 463 km,

Morocco 1,559 km, Niger 956 km, Tunisia 965 km, Western Sahara 42 km) and a coastline of 998 km. The terrain is composed mostly of high plateau and desert, some mountains and a discontinuous coastal plain. Only 3% of the land is arable.

Prior to independence in 1962 Algeria's economy had been dominated by agriculture. However, with rising oil revenues throughout the 1960s and 1970s, the government embarked on a major programme of industrialization which transformed the economy, making Algeria one of the wealthiest nations in Africa. Fuelled by oil revenues, Algeria's economy grew dramatically throughout this period. However, declining oil prices during the 1980s drastically reduced economic growth of the now oil-dependent country. Annual per capita income fell from $2,360 in 1988 to $1,541 in 1992. According to the Population Report Bureau, the 1999 GNI PPP per capita was 4,840 US$ compared with 5,700 in Tunisia, 3,460 in Egypt and 3,320 in Morocco (2001 World Population Data Sheet).

As a socialist country, Algeria's entire oil industry is controlled by the state. Although agriculture no longer dominates the economy it remains an important sector. During the first half of the 1990s the national budget registered expenditures of $14.6 billion as against revenues of $14.4 billion annually (Provost, 1996).

According to government statistics, 85% of all children between the ages of 6 and 13 years are enrolled in schools, amounting to some 5.8 million students in elementary and middle schools and 839,000 high school students during the early 1990s. Since 1976 all education has been controlled by the state, private schools having been abolished. Although education has been compulsory for all children aged between 6 and 15 since 1976, by 1989 nearly 40% of the entire population over 15 still had no formal education; and only 57% of over-15s were registered as literate. With 42% of the population under the age of 15, education will remain a major challenge for the government. There are 10 universities in Algeria accommodating over 160,000 students.

Socialism has given Algeria a comprehensive series of social welfare programmes for the impoverished, elderly and disabled members of society as well as benefits for labourers. Public housing and agricultural reform programmes have also been implemented for the benefit of the people. In 1974 the government implemented national health programmes providing medical care to all Algerian citizens free of charge. During the first part of the 1990s the country had over 284 hospitals and 23,550 doctors. Major health problems for the country are tuberculosis, malnutrition, trachoma and malaria.

Arabic is the primary language of around 82% of the population. the remainder speak various Berber dialects with Arabic as a second language. French colonialism left French as the second language of many educated Algerians. English is rarely spoken. The Touareg tribes in the south of the country speak two Berber dialects.

Islam is Algeria's official religion and the vast majority of Algerians are Muslim. Since the departure of the French, Christianity is a peripheral religion. However, Algeria's relationship with Islam has been complex and turbulent. The socialist government vigorously suppressed any Islamic activism throughout the 1960s and 70s. Many government workers and other employees judiciously kept clean-shaven to avoid overt identification with Islamists. The resurgence of Islam during the 1980s was stimulated by the Iranian revolution, Muslim Brotherhood influences and the manifest failure of socialism in the Arab world. The Islamic backlash in Algeria has been particularly strong due to the subversion of Islamic tradition and its supplanting with alien secularist ideologies and institutions. Algerian society has become increasingly polarized over the last 30 years between westernized secularists and a large, traditionally Muslim majority. Secularization has had another effect: the large Berber minority has spawned an anti-Arab, anti-Islam separatist, or Berber nationalist movement. With the harsh suppression of democracy in 1991, Islamic fundamentalists turned to violence, often targeting Berber separatists.

III.1.3 Demographic Background

As of 1994, the population of Algeria was registered at 27.8m and has rise up to 30.7m in 2000. This population explosion presents the country with a major crisis for the future, particularly since 92% of the population is confined to the fertile northern region of the country which covers only 14% of the land area. The implications of population growth and its confinement to the north are reflected in unemployment figures which stand at around 21%, particularly among young people. Over 52% of all Algerians live in cities and towns.

Algeria's largest population centre is the capital of Algiers. The greater city, which is also the country's industrial centre, has a population of over 3m. The other main urban centres are Oran (1.2m), Constantine (.7m), Annaba (.45m) and Tizi Ouzou (.35m). Algeria's overall population density of 11.7 people per km is misleading given the heavy population concentrations in the northern region of the country. In the north of the country there are not less than 30 people per km , rising to as many as 1,100 people per km . The overriding racial characteristic of the Algerian population is Arab (83%) and Berber (17%). Prior to independence in 1962 one million Europeans lived in Algeria, primarily French, as well as 150,000 Jews. After independence 90% of the Jewish and European communities emigrated. Of the present population over 50% live in what are classified as rural, agrarian areas. The nomadic Touareg tribes living in the Sahara are believed to have emigrated to Africa from south-western Asia in 3,000 BC. The Arab historian Ibn Khaldoun records that the Touaregs were converted to Islam in the 9th century and apostatised 14 times before finally submitting. During the last thirty years, while Algerian rulers have had an ambiguous and hesitating population control policy, the population of Algeria has more than tripled. It grew from 8.7m in 1954 to 27.2m in 1994, and reached 29 million in 1996. Algeria's population is projected to reach 43.2m by 2025 and 51.5m by 2050 (PRB, 2001).

The population of Algeria grew at a rate of 3.2% between 1966 and 1977 and slowed down somewhat to 3.06% during 1977-1987 and reached 2.21% in 1996.

Between 1970 and 1992, Algerian officials report that the total fertility rate has fallen from 8.36 to 4.4; this is a big fall considering the lack of consistent family planning/population policy and reliable source of information. By 1996, the TFR had fallen further down to 3.59. But this situation, quite optimistic on the surface conceals a real and non-negligible **population momentum** (see following Table 3.1). This is a condition that comes partly from the age structure and partly from the fact when fertility declines it affects successive cohorts to different degrees. Population momentum has two different aspects, both of which are relevant to the Algerian situation. As the Algerian society is moving from high to low fertility, the large numbers of girls born when fertility was high will take some time to reach child-bearing age. Thus even if women now begin to have fewer children, the large numbers already born will mean continued rapid growth for up to 40 years in the future. In 1996, 40% of the population are under 14 years and younger. 23.7% of the women population are married aged 15 to 49. (Algeria PAPCHILD Main Report, 1994).

Algerian population growth was relatively slow until after World War II, but between 1966 and 1987 the population grew by more than 3% annually and almost doubled from 12 to 23 million. The growth rate began to decline slowly beginning in 1985-86, but the components of growth had begun a change in the 1970s that the growth rate did not yet reflect. Mortality declined by over 6% per year between 1974 and 1985, and life expectancy increased from 53 years in 1977 to 66 in 1987. Data from independent Algeria's three censuses in 1966, 1977, and 1987; and two demographic surveys, the 1970 National Statistical Study of Population and the 1986 Algerian Fertility Survey, shed light on the components of population growth in these years of change. The 1986 survey demonstrated several significant changes since the 1970s: an increase in the female age at first marriage from 18.3 years to around 24, a decline

in the total fertility rate from 7.8 to 5.4, and an increase in contraceptive prevalence from 7% to around 35% of married women of fertile age. Kouaouci (1992) used a simplified standardization technique to decompose fertility into the three principal effects of age and sex structure, marital fertility, and proportion married. Increased marriage age was found to account for 65% of the decline in crude birth rate between 1970 and 1986 and declining marital fertility for 40%. The effect of age and sex structure would have been to increase fertility by 5%. Rural-urban differentials were significant. Women of childbearing age comprised 21.5% of the total population in 1986: 24% in cities and 20% in rural areas (Kouaouci, 1992).

The proportion married declined from 70% to 54% between 1970 and 1986, with the rural and urban proportions 73% and 64%, respectively, in 1970 and 60% and 48% in 1986. Between 1970 and 1986, the general legitimate fertility rate (i.e. births within marriage per 1000 married women aged 15-49 years) declined from 329/1000 to 279/1000 for the total population, from 339/1000 to 242/1000 in urban areas, and from 325/1000 to 316/1000 in rural areas (for methodology and calculation details see Kouaouci, 1992). The increased fertility difference between rural and urban areas was primarily due to changes in urban marital fertility. During the 1970-86 period, the decline in urban fertility of over three children per women was entirely due to increased contraceptive usage, which more than compensated for a decline in breast-feeding over the period.

The stability of rural fertility rates over the same years hid considerable change. Adoption of modern contraception has been massive. In 1986, 45% of urban and 30% of rural women used some form of contraception, with oral contraceptives alone accounting for 75% of usage (Kouaouci, 1992).

To sum up Algerian population has grown from 12m in 1966 to 23m in 1987 and 29.4m in 1998 (National Census). Table 3.1, which reports the main demographic indicators,

documents the demographic evolution in Algeria between 1990 and 2000, with projection until year 2020 (Direction de la Planification, Ministère de la Santé et de la Population Statistiques Sanitaires; Décembre 2000. www.ands.dz)

Table 3.1 Main Demographic Indicators, Algeria, 1990-2000 Projections 2005-2020

	1990	1995	2000	2005	2010	2015	2020
Population (million)	25	28.2	31.6	34.8	38	41.1	44.3
Birth rate (per 1000)	31	26.7	23.7	21.6	19.9	18.5	17
Death rate (per 1000)	6	4.9	4.4	4.2	4	3.9	4.4
Rate of natural increase (per 100)	2.5	2.2	1.9	1.7	1.6	1.5	1.3
Total Fertility rate	4.5	4.0	3.3	2.8	2.6	2.4	2.2

Table 3.2, documents the 2001 demographic situation in Algeria in comparison with Tunisia.

Table 3.2 Main Demographic Indicators in Algeria and Tunisia, 2001

	Algeria	Tunisia
Population (Millions) 2001	**31.2**	**9.72**
% urban	*49*	*62*
% aged 0-14 years	*39*	*30*
% aged over 64 years	*4*	*6*
Population (Millions) in 2025	**43.2**	**12.5**
Population (Millions) in 2050	**51.5**	**14.2**
Projected Population Change 2001-2050	**72%**	**46%**
Women 15-49 years (Millions)	**8.18**	**2.48**
Crude birth rate (per 1,000)	**28**	**19**
Crude death rate (per 1,000)	**7**	**6**
Rate of natural increase (per 100)	**2.1**	**1.3**
Total fertility rate	**3.1**	**2.3**

Sources: Population Reference Bureau, 2001.

The 2001 Algerian population is disproportionately distributed as shown in the following:

- 70 live in the Northern region, corresponding to 4% of Algeria territory,
- 22% live in the Central highlands, corresponding to 9% of Algeria territory, and
- 8% live in the Southern region, corresponding to 87% of Algeria territory.

The resulting population density is 1 inhabitant/km² in the south compared with 222 in the north. Urbanisation has also progressed from 31.4% in 1966 to 40% in 1970, 49% in 2001

and it is expected to reach 82% in 2020 (Ministère de la Santé et de la Population Statistiques Sanitaires; Décembre 2000.).

III.2 Family planning in Algeria

III.2.1 Algerian population policy

Algeria's stance in the context of world population policy

The study of population policies in Third World countries should never ignore the US position, American strategy has clearly influenced international population action, through its bankrolling of the UN agencies' programmes. It was estimated in 1984, that US contributed 40% of the international assistance in population field.

The population question became an international concern in 1950 when experts discovered that the human population had doubled in 50 years and could possibly double again before the end of the century. Between 1960 and 1980, the US administration took the leadership in the international community in the field of population by adopting officially an international population strategy in the general atmosphere of the Third World population threat. Through US Foundations, as well as with public funds through USAID, Third World countries were urged to adopt population policies. It became a sine qua non of US aid: since the late 1960s, no aid is given by the USA to any nation that fails to have a policy to limit its population growth (Hauser, 1973). Thus Third World countries were under the pressure from the West to adopt a population policy. The US president Johnson declared that. "Less than five dollars invested in population control is worth a hundred dollars invested in economic growth" (Wogaman, 1973). At the same time MacNamara, President of the World Bank declared that the cost of rearing a Third World child was 600 dollars while it costs only 6 dollars to avert the birth (Amin, 1972).

Many developing countries in serious need of the US assistance adopted policies almost immediately with various degrees of success. Among newly independent developing

countries, there was at that time an international, "non-aligned countries movement", anticipating the present reality that the main international contradiction is not between "East" and "West", but between "South" and "North". This movement demanded the establishment of a new world economic order, where Third World economies could benefit from better economic relationships with developed countries, including better prices for their export, (mainly raw products including hydrocarbons) and fairer relationships in general, including less consumption in the developed world.

In early 1970s, the population policies, with their major emphasis on birth control, promoted by the US and other developed countries faced two main opponents: the Catholic Church (not necessarily followed by Catholic couples) for moral and ethical reasons, and Marxists as part of their ideological calculus.

Third World economists developed theories that backed the demand for change in the International Economic Order: they showed that level of consumption in developed areas was the true threat on earth resources. The French agronomist René Dumont, comparing the average American and Indian consumption (the ratio was from 1 to about 30) suggested that American demographic growth should be limited, rather than that in the Third World (Amin, 1972). At that time the World Conference on Population in Bucharest took place. It was an opportunity to confront the developed world on the development issues and to demand once again the establishment of the desired "New International Economic Order". The ideological debate had the advantage over the pragmatism of the population issue: even China, which had already begun its vigorous population programme, supported the view that development should come first and also that the Third World demographic growth constituted a defence against the will of the West to dominate small countries.

At the 1974 Bucharest Population Conference, Algeria was represented by a delegation from the Ministry of Planning led by the Minister. He declared that ".... Algeria aims at

constructing for 1980 a strong and integrated economy to respond adequately to the needs in jobs, education, health and housing of a quickly growing population". The social project aimed at full employment, education for all, free health care and right to housing for everyone. "False solutions" (family planning programmes) were clearly rejected: "... The willingness of an authentic development based on the mobilization of the material and human resources can bring satisfaction of the needs of the population and remove handicaps to development that are consequences of the unherited under-development... what can appear as a constraint, demographic growth, may become a means of development." (Bucharest Population Conference Proceedings, 1974).

Ten years later, in 1984, at the World Population Conference in Mexico, both Algeria and China changed their stances on population programmes. Between the two Conferences, the protagonists changed sides: Third World countries became more convinced that population growth needed to be curbed in order to give development a chance, and therefore asked for more international assistance, meanwhile the United States retreated from its role of international leader in family planning, expressing reservations about abortion and advocating the right of couples to decide freely on their family size. As an expected result, the USA stopped funding the International Federation of Planned Parenthood (IPPF) in 1984 and the United Nations Fund for Population (UNFPA) in 1985. It also withheld funds, which the US Congress had approved for several years because of UNFPA support to China's programme considered as promoting a "national policy of coercive abortion and involuntary sterilization" (Peoples, 1988).

Changes in the attitudes of Third World countries between 1974 and 1984 are to be related to changes in the political administration in the different countries involved in the population debate, as well as to the international economic and political situation. In 1974, China and Algeria backed by Third World revolutionary countries put ideology first. In 1984, it was the

turn of the US to urge "...a market economy system on governments, as a means of slowing population growth.." (Peoples, 1984) as debates on abortion and choice were heating up at that time in the USA. Algeria played a leading role in the non-aligned countries movement, both at the international level and in the oil market by contributing to impose a fourfold increase in the oil prices causing the first world oil shock in 1973.

At Bucharest, in 1974, Algeria was the chair the World Population Plan of Action Committee. The emphasis was on "development issue"; the population issue was of secondary priority. Ten years later, in 1984, at the World Population Conference in Mexico, Algeria showed a clear shift from its Bucharest position and advocated population growth controls as means of development. What happened in Algeria between Bucharest and Mexico? What happened since then? The aim of this section is to show that behind the changes in speeches, the reality of family planning performances did not follow exactly the ideological stances. What was going on inside Algeria was not completely reflected in the Algerian position as known in the international arena. We shall try to illustrate the debates through the main periods corresponding to the crucial changes in the political leadership as they happened during the late 1980s and the 1990s. Three key periods have been identified: 1962-79, 1980-92, and 1992-2000.

Algerian population policy 1962-79

Since the independence, many factors contributed to shape the Algerian population policy, the fluctuation in its directions and the seriousness of its implementation.

Available data on the Moslem population show that after the end of the Second World War a constant rise in the proportions married (among females) began, accompanied by a lower age at first marriage. The independence war did not affect these trends. Algeria's baby boom continued after the end of the war in 1962.

In 1970, the population growth was 3.4%, resulting from a crude birth rate of 50‰ and a crude death rate of 16.7‰. This period was one of recovering marriages and births typical of post-war periods. The total fertility rate was estimated to be about 8 children per married woman of reproductive age and the median age at marriage (for women) was 19 years.

Population growth did certainly play a role in the Algerian revolution, as well as in many others. Large numbers of excluded people are a good milieu for revolutionary ideas. With the US viewing this problem in a very naive way, expressing fear of the Third World demographic growth rate, newly independent Algeria, having paid for independence with one million deaths, was not likely to accept to reduce voluntarily and drastically its population growth rate. Immigration to France remains influential factor acting on the Algerian population policy. There were 350,484 Algerians in France in1962, 819,053 in 1979, and over 2,000,000 in 1998. Since the annulment of the FIS's election victory, hundreds of thousands have migrated also to England, Italy and Germany. This flux has created bridges between Algeria and Europe with their corollaries of demands for political rights and women's rights.

The Second Period 1980-88: False Shifts and Real Troubles

Algeria did not reach the announced target for 1980. Employment and housing especially were seriously lacking. The population question reconsidered and one can read significantly in the 1981 Five-Year Plan General Report: "The action of active reduction of the birth rate has become a necessary condition to improve the efficiency in the construction of our economy, to respond in a satisfactory and durable way to the social needs of the population."

After 1980, Algeria suffered from a lot of economic and social difficulties. President Bendjedid adopted a population policy. However, what has been presented as a major shift was really continuity because in the field no important improvements appeared. Some observers suggest that the situation actually worsened. The combined effects of external debt,

the drop in oil prices (oil comprises more than 90% of Algeria's external revenues) and unemployment led to socio-political unrest in the country that has not stopped ever since.

Some observers suggest that the population argument was used by politicians to justify the collapse of the centralized economic system and its failure to respond to the social demand for employment, housing and welfare.

A population policy was adopted officially on 20 February 1983 as the National Programme on Population Control. It aimed to develop birth spacing activities; to study the determinants of fertility; and to develop information, sensitisation and education activities in the field of family planning. But there was immediately a problem of efficiency in translating the formulation of the programme into its execution. The conception phase was realized by the Directorate of Family and Population (the national coordinating body, a division of the Ministry of Social Affairs). The execution phase was carried out by the Ministry of Health through its MCH centres. The former had all the means and the power of succeeding in his task; the latter did not have enough means and qualified personnel to provide FP/MCH services.

At the Mexico Population Conference, the Algerian delegation was rather multi-disciplinary, contrasting with the on of Bucharest. It was composed of experts from the statistical office, and representatives from health, planning and foreign affairs. Algeria supported the 1984 World Population Plan of Action.

The national consultation process, which took place before the Mexico Population Conference, included the Ministries of Planning and Social Affairs and statistical office experts as well as Trade Unions and UNFA. Statisticians and gynaecologists provided technical advice. Central Directors in various Ministries participated in the formulation of policy. The Ministry of Social Affairs was in charge of the Coordination of the programme while the Ministry of Health, Directorate of Prevention, was responsible for the fieldwork.

Physicians and gynaecologists from the public sector did take part in consultations.

There was a false shift in 1983. Growth rate was used as an argument to explain economic problems. The programme was more structured when called "birth spacing activities". But when the demographic argument was introduced, and an official population policy put in place things went wrong because of the "bicephalous" programme. The programme became more bureaucratic, has created rivalry between administrations.

In summary, local demand for a population policy was strong and foreign influence was strong, the chief executive rather involved, the programme not tailored to varying cultural conditions and the language of presentation uniform. Foreign donors did play a role in the policy shift, because Algeria after 1980 had to face serious economic and social difficulties, aggravated by the drop in oil prices, the main export product. Adopting a population policy was almost a condition of access to the international assistance. A lot of countries adopted policies with this objective. During this period, the political balance changed: after the death of Boumediene, the Family Code was at last adopted, with a clear Islamic tone. At that time there appeared a secular opposition that openly contested the Family Code. The delay in officially adopting this Code, under Boumediene's rule, suggests that the president could manage to maintain the compromise and preserve an image of unity among the political elite. After his death, the statue quo disappeared. The approach to family planning became "top-down" with a demographic rationale. Having adopted a population policy, the government increased bureaucracy but not efficiency.

The Third Period 1989-2000: Eclipse of Population Policy

During the last twenty years, women have benefited greatly from social policy both in terms of education and health. The latest figures showed that in 1994, 40% of students were female while for the "Baccalauriat" (exam to pass in order to go to universities) there are 188,043 female candidates versus 173,516 males (Bellout, 1994). However, considering the ongoing

financial difficulties and political turmoil, cuts in education and health budgets are being seriously discussed in the context of structural adjustments reform (La presse, 30 August 1998). Since 1988, many political changes have occurred in Algeria. Social and political unrest culminated in the collapse of the State-Party system. The instability made successive governments concerned more with survival than with the implementation of any serious policy. During this period the population policy was neglected in official debates and the staff in charge of the programme were supposed to join the Ministry of Health, in a new Family Directorate that was never created. Between 1989 and 1992, the programme was all but buried and forgotten. After 1992, a Ministry of Health and Population was established and the programme has been openly discussed again. However social disorganization, and the political and economical reforms underway have complicated any serious action. The coordination of the National Programme on Population Control has been a prerogative of the Social Affairs Ministry until recently. It is now under the authority of the Ministry of Health and Population, the executive body being the Prevention Directorate assisted by the INSP. This latter has directed since the beginning the MCH centre's activities.

This period of political instability has also been a period of confusion: there was an increase in the amount of family allowances, obtained by the Trade-Union UGTA, that should be interpreted rather as compensation for the fall in the value of the Algerian currency, than as an incentive for large families. However, the increase gave a wrong signal to families: the monthly allowances per child were increased from 40 to 140 dinars. This period gave access to the international assistance in the field of population programmes. However, because of political conflicts, corruption and mismanagement, family planning performances did not benefit greatly from the international funds: The external population assistance per capita amounted in 1995 to only $0.053 compared with $0.29 to Morocco and $0.373 to Tunisia (UNFPA, 1997). Contraceptive supplies are severely lacking, as well as other basic products.

III.2.2 History of family planning activity in Algeria

Before 1962, Algeria was a French colony and French law was enforced on its territory. Contraception was forbidden, including advertising, sales, etc. and punished by the law.

The women's mass organization of the ruling party (UNFA) adopted in 1966 a motion on "family planning" urging government on favouring contraceptive use to protect mother and child health. The UNFA was very successful in mobilizing women and making them improve their status, thanks to former female veterans, who joined the organization. However, a majority thought that the most valued function for women was still marriage and motherhood and the most secure function that based on family ties.

The efforts of some secular leaders to change women's status by removing gender-based inequality of access to education, health care and employment, was without impact in presence of a much stronger opposing force. Islam is the state religion and from the beginning there has been a body of imams and scholars embodied in the state structure, under the authority of a Minister of Religious Affairs. The political leaders have always stressed the Arabic and Islamic characters of the Algerian "socialist" society. During the liberation war, Islam was used to mobilize the people against France, while many leaders were secular. After independence, representatives of the Islamic wing did of course obtain key positions in the state hierarchy and in the army.

The 1962-79 period was marked by President Boumediene's (1965-79) changes of mind regarding the adoption of a population policy. First, in 1966, he called the Algerian Women to struggle in order to abolish polygamy and dowry (in the frame of the Family Code) and to implement family planning as a means to free women and preserve their health and that of their children. "...We invited women to stand for Mayor elections in order to brood over problems related to marriage, divorce, polygamy and family planning.." (Bulletin intérieur, 1966). Boumediene was joined by his Minister of Education who publicly expressed in 1966

his serious concerns about the educational system's future in light of expected population increase "Unless an action on birth rate is engaged, level of school enrolment will become a problem and the absolute number of illiterates will increase, because of the rate of increase in the number of children in age to go to school" (Marcoux, 1978).

Then, in a dramatic shift, Boumediene declared his opposition to family planning on 20 June 1969: "Our aim is to assure to our masses a standard of living equivalent to that of the most developed countries... we do not accept false solutions like birth control, which means suppressing difficulties instead of searching appropriate solutions. We rather favour positive and efficient solutions, that is creating jobs for adults, schools for children and better social equipment for all" (Remili, 1972). Was this shift real? Or was it an expression of the balance of political forces?

Between his position in favour of family planning in 1966 and his apparent shift in 1969, there is a good deal of scope for interpretation. After independence, in spite of progressive declared positions on women's status, many leaders were not ready to accept radical changes in gender roles. President Boumediene was certainly more open to women's views and his 1966 speech allowed women's organizations to start working on the idea of family planning from a health and women's rights standpoint. He also wanted women to play a role in the creation of the Family Code. Encouraging women to struggle against polygamy and dowry certainly expressed a desire of the Family Code should banish these practices. However, multiple forces that participated in the Revolution shared power and the President had to compromise with every significant force. He could not push lawyers to adopt the Family Code he wanted. That is why this Code would be adopted only after his death, in 1984. On the other hand, population growth did certainly play a role in the Algerian revolution, as well as in many others.

The first step in the Algeria population policy process was to poll public opinion about the issue and to identify the FP needs of certain target groups. This was carried out two surveys. The first was the "Fecundity and attitudes towards Family planning in Algeria" survey. It was undertaken in 1966 by the Quaker Service in Algeria with support of the **British Friends Service Council** and the **American Friends Service Committee**. About 500 persons were interviewed, 415 being women. The second inquiry was a national KAP study (1967-68) conducted by AARDES (Association Algerienne de Recherches Démographiques et d'études Sociales), which was an institution of the Secretary of State of Planning. Although it was not officially acknowledged, this survey received a support from the **Population Council** at the conception and the sampling stages.

This survey addressed about 2,000 couples of reproductive age having at least one live birth at the time of the first (1966) Algerian census. The Secretary of State for planning himself introduced the results of the KAP study, stressing as a preamble, the "development option". "..In response to demographic growth, many Third World countries have engaged in birth control programmes. The Algerian Revolutionary Power has refused such a solution, as an alternative to development, in order to attack the roots of the problem, by constructing an economy capable of satisfying all the cultural and material needs of the Algerian people. I do not mean that the population question is neglected, or that family planning file is closed" (AARDES, 1972). The findings showed that despite the declared position in favour of contraceptive use, most of the Algerian population, because of its economic level, would be excluded from a national programme. At this time, conceptual confusion made decision makers think that a programme must be necessarily birth control-oriented, while family planning as a voluntary behaviour did not need a programme. Also, the intellectual milieu was rather favourable to family planning, though hostile towards population policy.

As one result of this identification phase, family planning was officially institutionalised as of July 1967. However, long years of struggle of the UNFA (Union Nationale des Femmes Algriennes) have been also necessary to reach this result (Dourlen-Rollier, 1970).

Formally created in 1962, the UNFA held its first Congress only on 20 November 1966. On that occasion a motion was carried demanding contraception as a woman's right: "Having studied the question of birth regulation, and willing first of all to protect the mother and child health, the Congress demands the implementation of family planning under necessary restrictions... family planning must be based on scientific data: it is the duty of the state to prepare and provide necessary structures and to educate people...exclude abortion...necessity of strict medical control and training of qualified personnel...in order not to fall in the problem met by several countries where foreigners have implemented themselves the family planning structures, in place of nationals neglecting both medical control and human contact..." (Bulletin Intérieur, 1966).

In November 1967, the first Algerian birth-spacing centre was launched in Algiers by Dr_Laliam, the UNFA President and a paediatrician. She made it clear to the press that many other similar centres would open everywhere in the country.

Religious leaders have never been explicitly opposed to family planning. After a period of study, the first Algerian fatwa (religious stance), was edicted in 1967. This was judged much more liberal than the Catholic Church's Papal Encyclical of the time.

It read, "Contraception is therefore permitted under the following conditions:

1- Its use must be an individual practice, in case of existing or contingent need, concerning the mother or her (present or future) children.

2- The determination of this need must be reserved to the concerned persons.

3- if the government is willing to take any measures, it is necessary first to undertake a sensitisation campaign and...No coercion...

4 - make available all necessary means to the concerned persons, in order to prevent them from engaging in a dangerous path." (La Régulation des Naissances en Islam, 1968).

The women's organization's motion stressed the medical control and the necessity for the state to implement family planning through appropriate structures, while the fatwa showed little enthusiasm for governmental action. Dr Laliam certainly played a decisive role in the wording of the UNFA motion and especially the "*médicalisation*" of family planning. Gynaecologists wanted family planning to be a medical issue, not to be debated among the public at large. On the other hand, religious scholars did not feel very comfortable about a national programme with a strong government involvement, and preferred a more individual "choice" strategy. Thus the Algerian experience of family planning, as is that in other fields, is the result of a compromise. There was mass media coverage and support in the daily press. There were round-tables on consumption and population.

In 1968, Dr Laliam circulated a 38-pages text entitled "Family Planning", taken from a speech she made to the women's organization's staff seminar (9-14 April 1968) on the social and medical benefits of family planning. In every issue of the UNFA "Internal Bulletin", a relevant topic of family planning was addressed and largely debated. Even more significantly the UNFA was explicitly mobilized against "non-application of family planning", as if despite the official stance, there were remaining obstacles: El-Moudjahid (1967) refers to "The struggle of UNFA against certain negative traditions like polygamy, dowry and non application of family planning". However, after the 1969 official stance of Boumediene against population growth control, and in the 1971 issues of El-Djazaria, the women organization review, we do not find any reference to family planning. The UNFA was the trigger of the whole process, however, and even though it was the most effective pressure group it had to follow Boumediene decision and keep silent on the issue, for a while.

The international agencies constituted an efficient pressure group through several means. The main one was sensitisation of strategic professionals or influential persons from national elites. Many medical practitioners from Algeria were offered scholarships from US Foundations (Ford in first instance) to attend courses, seminars and conferences whether in the USA, Canada. Technical assistance to conduct population studies (for example the AARDES KAP survey) without direct funding by external donors was provided. A Swedish NGO provided humanitarian aid for development, and Quaker services too helped on a humanitarian basis. The Scottish Quakers were the first to provide some expertise in family planning, which enabled IUDs to be inserted.

The first Algerian law on the age at marriage was published on 29 June 1963 and declared the minimum age at marriage to be 16 completed years for females and 18 completed years for males. In 1967, as it has been mentioned, the first Algerian birth-pacing centre was launched in Algiers. Two years later, two other centres opened in Oran and Constantine (the main cities in the West and East of Algeria, respectively) but would stop their activities after two years.

In 1974, Dr Ladjali was charged to start a national birth-spacing programme and appointed as Head of the Central Office of Maternal and Child Health (MCH). She started establishing a national network MCH centres. The number of these kept growing until it reached 260 by 1980. These centres were offering free contraception as well as free health care services for mothers and children. Family planning was well established. For example, midwives (in public health centres) could release and prescribe contraceptives and insert IUDs.

All this time the official position of Algeria on population policy remained unchanged, culminating in 1974 at the Bucharest Conference on Population, when Algeria shared the views of many Third World nations and argued that development should be emphasized rather than population control.

During this period of high oil prices, and of confidence in the economic growth, Algeria adopted a social policy favouring education and health. Public expenditure per capita for health was between 2 and 5 times higher than in Tunisia and Morocco, its immediate neighbours. From 1974, free health care was made available in the public health institutions.

Following the adoption in 1974 of the free health care system, the first health law was passed in 1976. Article 28 states that "Abortion is forbidden and punished...However, abortion is permitted as a necessary therapeutic measure in order to save the jeopardized mother's life or to preserve her gravely endangered health...". Article 119 states that "The national birth spacing policy by means of contraceptive use...to preserve life and health of mothers and children, as well as the social and psychological family welfare, by making available all appropriate and accepted means by the Minister in charge of Public Health".

High-ranking ruling party members publicly promoted family planning through mass meetings. About 300 public health centres were already providing family planning services, at the commune level, integrated with Mother and Child Health activities.

At the International level, Algeria sought the support of UN organizations. In 1971, the Ministry of Public Health presented a request to the World Health Organization, in which Algeria declared that she was willing to add birth spacing to other MCH care services. A national programme under the responsibility of the Central Office of MCH centres was proposed in order to integrate the new birth spacing activities with the MCH programme.

During 1974-79, the programme received $1.2m from UNFPA, the World Health Organization (WHO) and UNICEF to acquire MCH centre equipment, and contraceptive supplies, as well as to fund training both in Algeria and abroad. As a consequence, 275 health professionals were trained, Among them 244 midwives, 17 public health officers, 6 rural birth attendants, 3 social workers and 5 nurses. On average, every year several groups of 20-25 persons were trained, and a total of 19 training sessions were organized.

By 1978, Algerian funds were released to acquire contraceptive supplies ($0.16m in 1978 and $0.76m in 1979). All existing public health facilities were used by the programme, including infrastructure and personnel. Before 1980, most contraceptives were funded by external sources, mainly UNFPA and UNICEF.

Donors provided documentation, contraceptives, communication kits, equipment, training and expertise. In 1975, UNFPA-UNDP accorded to the Algerian government $1.3m to help implement the second Algerian census (1977) as well as other population activities. The Algerian contribution was $11m. Many other projects benefited from UNFPA assistance until 1989, consisting of training, research and feasibility studies. The Algerian Family Planning Association was created only in 1987, so during this period the external donor agencies operated by providing equipment and other modest assistance to the National Statistical Office (1977 Census) to CENEAP (Centre des Etudes Appliquées à la Population), and INSP (Institut National de la Santé Publique) and by providing international experts.

The Algerian government maintained and analysed vital statistics, annual household surveys, and population censuses. The kind of data collected relate to contraceptive prevalence, type of contraception, personnel and supplies distributed, new acceptors and number of FP/MCH visits. The government supported no strategic planning research.

The public health centres offered family planning services free to those who asked for them without publicity or willingness to impose it. That is why the shift in the official position, was not accompanied by a brutal change in the field. The number of new accepters rose from 14,000 in 1975 to 50,000 in 1976 and to 80,000 in 1979. These new contraceptive users constituted about a half of the total users according to the results of the National Fertility Survey, confirmed later by The 1992 Algeria PAPCHILD survey.

There were 346 centres offering contraception in 1983 and 2054 in 1990. However, all methods were not available everywhere: only a third of these centres offer IUDs. The number

of centres already providing Family Planning services is assumed to be capable of servicing 2.8 million married women in reproductive age. Officially, one should find such a centre in every baladia (municipality). However, in many cases, structures are lacking, and even where structures do exist, contraceptives are lacking.

Family planning is integrated with Mother and Child Health activities. The missing link is leadership, "the demand (for contraceptives) exceeds supply, but since the topic is not politically important, the programme is not under a strong leadership. After 1983, practically nothing changed with regard to field work: same personnel doing same activities with same material in same premises...However, bureaucracy increased and every medical practitioner I interviewed declared that the adoption of the population policy made things go wrong, because the field work was under the responsibility of the Health Ministry, while its "coordination" was under the Ministry of Social Affairs" (Souici, 1994).

Dr Ladjali's thesis is the most serious and the most comprehensive evaluation of the birth spacing programme. In every MCH centre there are individual files, individual forms. One of the findings was that only 40% of the contraceptive users were MCH centre clients, while 60% went elsewhere. In 1986, the National Fertility Survey revealed similar figures (Ladjali, 1983). Only oral contraception is easily available in most health units.

Between 1989 and 1992, the FP programme was all but buried and forgotten. After 1992, a Ministry of Health and Population was established and the programme has been openly discussed again. However social disorganization, and the political and economical reforms underway have complicated any serious action. The coordination of the National Programme on Population Control has been a prerogative of the Social Affairs Ministry until recently. It is now under the authority of the Ministry of Health and Population, the executive body being the Prevention Directorate assisted by the INSP. This latter has directed since the beginning the MCH centre's activities. The emphasis on family planning also changed. The legal texts

organizing family planning activities stressed once the "programme" (decree N89-91 appearing on 7 June 1989 in the Official Gazette) with a Directorate of the Family organized in two sub-directorates, dealing with MCH and Birth Spacing. A year later the decree N90-124 (9 May 1990) reorganized the Health Ministry. In the new structure, there is no longer a directorate of family, but only a sub-directorate of MCH no Board of Birth Spacing. This is an important discontinuity. On 6 March 1994, a new decree, N94-54, reorganized once again the Public Health and Population Ministry. This time, there was a Directorate of Population with 3 sub-directorates: one dealing with all issues related to family planning services, one dealing with issues related to non-contraception services in the population control programme, and the third one dealing with the analysis of demographic changes.

Since 1994, The mass media supported and are still supporting family planning. Several press campaigns on radio and TV have been organized. However these most recent years there has been a relative eclipse. Mass media, especially the press, frequently denounce shortages in contraceptive supplies, leading to bargains being stuck on the black market at grossly inflated prices: "Five years ago, pill cycle cost was only 7 dinars. It is now 150 dinars. For a IUD, one have to pay 1200 dinars" (Merkouche, 1994).

Up until 1996, 1965 FP service delivery units were mainly located within the healthcare delivery system (primary health care units, regional and university hospitals). The quality and performance of the service depends on the proximity to university hospitals. These later mainly provide surgical and IUD contraception (a small proportion of use). Most of the contraception used in Algeria (pill) is simply "distributed" by non FP professionals as reported by Algerian authorities. By the 1996, beside the 1965 FP service delivery units, 311 centres of FP (CPF) were created and are made operational in all FP services provision. Some are still located in maternity yards, regional and university hospitals but most are autonomous. Midwives and gynaecologist are in charge of IUD insertion (respectively 1 per

900 and 1 per 9000 married women 15-49) (Revue du CENEAP N° 14, 1999). As of 2001 the main drawbacks of the Algerian FP programme remain the same than 20 years ago:

- Quasi exclusive predominance of pill use,
- 60% of the pill use is polarised by two pill brands making shortages very often,
- Most of the non users couples, with highest fertility rate, are less motivated to adopt birth spacing but birth limitation once they achieve 6-8 alive children.
- Health side effects of pill use is the major reason for contraceptive use discontinuation and the subsequently definitive abandon.

III.3 Contraceptive prevalence in Algeria

III.3.1 History of Contraceptive prevalence

The 1986 Algerian National Fertility Survey (ENAF) is the only available source, which can be used to trace contraceptive usage patterns in Algeria and their development over the period of 1967-1986. In 1962, contraceptive prevalence was about 4% in urban and 1% in rural areas. The urban prevalence rate rose to 14% between 1967 and 1971, while the rural rate remained at 5%. The prevalence rate increased to 23% in urban areas, 7% in rural areas, and 13% overall in 1972-77, and to 40% in urban areas, 17% in rural areas, and 25% overall in 1977-82. In 1982-86, the urban rate increased to 55%, the rural to 30%, and the overall rate to 39%. A clear trend over time was observed toward adoption of contraception at younger ages and lower parities. As for current use in 1986, ENAF data indicated that 32% of non-single women aged 15-50 were using a contraceptive method: 24.7% used pills, 1.9% IUDs, 0.9% abstinence, 0.5% condoms, 2.9% withdrawal, and 1.0% other methods. Among the 67.7% who used no method, 1.2% were sterilized, 4.0% believed themselves sterile or in menopause, 14.3% were pregnant, 5.8% were divorced, widowed, or separated; 12.4% were married and wanted a child; and 30.0% were married but did not want a child. Among married women exposed to pregnancy but not wanting a child, 78% in metropolitan areas,

56% in other urban areas, 47% in rural areas, and 55% in Algeria (exclusive of the Sahara) used a method. 17% of non-single women had used a method in the past but no longer did so. Of these 33% discontinued to become pregnant, 11% feared side effects, 23% had medical contraindications, and 9% had experienced method failures. Of nonusers, 38% stated they did not want to begin use, 28% declared they would like to use a method, and 1% did not know what to answer. 33% were not exposed to risk of unwanted pregnancy. Among women using contraception, those wanting more children predominated at parities of four and under. Only one-fourth of women at parity 4 who used contraception wanted more children. The analysis of open birth intervals confirmed the increasing importance of birth limitation rather than spacing after the fourth birth (Kouaouci, 1993).

Table 3.3 Percent distribution of currently married women 15-49 by contraceptive method currently used, Algeria ONS 68, ENAF 88, PAPC 92 and MDG 95

	ONS 68	ENAF 88	APAPC 92	MDG 95
Any method	**8.0**	**35.5**	**50.8**	**56.9**
Any modern method	**1.5**	**31.1**	**43.3**	**49.0**
Pill	1.3	26.4	38.7	43.4
IUD	-	2.1	2.4	4.1
Injectables	-	0.6	0.2	-
Diaphragm / foam / jelly	-	0.1	0.2	-
Condom	-	0.3	0.5	0.6
Female sterilisation	-	0.6	1.0	0.9
Any traditional method	**6.5**	**4.4**	**7.5**	**7.5**
Periodic abstinence	0.4	0.8	1.7	2.5
Withdrawal	5.9	3.3	1.7	0.6
Breastfeeding	-	-	4.1	4.4
Not currently using	**92.0**	**64.5**	**49.2**	**43.1**

Table 3.3 shows the trend in contraceptive use prevalence from 1968 to 1995 drawn from comparable contraceptive use surveys (Bilan de situation et programme d'action pour l'année 1997, Ministère de la Santé et de la Population-Direction de la Planification www.ands.dz):

1. The 1968 "Enquête des ménages ONS 1968".
2. The 1986 Algerian National Fertility Survey (ENAF)
3. The 1992 Algerian PAPCHILD Survey
4. The 1995 "Enquête Objectifs de la mi-décennie MDG 1995, Ministère de la Santé".

The most recent surveys (1986-1992-1995) demonstrated clearly the lead taken by Pill. In 1995, it is accounting for 88.6% of the modern methods in comparison with only 8.4% for IUD, 1.8% for Female sterilisation and 1.2% for Condom. As for the traditional methods, and beside their well known ineffectiveness, the study of their rates and trends over time do not add any relevant information on the role of contraception in controlling fertility.

Algeria FP programme is therefore confronted with the uneasy task of increasing effective contraceptive user by increasing pill use effectiveness but more decisively by converting pill users to IUD and female sterilisation and recruiting IUD and female sterilisation new users.

III.3.2 Differentials in Contraceptive prevalence

As we did not have direct access to the Algeria PAPCHILD database, we based our study of the current contraceptive use on the Algeria PAPCHILD final report (1994). We extracted from the available tables the information relevant to our topic: current contraceptive use by residence, region and women's education. Unfortunately, parity was only covered in two tables in the report while father's education was totally absent.

Residential Distribution of Current Users by Method

Table 3.4 reports the distribution of contraceptive prevalence in 1992 by method used and by urban/rural residence. Almost half of the women married when interviewed were not using a contraceptive method (49.3%). Only 1% was sterilized. Of the rest (49.7% of the sample) 77.5% were using the pill and 15.4% were relying on natural methods, and only about 5% were using an IUD. Use of the other methods is negligible and will not be considered further in the account of the role of contraceptive use in controlling fertility in Algeria.

However, it is worth relating the very low use of condom (less than 0.5%), local methods (around 0.2%) Injectables (around 0.1%) and IUD (cooperated with Tunisia and considering

its high efficacy) to what was discussed earlier about the overwhelming role of pill distribution operations of the Algerian FP programme. It is also worth noticing that the designers of the Algerian PAPCHILD considered and reported breastfeeding as a natural family method, which was not the case for the Tunisian PAPCHILD or DHS. One effect of this is to make the non-use prevalence rate decrease from 53.3 to 49.2.

Table 3.4 Percent Residential Distribution of Currently Married Women By Method					
Residence	**Urban**		**Rural**		**Algeria**
None	**42.5**	*35.5* *	**55.9**	*48.6* $	**49.2**
Pill	**43.0**	*7.9*	**34.0**	*6.3*	**38.7**
IUD	**3.5**	*27.9*	**1.2**	*21.1*	**2.4**
Breastfeeding	**3.0**	----	**5.2**	----	**4.1**
Periodic Abstinence	**2.7**	*10.2*	**0.8**	*2.5*	**1.7**
Withdrawl	**2.2**	----	**1.2**	----	**1.7**
Condom	**0.7**	----	**0.3**	----	**0.5**
Local Methods	**0.3**	----	**0.0**	----	**0.2**
Injections	**0.1**	----	**0.2**	----	**0.2**
Female Sterilisation	**1.4**	*10.5*	**0.7**	*16.0*	**1.0**
Other	**0.5**	----	**0.1**	----	**0.3**
Number	**2331**		**2384**		**4715**

Source: Algeria PAPCHILD, 1992.

*** Urban $ Rural (contraceptive Use Prevalence, Tunisia PAPC 1994-5)**

Residence constitutes a very powerful factor related to contraceptive use. Indeed, 42.5% of urban women are not using any contraception (45.5% when breastfeeding is not considered a contraceptive method) compared with 55.9% in rural areas (61.1% when breastfeeding is not considered a contraceptive method). Urban pill users are 43% of all urban women, whereas pill users are only 34% of rural women. IUDs are thrice as widely used in urban than in rural areas while periodic abstinence and sterilization are respectively 3.4 times and twice as prevalent in the urban than in the rural part of the country. In contrast, breastfeeding is more prevalent among rural women (5.3%) than urban women (3%) but this has to be seen in the context of the usual koranic teachings, which impose two full years of breastfeeding; the rural women stick more to the koranic teaching than the urban ones.

Regional Distribution of Current Users by Method

The three main regions correspond to three different levels of population density in Algeria, defined by climatic and economic features, from the most to the least populated: the sahel (the inhabitable part of the coast) with three sub-regions (west, middle and east), the Heights with 2 sub-regions (west and east) and the South.

Table 3.5, which reports the regional distribution, shows clear method-specific contraceptive use differentials. Thus, for instance, the Heights has the highest rate of non-use followed by the South. It is important to consider this alongside their rate of use of the pill and of natural methods. The South has the lowest rate of pill use (28.6%) and the highest use of natural methods in the country (11.9%).

Table 3.5 Percent Regional Distribution of Currently Married Women By Method use.

	Sahel	West	Midd	East	**Heights**	West	East	**South**	**Algeria**
None	**46.2**	41.4	49.5	49.0	**54.6**	54.3	55.5	**52.0**	**49.2**
Pill	**42.0**	50.8	35.1	38.7	**34.5**	33.6	36.9	**28.6**	**38.8**
NatMet[1]	**7.1**	5.3	8.8	6.9	**7.1**	8.0	4.9	**11.9**	7.7
IUD	**2.5**	0.9	3.8	2.9	**1.6**	1.7	1.3	**4.0**	**2.4**
F.Strs.[2]	**1.1**	1.2	1.0	0.9	**0.9**	0.9	0.9	**0.7**	**1.0**
Condom	**0.6**	0.5	0.6	0.5	**0.4**	0.5	0.3	**0.2**	**0.4**
Number	**2905**	1163	1248	494	**1433**	1035	398	**377**	**4715**

[1] Natural methods: Periodic Abstinence, Breastfeeding & Withdrawal
[2] Female Sterilisation
Source : Algeria PAPCHILD

Distribution of Current Users by Educational Level

Table 3.6 reports the distribution of contraceptive prevalence by method and by educational level of the user (in grouped numbers of years of attending school: none, 1-5, 6, 7-9 and 10 or more). Educational level constitutes also a very strong differential of contraceptive use. IUDs are thrice as widely used among highly educated women than among the no educated ones. Periodic Abstinence use was not explicitly defined in the Algerian 1992 PAPCHILD report, we speculate that it refers to general period of abstinence rather than a detailed enquiry of the practice one of the rhythm methods. Variations in the use of periodic abstinence are also well

documented in Table 7.4. Among the highest educated women its prevalence rate is as high as 6.2%, 14 times higher than among the lowest educated women (0.44%). By pooling the rates among women educated 7 or more we can compare the trends of periodic abstinence use in Algeria and Tunisia. The prevalence use of periodic abstinence for women educated 7 or more is around 4%, roughly 10 times higher than among the lowest educated women (0.44%). This is the same gradient between the same education groups as reported for Tunisia in Table 2.10 (respectively 22.8% and 2.8%). The opposite trend exists with respect to breastfeeding. Among the highest educated women its prevalence rate is as low as 1.45%, 3.6 times lower than among the lowest educated (5.24%). Pill use is also associated, though not linearly, with a woman's education level.

Table 3.6 Percent Educational Distribution of Currently Married Women By Method

	None	1 to 5 y.	6 years	7 to 9 y.	10 y. +
None	**56.0**	**40.7**	**39.5**	**37.6**	**44.1**
Pill	**33.7**	**45.3**	**44.6**	**49.9**	**39.0**
IUD	**1.6**	**3.1**	**3.0**	**3.0**	**4.9**
Breastfeeding	**5.2**	**3.3**	**1.4**	**2.3**	**1.5**
Periodic abstinence	**0.4**	**2.5**	**4.1**	**3.2**	**6.2**
Withdarwl	**0.8**	**3.2**	**3.3**	**2.4**	**2.5**
Local Methods	**0.1**	**0.0**	**0.8**	**0.0**	**0.7**
Condom	**0.2**	**0.6**	**1.7**	**0.3**	**0.7**
Injection	**0.2**	**0.1**	**0.0**	**0.0**	**0.0**
Female Sterilization	**1.4**	**0.4**	**1.4**	**0.9**	**0.3**
Other	**0.2**	**0.7**	**0.3**	**0.4**	**0.0**
Number	**2641**	**1077**	**367**	**346**	**279**

At this stage, it would have useful to carry on studying the distribution of contraceptive prevalence by parity levels. This was not possible because the report does not contain the necessary information. However, it is well documented that parity is the most powerful factor associated with contraceptive use, but parity itself is related to many other factors, being highly correlated with woman's education, professional occupation, place of residence, and region of residence.

When comparing sections II.3.2 and III.3.2 we notice three similarities: modern methods use, IUD and natural methods use increase in both countries with urban residence, educational level. However the pace of increase is more marked in Tunisia.

While Tunisian data show a clear impact of the TNFPP illustrated by very high strerilization and IUD rates among obedient couples of the North West of Tunisia (respectively 15 and 21% of current use, Table 2.6) it also demonstrated the increasing official commitment stimulate the free demand and the adoption of contraception (uses IUD, pill and periodic abstinence are highest in the most developped regions: Tunis, North east and the Sahel).

This kind of deduction is not easy to achieve with Algerian data mainly because the pill is overwhelmingly distributed and used.

III.4 Reproductive health in Algeria

III.4.1 Algeria's contraceptive method mix

Table 3.7 documents and compares the changes that have been occurring in the method mix among birth use in Algeria, Morocco and Tunisia over 1986-1995. It is similar to Table 2.13 which has been commented with respect to Tunisia and Morocco. As for the Algerian method mix there is no shift whatsoever toward more effective methods (IUD and female sterilisation)

Table 3.7 Percent distribution of currently contraceptive user married women by Method Currently Used (Trends in the method mix among users)
Algeria ENAF 88, PAPC 92 and MDG 95
Morocco WFS 1979, DHS 1987, DHS 1995 and PAPCHILD 1997
Tunisia WFS 1978, DHS 1988 and PAPCHILD 1995

	Algeria			Morocco				Tunisia		
	1986	1992	1995	1979	1987	1995	1997	1978	1988	1995
Pill	74	76	76	61	64	64	70	21	18	12
IUD	6	5	7	5	8	9	7	28	34	42
F.Strs.[1]	2	2	2	4	6	8	6	24	23	21
P. Abs. [2]	2.2	3.3	4.4	29	19	16	15	21	19	17

[1] Female Sterilization [2] Periodic Abstinence (Traditional Methods for Morocco)

The stagnation of the overwhelmingly dominance of pill (remaining at 75% contribution to the method mix) use is somehow similar to the one in Morocco (though increasing over the same period of time). It is however surprising to notice that IUD contribution to the method mix in Algeria in 1995 is the same that the one of Morocco in 1997 despite the fact that Morocco has had a much longer FP stand, commitment and activities. Only female sterilisation is four times higher in Morocco in 1995. Trends over time of periodic abstinence use in Algeria show a slight increase from 2.2 to 4.4 over 10 years but it is likely to follow the Tunisian trend if the political and social environment get back to normal.

III.4.3 Reproductive health in Algeria and Tunisia compared

If we stated early in section II.4.3 that the TNFPP has several hindrances it is quite easy to conclude that the Algerian FP programme has the same than the Tunisian ones, but more acute and significant, and others much more serious related to the total absence of pro-women legislation and to the socio-political turmoil and chaos that characterised the Algerian scene over the last fifteen years.

The most striking disregarded emerging reproductive health issues are:

- The management of pregnant women after being raped (Zemmour-Khorsi, 1994; Tunis Hebdo, 2001). 4,000 unwed and pregnant Algerian women have been victims of violence, including kidnapping and rape during the civil war throughout the last 6 years. (www.ArabicNews.Com , 21 March 1998).

- The access to safe abortion services on request for all women, especially unmarried rape victims. Tunisia legalized abortion in 1965 for women with five living children and amended the law in 1973 to allow abortion on request for all women during the first trimester if performed by a physician in a hospital or clinic. This law has led to a reduction in maternal mortality and morbidity. As of August 2001, there is no legislation on abortion whatsoever in Algeria. One anecdotic exception occurs in 1998 when the Algerian government asked

religious authorities to declare a fatwa or religious edict allowing women raped during political violence to have abortions. Hundreds of babies born as a result of rapes by Islamic fundamentalists have been abandoned. ("Algeria: abortion appeal for raped women," BBC World Service, 2 March 1998).

Another unnoticed emerging issue is the growing reproductive health needs of adolescents and unmarried non-raped women. In Algeria, as shown in Table 3.8, according to the 1998 census, the population of adolescents aged 10-19 was 7.27 million, (25% of the population). Algeria is a middle-income country that has witnessed a decline in per capita income since the end of the 1980s as a result of significant political and socio-economic change. Unemployment is a major problem that particularly affects those under 30: 27% of the active population was unemployed in 1995 and 35% was a conservative estimation for 2000. Rapid urbanization and housing shortages are also great sources of tension. A median of 9.6 Algerians currently live in each housing unit. The demographic transition under way in the country is characterized by rapidly decreasing fertility -total fertility decreased from 8.4 in 1970 to 3.1 in 2001; an increase in the age of marriage -27.8 years for women and 31.2 for men in 1998; It is worth noticing that the growth of proportions of unmarried persons expose Algeria to the same emerging unmet reproductive health needs.

Table 3.8 Percent distribution of Algerian population 10-19 by Gender

	10-14	15-19	10-19	Algeria
Male (in million)	1.92	1.78	**3.7**	**14.7**
%	*13.1*	*12.1*	*25.2*	*100.0*
Female (in million)	1.85	1.72	**3.57**	**14.4**
%	*12.8*	*11.9*	*24.8*	*100.0*
Both genders (in million)	3.77	3.50	**7.27**	**29.1**
%	*13.0*	*12.0*	*25.0*	*100.0*

Source: 4ème Recensement Général de la Population et de l'Habitat. Algérie 1998.

III.5 Conclusion

This chapter has contained two parts in which was addressed two very important aspects in Algeria:

1. The historical accounts of the Algerian population policy. A special attention was given to the Algerian leadership ambiguous, confusing and undecided position towards population policy and its impact on nowadays contraceptive use (dominance of "distributed" pill) and fertility control.

2. Its similarity with Tunisia in terms of facing new challenging emerging reproductive health unmet needs concomitantly with its specific reproductive health problems related to the Algerian context during the last two decades.

impact of contraceptive use on fertility depends not only upon prevalence and choice of method but also upon reliability and continuity of use. Some cross-country evidence suggests that a consistent relationship between contraceptive use and fertility does not always exist. Part of the reason for this apparent discrepancy is that increases in contraceptive use in some countries may be merely compensating for other fertility-enhancing trends, such as declining levels of lactation and post-partum abstinence (Bongaarts, 1987). Contraceptive failure becomes a progressively more prominent fertility determinant as fertility preferences decline and as use of contraception increases. The values of the contraceptive failure rates in particular societies such as Tunisia become important for understanding fertility decline. Second, accurate information on contraceptive use dynamics is important for family planning (FP) programme policy makers who are evaluating the impact of providing contraceptives. Examination of prevalence provides programme administrators with valuable clues for evaluating programme effort and for improving program effect (Ness, 1997). The prevalence of contraceptive method and the particular mix of different methods used by couples is influenced by the FP services such as the availability and accessibility of various methods, by background characteristics of users (or potential users) and by their preferences, and method attributes. Information on acceptance and choice allows to the evaluation of the adequacy of performance through the comparison of actual acceptors with established targets, and of efficiency through the development of costs per acceptor, which can be compared across countries or over time within countries (Bongaarts, 1991). The study of contraceptive discontinuation is important for two reasons for a FP programme. First, discontinuation is an indicator of method acceptability. Changing methods denotes dissatisfaction with specific method characteristics, such as use-effectiveness, health effects and level of convenience. Stopping all contraceptive use while at risk of an unintended pregnancy marks a more general dissatisfaction with both current and available alternative method types, a dissatisfaction that

may result from the couple's experiences with the method abandoned. Since publicity about the adverse health effects of the pill and IUD may have altered the relative acceptability of these and other method types, more and more educated couples are inclined to using natural FP methods. The examination of current patterns of discontinuation is particularly important. A second important reason to study discontinuation is that it directly affects method efficacy, which is a function of two factors: effectiveness during use and continuity of use. Methods which are most useful for regulating fertility are those that are associated with low rates of both failure and discontinuation; to the extent that either rate is high, the method has reduced utility (UNFPA, 1992, 1997).

IV.2.1 Summary of available data sources

The available survey data for studying family planning and reproductive health in Tunisia and Algeria are the Tunisian 1988 DHS and the 1992 Algeria PAPCHILD surveys. Their standard, or core, questionnaire collects a full birth history as well as a considerable amount of information on a respondent's background, on her reproductive history and behaviour, contraceptive knowledge and practice, maternity and child-care history, and the characteristics of her household and her husband (see Croft, 1988, for a complete and annotated description of the data).

IV.2.2 The Demographic and Health Surveys

Use and importance of data from large-scale surveys

Since the 1970s, data from large-scale surveys have shown an important increase in contraceptive use prevalence in Tunisia. For example, between 1978 and 1992 the overall prevalence rate rose from 31.4% to 53.6%. It is estimated that it will rise to 58% in 1996 and 63.1% in 2001 (Boukhris, Rabat 1992). Until 1988, there was no, or very little, information on the effectiveness of contraceptive use in Tunisia obtained either from clinical trials or from programme surveys of modern methods. Therefore estimates did not represent

effectiveness of contraceptive practice among the general population of married women of reproductive ages. While the topic has received more attention in many other developing countries, very few in Tunisia have realized its significance despite the fact that contraceptive prevalence is rising steadily and the desired number of children is about two. This lack of awareness is due, undoubtedly, to the paucity of estimates of contraceptive failure, which result in large part from the limitations of the available data. The Tunisian World Fertility Survey in 1978 (1978 TWFS) and the Tunisian Contraceptive Prevalence Survey in 1983 (1983 TCPS) mainly sought information on knowledge, availability and accessibility of contraceptive methods, and on current use and ever-use of a method, but neither survey elicited the two pieces of information necessary for the calculation of contraceptive failure rates: duration of use and reason for discontinuation of contraceptive use. The first survey to collect such data was the Tunisian Demographic and Health Survey in 1988 (1988 TDHS). These data offer several advantages over information collected from clinical trials or user studies. They may be used to calculate failure rates for traditional as well as modern methods; they form a national sample not characterized by the selection biases frequently associated with other types of samples; and they are not affected by loss to follow-up.

The Demographic and Health Surveys

The Demographic and Health Surveys (DHS) programme, initiated in 1984, is a follow-on activity to the World Fertility (WFS), and Contraceptive Prevalence Surveys (CPS) undertaken in the seventies. The Demographic and Health Surveys (DHS) program has assisted countries in conducting national surveys on fertility, family planning, and maternal and child heath. Such survey programs are a primary source of information on the reproductive and health behaviour of women throughout sub-Saharan Africa, the Near East, North Africa, Asia, and Latin America.

On average, 4,000 to 8,000 women of childbearing age are interviewed in a standard survey. The DHS questionnaires are designed to elicit information on family planning knowledge, attitudes and practices; maternal and child health; nutritional status of women and their children; and social and economic background indicators. Since 1984, more than 90 such surveys have been conducted. WFS/DHS enabled over 50 developing countries to obtain reliable data on fertility, infant and child mortality and other population and health-related factors. In addition, several countries have organized some national surveys based on the DHS model. This includes many countries of the League of Arab States with the Pan-Arab Project for Child Development (PAPCHILD) and the Arab Maternal and Child Health Survey.

While designed to allow for comparative analyses, DHS questionnaires are adapted to the specific data needs of participating countries. Topics for special investigation have included: knowledge and attitudes about AIDS, social marketing of contraceptives, pill compliance, and causes of child deaths. In addition to standard surveys, DHS provides support for specialized data collection, including in-depth, experimental, and male surveys. Data on the availability of family planning services are obtained at the community level.

DHS data give policymakers information necessary for making crucial decisions about how to allocate scarce resources and provide family planning and health services to those who need them. In addition, DHS plays a major role in furthering international understanding of global population and health trends. The DHS program provides an unparalleled body of comparable data on demographic, health, and family planning indicators.

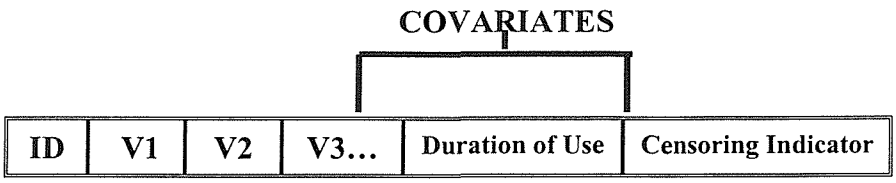
The 1988 Tunisian DHS

Data source. In Tunisia, a self-weighted sample of 4184 married women aged 15-49 was given the 1988 TDHS questionnaire.

Questionnaire structure. The standard, or core, 1988 TDHS questionnaire, collects a full birth history as well as a considerable amount of information on a respondent's background, on her reproductive history and behaviour, contraceptive knowledge and practice, maternity and child-care history, and the characteristics of her household and her husband. One section of the questionnaire is devoted to contraception: after data on contraceptive knowledge, previous uses of contraception, and contraceptive availability and acceptability have been collected, a series of questions elicits information about current use and use in the "open birth interval" (the period since the most recent birth). A tabular format is then used to record information about contraceptive use for the intervals closed by births that occurred during the five years preceding the survey. The survey took place from June to October 88. The nature of the information provided varies between the open and closed birth intervals. For the open interval, interviewers determined the duration of use of the current method. If a woman used two separate methods during this interval, or if she was not currently using a method, she was asked the duration of use and the reason for discontinuation of the previous method. Thus, complete contraceptive information is obtained for up to two segments of use in the open interval. With regard to the closed birth intervals, the questionnaire also allows for the coding of up to two methods within each of the relevant birth intervals. However, data on duration of use and reason for discontinuation are collected only for the last method in each interval.

Data manipulation. A computer programme called Integrated System for Survey Analysis (ISSA) was designed and developed by DHS/IRD to process the DHS data. Using ISSA and the "EXPORT" command (ISSA, 1986, p. 145) we created a "flat file" from the hierarchically structured data file, which was ordered from DHS. This flat file contained one fixed-length record per respondent, containing a selected subset of the original variables. An SPSS/PC programme file was produced automatically by ISSA along with the data file. Minor modifications were required and made in order to use SPSSX on an IBM 3090 mainframe.

Contraceptive use duration, relevant potential correlates and the censoring indicator were extracted from the birth history, the contraceptive history and the socio-demographic characteristics of each woman. These variables were written by SPSSX as an ASCII final file corresponding to the following format:



Each record in the file corresponds to one spell of contraceptive use, so that a woman who had two spells of contraceptive use will appear twice, and a woman who never used a birth spacing method during the five years preceding the survey will not be included in the file.

A simple file was produced containing spells of all the birth-spacing methods described in Chapter 2. A covariate was defined as "type of method", having two categories: "efficient" (IUD and Pill) and "inefficient" (the rest). The exact method used was placed in another covariate, taking four values: "Intra-Uterine Device", "Estro-Progesterin Pill", "Periodic Abstinence" and "Other".

IV.2.3 The PAPCHILD surveys

The objective of the PAPCHILD is to provide detailed information on the factors, which affect maternal and child's health: social, economic, biological, demographic and environmental. The Pan-Arab Project is an implementation of the resolutions and recommendations put forth by the council of Arab Ministers for Social Affairs and Labour. Information obtained from this survey will provide the Ministers for Social Affairs and Ministers of Health, national councils for childhood, research centres and all non-governmental organizations concerned with the state of mothers and children in the Arab world, with the up-to-date and reliable information required for the planning, implementation, monitoring and evaluation of maternal, child health (MCH) and primary health care (PHC)

programmes. The Secretariat General of the League of Arab States implements the project with support from the Arab Gulf Programme for United Nations Development Organizations (AGFUND), UNFPA, UNICEF, WHO, the United Nations Department of Technical Cooperation for Development (UNDTCD) and the United Nations Statistical Office (UNSO). The project's objectives will be achieved through the implementation of activities and programmes along the project's two principal axes: the first being the PAPCHILD survey, the second being parallel activities related to maternal and child health. More detailed information concerning PAPCHILD can be found in the League of Arab States manual "Pap child Design, Organization and Objectives" (undated).

The Algerian Maternal and Child Health Survey (AMCHS) was conducted by the ministry of Public Health and Population with the ***Office National des Statistiques*** (www.ons.dz) within the framework of the Pan Arab Project for Child Development (PAPCHILD) League of Arab States (LAS). The data were collected during the period from January to Mai 1992.

Its objectives is to provide health policy makers and health professionals with detailed information on the health status of mothers and children, to identify their health problems and to help in the designing of appropriate strategies and policies to combat these problems. The integrated set of reliable information drawn from the survey is suitable for formulating, implementing and evaluating health and development policies and programs.

The sample of the survey was selected on a random and systematic basis according to a statistical frame developed by the *Office National des Statistiques*, Ministry of Planning in collaboration with UNFPA, within the framework of a joint project aiming at surveying population and housing statistics (Recensement Général de la Population Algérienne, 1998).

The AMCHS was conducted among a sample, which includes 6,449 households. Information was collected on 5,024 ever- married women aged between 15 and 49 years with 4,331

children aged less than 5 years. Table 4.1 shows the sample distribution by region and type of place of residence (urban/rural). These women were questioned on their reproductive history and behaviour, contraceptive knowledge and practice, maternity and child-care history, and their own and their households' and husbands' characteristics.

The AMCHS used five sets of questionnaires developed by PAPCHILD and modified to correspond to the reality of the Algerian society to collect data on:

- Community characteristics, Households and Housing Characteristics
- Mother's health and Children's health

The data collected covered:

- Characteristics of the sample population: age, sex, marital status, education, economic activity, type of insurance, disability, some information on general mortality during the two years preceding the survey and chronic diseases.
- Housing characteristics of the household: type of dwelling, type of toilet facilities, source of drinking water, waste disposal, dwelling environment, ownership of some durable goods and monthly income.
- Women's health status including: information on women's background, marital status, reproductive history, infant and child deaths and causes of death, care of current pregnancy, maternal care during the five years preceding the survey, breastfeeding, family planning, fertility preferences, husband's background and maternal mortality.
- Health status of children under five years of age: morbidity and treatment measures, immunization, accidents, weight and height.
- Availability of public services, health services maternal care and family planning services in the local community.

The 1992 Algerian PAPCHILD was carefully planned and carried out over a period of 10 months. At that time it was a great achievement for the Algerian FP programme and also for

the League of Arab States. The Algerian had an urgent need to collect data on contraception and fertility as much reliable as possible (for evaluation and programmatic purpose) because both the demographic and the socio-economic situations were alarming. There was also a political pressure on the regime to demonstrate good governance and to show that decisions are made on the basis of reliable data and are not a matter of "good guesses" as it has always been the case in Algeria since independence.

Table 4.1 % Distribution of PAPCHILD sample by region		
Ever Married women		
Regions		
Sahel	**(Sl)**	**61.9**
West	(WSl)	25.5
Middle	(MSl)	26.2
East	(ESl)	10.2
Hights	**(Ht)**	**30.0**
West	(WHt)	21.6
East	(Eht)	8.4
South	**(St)**	**8.2**
RESIDENCE		
Urban		**50.2**
Rural		**49.8**
Total Number		**5024**
Source: Algeria PAPCHILD, 1992		

The 1994-95 Tunisian PAPCHILD survey was planned and carried out all together in two months. Its technical director was the responsible of the 1988 DHS data entry and processing. The 1988 DHS technical director was not involved in any stage of the Tunisian PAPCHILD planning and execution. In the 1999 PAPCHILD Cairo Conference all involved Arab countries were represented by their researcher (demographers, statisticians, reproductive health practitioners, population policy makers) except Tunisia who was represented by the director of public relation and cooperation (further information on the quality of the Tunisian PAPCHILD survey and the derived information in comparison to the quality, wealth and relevance of the other country publications see http://www.poplas.org/conference/html/).

As of August 2001 the official the Tunisian PAPCHILD report has not been published yet but three "intermediary!" have been produced by the ONFP but none published officially. On the contrary, the 1992 Algerian PAPCHILD continue to be cited in all national and international references along side the 1992 Egyptian DHS, the 1995 Moroccan DHS and the 1988 Tunisian DHS (but never the 1994-95 Tunisian PAPCHILD) (please refer to the POPOLINE searchable database).

We will mainly use Tunisian 1988 DHS for the purpose of both contraceptive use prevalence and failure, The 1992 Algerian PAPCHILD for the study of contraceptive use prevalence.

IV.2.4 Other sources of survey data

Many case studies related to specific aspects contraceptive use prevalence and failure have been carried out in both countries but the y have no use in helping designing or rectifying a policy nor in identifying target groups with unmet needs or so forth.

In Tunisia, a major survey on adolescents, their sexuality, contraceptive use, sexually transmitted diseases and AIDS, run in December 1993- January 1994 has been censored. The sample was statistically and nationally representative of the male and female Tunisian population aged 17-23 and "unmarried". The interviewers were from social sciences, psychology, law, journalism and health. They were trained during two months on all aspects of the study. Male interviewers interviewed men and female interviewers interviewed women. The survey was the most comprehensive and accurate survey ever run in the Arab and Muslim world on the topic.

IV.3 Other sources of data

IV.3.1 Government statistics

Population, housing and agricultural censuses. In most countries the most comprehensive sources of social data are population and housing censuses supplemented, where feasible in predominantly rural countries, by agricultural censuses. The importance of population and

housing censuses lies in their universal coverage, the wide range of data collected, the well-tested and well-documented nature of the classifications used and the wide range of possibilities for cross-classification geographically and according to selected population characteristics. Their disadvantages lie in the infrequency of data collection (once in ten or five years), a usual delay of several years in availability of the detailed data and the costs and difficulties of manipulating such a large body of data, which impose constraints on the numbers of tabulations and cross-classifications that can be produced. Nevertheless, for most countries, the universality and simultaneity of the detailed information on individuals produced by the censuses is very useful and practical for all kind of purposes, including programme planning, policy formulation, research and studies for the Government (public administration), private enterprises, academic sector and the general public.

Civil registration and other registers. In the context of population data collection, civil registration, is a method that refers to the continuous, permanent and compulsory recording of the occurrence and characteristics of vital events such as live births, foetal deaths, deaths, marriages, annulments of marriages, divorces, judicial separations, recognitions, adoptions, etc., in accordance with the legal requirements of a country, for legal and administrative purposes. Civil registration is the only universal and continuous source of vital statistics at the national, sub-national and community level. Data are free of sampling errors. However due to low levels of completeness and accuracy, most developing countries do not have adequate an adequate civil registration system which can provide the vital statistics needed. As of 1994, birth registration was considered to be complete in 54% of the countries. The corresponding figure for death registration is 51%. The registration coverage varies from country to country where such registration exists, but the range goes from 10% (deaths in some sub-Saharan African countries) to 100% (Europe). If well functioning, civil registration provides the needed information at the community level required to measure, evaluate and monitor the

impact of health and population intervention programmes, such as family planning, mother and child health care, immunization and vaccination, youth development, elderly care, etc.

A few countries compile other series on population characteristics from registers to supplement or instead of census and survey data (electoral, vehicle registration, tax or insurance records, social security, etc.), but this approach is confined to a relatively few developed countries and raises many technical and other problems.

Administrative data. A wide range of social and related economic data is collected by government administration units as part of normal operating procedures to monitor and assess their activities (health, education, income tax, trade, tourism, etc.). These data are a rich store of information for developing an integrated framework of social and demographic statistics and constructing population-related indicators. However, the coordination of these statistics into a framework for integration raises many special problems in the application of common classifications, concepts and definitions across various fields and sources of statistics. Problems of timeliness and confidentiality are also frequently encountered. Thus these data are useful for many specific applications but should be carefully evaluated and adjusted to fit within the overall statistical framework.

Family Planning Service data. In Tunisia and since 1968 (Table 2.2) there is a routine data collection on all modern contraceptive method used in the ONFP service delivery units. They are all but reliable, standardised and valid. They are usually collected and recorded at the very grassroots level by people who do not have any idea of their importance and usefulness. The data entry, processing and analysis are performed at intermediary level by computer and statistics low level professionals (typically, in ONFP these are old people who were recruited as car drivers or hand workers 10 to 20 years ago and then get "promoted" over time to hold "technical key positions", that was the course of job progression of the technical director of 1994-95 Tunisian PAPCHILD (http://www.poplas.org/conference/html/participants.html).

The data analysis and interpretation (usually after major manipulation according to the current political demand and need) is performed in Tunis. The dissemination is always local. In years 1999-2000 no one can get access to this information except after special detours and thanks to good acquaintances in ONFP. Also and since 1998, no more ONFP annual report is published but instead an Arabic written document is produced simply relating, in journalistic style with no figure whatsoever, all FP issues to the regime achievements.

Similar FP Service data collection started to be collected in Algeria only recently. Similarly we should expect the same data quality shortcoming issues than in Tunisia.

IV.3.2 Data on abortions

The current state of abortion data collection and reporting in Tunisia

In Tunisia only abortions among "married women" performed in the ONFP service delivery units are collected (and not in all public health service delivery units and governmental hospitals) following the same steps and having the data quality shortcoming described in the last paragraph of section IV.3.2.

The underreporting and the underestimation of all cases of abortion in Tunisia is massive. The reported consistent "decline" of the number of abortions from 23,348 in 1988 to 15,918 in 2000 (Table 2.2) is the best illustration of this bias.

In Turkey, 6.5 times more populated than Tunisia, officials report 500,000 abortions in 1998. So how could Tunisia have 5 times less abortions than Turkey (after taking into account population size difference) knowing that Islamic fundamentalism is prevailing.

In the absence of any other possible abortion data source we can safely estimate that there are at least 60,000 abortion in Tunisia and 150,000 abortion in Algeria with one major differential element: abortion is much safer in Tunisia. A central reproductive health issue is to be raised: in each country how many abortions are unsafe and how many are done outside the wedlock? In the absence of any current element of answer to this question we can only

review the difficulties of obtaining reliable data on abortion in order to rectify and improve the system of data collection and reporting in Tunisia and Algeria.

Limitations of existing data on abortion

The 1990 abortion rate and ratio calculated by the World Health Organization (WHO, 1998; Anderson, 1998) provide the best available estimates of the global incidence of induced abortion. They indicate that the practice is so pervasive that the potential consequences for fertility and women's health cannot be ignored anywhere in the world. While the WHO statistics are firm enough to establish that abortion warrants concerted medical and political attention, they nevertheless carry a considerable margin for error. In the 1990s, only 23 countries - about 10% of the world's complement of nations, accounting for 15.5 million of the total 50 million estimated abortions - were judged to have reasonably complete statistics. All were more developed countries except for China, Cuba, Singapore, and Viet Nam. Each country had sufficient medical organization to generate robust abortion records, either as part of routine recording of all procedures in a national health system, or through registration systems and provider surveys in a private system. In addition, these countries offered abortion with more or less minimal legal restriction. In general, neither women nor abortion providers needed to conceal procedures for fear of potential legal repercussions. In the rest of the world, the reported number of abortion procedures was thought to represent less -sometimes much less- than 80% of the true incidence.

Demographers have used various assumptions to extrapolate abortion rates and ratios from such faulty data. In most Latin American countries, for example, abortion is illegal. Most women who wish to terminate a pregnancy attempt to abort themselves or else seek out a practitioner who will perform a procedure in secret. For the most part, the mainstream health system learns of these events only when women experience post-procedural complications that compel them to seek treatment at a hospital. To estimate abortion rates in these countries,

demographers start with the number of such hospital admissions. They then assume, based on other observations, that, depending on the country, roughly a third to a fifth of all induced abortions result in complications leading to hospitalisation. The total number of abortions, then, is 3 to 7 times the number of women hospitalised with complications of abortion. Modelling methods that are even more indirect were used to determine abortion frequency in many other countries.

The Bongaarts method (Bongaarts and Westoff, 2000), for example, first makes a hypothesis about what the 'natural' total fertility rate would be if all women were married throughout their reproductive lives and none contracepted. This 'natural' rate is usually thought to be around 10 children per lifetime. The model then explains the difference between the 'natural' fertility rate and the actual observed rate by the effects of 'proximate fertility determinants' - factors that restrict births, such as the portion of reproductive life that women spend unmarried, the use of contraception, levels of infertility, and abortion. In practice, the data for all other proximate determinants is always more complete and trustworthy than that for abortion. As a result, the abortion rate is estimated to be the residual difference between the 'natural' and actual birth rates once all the other proximate determinants have been estimated and subtracted from the ideal rate. It is intuitively obvious that such an estimate is inexact.

Demographers report that women are more willing to speak about their abortion experiences than has been generally supposed. Some even believe that it may be possible to employ large-scale instruments such as the Demographic and Health Surveys to obtain reliable information about abortion practices, providing interviewers are properly trained. Meanwhile, existing data are useful for generating hypotheses about abortion practices and effects, although not robust enough to make wide-ranging comparisons between different countries or theories.

IV.4 Methods

IV.4.1 Descriptive statistics on contraceptive use and contraceptive failure

We plan to make use of cross-tabulations and various statistics of association to look at differentials in contraceptive use and contraceptive failure.

The 1988 TDHS only collected a detailed contraceptive history for the five years prior to the survey, thus we can only study contraceptive use failure in this period. However, this recent period is the most important from a family planning programme perspective.

By focusing on the recent period we avoid various selectivity biases which have been extensively studied in the context of birth interval analysis (see Rindfuss et al., 1982, for a fuller discussion). We restricted our analysis to women married only once within the 60 months prior to the date of the survey and who were still married on the day of the survey.

We selected spells of contraceptive use for which we had complete information on the duration of use, the type of contraceptive method used and the reason for discontinuation.

We obtained 628 spells of IUD use, 484 spells of pill use, 248 spells of use of periodic abstinence and 269 spells of use of other birth spacing methods.

The Explanatory variables

Besides duration of use, reason for discontinuation (censoring indicator) and the type of birth spacing method, the following five explanatory variables were retained:

- Age of the respondent at the beginning of the spell of contraceptive use (in years)
- Type of place of residence of the respondent (urban or rural)
- Education of the respondent (in completed years of schooling)
- The number of living children of the respondent at the beginning of the spell of contraceptive use.

- Source of supply of the Estro-Progesterin pill, categorized as "private" (pharmacists and private physicians), and, "public" (government-sponsored clinics). Most IUDs are inserted in the "public" clinics, and, periodic abstinence is most of the time self-prescribed.

A few cases with missing values on some of the explanatory variables were recoded in order not to throw away data unnecessarily. The variables affected in this way were type of place of residence of the respondent (where 1% of missing replies were recoded to be the same as the type of place she had lived in during her childhood, which was a variable not included in our analysis) and the source of Estro-Progesterin Pill supply (4% who responded that they did not know were recorded as 'public' since they have in common, with those who responded 'public', many socio-economic characteristics and reproductive and contraceptive behaviours). Descriptive statistics for the quantitative explanatory variables retained for the study are given in Table 4.2.

Table 4.2 Descriptive Statistics for the Quantitative Explanatory Variables (N = 1,629)

	Mean	S.D	Smallest Value	Largest Value
Age (in years)	26.8	5.0	16	44
Education (in years)	4.3	4.2	0	18
PARITY	2.9	1.7	0	7

Method specific failure proportions fall into two categories: less than 5%, corresponding to the contraceptive performance of "efficient" contraceptive methods; and more than 10%, corresponding to the contraceptive performance of less efficient ("inefficient") contraceptive methods. Though IUD use failure (1.8%) is significantly lower than Pill use failure (4.5%, $p<0.01$), and Periodic Abstinence failure (10.6%) is significantly lower than failure of other methods (16.7%, $p<0.05$), we will now treat IUD and Pill together, as "efficient" contraceptive methods; and, Periodic Abstinence and other birth spacing methods together, as "inefficient" contraceptive methods.

The overall failure rate is nearly five times lower for efficient methods (3%) than for inefficient methods (14%, $p<0.001$). When considering the effect of some of the covariates on failure rates for efficient and inefficient methods the recording the birth spacing methods into two categories will help to avoid some problems with small size cells when studying contraceptive failure by two or more covariates. This is important, since we believe that some covariates interact with each other to produce complex effects on failure rates.

The choice of this covariate "source of supply the Estro-Progesterin Pill" is a result of the fact that it has emerged in previous work as the most important explanatory variable of oral contraceptive failure in Tunisia with the risk of failure being 8 times (95% confidence interval of 2.5 to 25) higher for "public" sources than for "private" sources after controlling for other statistically significant explanatory variables (Esseghairi, 1990). The source of supply of the Estro-Progesterin Pill is very important in the context of our study since once the Pill user has received her Pill packet she becomes fully responsible for the contraceptive effectiveness of the Pill.

The only opportunity to know about the functioning of the Pill, and how to use it effectively is through the source of supply.

This is not the case for the IUD, since after insertion the user will not be directly responsible for the effectiveness of the method. Moreover, in Tunisia almost all IUD insertions are done in public family planning clinics since their performance is better than that of private practice, and IUDs are freely available.

Periodic Abstinence users mostly self-prescribe the method. Thus, when asked about the source of supply, they do not report any. How do they learn about periodic abstinence? And about how do they learn to use it? Are good questions to ask? It is, however, very likely that the Periodic Abstinence users, being quite educated, seek and obtain the needed information from books and brochures, with input from peers and relatives.

Bivariate Descriptive Analysis

As it will appear in the next chapter, the relationship of overall contraceptive failure with of age, education, and parity is not consistent in direction. It happens that failure increases with education (at least from low to moderate levels) while we are expecting it to decrease. It happens also that failure remains stable across-sub groups of age, education or parity, where we might expect it to change. One possible explanation is that the covariates we have selected might be interacting. To examine this, we shall describe the bivariate distribution of each pair wise combination of age, education and parity. Then, in the light of the results obtained, we will study the appropriate distribution of the overall contraceptive failure proportions.

IV.4.2 Analysis of contraceptive failure [3 pp., 750 words]

We estimated contraceptive failure by the application of the Kaplan-Meier method on 1629 'spells' of contraceptive use derived from the TDHS 1988.

What do we mean by 'spell' of contraceptive use?

It is the ***duration*** (in months) ***of method use until the occurrence of failure or censoring***. In survival analysis failure is usually the death (disease, complication...) of the followed patient. In our study *failure is the "occurrence of pregnancy when a women is using a birth spacing method"*. Censoring happens when there is discontinuation of contraceptive use for any other reason than *"occurrence of pregnancy"* or when the study ends (12 months). A birth spacing method user can have one or more than one 'spell' over the five years period preceding DHS.

What is the objective of the Kaplan-Meier method?

The objective of the Kaplan-Meier (KM) methodology is to estimate the probability of survival (until failure, here pregnancy) of a defined group (Kaplan-Meier survival curve) at a designated time interval (conditional probability). KM uses a non-parametric survival function for a group of patients (in other words their survival probability after the time *t*) and therefore does not make assumptions about the survival distribution. To compare two survival

curves produced from **two groups** pill users ***'urban residence'*** and ***'rural residence'*** we use the log rank test, so called because it can be shown to be related to a test that uses the logarithms of the ranks of the data (Lee, 1992). The assumptions used in this test are:

1. That the survival times are ordinal or continuous.
2. That the risk of an event in one group relative to the other does not change with time.

   (Proportional hazards assumption).

In the same way that multiple regression is an extension of linear regression, an extension of the log rank test includes, for example, allowance for prognostic factors. This was developed by DR Cox, and so is called **the Cox regression model** (Kleinbaum, 1996).

The Cox Proportion Hazards Regression Model is used to model failure-time. It provides a semi-parametric way of modelling such data in the presence of censored observations. The model assumes that the baseline hazard function is unknown, but that the hazard functions for all other covariate patterns are proportional to the baseline hazard (reference risk). The general form for Cox regression links a failure time and a failure/censoring indicator with a set of fixed covariate values. We used EGRET Version 0.25.01 to enter and model the spell of contraceptive use data. There is a provision for riskset stratification if the proportionality assumption is untenable. In EGRET, the default relative risk is multiplicative, which corresponds to the standard Cox regression model. The regression terms are the logarithms of the hazard ratios, so that adding regression terms corresponds to multiplying hazard ratios.

IV.4.3 Estimating the impact of contraceptive failure

We will assess contraceptive use efficacy in 1994 by applying the estimated of failure proportions for each of the four methods by rural/urban place of residence.

Using the 1994 Census of Tunisia we extracted the number of married women aged 15-49 (MWRA) in urban and rural residences. We can apply an annual natural increase rate from on the 1994 numbers until the year 199X of estimation and added to the 1994 figures. We then

have the 199X number of married women aged 15-49 in urban and rural residences. Using these figures, and applying to them the urban/rural residence specific contraceptive use prevalence rates we obtain the estimates of numbers of method specific MWRA users. Using these figures, and applying to them the Urban/Rural Residence specific failure proportions we obtain the following estimate of number of unwanted pregnancies due to contraceptive failure in Urban/Rural Residence areas of Tunisia. We can also estimates the same in Algeria by applying Tunisian Urban/Rural Residence specific failure proportions to Algerian numbers of method specific MWRA users

IV.5 Conclusion

In this chapter we reviewed the available survey, and non survey, data for studying family planning and reproductive health in Tunisia and Algeria. We single-out the 1988 Tunisian DHS and the 1992 Algeria PAPCHILD as the only reliable and relevant surveys to study contraceptive use and contraceptive failure, and to estimate unwanted pregnancies due to contraceptive failure in both countries. We have also given some evidence and support for the choice of these surveys.

We put much more emphasis on the lack of verifiable and accurate abortion data collecting and reporting in Tunisia and even more in Algeria, and the implication of this shortcoming issues on monitoring reproductive health needs in general, and, abortion and contraceptive unmet needs in particular.

Chapter V

Contraceptive Prevalence and Discontinuation

V.1 Introduction

Contraceptive use dynamics refers to the changing process of contraceptive use, including contraceptive choice, continuation and discontinuation of use, contraceptive failure, and switching of methods. Studying contraceptive use dynamics is indispensable to practitioners and policy makers of reproductive health, family planning and population control.

This chapter will tackle several aspects of quantitative analysis of contraceptive prevalence and discontinuation and their consequences. The necessary information will be derived either directly from existing datasets (1998 TDHS and 1992 Algerian PAPCHILD) or indirectly in order to produce estimation when necessary.

V.2 Contraceptive prevalence

V.2.1 Regional variations in contraceptive prevalence in Tunisia

The data on the current use of family planning is among the most important information collected in the 1988 TDHS since it provides insight into one of the principal determinants of fertility and serves as a key measure for assessing the success of the national family planning program. This chapter focuses on data from the 1988 TDHS on levels and differentials. Trends in current use have been addressed previuosly. Information on the service providers from which users obtain their methods and on the willingness to pay for the widely used methods have been collected but will not be presented. From the 1988 TDHS, the most recent reliable data on Tunisia, we used the distribution of contraception and conception status of the all 4012 sampled women who were still married (out of 4184, 172 reported that they were no longer married). We report in Table 5.1 the percentage of the women not using contraception "None", or using Efficient contraception (Pill, IUD) or pregnant. Of currently

married women 15-49, 49.8% are using contraception, with 40.4% depending on modem methods. The IUD, female sterilisation, pill and periodic abstinence are the most widely used methods: 17% of currently married women are using the IUD, 11.5% are sterilised, 8.8% rely on the pill and 6.3% are currently using periodic abstinence. Relatively small proportions of women are using other modem methods; e.g., 1.3% report currently using the condom, 1.0 local methods and 0.8 injectables.

Despite three decades of legislative measures and political commitment to institutionalise the NFPP and to give an impetus to strong population growth control, in Tunisia the 1996 rate of natural increase remains at 1.9%. The total fertility rate was still high in 1996 with the national figure being 3.1, and regional values ranging from 2.5 (urban Tunis) to 7 (rural Centre) (UNFPA, 1996).

Table 5.1 shows clearly regional and residential disparities. In the Sahel's cities the contraceptive use rate is as high as 79.2% (with 38.2% using Efficient) and the pregnancy rate is as low as 5.6%. In rural areas of the Centre and the South, however, the contraceptive use rate is only 34.7% and 35.7% (with just 2.5% and 3.9% IUD use, and, 3.9% and 5.8% pill use) and the pregnancy rate is 13.5% and 15%, respectively.

If we are strongly convinced that contraceptive failure is becoming a prominent determinant of fertility in Tunisia, we still believe that the issue is applicable only to certain parts of the country and certain sub-groups of the fertile population: those who are aware of the necessity of controlling birth once they have achieved their fertility goals and who have accessibility to health and family planning services and facilities.

Table 5.1 shows that these people are mostly living in Tunis, the North East, the North West and the Sahel. Couples living in the South and the Centre (especially the rural areas) are lagging far behind in terms of contraceptive use and fertility control. A substantial number of the people living in these regions are still in need of information and education about birth

control and, most of all, they need the standard family planning services required to increase the contraceptive prevalence rate: qualified health and FP professionals, and an up-to-date infrastructure with facilities, services and equipment adapted to the reality of their remote and dispersed countryside.

Table 5.1 Percent Of Currently Married Women Using Pill Or IUD Or Being Pregnant By Geographic Region And Residence Tunisia DHS, 1988

		CITY	TOWN	RURAL	TOTAL
TUNIS	**NONE**	25.5	23.5	30.0	25.4
	PILL	14.0	11.8	13.3	13.5
	IUD	23.8	23.5	5.0	22.2
	PREGNANT	9.6	10.0	21.7	10.6
		513	**170**	**60**	**743**
NORTH EAST	**NONE**	15.7	34.0	39.7	32.9
	PILL	13.4	12.3	8.1	10.9
	IUD	26.0	16.7	8.5	15.2
	PREGNANT	7.9	9.0	12.1	10.0
		127	**300**	**272**	**699**
NORTH WEST	**NONE**	12.9	28.4	47.3	40.7
	PILL	3.2	15.4	7.2	9.1
	IUD	41.9	25.9	17.6	21.0
	PREGNANT	6.5	9.9	7.4	8.0
		31	**162**	**431**	**624**
CENTRE	**NONE**	37.2	34.1	65.3	56.4
	PILL	7.3	15.9	3.9	5.6
	IUD	24.8	18.2	2.5	8.9
	PREGNANT	8.0	11.4	13.5	12.1
		137	**44**	**406**	**587**
SAHEL	**NONE**	20.8	38.5	53.8	4.2
	PILL	5.6	4.0	2.1	3.6
	IUD	32.6	17.6	16.1	20.6
	PREGNANT	5.6	10.8	14.4	11.0
		178	**278**	**292**	**748**
SOUTH	**NONE**	33.3	38.7	64.3	45.8
	PILL	16.1	9.6	5.8	10.1
	IUD	14.9	17.0	3.9	11.9
	PREGNANT	10.9	12.2	15.0	12.8
		174	**230**	**207**	**611**

While the Bourguiba regime (1956-1987) has gained recognition -and has been cited as a reference- for its tremendous achievements in the fields of women rights, fertility control, education, tolerance, modernisation and openness; it failed totally in terms of equitable

regional economic development, with most of the developmental infrastructure concentrated in the coastal areas.

The North West, the South and the Centre West (especially the rural areas) were the least developed. This is well demonstrated by the comparison of regional development and economic indicators, and, by the comparison of the distribution of regional investment funds of the three five-year plans of 1972-76, 1977-81, 1982-86 with those of 1992-1996, 1997-2001. The five-year plan 1987-1991corresponded to a transitional political period during which President Ben Ali took over after President Bourguiba (Ministre du Plan et du Developpement Regional, 1971, 76, 81, 86, 91, 1996).

The North West was chosen as the pilot location to launch in 1960 the very first phase of the state-sponsored FP program. The North West remains until now the most performing region in terms of fertility control as it achieves the rate of natural increase of 1.3% (ONFP, 1996).

Table 5.2 Comparison of enrolment in tertiary education by Field of study (percentage share of total enrolment) Chile, Malaysia, Portugal and Tunisia, 1989-1992.

Field of study	Tunisia 1990-92	Malaysia 1989-90	Portugal 1990-91	Chile 1990-91
Education	5.0	23.0	13.1	12.1
Humanities	**24.7**	**8.6**	**8.9**	**3.0**
Law	12.8	1.9	8.9	4.1
Social Sciences	19.8	28.0	30.4	32.2
Business and Management	**6.5**	**20.5**	**18.9**	**22.9**
Natural Sciences	13.4	10.6	7.5	3.5
Medicine	10.6	2.7	5.6	5.9
Engineering	**9.4**	**13.4**	**18.0**	**31.1**
Architecture	0.7	1.6	2.0	5.0
Other	1.7	8.2	3.1	2.0
Total	**100.0**	**100.0**	**100.0**	**100.0**

Source: UNESCO Educational Statistical Yearbook 1994.

It is worth stressing that during Bourguiba's rule (1956-87) most of the so-called development was mostly an inadequate application of imported -mainly from France- economic procedures and worst of all, a lot of non productive government expenditure on the so-called state prestige and respectable appearances. The other French-imported inadequate and detrimental approach is the educational one, which left many Tunisian, graduates without jobs and

without even a perspective of jobs. Table 5.2, which compares the enrolment in tertiary education by field of study in Chile, Malaysia, Portugal and Tunisia, demonstrates this and shows clearly the high proportions in the humanities, law and medicine, and the low proportions in education and teacher training, town planning and architecture, engineering and the social sciences (commerce, management and business).

The quasi totality of the literature related to Tunisian fertility control and FP experiences (Ayed et al., 1991; Brown, 1981; Coeytaux et al., 1987; 1989; Deschampheleire, 1981; 1981a; 1981b; 1982; Hall, 1994; Hamzaoui et al., 1996; Lecomte et al., 1976; Marcoux, 1975; Obermeyer, 1993; 1994; 1996; The Population Council, 1963) has focused on and reported exclusively family planning services (availability, delivery, quantity, intensity, quality, diversity, integration within maternal and child health services). This is a common weakness of the demographic literature in most of the developing countries.

Many relevant social, economic and developmental aspects have not been addressed. These are important from a historical point of view, but even more important from a prospective point of view as we are investigating the best ways for the Tunisian fertility control activities to be sustained in order to satisfy the current demand while getting ready to face a growing number of future potential users.

V.2.2 The effects of age, education and parity in Tunisia

Monovariate Descriptive analysis

Table 5.3 reports the distribution of currently married women by main the FP methods currently used, according to residence, age, education and parity.

The level of contraceptive use differs significantiy across urban/rural residential categories. Currently married women were more likely to be using a method in urban than in rural areas (60.5% and 34.6%, respectively). Urban women rely on the IUD 2.2 times more often than women from other areas. Female sterilisation, pill and periodic abstinence are sensibly used

at the same rate in urban areas (respectively 11.2, 11.1 and 9.3) but they ranked in this order in rural areas (respectively 11.8, 5.7 and 2.0). Therefore periodic abstinence is mainly used by urban couples.

Table 5.3 Percent distribution of currently married women by main FP methods currently used, according to residence, age, education and parity, Tunisia DHS, 1988

	Any method	Modern method	IUD	F.Str.[1]	Pill	P.Abs.[2]	Numbeof women
Residence							
Urban	60.5	47.6	21.9	11.2	11.1	9.3	2349
Rural	34.6	30.1	10.0	11.8	5.7	2.0	1663
Age groups							
15-19	11.1	9.5	4.8	0.0	1.6	1.6	63
20-24	34.9	28.3	17.1	0.2	8.3	4.9	527
25-29	44.0	35.0	21.5	2.1	9.3	5.4	836
30-34	55.0	43.9	20.8	7.3	12.4	7.4	922
35-39	59.2	48.0	17.8	16.2	10.0	7.7	723
40-44	61.2	49.7	12.1	27.8	5.9	7.1	538
45-49	43.2	38.2	5.7	26.8	3.5	4.2	463
Education							
None	42.3	37.4	12.8	15.4	6.8	2.1	2271
Primary	56.8	44.1	21.2	6.9	11.9	8.7	1251
Secondary / +	66.5	44.5	25.7	5.1	10.6	19.2	490
Number of living children							
0	3.5	1.3	0.3	0.3	0.6	1.3	312
1	34.2	25.2	14.2	0.6	7.7	6.3	480
2	58.0	46.4	28.8	2.6	11.7	8.3	660
3	55.7	43.1	23.4	6.2	11.6	10.6	662
4 +	56.4	47.6	14.1	21.0	8.5	4.8	1898
Total	**49.8**	**40.4**	**17.0**	**11.5**	**8.8**	**6.3**	**4012**

[1] Female Sterilization [2] Periodic Abstinence Source: Tunisian DHS, 1988.

Current use is clearly associated with a woman's age; younger and older women are less likely to be using contraception than women age 25-44. The lowest level of use is found among women age 15-19 (11.1%). The IUD is the most popular method among women in all age groups, with the highest levels of IUD use found among women age 25-34 (21%).

Contraceptive use is also associated with the number of living children a woman has. Use levels increase from 34 % of women with one child to 56% of women with three children and then drop off to 62% of women with three or more children. A sizeable percentage of women use family planning use before having the first child. 3.5% of childless women are currently using a method (periodic abstinence and pill).

As for education, the proportion currently using a method varies from 42% among women with no education to 67% of those with a secondary or higher education. The IUD is the most commonly used method among women with a secondary or higher education (25.7%), followed by periodic abstinence (19.2%) and the pill (10.6%). The IUD is still the most commonly used method among women with a primary education (21.2%), but followed by the pill (11.9%) and periodic abstinence (8.7%). However, among women with no education, female sterilisation is the most commonly used method (15.4%) followed by IUD (12.8%, half of the use for the other educational levels) and pill (6.8%) while periodic abstinence lies far behind (2.1%, 4 and 10 times less than 'primary' and 'secondary +'). Regardless of any other explanatory factor, educational level is the main determinat of periodic abstinence use.

Bivariate Descriptive analysis

Bivarite analysis will be most useful preceding the anaysis of contraceptive use efficiency (or failure), we will therefore use the dataset of 1629 spells.

Contraception use increase in similar pattern with age and parity. Before further analysis, it is useful to investigate at this stage the relationship between age and parity which. To examine this, we shall describe the bivariate distribution of each pair wise combination of age, education and parity.

Distribution of Education by Age. Up to age 29 years, the distribution of educational level is the same across age groups. However, older women (aged 30 years or more) are less well educated (Table 5.4, $p<0.00001$).

Table 5.4 Respondents' Educational Level by Age (in percentages)

	AGE GROUPS			
EDUCATION (in years)	-- 24	25-29	30++	Total
0	29.5	29.1	49.6	35.2
1-6	49.5	51.8	34.5	46.0
≥ 7	21.0	19.1	15.9	18.8
Total	**596** 100%	**561** 100%	**472** 100%	**1629** 100%

Effective Parity by Age. Though obvious, it is important to notice that parity is very highly positively associated with age (Table 5.5, $p<0.00001$). Because of the very high co-linearity, in multivariate analysis one of the two has to be omitted. This is usually age, since parity is a key programmatic covariate for family planning programme evaluation. Theoretically and behaviourally parity is much more relevant than age.

Table 5.5 Respondents' Effective Parity Level by Age (in percentages)

	AGE GROUPS			
PARITY	-- 24	25-29	30++	**Total**
0-1	47.5	15.9	4.9	24.2
2-3	47.1	54.7	26.9	43.9
4 +	5.4	29.4	68.2	31.9
Total	**596** 100%	**561** 100%	**472** 100%	**1629** 100%

Distribution of Effective Parity by Educational Level

This is a most important and meaningful distribution to look into carefully in the context of this study since each of these explanatory variable is thought to be a key programmatic factor. Tables 5.6a-5.6b show that effective parity is highly negatively associated with educational level, $p<0.000001$). The implication is that when failure is studied by parity alone, or by educational level alone, the findings are may be wrong and misleading. When either one, of these two explanatory variables, is considered, we must account for the other one.

Table 5.6a Distribution of Effective Parity Level by Educational Level (in frequencies)

		EDUCATION (in years)			
PARITY		**0**	**1-6**	**≥7**	**Total**
0-1	**Obs.**	**86**	**193**	**116**	**395**
	Exp.	(139)	(181)	(74)	
2-3	**Obs.**	**205**	**354**	**156**	**715**
	Exp.	(251)	(329)	(135)	
4 +	**Obs.**	**282**	**202**	**35**	**519**
	Exp.	(183)	(238)	(98)	
Total		**573**	**749**	**307**	**1629**

Obs. = Observed Frequencies, Exp. = Expected Frequencies

Table 5.6b Distribution of Effective Parity Level by Educational Level (in percentages)

	EDUCATION (in years)			
PARITY	0	1-6	≥7	**Total**
0-1	15.0	25.8	37.8	24.2
2-3	35.8	47.3	50.8	43.9
4 +	49.2	27.0	11.4	31.9
Total	**573** 100%	**749** 100%	**307** 100%	**1629** 100%

Table 5.7 presents the distribution of contraceptive use by parity within education and place of residence. We omitted parity "0" from this table since 96% of childless women were not using contraception. Parity (measuring fertility preference and birth spacing behaviour and motivation) acts on contraceptive use along with place of residence (measuring FP services accessibility) and education (measuring woman knowledge and awareness). Indeed, we can see from the table that 30% of non educated urban women having one child use contraception compared with 20% of similar rural women. Similarly, 60% of urban women with primary education having one child use contraception compared with 35% among the similar rural women. Among the non educated urban women having two or three children 55% use contraception compared with 30% among the similar rural women. Out of 721 rural childless (4 or more children) women only 91 or 12.6% are using IUD and 70% are not using any.

Table 5.7 Percent distribution of currently married non pregnant and non sterilised women by main FP methods currently used, according to "parity and residence and education", Tunisia DHS, 1988

	None	Pill	IUD	P.Abs.[1]	Number of women
One Child					
Urban					
None	70.2	10.6	10.6	2.1	47
1-6 years	39.6	12.9	26.7	10.9	101
7 + years	32.4	13.5	24.3	20.3	74
Total	**43.7**	**12.6**	**22.5**	**12.2**	**222**
Rural					
None	80.4	3.3	15.2	0.0	92
1-6 years	64.7	8.8	8.8	5.9	34
7 + years	100	0.0	0.0	0.0	2
Total	**76.6**	**4.7**	**13.3**	**1.6**	**128**
2-3 Child.					
Urban					
None	45.4	11.5	35.1	2.9	174
1-6 years	20.9	17.8	39.3	14.0	321
7 + years	19.4	13.1	36.5	26.1	222
Total	**26.4**	**14.8**	**37.4**	**15.1**	**717**
Rural					
None	70.1	7.6	14.7	1.8	224
1-6 years	45.9	16.3	20.4	8.2	98
7 + years	30.8	15.4	38.5	15.4	13
Total	**61.5**	**10.4**	**17.3**	**4.2**	**335**
4 + Child.					
Urban					
None	47.9	14.7	22.8	5.0	443
1-6 years	25.0	18.1	26.4	14.9	276
7 + years	15.9	13.0	31.9	24.6	69
Total	**37.1**	**15.7**	**24.9**	**10.2**	**335**
Rural					
None	70.4	7.0	11.9	2.5	628
1-6 years	62.1	10.3	18.4	1.1	87
7 + years	83.3	16.7	0.0	0.0	6
Total	**69.5**	**7.5**	**12.6**	**2.4**	**721**

[1] Periodic Abstinence Source: Tunisian DHS, 1988.

V.2.3 Algeria

Section III.3.2 reports the differentials in contraceptive prevalence for residence, regions and educational levels. This section presents further analysis of contraceptive prevalence differentials according to respondent current age and effective parity as reported by Table 5.8. Current use is clearly associated with a woman's age; younger and older women are less likely to be using contraception than women age 25-44. The lowest level of use is found among women age 15-19 (26.4%). Pill is the most popular method among women in all age groups with the highest levels found among women age 25-39 (43%).

Contraceptive use is also associated with the number of living children a woman has. Use levels increase from 40 % of women with one child to 63% of women with four children and then drop off to 55% of women with five or more children. A sizeable percentage of women use family planning use before having the first child. 4% of childless women are currently using a modern method, exclusively the pill.

Table 5.8 Percent distribution of currently married women by pill and IUD, according to age and parity, Algeria PAPCHILD, 1992

	Any method	Modern method	Pill	IUD	Number of women
Age groups					
15-19	26.4	25.1	25.1	0.0	80
20-24	39.5	35.0	34.1	0.5	533
25-29	52.7	46.2	43.4	2.4	971
30-34	56.1	45.1	42.2	2.1	972
35-39	56.4	47.2	41.9	3.3	932
40-44	52.2	43.7	37.6	2.7	748
45-49	38.9	33.8	24.5	3.2	480
Number of living children					
0	4.3	4.0	4.0	0.0	351
1	39.9	35.6	34.7	0.4	497
2	58.1	50.7	47.6	2.0	605
3	54.2	47.4	42.4	3.5	586
4	62.6	52.3	45.7	4.2	560
5 +	54.7	45.0	39.9	2.5	2116
Total	**50.7**	**42.9**	**38.7**	**2.4**	**4715**

V.3 Contraceptive failure

V.3.1 Descriptive analysis of Tunisia

As reported in Table 5.9, 38.6% of the 1,629 spells of Birth Spacing Method Use (BSMU) were of IUD, 29.7% of Pill, (thus 68.3% were of spells of efficient methods). The remainder comprised 15.2% of periodic abstinence (PA) and 16.5% of other methods (making 31.7% of spells of inefficient methods).

Residence. Only 29% of the 1,629 spells of BSMU were from the rural part of Tunisia. The proportions of spells of IUD use and use of other methods are statistically the same in rural and in urban areas (37.9% and 38.8%, $p>0.6$; and 18.3% and 15.8%, $p>0.3$, respectively).
The proportion of spells of Pill use is significantly higher in rural areas than in urban areas (35.2% and 27.5%, $p<0.005$), while the proportion of spells of PA use in rural areas is only half that in urban areas (8.6% and 17.9%, $p<0.0001$).

Table 5.9 Distribution of Spells of Birth Spacing method use by Respondent's Residence

RESIDENCE		IUD	Pill	Pd.Abs.	Other	Total
Urban	Nb	448	317	207	182	**1154**
	%	38.8	27.5	17.9	15.8	100%
Rural	Nb	180	167	41	87	**475**
	%	37.9	35.2	8.6	18.3	100%
Total	**Nb**	**628**	**484**	**248**	**269**	**1629**
	%	38.6	29.7	15.2	16.5	100%

Age of the Respondent. The distribution of spells for each of the four birth spacing methods by age group is described in Table 5.10.
The proportions of spells of the four birth spacing methods are statistically the same in the three age groups ($p>0.2$).

Table 5.10 Distribution of Spells of Birth Spacing method use by Respondent's Age

AGE		IUD	Pill	Pd.Abs.	Other	**Total**
16-24	Nb	232	169	100	95	**596**
	%	38.9	28.4	16.8	15.9	100%
25-29	Nb	229	256	81	95	**561**
	%	40.8	27.8	14.4	16.9	100%
30-44	Nb	167	159	67	79	**472**
	%	35.4	33.7	14.2	16.7	100%

Educational Level of the Respondent. The distribution of spells for each of the four birth spacing methods by educational level is described in Table 5.11.

Table 5.11 Distribution of Spells of Birth Spacing method use by Respondent Education

EDUCATION		IUD	Pill	Pd.Abs.	Other	**Total**
None	Nb	236	210	32	95	**573**
	%	41.2	36.6	5.6	16.6	100%
1-6	Nb	272	214	122	141	**749**
	%	36.5	28.7	16.4	18.9	100%
Higher	Nb	120	60	94	33	**307**
	%	32.4	16.2	25.4	10.7	100%

It is worth noting that, while the proportion of spells of periodic abstinence use increases with educational level (5.6%, 16.4%, 25.4%) the pattern is in the opposite direction for Pill (36.6%, 28.7%, 16.2%) and, to a lesser extent, for IUD (41.2%, 36.5%, 32.4). One explanation for this is that educated women tend to be younger, with few living children who do not require more efficient or non-reversible methods. Women with little or no education tend to be older and multiparous, and thus more likely to switch to a more reliable birth-spacing method or a non-reversible method such as tubal legation.

Parity Level of the Respondent. The distribution of spells for each of the four birth spacing methods by effective parity level (number of living children at the beginning of the spell) is described in Table 5.12.

There is no clear pattern except for periodic abstinence spells, which decreases consistently as parity increases (22.5%, 14.1%, and 11.2%). Periodic abstinence is concentrated among low parity women more than other methods. These findings reinforce the explanation given

above about the possibility that educational level and its relationship to contraceptive use and choice might be hiding the real relation between parity level and the necessity to opt for a contraceptive method appropriate to the situation: reversible and moderately efficient such as other methods or periodic abstinence at low parities, and reversible and highly efficient methods (IUD or pill), or non-reversible methods (female sterilisation) at high parities.

Table 5.12 Distribution of Spells of Birth Spacing method use by Effective Parity

PARITY		IUD	Pill	Pd.Abs.	Other	**Total**
0-1	Nb	123	106	89	77	**395**
	%	31.1	26.8	22.5	19.5	100%
2-3	Nb	329	192	101	93	**715**
	%	46.0	26.8	14.1	13.0	100%
4 +	Nb	176	186	58	99	**519**
	%	33.9	35.8	11.2	19.1	100%

This conclusion can be further examined by looking at the observed and expected counts of spells of the four birth-spacing methods use by the three categories of effective parities. For this purpose, we used the observed counts, column and row totals reported in Table 5.12 and calculated the expected counts (no association between parity and method) in each case (Table 5.13) as: (row total x column total) / grand total

Table 5.13 Observed and expected values for Spells by Effective Parity

PARITY	IUD	Pill	Pd.Abs.	Other	**Total**
0-1 O.	123	106	89	77	**395**
E.	152	117	60	65	
2-3 O.	329	192	101	93	**715**
E.	276	212	109	118	
4+ O.	176	186	58	99	**519**
E.	200	155	79	86	
Total	**628**	**484**	**248**	**269**	**1629**

O. Observed Frequencies E. Expected Frequencies E = no association between parity and method
Ringed cells have "observed" greater than "expected"

Descriptive Analysis of Contraceptive Failure

Table 5.14 reports the numbers and the proportions of failures, which occurred during the first year of use for the 1,629 spells of BSMU and for each of the four birth spacing methods.

Out of 1,629 spells of BSMU 105 failures occurred during the first year (thus 6.4% of spells ended in failure). This figure, however, hides differences in the failure proportions among the four birth-spacing methods, since these ranges from 1.8% and 4.5% for IUD and Pill to 10.9% and 16.7% for periodic abstinence and other methods.

Table 5.14 Spells Ending in Failure During the first year use by Birth Spacing Method

		IUD	Pill	Pd. Abs.	Other	**Total**
Failure	Nb	11	22	27	45	105
	%	1.8	4.5	10.9	16.7	6.4
Total	**Nb**	**628**	**484**	**248**	**269**	**1629**

Residence. Table 5.15 reports the proportions of failures which occurred during the first year of use for each of the four birth spacing methods according to whether the respondents lived in urban or rural areas. The overall proportions of failure are statistically the same in urban and rural areas (respectively 6.2% and 7.2%, $p>0.5$). There is an rural/urban differential with respect to Pill failure, since the rural proportion is significantly higher than the urban one (7.2% vs. 3.2%, $p<0.04$). For the three other methods there are not statistical differences, however the proportions of failure are higher in rural areas for IUD and periodic abstinence.

Table 5.15 Proportions of Spells Ending in Failure During the First Year of Use By Birth Spacing Method and by Type of Place of Residence

METHOD	RESIDENCE	% Fail	Total
IUD	**Urban**	1.6	448
	Rural	2.2	180
Pill	**Urban**	3.2	317
	Rural	7.2	167
Pd.Abs.	**Urban**	10.1	207
	Rural	14.6	41
Other	**Urban**	18.1	182
	Rural	13.8	87

Age of the Respondent. Table 5.16 reports the proportion of failures, which occurred during the first year of use for each of the four birth spacing methods according to the age of the respondent. The overall proportion of contraceptive failure is significantly higher for women

aged 24 years and under (9.4%) than for women aged between 25 and 29 years (5.5%), and 30 years and over (3.8%, $p<0.001$).

Table 5.16 Proportions of Spells Ending in Failure During the First Year of Use by Birth Spacing Method and Respondents' Age

METHOD	AGE	% Fail	Total
IUD	≤ 24	2.6	232
	25 – 29	1.3	229
	≥ 30	1.2	167
Pill	≤ 24	6.5	169
	25 – 29	7.1	156
	≥ 30	0.2	159
Pd. Abs.	≤ 24	19.0	100
	25 – 29	4.9	81
	≥ 30	6.0	67
Other	≤ 24	21.1	95
	25 – 29	13.7	95
	≥ 30	15.2	79

For specific methods the age-group specific failure proportions behave differently. While for IUD use and use of other methods there are no statistically significant differences in failure rates between age-groups, Pill failure is higher for women aged 29 years and under (6.8%) than for other women (0.2%, $p<0.0001$) and Periodic Abstinence failure is significantly higher for women aged 24 years and under (19%) than for other women (5.4%, $p<0.001$).

Educational Level. Table 5.17 reports the proportions of spells ending in failure during the first year of use for each of the four birth spacing methods by the educational level of the respondent. The overall failure rate is significantly higher for women who achieved one to six years of schooling (8%) than for those with no education (4.7%) and for those who achieved seven years or more schooling (5.9%, $p<0.03$). The same pattern exists for the Pill and for other methods though the differences within each of these methods are not significant.

Table 5.17 Proportions of Spells Ending in Failure During the First Year of Use by Birth Spacing Method and Educational Level

METHOD	EDUCATION	% Fail	Total
IUD	**None**	2.1	236
	1-6	1.5	272
	Higher	1.7	120
Pill	**None**	3.3	210
	1-6	6.5	214
	Higher	1.7	60
Pd.Abs.	**None**	12.5	32
	1-6	10.7	122
	Higher	10.6	94
Other	**None**	11.6	95
	1-6	20.6	141
	Higher	15.2	33

Parity of the Respondent. Table 5.18 reports the proportions of spells ending in failure during the first year of use for each of the four birth spacing methods by the effective parity of the respondent. The overall failure rate is nearly three times lower for women who have two or more living children (4.5%) than for women who have zero or one (12.4%, $p<0.00001$).

Table 5.18 Proportion of Spells Ending in Failure During the First Year of Use by Birth Spacing Method and Effective Parity

METHOD	PARITY	% Fail	Total
IUD	**0-1**	3.3	123
	2-3	1.5	329
		1.4	
	4 +	1.1	176
Pill	**0-1**	9.4	106
	2-3	2.6	192
		3.2	
	4 +	3.8	186
Pd.Abs.	**0-1**	22.5	89
	2-3	5.0	101
		4.4	
	4 +	3.4	58
Other	**0-1**	19.5	77
	2-3	18.3	93
		15.5	
	4 +	13.1	99

Similarly, the proportion of Periodic Abstinence and Pill use spells ending in failure is significantly lower for women who have two or more living children (respectively 4.4%, and, 3.2%) than for women with zero or one (respectively, 22.5%, $p<0.0001$, and, 9.4%, $p<0.01$). Again, it is plausible to believe that education interacts with parity level which is, in turn, a very important determinant of contraceptive use and effectiveness. We will attempt to verify this belief while looking for other relevant aspect of birth spacing efficacy.

First Year Failure Rates: Distribution by Efficient/Inefficient Contraceptive Methods

Table 5.14 shows that method specific failure proportions fall into two categories: less than 5%, corresponding to the contraceptive performance of **"efficient"** contraceptive methods; and more than 10%, corresponding to the contraceptive performance of less efficient (**"inefficient"**) contraceptive methods. Though IUD use failure (1.8%) is significantly lower than Pill use failure (4.5%, $p<0.01$), and Periodic Abstinence failure (10.6%) is significantly lower than failure of other methods (16.7%, $p<0.05$), we will now treat IUD and Pill together, as "efficient" contraceptive methods; and, Periodic Abstinence and other birth spacing methods together, as "inefficient" contraceptive methods.

The overall failure rate is nearly five times lower for efficient methods (3%) than for inefficient methods (14%, $p<0.001$). Let us now consider the effect of some of the covariates on failure rates for efficient and inefficient methods. Recording the birth spacing methods into two categories will help to avoid some problems with small size cells when studying contraceptive failure by two or more covariates. This is important, since we believe that some covariates interact with each other to produce complex effects on failure rates.

Residence. Table 5.19 reports the proportions of spells which ended in failure during the first year of use for efficient and inefficient birth spacing methods by type of place of residence. There is a rural/urban differential with respect to efficient methods since the rural proportion

is twice as high as the urban one (4.6% versus 2.2, p<0.01). The rural and urban inefficient contraceptive failure proportions were almost exactly equal (p>0.98).

Table 5.19 Proportion of Spells Ending in Failure During the First Year of Use for Efficient/Inefficient Method and by Urban/Rural Residence

METHOD	RESIDENCE	% Fail	Total
Efficient	**Urban**	2.2	765
	Rural	4.6	347
Inefficient	**Urban**	13.9	389
	Rural	14.1	128

Age of the Respondent

Table 5.20 reports the proportion of spells ending in failure during the first year of use for efficient and inefficient methods by the age of the respondent. For efficient methods, the failure proportion is 6.5 times higher among women aged 29 years and under (3.9%) than it is among older women (0.6%, p<0.001).

For inefficient methods, the failure proportion is twice as high among women aged 24 years and under (20%) than among women aged 25 years and over (10.2%, p<0.0005).

Thus, the age of the respondent is strongly associated with failure rates for both efficient and inefficient methods. However, the pattern of association is slightly different. For efficient methods, the women aged 30 and above have the lowest failure rate.

Table 5.20 Proportion of Spells Ending in Failure During the First Year of Use for Efficient/Inefficient Method and by Respondent' Age Residence

METHOD	AGE	% Fail	Total
Efficient	**≤ 24**	4.2	401
	25 – 29	**3.9**	385
	≥ 30	**0.6**	**326**
Inefficient	**≤ 24**	**20.0**	**195**
	25 – 29	9.7	176
	≥ 30	**10.2** 0.6	146

For inefficient methods, the women aged 25 and above have the lowest failure rate. The difference in age cut points is probably due to a combination between the type of the method, which is itself influenced by the education level, and the residence of the respondent (efficient/inefficient), and her effective parity level, which is highly correlated with age.

Educational level. Table 5.21 reports the proportion of spells ending in failure during the first year of use for efficient and inefficient birth spacing methods according to the respondents' educational level (measured in completed years of full-time education). Though no statistically significant differentials were detected, it appears that for both efficient and inefficient methods the failure rate increases from the category of "no education" to the category "1-6 years", and then decreases again at higher levels of education. For efficient methods, the decrease results in a lower failure rate amongst women with "7+" years of education than amongst women with no education. One possible cause of the no monotonic relationship observed in Table 5.11 is that education is interacting with one or more other variables in its effect on failure proportions. Parity has to be considered first in this respect.

Table 5.21 Proportion of Spells Ending in Failure During the First Year of Use for Efficient/Inefficient Method and by Educational Level

METHOD	Education in year	% Fail	Total
Efficient	0	2.7	446
	1-6	3.7	486
	≥ 7	1.7	180
Inefficient	0	11.8	127
	1-6	16.0	263
	≥ 7	11.8	127

Effective parity of the respondent. Table 5.22 reports the proportion of spells ending in failure during the first year of use for efficient and inefficient methods by the effective parity (number of living children) of the respondent. For efficient methods, the failure proportion is nearly three times lower for women who have two or more children (2.1%) than for women who have one child or none at all (6.1%, $p<0.001$). For inefficient methods, the failure

proportion is nearly twice as low for women who have two or more children (10.5%) than for women who have one child or none at all (21.1%, $p<0.0005$).

Parity is consistently acting in the same direction. For both efficient and inefficient methods, the failure proportion decreases considerably at parities of two or more.

Table 5.22 Proportion of Spells Ending in Failure During the First Year of Use for Efficient/Inefficient Method and by Effective Parity

METHOD	PARITY	% Fail	Total
Efficient	0-1	6.1	229
	2-3	1.9	521
		2.1	
	4 +	2.5	362
Inefficient	0-1	21.1	166
	2-3	11.3	194
		10.5	
	4 +	9.6	157

Source of Supply of the Estro-Progesterin Pill

Introduction. The choice of this covariate is a result of the fact that the source of supply the Estro-Progesterin Pill has emerged in previous work as the most important explanatory variable of oral contraceptive failure in Tunisia with the risk of failure being 8 times (95% confidence interval of 2.5 to 25) higher for "public" sources than for "private" sources after controlling for other statistically significant explanatory variables (Esseghairi, 1990). The source of supply of the Estro-Progesterin Pill is very important in the context of our study since once the Pill user has received her Pill packet she becomes fully responsible for the contraceptive effectiveness of the Pill. The only opportunity to know about the functioning of the Pill, and how to use it effectively is through the source of supply.

This is not the case for the IUD, since after insertion the user will not be directly responsible for the effectiveness of the method. Moreover, in Tunisia almost all IUD insertions are done in public family planning clinics since their performance is better than that of private practice, and IUDs are freely available.

Periodic Abstinence users mostly self-prescribe the method. Thus, when asked about the source of supply, they do not report any. How do they learn about periodic abstinence? And about how do they learn to use it? Are good questions to ask? It is, however, very likely that the Periodic Abstinence users, being quite educated, seek and obtain the needed information from books and brochures, with input from peers and relatives.

Type of Place of Residence

Table 5.23 shows that out of 484 spells of Pill use 317 (65.5%) are from urban areas and the remaining 167 (34.5%) are from rural areas of the country. There is an uneven distribution of the source of supply (Private/Public) by the type of place of residence. In urban Tunisia 40% of Pills come from the private sector, against only 28% in the rural areas ($x^2 = 6.85$, $p<0.005$).

Table 5.23 Source of Supply of the Estro-Progesterin Pill by the Type of Place of Residence of the Respondent

SOURCE OF PILL SUPPLY			
RESIDENCE	Private	Public	**Total**
Urban Nb	127	190	**317**
%	(40)	(60)	100 %
Rural Nb	47	120	**167**
%	(28)	(72)	100 %
Total Nb	**174**	**310**	**484**
%	(36)	(64)	100 %

Age of the respondent. Table 5.24 shows that the 484 spells of Pill use are evenly distributed among the three age groups (35%, 32% and 33% respectively from youngest to oldest). The distribution by type of source of Pill supply is statistically the same for each of the three age groups ($x^2 = 4.6$, $p>0.1$).

Table 5.24 Source of Supply of the Estro-Progesterin Pill by the Age of the Respondent

SOURCE OF PILL SUPPLY			
AGE-GROUPS	Private	Public	**Total**
≤ 24 Nb	50	119	**169**
%	(30)	(70)	100%
25-29 Nb	60	96	**156**
%	(39)	(61)	100%
≥ 30 Nb	**64**	**95**	**159**
%	(40)	(60)	100%
Total Nb	**174**	**310**	**484**

Educational level. Table 5.25 shows that the proportion of the source of Pill supply represented by the private sector increases consistently with the respondents' educational level (27%, 40% and 55% respectively from lowest to highest, $x^2 = 18.7$, $p<0.0001$).

Table 5.25 The Source of Supply of the Estro-Progesterin Pill by Educational Level

SOURCE OF PILL SUPPLY			
Education (in years)	Private	Public	**Total**
0 Nb	56	154	**210**
%	(27)	(73)	100 %
1-6 Nb	85	129	**214**
%	(40)	(60)	100 %
≥ 7 Nb	**33**	**27**	**60**
%	(55)	(45)	100 %
Total Nb	**174**	**310**	**484**

Effective parity of the respondent. Table 5.26 shows that the distribution by type of source of Pill supplies are statistically the same for each of the two parity groups (29% for women with zero or one child and 38% for the rest, $c = 2.7$, $p>0.25$).

Table 5.26 The Source of Supply of the Estro-Progesterin Pill by Effective parity

SOURCE OF PILL SUPPLY			
PARITY	Private	Public	**Total**
0-1 Nb	31	75	**106**
%	(29)	(71)	100 %
Higher Nb	143	235	**378**
%	(38)	(62)	100 %
Total Nb	**174**	**310**	**484**

Source of supply and Pill failure in the first year

Twenty failures occurred during the first year, out of the 310 spells of Pill use provided by the public sector, corresponding to a failure rate of 6.5%, more than five times higher than that in the private sector, where only 2 failures occurred during the first year out of 174 spells of Pill use provided by pharmacists and private family physicians (corresponding to a failure proportion of 1.1%, $x^2 = 7.22$, $p<0.008$).

V.3.2 Bivariate analysis of Tunisia

As discussed previously, the relationship of overall contraceptive failure with of age, education, and parity is not consistent in direction. It happens that failure increases with education (at least from low to moderate levels) while we are expecting it to decrease. It happens also that failure remains stable across-sub groups of age, education or parity, where we might expect it to change.

Overall contraceptive use failure Rates by the respondents' effective parity and education

Previous results show that for both efficient and inefficient methods the failure rate first increases and then decreases when education level rises, though no statistically significant differences were detected. We suggested that education must be interacting with one or more other differentials regarding failure proportion and that parity will be considered at first in this respect. The findings reported by Tables 5.6a and 5.6b justify considering education together with parity since they are highly negatively associated.

Table 5.27 describes the overall contraceptive failure proportions by effective parity levels within educational levels. For each of the three educational levels, failure proportions for effective parity groups "2-3" and "4 +" are statistically similar (respectively, 3.4% and 4.6%, $p>0.5$ for no education, 6.2% and 5.4%, $p>0.65$ for 1-6 years of education, and, 1.9% and 0.0%, $p>0.4$ for ≥7 years of education). This findings has led us to group parity levels "2-3" and "4 +" into one category "2 +". Moreover, this cut point is very meaningful in the light of

the Tunisian government's official population policy and in terms of the parity level from which most of the Tunisian couples start to think seriously about either birth spacing or even family limitation ("stopping" behaviour).

Table 5.27 Overall Proportion of Spells Ending in Failure During the First Year of Use by Educational and Effective Parity (3 levels)

EDUCATION	PARITY	% Fail	Total
0	0-1	8.1	86
	2-3	3.4	205
	4 +	4.6	282
1-6	0-1	14.0	193
	2-3	6.2	354
	4 +	5.4	202
≥ 7	0-1	12.9	116
	2-3	1.9	156
	4 +	0.0	35

Table 5.28 presents the same results than Table 4.22 with the new coding of effective parity into two levels instead of three.

Table 5.28 Overall Proportion of Spells Ending in Failure During the First Year of Use by Educational and Effective Parity (2 levels)

EDUCATION	PARITY	% Fail	Total
0	0-1	8.1	86
	2 +	4.1	487
1-6	0-1	14.0	193
	2 +	5.9	556
≥ 7	0-1	12.9	116
	2 +	1.6	191

Once education is taken into account, failure increases consistently from parity level "2 +" to parity level "0-1", the magnitude of the increase is different from one education level to another. It doubles for no education (4.1% to 8.1%, $p=0.1$), it almost triples for 1-6 years of education (5.9% to 14.0%, $p<0.001$), and it rises by 8 times for women with 7 or more years of education (1.9% to 12.9%, $p<0.0001$).

V.3.3 Multivariate analysis of Tunisia

While investigating the relevant aspects of birth spacing efficacy, the findings lead us to run a multivariate descriptive analysis of contraceptive failure and look into the results. For this purpose we fitted a **Cox proportional hazards survival analysis** model to the 'failure data' to investigate the weight of each of education and effective parity, while taking into account the type of contraception method used (efficient and inefficient), the place of residence and the age of the respondent. After fitting different models (with different interactions) we finally get to the results presented in the following "EGRET outputs 1-2-3".

Effective parity is the most influential factor of contraceptive use failure (the more surviving children, the less failure). Education is also an influential factor, though much less important, which acts within residence level (educated women '1-6' fail equally regardless of residence, educated women "7 +' from rural residence fail on average 3.7 times more).

EGRET output 1

COX PROPORTIONAL HAZARDS SURVIVAL ANALYSIS

FACTOR	Censorings	Failures	Total	% Censor	% Fail
Method					
Efficnt	1062	50	1112	95.5	4.5
InEffic	397	93	490	81.0	19.0
Education					
Edu None	513	43	556	92.3	7.7
Edu_1-6	667	73	740	90.1	9.9
Edu_7y+	279	27	306	91.2	8.8
Parity					
Par 0-1	333	60	393	84.7	15.3
Par 2_+	1126	83	1209	93.1	6.9
Age					
A16-24	518	70	588	88.1	11.9
A25-29	503	45	548	91.8	8.2
A30-44	438	28	466	94.0	6.0
Residence					
Res_URB	1050	98	1148	91.5	8.5
Res_RUR	409	45	454	90.1	9.9

EGRET output 2

Term	Coefficient	Std Error	P-Value	Hazard Ratio
InEffic	**1.654**	**(.183)**	**<.001**	**5.226**
Edu_1-6	-.3260	(.265)	.218	.7218
Edu_7y+	**-.7678**	**(.312)**	**.014**	**.4640**
Par2_+	**-.7963**	**(.204)**	**<.001**	**.4510**
A25-29	-.2152	(.211)	.309	.8064
A30-44	**-.5762**	**(.258)**	**.025**	**.5620**
Res_RUR	.02944	(.305)	.923	1.030
Int (Edu_1- 6 Res_RUR)	.6382	(.407)	.117	1.893
Int (Edu_7y+ Res_RUR)	**1.309**	**(.625)**	**.036**	**3.703**

EGRET output 3

TERM	HAZARD RATIO	95% CONFIDENCE BOUNDS	
InEffic	**5.226**	**3.652**	**7.479**
Edu_1-6	.7218	.4295	1.213
Edu_7y+	**.4640**	**.2518**	**.8553**
Par2_+	**.4510**	**.3022**	**.6730**
A25-29	.8064	.5328	1.220
A30-44	**.5620**	**.3391**	**.9314**
Res_RUR	1.030	.5663	1.873
Int (Edu_1- 6 Res_RUR)	1.893	.8525	4.204
Int (Edu_7y+ Res_RUR)	**3.703**	**1.088**	**12.61**

V.3.4 Algeria

As of September 2001, there is no single reference or figure or even estimation (whether representative survey or hospital based case study) found about contraceptive failure or contraceptive discontinuation in Algeria.

The only possible reference from which we can derive information on this topic and applied on Algeria is "Contraceptive discontinuation in six developing countries: a cause-specific analysis" by Ali and Cleland (1995). It addressed contraceptive failure or contraceptive discontinuation in Morocco, Tunisia, Egypt, Ecuador, Indonesia, and Thailand. Typically, about one-third of the couples stopped using their contraceptive method within 1 year of acceptance and about half did so within 2 years. In all six countries users of IUDs were more likely than users of other methods to be continuing both at 12 months and at 24 months after acceptance. 82-89% of IUD users persisted with use after 1 year and 65-80% continued use at the end of 2 years. For instance, in Thailand only 23% of episodes of IUD use ended within 24 months compared with 50% of episodes of pill use. In Egypt, the corresponding figures were 24% and 59%, respectively. The three main reasons of discontinuation were: desire for a child, method failure, and health concerns (including side effects). For hormonal contraceptives and the IUD, health concerns were the most common reason. For all methods combined, about 10% of episodes were terminated within the first year for this reason and about 20% were ended within two years. Users of periodic abstinence, withdrawal, the condom, herbs, breast feeding, and other traditional methods were unlikely to stop because of health concerns, but such concerns were a major reason for giving up hormonal methods. In Tunisia, Egypt, and Ecuador about 20% of all hormonal method users stopped for this reason by the end of the first year and about 30% did so within two years. For withdrawal and periodic abstinence, accidental pregnancy was the dominant reason. Probabilities of failure were high among users of periodic abstinence and withdrawal in every country except

Indonesia. Women using the pill or the IUD were more likely to continue use if they had attained their desired family size. Education and residence had little effect on levels of pill failure.

V.4 Consequences of contraceptive failure

V.4.1 Tunisia

Contraceptive Use Prevalence. Table 5.29 reports the urban/rural distribution of contraceptive prevalence by method used. We report these findings, as they are the only ones available from the Tunisian PAPCHILD preliminary report (the third one).

Table 5.29 Percent Urban/Rural Distribution of Currently Married, Non Pregnant Women By the Contraceptive Method Currently Used.

	Urban	Rural	Total
None	35.5	48.6	40.3
IUD	27.9	21.1	25.3
Pill	7.9	6.3	7.3
Periodic Abstinence	10.2	2.5	7.3
Other	8.2	5.5	7.2
Female Sterilisation	10.5	16.0	12.6
Number	**100**	**100**	**100**

Source: Tunisian PAPCHILD, 1994-95.

They are however important to consider in regard to our expectation that periodic abstinence should be recognized as being a spontaneously chosen method, a highly prevalent method- though not marketed or reported in routine service provision. IUD is still the most widely used method and has increased its prevalence in rural Tunisia since in 1988. There is also an "unusually" high rate of Female Sterilisation in rural Tunisia due, probably, to the intensive Female Sterilisation activity of the mobile rural FP clinics since 1987.

Contraceptive Use Failure Estimation. We can assess contraceptive use efficacy in 1994 by applying the estimated of failure proportions for each of the four methods by rural/urban place of residence reported by Table 5.15.

From the 1994 Census of Tunisia we extracted the following data on the number of currently married women aged 15-49 (MWRA):

	URBAN WOMEN		RURAL WOMEN	
AGE	**Number**	**Proportion**	**Number**	**Proportion**
15-19	7373	.0097	6212	.0145
20-24	63419	.0835	46474	.1087
25-29	145876	.1920	84296	.1971
30-34	173221	.2280	87406	.2044
35-39	158634	.2088	82884	.1938
40-44	122745	.1616	70537	.1650
45-49	88465	.1164	49794	.1164
Total	**759733**	**1.000**	**427603**	**1.000**

In 1994, the number of MWRA is 759,733 in urban areas and 427,603 in rural areas. In 1996, after applying an annual constant natural increase of 2%, we estimate the number of MWRA to be 790,603 in urban areas and 444,878 in rural areas. Using these figures, and applying to them the urban/rural residence specific contraceptive use prevalence rates of Table 5.5 we obtain the following estimate of number of method specific MWRA users:

	URBAN		RURAL	
METHOD	**Use Rate**	**Users**	**Rate**	**Users**
None	(35.3)	279020	(48.6)	216211
Pill	(7.9)	62444	(6.3)	28027
IUD	(27.9)	220529	(21.1)	93869
P.A.	(10.2)	80623	(2.5)	11122
Others	(8.2)	64815	(5.5)	24468

Using these figures, and applying to them the Urban/Rural

Residence specific failure proportions in Table 5.15 we obtain the following estimate of number of unwanted pregnancies due to contraceptive failure in urban areas of Tunisia:

METHOD	**Users**	**Failure Rate**	**UNWANTED PREGNANCIES**	
			Number	**Proportions**
Pill	62444	.032	1998	.0787
IUD	220529	.016	3528	.1389
P.A.	80623	.101	8143	.3206
Others	64815	.181	11732	.4618
Total			**25401**	**1.000**

And in rural areas of Tunisia:

METHOD	Users	Failure Rate	UNWANTED PREGNANCIES	
			Number	Proportions
Pill	28027	.072	2018	.2221
IUD	93869	.022	2065	.2273
P.A.	1122	.146	1624	.1788
Others	24468	.138	3377	.3718
Total			**9084**	**1.000**

The estimated number of unwanted pregnancies would therefore be 34485 in 1996. If this number leads to only 30000 live births it would correspond to one sixth of all the annual number of live births. We should also bear in mind that 279020 MWRA are unprotected against conception in urban Tunisia and 216211 in rural Tunisia. Thus, using PAPCHILD and TDHS findings, we have verified that contraceptive use failure is an important contributing factor in the excess of unwanted or mistimed pregnancy. A large proportion of MWRA are at high risk of unwanted or mistimed pregnancy and that a variety of specific services are to be carefully planned and offered in order to meet their need, whether or not expressed.

V.4.2 Algeria

Contraceptive use failure estimation

From the 1992 Algerian PAPCHILD report we estimate that the number of currently married Algerian women aged 15-49 (MWRA) in 1997 is 3.5 millions. Using this figure, and, after excluding the 1% sterilised Algerian women, we applied on it the method specific contraceptive use prevalence rates of Table 3.4 (counting breastfeeding category as no use) we obtained the number of MWRA per method.

We then derived, for the Algerian situation, a 12 month method specific failure rates by calculating averages of the Tunisian 12 month method specific failure rates reported in Table 5.15 and of the Moroccan 12 month method specific failure rates of the pill (0.091), the IUD (0.042) and "all the others" (0.20) reported in Ali and Cleland (1995). The derived averages were respectively 0.07, 0.03 and 0.20. We considered the rest as "all the others" since they

account for only 4.6% and since their failure rate is almost the same for the two countries and among them. (We used the Moroccan rates, along with the Tunisian ones, for two reasons: the overwhelming place of the pill in the Algerian and Moroccan FP programmes and their relying on pill distribution operations). We then obtained the following estimate of numbers of mistimed pregnancies due to contraceptive failure:

METHOD	Number of MWRA Users In million	Failure Rate	Number of Mistimed Pregnancies
None	3.5 x .0553 = 1.8655	....	.....
Pill	3.5 x 0.387 = 1.3545	**0.07**	94,815
IUD	3.5 x 0.024 = 0.0840	**0.03**	2,520
Other	3.5 x 0.046 = 0.1610	**0.20**	32,200
Total			**129,535**

For 1997, we estimated that there would be 1,865,500 Algerian MWRA who are unprotected against conception and that among the 1,634,500 reversible contraceptive method MWRA users 129,535 would have mistimed pregnancies. We start by estimating these figures for 2001 and we compare them to those of Tunisia once we have made the necessary projections for 2001. We obtain the following:

2001 Estimation	ALGERIA	TUNISIA
Population	**30.48m**	**9.38m**
Women 15-49 years	**8.18 m.**	**2.48 m.**
Married Women 15-49 years (MWRA)	**3.73 m.**	**1.28 m.**
Number of Contraceptive Users	**1.75 m.**	**0.71 m.**
Number of Contraceptive Non Users	**2.1 m.**	**0.53 m.**
Number of Mistimed Pregnancies	**138,431**	**37,150**

V.5 Conclusion

First, we performed a description study (mono, bi, and multivariate) of contraceptive use prevalence and its most relevant differentials for programmatic purpose (parity, residence, education and age). For this purpose we used 1998 TDHS and 1992 Algerian PAPCHILD. Using TDHS, we carried on studied for both Tunisia and Algeria contraceptive failure and its consequences. The necessary information will be derive either directly from or indirectly in order to produce estimation when necessary.

The substantive results are much as expected:

- Effective parity is the most important factor; it acts as a factor of contraceptive use efficacy and vigilance;
- Education is ambiguous, it acts alongside parity, but it is closely related to the use of periodic abstinence, an inefficient method with the highest record of failure rate. Education acts also within place of residence levels, which is, in turn, a crude composite of health and socio-economic factors. The data does not contain the appropriate information to give more insights into the contraceptive use dynamics behaviour of the Tunisian couples.

Contraceptive use continuation should be considered by both countries -probably much more by Algeria, as one of the top emerging reproductive health priorities.

We have verified that contraceptive use failure is an important contributing factor in the excess of mistimed pregnancy. A large proportion of MWRA are at high risk of unwanted or mistimed pregnancy (MP). It is, however, important to point out that although there are similar rates of mistimed pregnancies in Algeria and Tunisia, there are fundamental differences, the most striking ones are: a much easier and safer abortion service system in Tunisia, and a much more efficient FP programme in Tunisia promoting contraceptive

methods which efficacy relies more on the providers than the users (IUD and female sterilization). Increasingly, the achievements of family planning programmes are measured by repeated surveys rather than by service statistics on acceptors, complemented by estimates of continuation. However, the study of discontinuation (failure being one of its main causes) and its differentials become nowadays the basis for programme evaluation, rectification and amelioration. When discontinuation rates increase this implies a discontent with the method or with the service, or with both. From the Tunisian TDHS 1988, we found that health side effects were the most common cause of discontinuation. 23.3% of all pill users stopped for this reason by the end of the first year and about 36.3% did so within two years. These figures were respectively 8.5% and 16.2% for the IUD, 10.9% and 20.4% for the vaginal methods 14.0% and 14.8% for the injectable and the condom. The probability of discontinuation for health-related reasons was much higher among IUD users than among users of periodic abstinence or withdrawal but it was much lower than among users of the pill. When discontinuation is studied in relation to parity and to the desire of having another child it measures the motivation as a determinant of pill and IUD continuation. This in its turn, when taken into consideration by responsible services providers, gives guidance and clues to manage efficiently different of clients, to be patient with them in order not to loose them. Compared to health side effects, urban-rural differences were insignificant, though of practical relevance because of the possibility that access problems in rural areas may reduce continuation.

The main implications of studies of contraceptive discontinuation are:

- Efficient family planning programs must offer a range of methods so that clients who discontinue one method can switch easily to another. A responsible FP provider must know that a third of pill users and a tenth of IUD users will stop within a year and a substantial proportion will require an alternative method to avoid an unwelcome pregnancy.

- Natural FP methods, periodic abstinence and withdrawal, have high rate of discontinuation because of the high failure. The users of these methods are motivated and the health risks negligible. A very wrong reaction would be to discard them. On contrary a specific programme must be devised to know them better, to gain their trust and to be ready to advise them using the most appropriate method when they asked for it, and this is usually the case when they fail.

- Users of the IUD were much more likely to continue using their method than were users of other methods. IUD users were less likely than users of pill to stop because of health or side effects and were less likely to report method failure. These apparent advantages of the IUD can be attributed in part to the characteristics of women who choose this method, in particular the strength of their commitment to pregnancy avoidance. IUD is therefore reliable -because of its efficacy and because of the faith the users have put in it once they get used to it, which is not the case of the pill. Losing IUD clients because of health cost recovery is extremely harmful for the poor and vulnerable.

The high failure rates for methods other than the IUD carry obvious implications for policies on induced abortion. Here we are having a heated debate. The findings might support the views of those who argue that access to safe abortion should be part of any comprehensive family planning service.

However induced abortion is by no means a preventive method, it is a palliative method. If we try to resolve the problem of high failure rates of the distributed pill by untrained and unqualified community base workers (who are paid by reported distribution) by emphasising the role of induced abortion then we are in presence of a acute problem of ethics.

We know that the efficacy of the pill is entirely conditional on the full commitment of the user to regular and disciplined daily taking. This, in its turn, is conditional on the fact that the client does not have any medical contradiction with using the pill. We see very clearly that a

minimum of medical assessment is required at least at the very first visit when the decision of prescribing has to be made or not. Responsible pill providers would also give one counselling session to explain all relevant information about the possible minor side effects that are usually temporary, the timing of the next visit etc.

This lead to an obvious contradiction. We allow non-medically trained lay workers to distribute pill in the countryside and the slums to young and inexperienced women in need of taking a pill. And then afterwards we advocate the "paramount" and essential role of induced abortion to take care of the consequent pill use failure.

For each country, a major pitfalls was identified:

- Ever since its creation, the TNFPP has not been interested to collecting information on periodic abstinence, which is by far the first chosen method among the young educated couples. There is no single information on how correctly and consistently they use it, and, more much importantly, on where can they receive counselling and orientation when they need it.

- We notice a 'desert' of information on contraceptive use dynamics in Algeria. There is an indispensable need to collect timely and precise information on the changing process of contraceptive use, including contraceptive choice, continuation and discontinuation of use, contraceptive failure, and switching of methods.

Finally, in both countries –probably more embarrassing and sensitive in Algeria, many emerging reproductive health needs are unmet. They should be aimed at the usually targeted married women, but the real emergency and concern is certainly with raising numbers of unmarried women and girls, and adolescents from both sexes.

Chapter VI

Emerging issues in Reproductive Health

VI.1 Introduction

This chapter will address the main emerging reproductive health issues in Algeria and Tunisia in the 2000s and in new contexts of family building transformation and sexuality behaviour.

It has been shown in previous chapters that the TNFPP was the –positive- exception in the Islamic world, especially at its commencement and with respect to its early launching when the Arab world was totally dormant and unaware –if not suspicious and rejecting- of the extraordinary impact of population control policy on development.

Many studies are now reporting and praising the fruits of this 1960-80s policy in terms of reduction of the demographic burden, reduction of the employment burden, reduction of health and schooling expenditures and so forth (see Gueddana, 1999: "Impact of TNFPP on socio-economic indicators in Tunisia" http://www.poplas.org/conference/html/). The truth is that nowadays we only have the remnant of the ambitious and daring original TNFPP.

The "National Report on Population 94-98" (ONFP, 1999), describing the Tunisian family planning and reproductive health (FP/RH) policy and programme, is merely a listing of statistics and statement gathered from a dozen of governmental institutions. It does not reflect the real current situation of FP/RH in Tunisia and it does not address in any effective manner the current FP/RH services needs and the future evolving ones. The FP/RH current and future situations in Tunisia are the outcomes of several type of transitions: some have just ended, others have been evolving and new ones have just been ignited. This state deserves to be investigated in scientific, comprehensive and non-partisan manner. The findings might be used and applied in other fields, they could also be relevant to neighbouring countries, such as Algeria.

Some fundamental changes, highly related to fertility, are taking place in Algeria and Tunisia and little if none has been explicitly investigated: "age of marriage" can be cited in first.

The delaying (or even the absence) of marriage has produced new "unspeakable" situations such as sexuality and fertility outside the wedlock, and their obvious correlates: contraception and its failure: pregnancy. Pregnancy and its unavoidable consequence: abortion.

Unlike in the West where marriage is not necessarily the precursor of childbearing, any change in nuptiality would influence the fertility of women, as procreation is almost entirely within marriage in both countries. Therefore, it is important to inquire whether the age at marriage is continuing to increase. Tunisian data show that marriage is declining and that female median age at marriage had risen to 28 years (INS, 1994). Marriageability for men, in both countries, is largely related to their employment status; first, whether or not a man has a job and second, the status of the job (whether or not it is "permanent"). When Tunisia had a more agrarian economy, the unemployment issue did not arise because the family of the bride or the groom was able to provide the young couple with a suitable livelihood. The changes in Tunisia's socio-economic and cultural environment have become exceptionally significant and have made a great impact on adolescents, particularly with regard to preparations for marriage. As a result of the changes in nuptiality, the proportion of unmarried youth continues to rise (De Silva, 1997). Changing sexual behaviour and unwanted pregnancies of the unwed are emerging policy concerns in Tunisia. The national family planning programme usually targets married couples only. However, unmarried females represent one of the "unreached" groups that are at great risk of becoming pregnant owing to changes in sexual behaviour; almost all unwanted pregnancies among this group are terminated by induced abortion. Even though no direct information is available on the topic, the number of unwanted new-borns left in delivery hospitals is consistently raising.

Adolescence has always been a reproductive health issue when early marriage was the rule in most of the Muslim world and the less developed countries. Nevertheless, the adolescent married woman had a shelter, a security and –through fertility- a "life insurance".

Nowadays, adolescence is emerging as a societal problem because of the cultural "earthquake" that is happening as a result of globalisation of communication, medias and telecommunication. It is still a reproductive health issue, although different from before. Being "prolonged" because of marriage delay (or absence), adolescence is more perceptible and adolescents –female and male alike- are requiring, and do deserve appropriate attention.

Although it is not be tackled separately in this chapter, quality of contraceptive use (measured by the length of contraceptive protection, failure and discontinuation) is the most urgent reproductive health issue to improve. Algeria and Tunisia have both achieved a high rate of contraceptive use (52 and 60 in 2001 according to PRB) among MWRA. Quality of contraceptive use is also to be considered, with more commitment and conviction, among the unmarried contraceptive users, usually secret and hesitant.

Despite the fact that contraceptive efficacy has been intensively studied and investigated, nationally representative measures of contraceptive failure and contraceptive failure differentials are not available for most Arab countries since the recent PAPCHILD surveys do not collect information on the topic. In developing countries the emphasis has been put on increasing the acceptance of contraception rather than on improvements in contraceptive effectiveness. However, as fertility declines in developing countries (between 1965 and 1995 the total fertility rate declined from 6.0 to 3.3) and contraceptive use rises (49% of all couples in 1997) contraceptive failure becomes a progressively more prominent fertility determinant (Ness, 1997; United Nations, 1989; UNFPA, 1992, 1997; Wang and Diamond, 1995). For instance, as shown by Bongaarts and Rodrhguez (1991), when the fertility target is two or three children, most couples are likely to need protection against unwanted fertility for over

10 years before the woman's reproductive period ends. If contraception is practised with 90 percent efficacy, 70% of users would expect a contraceptive failure within 10 years; and unless the couples resort to induced abortion, the births resulting from contraceptive failure would contribute substantially to the population's level of fertility (Hammerslough, 1991).

Accurate information on contraceptive failure is therefore important for family planning programme policy makers who are evaluating the impact of providing contraceptives, as well as for demographers seeking to understand the determinants of fertility. Demographic models of the births averted through the use of contraceptives depend upon assumed values of the failure rates (United Nations, 1979 and 1986). Couples desiring to make an informed choice about contraception also need valid information about contraceptive failure.

Many researchers, demographers among others, have addressed the issue of contraceptive use failure and discontinuation since it appears to be "the little-explored" variable which might explain why some countries combine a high contraceptive use prevalence rate with high fertility levels (Jejeebhoy, 1991). Because of the limitations of conventional methodologies, new analytical approaches have recently been proposed to measure contraceptive continuation and failure and to study demographic and social correlates of failure by fitting proportional hazards models to contraceptive continuation and failure (Pearl, 1932; Potter, 1966; Phillips, 1982; Potter and Phillips, 1982; Schrim et_al., 1982; Trussell and Menken, 1982; Cliquet et_al., 1977; Gaslonde and Carrasco, 1982; Grady et_al., 1983, 1986; Laing, 1984, 1985; Hammerslough, 1987; Lodewijckx and Impens, 1987; Moreno, 1991; Trussell and Grummer-Strawn, 1991; Jones and Forrest, 1992; Steel, Wang and Diamond, 1994).

VI.2 Sexuality and reproductive health among the unmarried

VI.2.1 The increasing importance of the unmarried

Fertility is a complex process which is affected by several socio-economic, cultural and biological variables. One of the latter is fecundity, which starts with the onset of menarche

and ends with menopause. Among socio-economic and cultural variables is the prevalence of early and universal marriage, which is of great demographic, social and economic significance, especially in those countries that are characterized by high fertility and a low average age at marriage. Postponement of marriage contributes substantially towards a reduction in the level of fertility by shortening the total reproductive span of the female, which in turn, owing to a cumulative effect, influences the size of individual families as well as the population growth rate of the country. Davis (1963) identified reductions in proportions married, along with emigration and declines in marital fertility, as being a multiphase response to population pressure. Therefore, changes in marriage and particularly marriage patterns have been extensively studied in the context of the demographic transition.

In many developing countries, especially in Asia where significant declines in fertility are being experienced, reductions in the proportions married have often coincided with or, as in the case of Sri Lanka, preceded declines in marital fertility. The case of Sri Lanka constitute an appropriate model to use in order to grasp the current situation in Tunisia and, more importantly, the situations in both Algeria and Tunisia during the next decade even after controlling for the religious and cultural differentials.

During the present century, female age at marriage in Sri Lanka has increased by almost seven years. The delays in marriage and their impact on the birth rate led Kirk (1969) to refer to Sri Lanka as "the Ireland of Asia".

Tunisian data show that early marriage -and sometime any marriage- is less feasible now than previously for both men and women (INS, 1994). Marital postponements and in some cases permanent celibacy have been increasingly necessary throughout the country because of unemployment and other factors. Both men and women must wait longer to accumulate the necessary resources to set up an independent household. In Tunisia, the patriarchal joint

family is not the favoured marriage model, even in rural areas; young couples tend to establish separate households usually right after the marriage ceremony.

Men are unlikely to marry until they find employment to earn sufficient income to support a family. Thus, a high level of prolonged unemployment could lead to postponement of marriage among young men. This in turn could create a shortage of eligible marriage partners for the women of corresponding ages. And that is exactly what has happened is happening right now in Tunisia. Further, the type of education being provided in Tunisia, hardly enables the employment of such persons. The large number of "educated unemployed" gives a special character to the problem. Although Tunisia's population growth rate has been consistently declining, and is expected to decline further, the numbers entering the labour force each year are staggering. Estimates place the number of people entering the labour force at about 60,000 persons annually. This is a very large number when institutional labour absorption is only around 20,000 persons per year (Ministre de l'Emploi et de la Formation Professionelle, 1999). Population and labour force projections indicate an increase in the size of the labour force until the year 2010. As a result of the "French-driven" education model adopted over the past three decade, Tunisia's economic performance has not been adequate for providing sufficient employment for male youths, particularly educated youths. And, as has been discussed previously, employment of the man is the most important requirement for his entering into a formal marriage. Thus, it is possible that there will be a further trend towards increased age at marriage in Tunisia, as may be observed in the case of Sri Lanka and Ireland. One of the most conspicuous single changes regarding marriage has been Tunisia's transformation from a society in which marriages were arranged by families to one in which marriages are based on the individuals' own selection. The individual attributes that were regarded as important in the past, such as the acceptance of the primacy of family interest and hard work, have been replaced by new attributes more relevant to the nuclear family.

An educated woman is, therefore, regarded as one with the potential for making a better mother than would an illiterate woman. Clearly, with regard to rearing children, general maturity is regarded as necessary nowadays for wives as well as for husbands; because of rapid modernization, all aspects of life have become more complicated. The changes in Tunisia's socio-economic and cultural environment have become exceptionally significant and have made a great impact on adolescents, particularly with regard to preparations for marriage. As a result of the changes in nuptiality, the proportion of unmarried youth and unmarried adults continues to rise. Following are their detailed descriptions (by age, sex, urban/rural residence and county of origin).

Table 6.1 Number and percentage of unwed by age groups and sex Tunisia. National Census INS 1994

AGE GROUPS	MALES		FEMALES	
	% unwed	Total	% unwed	Total
15 - 19	**100.00**	478618	**96.96**	460448
20 - 24	**96.32**	412463	**72.28**	406255
25 - 29	**70.97**	363603	**37.74**	380300
30 - 34	**31.15**	326172	**18.08**	330443
20 - 34	**68.67**	**1102238**	**44.49**	**1116998**

Table 6.2 Number and percentage of unwed by age groups and sex. Urban Residence. Tunisia. National Census INS 1994

AGE GROUPS	MALES		FEMALES	
	% unwed	Total	% unwed	Total
15 - 19	**100,00**	280017	**97,14**	266273
20 - 24	**97,45**	254409	**73,24**	243510
25 - 29	**75,06**	237120	**37,84**	241991
30 - 34	**34,02**	223004	**18,09**	220686
20 - 34	**70,22**	**714533**	**43,88**	**706187**

Table 6.3 Number and percentage of unwed by age groups and sex. Rural Residence. Tunisia. National Census INS 1994

AGE GROUPS	MALES		FEMALES	
	% unwed	Total	% unwed	Total
15 - 19	**100,00**	198601	**96,72**	194175
20 - 24	**94,50**	158054	**70,83**	162745
25 - 29	**63,30**	126483	**37,57**	138309
30 - 34	**24,96**	103168	**18,05**	109757
20 - 34	**65,82**	**387705**	**45,53**	**410811**

Tables 6.2 and 6.3 show that celibacy is increasing rapidly even in rural Tunisia especially among females and (sensibly the same percentage of unwed in each age group but higher in rural Tunisia for age group20-34, 45.53 versus 43.88 in urban Tunisia). It is also climbing among rural male youngsters 20-24, 94.50 versus 97.45 in urban Tunisia).

Prolonged celibacy has led to changing sexual behaviour and unwanted pregnancies among the unwed. These are emerging concerns in Tunisia requiring unprecedented and yet appropriate response and policy. But from where to start since the information is rare.

A survey on the reproductive health of unmarried adolescents and young adults, was carried (and censored) in 1994. The sample was statistically and nationally representative of the male and female Tunisian population aged 17-23. The interviewers were from social sciences, psychology, law, journalism and health. They were trained during two months on all aspects of the study. Male interviewers interviewed men and female interviewers interviewed women. The survey was the most comprehensive and accurate survey ever run in the Arab and Muslim world on the topic. Having access to the data set, we can report that around 25% of the male and 12% of the female reported having had any sexual activity. Respectively, 18% and 8% report having sexual relations with full penetration (40% and 18% among university students). Contraceptive knowledge was obviously of much inferior quality than among married couples. Contraceptive practice was erratic and the reporting showed real ignorance of the whole topic.

Table 6.4 Number and percentage of unwed by age groups and sex. Tunis and main Counties areas surrounding Tunis. National Census INS 1994

COUNTY	Age Groups	Number of Males		Number of Females		% UNWED	
		UNWED	TOTAL	UNWED	TOTAL	Male	Female
TUNIS	15 - 19	40789	40789	38885	39585	**100.00**	**98.23**
	20 - 24	43862	44737	33999	42217	**98.04**	**80.53**
	25 - 29	39319	47327	21112	44478	**83.08**	**47.47**
	30 - 34	19390	43092	10122	39949	**45.00**	**25.34**
	20 - 34	**102571**	**135156**	**65233**	**126644**	**75.89**	**51.51**
ARIANA	15 - 19	29832	29832	28104	28698	**100.00**	**97.93**
	20 - 24	25356	25986	18684	25194	**97.58**	**74.16**
	25 - 29	19062	24834	10146	25614	**76.76**	**39.61**
	30 - 34	8400	23772	4062	23814	**35.34**	**17.06**
	20 - 34	**52818**	**74592**	**32892**	**74622**	**70.81**	**44.08**
BEN AROUS	15 - 19	17628	17628	16716	17104	**100.00**	**97.73**
	20 - 24	16596	16948	12300	15884	**97.92**	**77.44**
	25 - 29	12816	16644	7248	17896	**77.00**	**40.50**
	30 - 34	5864	16564	3168	17108	**35.40**	**18.52**
	20 - 34	**35276**	**50156**	**22716**	**50888**	**70.33**	**44.64**
NABEUL	15 - 19	31494	31494	2953	30426	**100.00**	**9.71**
	20 - 24	28554	29346	19362	27324	**97.30**	**70.86**
	25 - 29	19464	26436	9060	25938	**73.63**	**34.93**
	30 - 34	7626	23538	3588	21378	**32.40**	**16.78**
	20 - 34	**55644**	**79320**	**32010**	**74640**	**70.15**	**42.89**
Zaghouan	15 - 19	8077	8077	7741	7947	**100.00**	**97.41**
	20 - 24	5863	6071	4957	6728	**96.57**	**73.68**
	25 - 29	3576	5308	2371	6000	**67.37**	**39.52**
	30 - 34	1359	4653	943	4914	**29.21**	**19.19**
	20 - 34	**10798**	**16032**	**8271**	**17642**	**67.35**	**46.88**
Bizerte	15 - 19	26500	26500	23915	24780	**100.00**	**96.51**
	20 - 24	22585	23250	16425	23240	**97.14**	**70.68**
	25 - 29	14635	20575	7565	21035	**71.13**	**35.96**
	30 - 34	6090	18430	3035	17845	**33.04**	**17.01**
	20 - 34	**43310**	**62255**	**27025**	**62120**	**69.57**	**43.50**

Table 6.5 Number and percentage of unwed by age groups and sex. North West and Centre West (under developed). National Census INS 1994

COUNTY	Age Groups	Number of Males		Number of Females		% UNWED	
		UNWED	TOTAL	UNWED	TOTAL	Male	Female
Beja	15 - 19	17454	17454	16509	16923	**100.00**	**97.55**
	20 - 24	13944	14382	11148	14550	**96.95**	**76.62**
	25 - 29	8940	12063	5715	13497	**74.11**	**42.34**
	30 - 34	3690	10821	2412	11424	**34.10**	**21.11**
	20 - 34	**26574**	**37266**	**19275**	**39471**	**71.31**	**48.83**
Jendouba	15 - 19	22028	22028	20604	21316	**100.00**	**96.66**
	20 - 24	16744	17472	13804	18576	**95.83**	**74.31**
	25 - 29	11048	15320	6976	17140	**72.11**	**40.70**
	30 - 34	4736	12904	3288	14652	36.70	22.44
	20 - 34	**32528**	**45696**	**24068**	**50368**	**71.18**	**47.78**
Le Kef	15 - 19	14637	14637	14316	14655	**100.00**	**97.69**
	20 - 24	12537	12966	10353	13224	**96.69**	**78.29**
	25 - 29	8190	11202	5127	12000	**73.11**	**42.73**
	30 - 34	3432	9423	1962	9963	**36.42**	**19.69**
	20 - 34	**24159**	**33591**	**17442**	**35187**	**71.92**	**49.57**
Siliana	15 - 19	14901	14901	14400	14805	**100.00**	**97.26**
	20 - 24	10638	11331	9192	12420	**93.88**	**74.01**
	25 - 29	6018	9036	4050	9975	**66.60**	**40.60**
	30 - 34	1989	7071	1536	7926	**28.13**	**19.38**
	20 - 34	**18645**	**27438**	**14778**	**30321**	**67.95**	**48.74**
Kairouan	15 - 19	31300	31300	29780	30635	**100.00**	**97.21**
	20 - 24	24535	25865	19170	25845	**94.86**	**74.17**
	25 - 29	12570	19285	8330	21505	**65.18**	**38.74**
	30 - 34	**3965**	**15815**	**3100**	**17640**	**25.07**	**17.57**
	20 - 34	41070	60965	30600	64990	**67.37**	**47.08**
Kasserine	15 - 19	22848	22848	20980	21948	**100.00**	**95.59**
	20 - 24	15464	16892	11908	17528	**91.55**	**67.94**
	25 - 29	7768	13512	5004	15076	**57.49**	**33.19**
	30 - 34	2552	11420	1624	12020	**22.35**	**13.51**
	20 - 34	**25784**	**41824**	**18536**	**44624**	**61.65**	**41.54**
Sidi Bouzid	15 - 19	23164	23164	21520	22108	**100.00**	**97.34**
	20 - 24	17084	17828	13588	17968	**95.83**	**75.62**
	25 - 29	9240	13684	6424	15496	**67.52**	**41.46**
	30 - 34	3032	11308	2328	11904	**26.81**	**19.56**
	20 - 34	**29356**	**42820**	**22340**	**45368**	**68.56**	**49.24**

Table 6.6 Number and percentage of unwed by age groups and sex. SAHEL (highly developed). National Census INS 1994

COUNTY	Age Groups	Number of Males		Number of Females		% UNWED	
		UNWED	TOTAL	UNWED	TOTAL	Male	Female
Sousse	15 - 19	23985	23985	21305	22010	**100.00**	**96.80**
	20 - 24	20295	21180	14170	20250	**95.82**	**69.98**
	25 - 29	12785	18520	6050	17950	**69.03**	**33.70**
	30 - 34	4930	17055	2630	17170	**28.91**	**15.32**
	20 - 34	**38010**	**56755**	**22850**	**55370**	66.97	41.27
Monastir	15 - 19	19384	19384	17676	18272	**100.00**	**96.74**
	20 - 24	18112	18844	11492	16432	**96.12**	**69.94**
	25 - 29	10544	15832	4936	15248	**66.60**	**32.37**
	30 - 34	3412	14672	2008	14032	**23.26**	**14.31**
	20 - 34	**32068**	**49348**	**18436**	**45712**	64.98	40.33
Mahdia	15 - 19	18748	18748	17908	18488	**100.00**	**96.86**
	20 - 24	13680	14328	10816	15412	**95.48**	**70.18**
	25 - 29	6736	11036	5484	14576	**61.04**	**37.62**
	30 - 34	2256	10084	2400	11700	**22.37**	**20.51**
	20 - 34	**22672**	**35448**	**18700**	**41688**	63.96	44.86
Sfax	15 - 19	39116	39116	35189	36820	**100.00**	**95.57**
	20 - 24	33278	34608	20461	32354	**96.16**	**63.24**
	25 - 29	20286	31507	9436	31822	**64.39**	**29.65**
	30 - 34	6930	30037	4466	29666	**23.07**	**15.05**
	20 - 34	**60494**	**96152**	**34363**	**93842**	62.91	36.62

Table 6.7 Number and percentage of unwed by age groups and sex. South (under developed). National Census INS 1994

COUNTY	Age Groups	Number of Males		Number of Females		% UNWED	
		UNWED	TOTAL	UNWED	TOTAL	Male	Female
Gafsa	15 - 19	17925	17925	16575	16971	**100.00**	**97.67**
	20 - 24	13680	14088	10530	13917	**97.10**	**75.66**
	25 - 29	8625	11703	5553	13242	**73.70**	**41.93**
	30 - 34	3366	10509	2160	11313	**32.03**	**19.09**
	20 - 34	**25671**	**36300**	**18243**	**38472**	**70.72**	**47.42**
Tozeur	15 - 19	4786	4786	4517	4668	**100.00**	**96.77**
	20 - 24	4058	4151	3070	4165	**97.76**	**73.71**
	25 - 29	2996	3904	1605	3956	**76.74**	**40.57**
	30 - 34	1306	3579	699	3326	**36.49**	**21.02**
	20 - 34	**8360**	**11634**	**5374**	**11447**	**71.86**	**46.95**
Kebili	15 - 19	7622	7622	6927	7125	**100.00**	**97.22**
	20 - 24	5890	6007	4225	5903	**98.05**	**71.57**
	25 - 29	3567	4951	1731	5100	**72.05**	**33.94**
	30 - 34	1072	3964	567	4197	**27.04**	**13.51**
	20 - 34	**10529**	**14922**	**6523**	**15200**	**70.56**	**42.91**
Gabes	15 - 19	16857	16857	16179	16704	**100.00**	**96.86**
	20 - 24	12909	13335	9867	13911	**96.81**	**70.93**
	25 - 29	8859	12216	4431	13110	**72.52**	**33.80**
	30 - 34	3285	11184	1671	10902	**29.37**	**15.33**
	20 - 34	**25053**	**36735**	**15969**	**37923**	**68.20**	**42.11**
Medenine	15 - 19	21744	21744	19956	20932	**100.00**	**95.34**
	20 - 24	16304	17260	10904	17576	**94.46**	**62.04**
	25 - 29	8316	14148	4068	14772	**58.78**	**27.54**
	30 - 34	2264	12284	1596	13284	**18.43**	**12.01**
	20 - 34	**26884**	**43692**	**16568**	**45632**	**61.53**	**36.31**
Tataouine	15 - 19	7799	7799	7228	7528	**100.00**	**96.01**
	20 - 24	5299	5588	3205	5637	**94.83**	**56.86**
	25 - 29	2690	4560	1112	4874	**58.99**	**22.81**
	30 - 34	670	3993	372	4316	**16.78**	**8.62**
	20 - 34	**8659**	**14141**	**4689**	**14827**	**61.23**	**31.62**

TNFPP usually targets married couples only. However, unmarried females represent one of the "enriched" groups that are at great risk of becoming pregnant owing to changes in sexual behaviour; almost all unwanted pregnancies among this group are terminated by induced abortion. Even though no direct information is available on the topic, the number of unwanted new-borns left in delivery hospitals is consistently raising.

A female median age at marriage as high as 28 years (in 1994, at least 30 in 2001) means a lengthy period of exposure to potential sexual activity before getting married. Therefore, TNFPP should strongly consider including services for the unmarried portion of the adolescent and young adult population (De Silva, 1997). This group should seriously be considered, as one having unmet needs for family planning. Even though Tunisian society frowns on casual male-female relationships and pre-marital sex, the changes that have occurred in the socio-economic and political environment during recent years certainly present the opportunity for a higher incidence of pre-marital sex and unwanted pregnancies outside marriage. Therefore, unless the programme is carefully planned to address this issue and successfully implemented to reach the unmarried young age group concerned, the most likely outcome will be heavy reliance by unwed females on induced abortion to terminate their unwanted pregnancies.

In Algeria the median age of marriage has reached 27.6 years in 1998, versus 18 in 1966, and over half of the women aged 25-29 are unmarried. In Morocco the median age of marriage has reached 26 in 1995 versus 16 in 1960 (Express 25 January 2001 "Algérie, Maroc, Tunisie: Les nouveaux choix des femmes" by Dominique Lagarde, Mounia Daoudi, Baya Gacémi, with input from an INED study).

VI.2.2 Adolescents

In developing countries, the number of adolescent's aged 10-19 was estimated in 1995 at around 914 million or 20% of the population. This proportion varies from a high of 23% in

Africa to 19% in Asia. According to the median population projection of the United Nations, the number of adolescents is expected to reach 1.13 billion by the year 2025. The most rapid future growth is expected to occur in Africa. In Tunisia, according to the 1994 census, the population of adolescent's aged 10-19 was 1.974 million, (22.5% of the population). Table 6.1, shows that those aged 15-19 were 39,0669 (10.7%) and that all the male and 96.96% of the female were unmarried. In Algeria, as shown in Table 3.8, according to the 1998 census, the population of adolescents aged 10-19 was 7.27 million, (25% of the population).

Also, among those aged 20-34, 68.67% of the male and 44.79% of the female were unmarried. In reference to sexual fitness and potential activity, we can restrict our study of adolescents to those aged 15-19. In this case, the total number of sexually fit, potentially active and unmarried men aged 15-34 in 1994 was 1,235,551 (78% of all men aged 15-34) and the corresponding number women was 943,369 (60% of all women aged 15-34). It is worth noticing that the proportions of unmarried persons have risen greatly between the 1984 and the 1994 censuses as shown in the following table:

Age groups	Men		Women		Total	
	1984	**1994**	**1984**	**1994**	**1984**	**1994**
15-19	100	100	93.3	97.0	96.6	98.5
20-24	91.4	96.3	59.0	72.3	75.4	84.4
25-29	51.9	71.0	24.6	37.7	38.1	54.0
30-34	17.7	31.1	9.7	18.1	13.7	24.6
35-39	5.9	9.5	3.8	8.9	4.8	9.2

Addressing reproductive and sexual adolescence issues in Tunisia is equivalent to addressing the same issues for unmarried men and women aged 20-34 years. However (Table 6.4), the topic is more acute in urban Tunisia with Great Tunis the capital city (Tunis, Ariana and Ben Arous) reaching the highest rate of celibacy among those aged 20-34 (75.89% for male and 51.51% for female, 70.33% and 44.64%, 70.15% and 42.89%, respectively).

It may seem irrelevant or confusing to mix teenagers with older aged 20-34 but practically we are speaking of the same people facing the same unusual sexual and reproductive concerns at different ages, it also means that because of the fourteen century Arab-Islamic impact a 25 year old unmarried women is still an adolescent in terms of sexuality, sexual education, sexual vigilance, capability to protect herself from infection and from pregnancy.....

In fact, in both Algeria and Tunisia, a responsible planning and management of an "Adolescent Reproductive Health" programme (targeting the 13-19 year old youngsters) is the right precursor to best serve and meet the needs of 20-34 years and older unmarried "adults" and still undergoing all the taboo and restrictions experienced by the adolescents.

While concentrating on the reproductive health concerns of adolescents, we can not ignore addressing other intimately related aspects.

Adolescence is a time of tremendous opportunity and change. It also is a time of heightened vulnerabilities. A responsible programme designed to meet the reproductive health needs of adolescent must tackle in a meaningful way the following:

1 - Developing the life skills of adolescents

2 - Providing adolescents with school-based sexuality education

3 - Providing adolescents with education and services on Contraception

Adolescents who are sexually active need access to safe and effective contraception. Many adolescents use no contraception or use a method irregularly, so they are at high risk of unwanted pregnancy, unsafe abortion, and sexually transmitted diseases. In general, adolescents are eligible to use any method of contraception. Adolescents need access to family planning services regardless of their marital status. Services should avoid unnecessary procedures that might discourage or frighten teens, such as requiring a pelvic exam when requesting oral contraceptives.

4 - Providing adolescents with education and services on sexually transmitted diseases and AIDS

5 - Providing adolescents with information, education, preparedness and services on early and unintended pregnancy

6 - Meeting the needs of the youngest adolescents

7 - Reaching underserved adolescents

8 - Reducing service restrictions and biases

We fully agree with most research on adolescents in developing countries that focused on documenting the incidence of unprotected premarital sexual activity, and early marriage, pregnancy, and childbearing. We do however believe that in order to fully comprehend-or attempt to alter-these behaviours, we first need to understand the broader social context in which they occur.

Girls' living arrangements, domestic roles and responsibilities, social and physical mobility, schooling, and work experiences may affect their ability to set the terms of sexual relations and childbearing. Moreover, these factors are critical to girls' economic and social well-being. That is why we insisted on the deterministic value of the current socio-economic context and the changing family building patterns in Tunisia.

While this is also true and applicable in Algeria, there is an added political and "insecurity" context that creates new "specifically Algerian issues". Many Algerian girls are "fostered out" to other households or to the street, where they may be exploited in domestic service or in the prostitution industry (Algeria Press Services 17 October 2000, Tunis Hebdo, 2001). Girls' school enrolment declines steeply during adolescence because of a combination of these "Algerian" factors with the classical ones: rising school fees, distances girls must travel from home to school, and fear for girls' reputation as well as their safety.

Tourist and "security" environment in Tunisia has favoured premarital sex with tourists and between Tunisians. It started with dating at very early ages and the promises of marriage. In the usual absence of contraceptive knowledge and use pregnancy with two outcomes:

- Abandoned children in rural and poor areas, while the single child-mother is definitively eradicated from the list of marriage candidates.
- Abortions as many times as possible for those who can afford paying for it.

Adolescent policies sensitive to the different needs of girls and boys must be built virtually from the ground up because there is no cultural consensus that adolescence exists as a distinct and important developmental stage for all 10-19-year-old girls and boys.

Four policy challenges are to be set out:

1- Create a safe, supported passage for girls from ages 10 to 19, recognizing that the second decade of their lives is a period of critical capability-building and heightened vulnerability, which does not end with marriage and childbearing;

2- Acknowledge that adolescent girls' lives are often governed by harmful, culturally sanctioned gender rules imposed by males, parents, and other elders and perpetuated at times by girls themselves;

3- Expand girls' social participation, schooling, and economic opportunities, understanding that these are basic entitlements and that they frame girls' reproductive behaviour;

4- Recognize that a large proportion of adolescent girls are already sexually active and some are mothers, who need support and investment at least as much as do their unmarried female older peers.

We must move adolescent policy beyond reproductive health. There is a real need for the development of a multisectoral adolescent policy, with diverse initiatives that improve the conditions of girls' lives, not only in the realm of reproductive health, but also in the areas of work, sports, and schooling. This will require advocacy and budgetary resources for social

and economic investments outside the health sector. Ministries of education, employment, labor, youth, community development, and sports must all contribute to a broadly cast programme. Expanding girls' economic options should be a priority: girls need access to microenterprise, savings, and credit programs; they also need opportunities for wage-earning work outside the home in the formal sector. Education is certainly the most influential investment in Algeria. (For more information on adolescence topics in fuller treatment see the 1998 Population Council publication "The Uncharted Passage: Girls' Adolescence in the Developing World" by Mensch, Barbara S., Judith Bruce, and Margaret E. Greene).

VI.3 Abortion

VI.3.1 Abortion main issues and correlates

Review of the main aspects

What is abortion? Abortion is the ending of a pregnancy by removal of the foetus from the uterus. Almost 90 percent of all abortions are performed in the first trimester through outpatient surgical procedures, by mild suction that removes the placenta, uterine lining, and early foetus (Centers for Disease Control and Prevention, "Abortion Surveillance: Preliminary Analysis - United States, 1996," MMWR, December 4, 1998, and "National Abortion Federation, Fact Sheet: What is Surgical Abortion?," 1995). In some cases, a pregnancy can be ended by taking certain medications administered by a physician. This type of abortion can be done up to about seven weeks from when a woman got her last menstrual period ("Early Pregnancy Termination with Mifepristone and Misoprostol in the United States," The New England Journal of Medicine, April 30, 1998).

When do women have abortions? Most abortions take place early in pregnancy, when the foetus is very immature. Just over half (55 percent) take place by the first eight weeks of pregnancy, when the foetus is one-half to three-quarters of an inch long (Centers for Disease Control and Prevention, "Abortion Surveillance: Preliminary Analysis," MMWR, December

4, 1998, and Sara Derange and Nancy James, A Guide to Foetal Development for Abortion Providers, 1993). 88% take place by the end of the first trimester (the first twelve weeks of pregnancy), when the foetus is two to two and one-half inches long. Another six percent take place in the early second trimester (Centers for Disease Control and Prevention, "Abortion Surveillance: Preliminary Analysis," MMWR, December 4, 1998, and Sara Derange and Nancy James, A Guide to Foetal Development for Abortion Providers, 1993).

Abortions late in pregnancy are very rare every where and in Tunisia. Only a tiny fraction of all abortions - 1.5 percent - occur in the second half of pregnancy, after 20 weeks (Centers For Disease Control and Prevention, "Abortion Surveillance: Preliminary Analysis," MMWR, December 4, 1998). An even smaller number - less than one fiftieth of one percent - occur in the period when foetuses are developed enough to survive outside the uterus (Alan Guttmacher Institute, cited in the "Late-term Abortion," Journal of the American Medical Association, August 26, 1998).

Is abortion safe? Abortion is a very safe medical procedure, especially when done in the first trimester, which is when the overwhelming majority of abortions - almost 90 percent - take place. As in all surgery, some physical complications are possible; however, major complications - such as haemorrhage, serious pelvic infection, or a tear in the uterus - are very rare, occurring in well below one percent of all abortions ("Induced Termination of Pregnancy Before and After Roe v. Wade: Trends in the Mortality and Morbidity of Women," Journal of the American Medical Association, December 9, 1992). The mortality rate from abortion today is very low - less than one death for every 100,000 abortions (Centers for Disease Control and Prevention, "Abortion Surveillance - United States, 1993 and 1994", MMWR, August 8, 1997). It is important to remember that women who choose to give birth also face the possibility of serious physical complications like hemorrhage, infection, diabetes, embolism, heart damage, severe high blood pressure, and impaired liver

and kidney functioning. In the United States, the mortality rate for pregnancy is 7.5 maternal deaths for every 100,000 live-births ("State Specific Maternal Mortality Among Black and White Women - United States, 1987-1996," Centers for Disease Control and Prevention, MMWR, June 18, 1999, and "Maternal and Child Health Statistics: Russian Federation and United States, Selected Years 1985-95," Centers for Disease Control and Prevention, Vital Health Statistics, March 1999).

What barriers do women face in getting abortions? Although abortion is legal throughout Tunisia, many women –especially unmarried- have difficulty getting the abortion services they need because of a shortage of public providers and the very high cost in private clinics.

Medical abortion Emergency contraception. The Mifrepristone (RU-486), if taken up to 72 hours after sex, can prevent pregnancy ("Emergency Postcoital Contraception," The New England Journal of Medicine, October 9, 1997). It should not be relyed on as regular birth control method, but it is an option in case of an emergency. It is an option during the first 7 weeks (49-days) after a woman's last menstrual period. Mifepristone blocks the action of the natural hormone progesterone. It has many potential uses but is best known for its ability to interrupt pregnancy in its early stages, thus providing women with a medical alternative to surgical abortion. Mifepristone alone can cause a very early abortion some of the time but is not reliable enough by itself, so it is followed in two days by a prostaglandin, misoprostol. A majority of women experience bleeding and the passage of the pregnancy within four hours of receiving the prostaglandin. If taken through the end of the seventh week of pregnancy, this regimen is 95-99% effective in inducing an abortion. Since 1988, women in 20 countries have used mifepristone and a prostaglandin as a medical method of pregnancy interruption. Over 600,000 women have used the drug safely in Europe; over 400,000 French women have used the same combination of mifepristone and prostaglandin that is being used in the USA.

The vast majority of women who have chosen this method have been satisfied. About 85% to 95% of women say that they would choose the procedure again if they needed it and would recommend it to a friend. They like the fact that there is no surgery or anaesthesia, that the method is non-invasive, that it takes place earlier in a pregnancy than a surgical abortion, and is more "natural". It also puts more of the abortion in the hands of the woman. All the studies have shown mifepristone to be safe and effective.

Side effects, after taking the mifepristone, vary among women and appear to be similar to "morning sickness" - nausea, headache, weakness and fatigue and may also include light uterine bleeding. However, side effects are more common after taking the prostaglandin. These side-effects may include: Cramps and abdominal pain, similar to those associated with a very heavy menstrual period or a miscarriage, nausea, vomiting and diarrhea, uterine bleeding, which could range from light bleeding and spotting to a very heavy period, like a miscarriage. In a small percentage of women, a surgical abortion is necessary to complete the abortion or to stop the bleeding.

Quantitative evaluation and data related limitations

Abortion rate and ratios. The World Health Organization estimated that worldwide, about 50 million abortions were induced annually in the 1990s. Combining this estimate with others, WHO concluded that each year in this period, approximately 3.4% of women in the childbearing ages of 15 to 49 years had an abortion (the abortion rate), and 25% of all pregnancies ended in abortion (the abortion ratio). These estimates imply that at least a substantial minority of the world's women have the experience of undergoing or self-administering a procedure to induce abortion sometime during the span of their childbearing years. Many are at high risk for procedure-related morbidity and mortality, with repercussions, too, for their families and wider social networks. So many abortions and complications are deeply troubling, emotionally or morally, to many people. They impose

considerable strains on health budgets, personnel and resources, which, in some areas, might seriously compromise the ability to pursue other health objectives.

These global rates do not, of course, apply equally to all women everywhere. A Population Council compilation of data showed that the abortion rate was twice as high among more developed compared to less developed countries: 6.0% versus 2.8%. Abortion rates (per 1,000 women aged 15 to 44 years) ranged from a low of 6 in the Netherlands, to 13 in Tunisia, 100 in Viet Nam and –highest of all- 183 in Romania. Corresponding abortion ratios were 9.6% in the Netherlands, 10% in Tunisia, 38% in Viet Nam and 74% in Romania.

Abortion and Women's Health. Women have terminated unwanted pregnancies everywhere in all historical periods. Today, skilled practitioners using modern equipment in hygienic facilities can perform vacuum aspiration and dilatation and curettage, and administer abortifacients during the first two trimesters of pregnancy with slight risk of complications. Swedish women in one recent year had a total abortion rate of 2 per lifetime, with not a single death. In the United States a few years ago, the maternal mortality rate from all causes was 1 in 10,000, only 1% of which was related to abortion.

In many less developed regions, however, and in some subpopulations in more developed regions, high proportions of women still self-administer or undergo traditional or faulty modern procedures. The adverse consequences of poor technique or the use of contaminated or unsuitable instruments include damage to the reproductive organs, haemorrhage, infection, sepsis, septic shock and death. Long-term sequelae include chronic pelvic pain, incontinence, obstetric problems and infertility.

The most important single determinant of abortion's impact on women's health appears to be its legal status. Where abortion is legal, physicians can learn procedures in schools, and equipment and supplies can be manufactured and obtained openly. The growth of this illegal but tolerated abortion network coincided with a decline in the rate of hospital admissions due

to complications of abortion, from 870 to 845 per 100,000 procedures, between 1980 and 1990. Legalization does not necessarily change entrenched social attitudes toward abortion, or persuade husbands and family members to accept a woman's decision to abort.

Socio-cultural aspects. Women commonly report encountering poor treatment from health workers who disapprove of their desire for an abortion (abortions without anaesthesia as a punishment, non consented sterilization following an abortion). Rather than risk or submit to such experiences, many women try to abort themselves or turn to private practitioners who offer discretion, but whose methods and skills may range from excellent to terrible. Due to disapproving social attitudes and service shortfalls, many women who are eligible for legal abortion nevertheless confront the same difficulties as do women where abortion is illegal. Money and social connections become prime determinants of their ability to obtain an effective and safe procedure.

In settings where affordable high-quality abortion services are unavailable, abortion is best viewed as a process rather than an event. Women commonly try several means to end their unwanted pregnancies, first attempting to abort themselves, then using methods supplied by various practitioners until something finally works or they give up. Each successive attempt adds to the costs and dangers, and each failure means that the next attempt will occur later in the pregnancy. Even a woman who has the ability to find and pay a trained practitioner may require many weeks to do so, particularly since illegality hinders her from acting openly. As a result, she may pass beyond her first trimester, the stage when abortion is safest, before she is able to arrange a procedure.

Abortion and Fertility. Demographers agree that abortion is playing an important role in the ongoing decline in global fertility, but the precise impact is extremely difficult to estimate. The incidence of abortion depends on the level of sexual activity in the reproductive ages (largely determined by marriage rates), access to abortion services, and the degree of moral

and emotional acceptance of contraception and abortion. Ironically, the more women rely on abortion, the less efficient abortion becomes as a means of fertility control. More procedures are required to reduce births by an equal number when the rate of contraception is lower. Demographers estimate that each abortion prevents an average of 0.4 births in non-contracepting populations, up to 0.8 births where effective contraception is widespread. The discrepancy has to do with the timing of the next birth after the abortion.

Policy Implications. Abortion is an appropriate subject for policy making primarily because of its impact on women's health. The Programme of Action adopted by the 1994 International Conference on Population and Development contains three statements to this effect: Abortion is a major public health concern; Where abortion is legal, safe procedures should be available to everyone; Whether or not abortion is legal, high-quality services should be in place for women suffering from complications of these procedures.

The two most straightforward general strategies for reducing the toll of abortion on women's health are reducing demand and improving the safety of procedures. The two should be pursued together for an optimal health benefit.

Promoting women's ability to avoid unwanted pregnancy and promoting women's ability to avoid unwanted fertility obviously overlap to a large degree. Clearly, in each case, success hinges on women's being able to regulate their own sexual activity, exercise autonomy with respect to contraception, and employ effective contraceptive methods.

In most places, wider distribution of family planning services is probably the most promising single strategy for rapid rollbacks in unwanted pregnancy, fertility and abortion. As previously mentioned, abortion rates seem to peak where the desire to lower fertility is intense and family planning services are sparse.

To obtain the greatest reduction in abortion rates, the extension of family planning services should focus on the groups at highest risk for abortion. Because abortion is a discrete decision

that arises after an unwanted pregnancy occurs, these groups may have distinctive characteristics compared to those at highest risk for unwanted pregnancy.

Women reject pregnancies for two general reasons: the timing is inconvenient or they already have as many children as they want. Some other rationales are also very important, such as rape as it is the case in Algeria.

What makes a pregnancy mistimed is a woman's particular situation together with the codes of her group. In most societies, researchers have found certain social and age groups are at highest risk. North Americans and Western Europeans who undergo abortions tend to be primarily adolescent, unmarried and married childless women who wish to delay the start of childbearing. In developing countries, most women who terminate pregnancies are older, have already produced children, and plan to have at least one more - but not just yet.

More useful than these broad patterns is information about specific population subgroups that have outstanding abortion rates, and so deserve concentrated attention. In the United States, for example, the abortion rate is 21 per 100,000 among white women but 56 per 100,000 non-white women. In the Netherlands, immigrants from former colonies have much higher abortion rates than native Dutch women.

Lack or failure of contraception. Virtually all American women who are sexually active but wish to avoid becoming pregnant use some form of birth control, since they have concluded that contraception is the most effective way to reduce the likelihood of a crisis pregnancy and the possibility of an unwanted birth or abortion. The facts support them: women using a method of contraception are only 15% as likely as women using no method to have an abortion. In other words, contraception reduces the probability of having an abortion by 85%. (Henshaw, 1996). Yet, because of the enormous effort involved in practising contraception continuously and effectively for more than two decades, almost half of all American women will have had at least one abortion by the time they are 45. The abortion rate (26 abortions per

1,000 women of reproductive age) is high by industrialized-country standards, even though 90% of women use a contraceptive method at some point in their lives. The explanation is that most of the unintended pregnancies and a disproportionate share of the resulting abortions occur among the 10% of women who use no method of birth control (such as teenagers having early sexual experiences) or use one only sporadically. The remaining abortions result among women trying to prevent an unwanted pregnancy after contraceptive failure. Some of the failure is due to the methods themselves, but most is a result of the difficulties that individual women confront in incorporating the task of contraceptive use into their everyday lives; over half of all women practising contraception use a method that requires ongoing attention (as opposed to surgical sterilisation). They include women who rely on oral contraceptives as well as those using intercourse-related methods such as abstinence and the condom.

Abortion rates are believed to be low in some Islamic countries, for example, because couples there still want to have large families and because the consequences of sex outside marriage are very severe for women. At the opposite end of the legal and cultural spectrum, the abortion rate is low in the Netherlands, but for completely different reasons. Dutch women want very small families and high rates of premarital sexual activity prevail, but because of widespread reliance on effective contraception, abortion is uncommon.

In poor countries illegal abortion kills 50-1000 women per 100,000 procedures. It is 10-250 times more dangerous to have an abortion there as it is to use any form of birth control. Up to 70 per cent of maternal deaths are due to complications following illegal abortion. Legalization of abortion reduces maternal mortality, especially where abortions are also affordable and widely available (legalisation does not guarantee access).

Monthly gynaecological checks for women in the state's industrial complexes were the perceived need to reduce population in Singapore and Tunisia resulted in liberalized laws. In

Algeria abortion following rape was "legalised" (*fatwa*) during the country's civil war; war-time rape of women by soldiers necessitated the change. Doctors and midwives making a good living off illegal abortion effectively oppose abortion and contraception availability in some countries in the Middle East and South East Asia.

Abortion data accessibility and reliability. is hard to come by. Reported, legal abortions are often a fraction of the true abortion rate; and there is no reliable data on the incidence of illegal abortion-only best guesses. To improve getting more reliable data on abortion nationwide studies should map, understand and analyse the following provider-related issues:

- Management and organisation of abortion services (including management of complications and life threatening situations) in the public and private sectors;
- Technologies used in the public and private sectors;
- Registration, training and certification;
- Availability, technical competence, training needs and current training facilities/programmes for abortion care providers in the public and private sectors;
- Utilisation of facilities and factors responsible for poor utilisation of public sector services.
- Costing and finance related.

In much of the world, abortion rates have already declined or are beginning to do so. In most cases, the declines have been made possible by the increased availability, greater acceptance and more effective use of contraceptive services. Contraception, even under the best of circumstances, cannot end the need for abortion entirely. Contraceptive methods will never be perfect, and women and men will never be perfect users of them. What common sense and research show, however, is that the most effective means of reducing abortion is preventing unintended pregnancies in the first place. No serious effort to achieve this end, and thus reduce abortion, can succeed without contraception. (For more information on abortion topics in fuller treatment see Seager, 1986; Manisha, 1997; Sundstrom, 1993; Anderson 1998).

VI.3.1 Abortion in Tunisia and Algeria

Abortion is prohibited in Algeria and therefore unsafe and represents a reproductive health concern. It is legally allowed in Tunisia since the 1960s. In 2001, it is overused and misused by women and health professionals, especially among the unmarried. It also represents, therefore, a reproductive health concern in Tunisia.

In 2001, for both Algeria and Tunisia, the average preference is for two or three children. To succeed in having the number of children she wants when she wants them, a woman must use contraceptive methods properly for a long time. The fewer desired number of children, the longer the period of time. For example, if a woman marries or becomes sexually active at 20, remains sexually active through her reproductive years (roughly until age 45) and wants only two children, she must practice contraception for approximately 240 months, or 20 years.

In the absence of reliable information, and based on the above WHO figures and the field experience of the author of this thesis, we can estimate that at least 15% of all the pregnancies end by abortions in Tunisia. We applied on Algeria a 10% ratio (since abortion is highly accessible in Tunisia and illegal in Algeria). According to Makdessi (1999) Algerian women are so desperate to get aborted that they would sometimes go to as many physicians as necessary until they found the one who accept to perform it for the highest price he requires. Based on the 1992 Algerian PAPCHILD the same Makdessi (1999) also estimated that 82% of Algerian married women have had at least one abortion during the last five years.

The expected number of alive births in 2001 is 874,000 in Algeria and 185,000 in Tunisia. By applying the abortion ratios of 10% and 15%, the expected number of pregnancies in 2001 should be respectively 970,000 and 217,000. This lead us to estimate, among MWRA, the number of "unsafe" abortion at 97,000 in Algeria and 32,000 in Tunisia. These are closer estimates with those we derived in Chapter V concerning the expected number of mistimed pregnancies in 2001 (138,000 and 37,000).

Those figures are only rough underestimation of all abortions in both countries when keeping in mind that no single indication exists on abortion among the unmarried –and for Algeria the raped. Those typically who have resort almost always to abortion, only almost because the number of illegitimate children has risen to 170,000 in Algeria (the Algerian minister of small and medium size enterprises reported on Canal+ the 15 of March 2001 '.... 14 million Algerians, approximately half of the population, live under the poverty threshold, ...7 millions are analphabetic, 2.3 millions are unemployed -30% of active population-, celibacy rate is at the unprecedented level of 24%. Besides, as of January 2001, we count 180,000 orphans, 170,000 illegitimate children and 49,000 unmarried mothers').

VI.4 Gender issues in Tunisia and Algeria

The situations with respect to women's positions in Tunisian and Algerian societies are very different. We showed in section II.2.1 the tremendous importance of pro gender-equity policy, what we called "antecedents", on launching a successful TNFPP.

The Tunisian women emancipation and empowerment movement was advocated for by two men: Tahar Haddad (1899-1935) and Habib Bourguiba (1903-2000) (see section II.2.1).

Today, as the policy of women's emancipation has begun to bear fruit, Tunisian officials insist that they are determined more than ever before to ensure that the break with and obscurantist past will be irreversible. Ben Ali, Tunisia Second President as of the 7 November 1987, gave an impetus to CPS and renewed interest in women status:

"For centuries, women in Tunisia were an atrophied, inactive segment of society. With independence, they acquired rights guaranteeing them their dignity as human beings and citizens. On more than one occasion we have reaffirmed our commitment to defend women's rights and gains. We will devote ourselves to seeing that they become firmly established and recognized. What is more, we will work to expand them so as to guarantee women an effective role in Tunisia's struggle for progress... " (Ben Ali, 1989)."

Today, the prospects for wider participation of women have been greatly improved: in 1992 the Ministry of Women and Family Affairs was created which has the mission to promote the wider integration of women into the process of national development. In terms of the economy, women made up 23% of the working population in 1995, and 33% of those working in agriculture. Industries employ 35% of all workingwomen, and over 1,500 women are heads of businesses (of the businesses entered in the commercial register for greater Tunis, in 1993, 13% were created by women). In terms of education, in September 1994 97% of all 6-year-old girls were enrolled in the first grade (99% of boys). In 1995, the rate of school enrolment in all 6 years of primary school (ages 6-12) was 87% for girls versus 76% in 1985 (94% for boys versus 90% in 1985). In 1995, 46.8% of those enrolled in primary school were girls (versus 34% in 1966), 47.2% of those enrolled in secondary school were girls (versus 28% in 1966) and 43.1% of those in higher education school were women (versus 19% in 1966). Basic instruction has been made mandatory from the ages of 6 to 16 under the reform of the educational system. This measure was implemented in September 1989 and aims, in combination with various school social actions, to eliminate the school dropout rate and de facto discrimination of which girls, especially in rural areas, are the victims. In higher education, as of September 1994, women represented 20.2% of those enrolled in technical disciplines, 33.4% of those in scientific disciplines, 53.3% of those in medical disciplines, 40.2% of those in economic and legal studies and 55.2% of those in social sciences and the humanities. In 1994, women represented 43% of those granted degrees of higher education versus 34% in 1993. In the Civil Services, women represented, in 1992, 34% of those employed in ministries and the public sector (of these 45.8% held clerical positions, 41% supervisory positions and 30% managerial positions). In 1995, 34% of teachers are women (47.9% in primary school, 45% in secondary school and 26% in universities). In health, women represented 33% of the physicians, 57% of the dental

surgeons, 63% of the pharmacists, 18% of the veterinarians and the biologists, and 52% of the paramedics. While their numbers are particularly high in clerical and low-level positions, women are nonetheless increasingly rising to decision-making levels, and in 1994 they represented 12% of senior management positions in the public service versus 5.5% in 1984.

Women employed in the public sector enjoy two months of paid maternity leave, and are granted time to nurse their babies. Mothers may, if they so request, take up to extra four months post-natal half-paid leave.

Tunisian women organisations started to realize their specific importance and their potential input to their countries. On Tunisia Women Day, 13 August 1992, Ben Ali emphasized "... There is no doubt that women gains are of concern to all, but it is equally certain that women bear the prime responsibility for the gain they make... assuming this responsibility, they must rely on themselves, and on all women organizations and associations involved in the various spheres of national life. Women may be assured that they will find support in all the structures governing civil society..". To date twenty women organisations are active in different fields of pro-gender equal opportunity.

Tunisian women have gained a lot from this pro-women movement in Tunisia, and they are really equal to men in all respects. They have made such advances that are unmatched even in European countries: it is rare to find women being paid the exact same salary than men for the same job whether in France, Belgium or Italy... but this is the rule and not the exception in Tunisia since 13 August 1956.

In Algeria, it happens that the women emancipation and empowerment movement has been launched by women before independence and they are still waiting to reap the fruit, Algeria men still insist in 2001: the fruit is not ripe yet (see Annex).

The following reviews the main features of gender history and development in Algeria. Algerian women, like most of the Muslim women, are in an inferior position to men with

respect to the rights governing the relation between men and women. After 130 years of French occupation with its corollaries of women's awakening and women's emancipation, gender development in Algeria is different from elsewhere in Muslim countries.

In Algerian history and since Kahina fought the Arab invasion, women were always at the forefront of the national events. They paid a very expensive price during the war against France, and they are still paying nowadays during the Civil War. They stand on the FIS side to warn the military Junta, or on the secular side, to warn the obscurantist Islamists. They play a determinant role in cementing and holding the country together. The injustice of France towards the Algerian people was continued by the FLN and its armed branch in the political and economic arena but most of all in the field of women's rights and gender development.

Until very recently the electoral law permitted the family head to vote for all members of the household, which has meant that many women have not been granted the right to use even the most basic of their citizenship rights. Societal development has led to an "active" female population as far as work and education is concerned, but women have never been included in the decision- making structures which create norms and regulate civil life. It can be argued that by blocking women's rights, the Algerian rulers are simply blocking the Algerian people's rights.

Women's position in Algeria is complex and there is a contradiction between theory and practice. The Constitution states in Articles 39 and 42 (the latest addition to the Constitution was effected on 23 February 1989): "All prejudicial discrimination based on sex, race or work is forbidden" and "the rights of the Algerian women as far as politics, economics, social and cultural rights are guaranteed by the Constitution". On the other hand the family law (Code de Statut Personnel) whose source is the Sharia'h places women under the direct tutelage of a man. The contradictoriness of this legal context creates a confusing structure within which

women are expected to work and live their lives: active citizens on the one hand and legal minors on the other. "The most banal act becomes combat: continuing to go to the beach in a bathing suit or walking down the street in a sleeveless blouse are victories stolen from the enemy" (Bessis, 1992). There have also been reports since 1979 of women who have had acid thrown in their faces because they have not worn a veil (Jeune Afrique, 1992). One major pitfall is that legal and societal structures dealing with gender issues are virtually woman-free (there are no women in positions of power who could represent women's needs or interests). In the absence of secular legislation insuring gender fairness and equity, as it is the case in Tunisia, Algerian women learned to resist injustice, whether from the secular junta or the obscure Islamists, and continue their struggle and lobby to gain "effective" rights.

VI.5 Institutional issues

VI.5.1 Tunisia

During the last three decades, Tunisia has mounted, probably, the most comprehensive population and family planning (FP) programme in Africa and the Arab World. It is a nationwide governmental programme offering mostly free FP services through some 2,000 government and 1,000 private health clinics and 50 additional mobile units as of 1998. It is worth noticing the plethora of health personnel in Tunisia in 1998: 50,000 of which 6,400 physicians and 28,650 nurses and midwifes in the public sector, and, 10,000 of which 3,000 physicians and 6,000 nurses and midwifes in the private sector (Ministère de la Santé, 1998). Tunisia has a population of 9.8 million people in 2001 compared with 2.1 in 1926, 3.8 in 1956, and 5.61 in 1975 and 7.91 1989. It is projected to reach 11.0 in 2010 and 13.6 in 2025. Current programme goals are to integrate fully all FP services into primary health care services and to concentrate most efforts, services and investments on rural and remote parts of the country where we observe unacceptably high levels of fertility, and of contraceptive

failure and discontinuation, alongside unacceptably low levels of contraceptive use (Table 5.1). The long-term objective is to reduce population growth to 1% per year as of year 2001.

Since its creation and up until 1998, the TNFPP has not been interested in collecting information on periodic abstinence, which is a widely chosen method among the young educated couples. There is no information on how correctly and consistently they use it, and, more much importantly, on where can they receive counselling and orientation when they need it.

The 1994-1995 Tunisian PAPCHILD is the poorest survey, ever carried out by the ONFP, in terms of collecting information to improve understanding, evaluating and rectifying the TNFPP. After 15 years (1973-1988) of excellence and leadership in all aspects of FP services provision and population data collection and correct use the Tunisian programme has stopped advancing, it has been fully politicised, putting the emphasis on historical achievement and rewarding of FP pioneers rather than tackling current and emerging issues such as abortion and its unknown levels of uses and differentials, sexuality outside the wedlock, fertility outside the wedlock, and, the emerging needs of adolescents in terms of sexuality, fertility and contraception.

In face of this 'desert' of information over the last 10 years, it is urgent to address and tackle the conditions and the future of sustaining fertility control in Tunisia while taking into account new events such as structural adjustment reforms, health care service privatisation and the emerging role of gender planning and non-governmental organization development.

VI.5.2 Algeria

The main institutional issues were discussed in section "III.2.1 Algerian population policy: The Third Period 1989-2000: Eclipse of Population Policy".

We can re-emphasise that political and military conflicts, corruption and mismanagement have led to a nowadays situation where RH/FP service performance is the least to be

concerned with or to pay attention to. In fact, there is a total confusion and disarray in the whole Algerian health system as illustrated by this press conference of the newly appointed minister of health and population, reported by the daily Algerian democratic non partisan 'Liberté' of 16 July 2001 (see Annex II). The minister, appointed in June 2001, denounce the whole current health situation describing it as a complete resigning and giving up from all health stakeholders. The lack of specialists in the public sector. The escape of best competencies to private sector. No equipment are functioning. No maintenance or repairing of these equipments since 1982. The absence of financial management and monitoring of the public health hospital and administrative institutions. No essential drugs are available....

A very pessimist and gloomy health situation picture has been depicted, yet it is an authentic and genuine one as it has been noticed by the author of this thesis (Algiers 12-31 May 2001).

Undoubtedly, the AFPP failure is a component of the whole public health dismay. The dominance of the pill can be interpreted as the simpler contraceptive resort. What needs to be done is much beyond the scope of the AFPP or this thesis.

VI.6 Conclusion

Algeria lags behind Tunisia reproductive health: by all means and in all aspects. This is the clear synopsis from this thesis account.

Algeria will soon suffer serious social and economic repercussions if steps are not taken to change traditional male and religious attitudes towards women and family planning. This fast becoming impoverished country, despite unbelievable oil resources, has been criticised for its trivial investment in preventive health care and education. Tunisia spend ten times more on these sectors.

A toll of brutality, violence and exclusion damaging women health and well being is the stupid and unfortunate harvest of four decades of blind policy of arrogance, military and autocratic rule. If we do not have any clue of the abortion practices and rates, maternal mortality is four times higher with 120 women dying (out of 100,000 delivering) every year on average, but rural the toll reaches very easily 500 (Journal El Watan 5 April 2001). The ministry of health and population attribute these alarming figures to the increasing number of high-risk pregnancies. But this is, in turn, due to a pauperisation of the majority of women population in Algeria and the increasingly deteriorating situation of pregnant women health. The Cairo conference concluded that up to 20% of these deaths are the result of unsafe abortions. According to the PAPCHILD surveys, 71% of pregnancies are monitored by a midwife or a gynaecologist in Tunisia versus 53% in Algeria (Gueddana, 1999). In Algeria, Health professionals and field workers face hostility, and even fear for their live from religious leaders and family matriarchs, who prevented them from speaking about reproductive health with young women.

In Tunisia, while the question of the legality of abortion has been settled, the question of accessibility has not. Despite all the propaganda praising the exceptional performance of the TNFPP the lack of government funding and the decrease in available services and providers for poor and unmarried Tunisian women is a reality, a well resented reality that have costs the unsure and insecure future and careers of thousands of adolescents and women in Tunisia.

In Algeria, the contemporary struggle for abortion rights is over the legal conditions under which it will be available and the restrictions which limit its accessibility. There have been many life losses due to abortion inaccessibility. The Algerian abortion reality is recapitulated in the word "absence": absence of responsible government, absence of government initiative, absence of government funding, absence in available services and providers. Added to this

gloomy picture the violence towards and harassment of clinics and clinic personnel, and legislative restrictions to those raped, violated and dishonoured women, let's specify poor, deprived and neglected women.

Although legal first trimester abortion is one of the safest surgical procedures in Tunisia today -a first trimester procedure is comparable in risk to a tonsillectomy- and although it is relatively inexpensive (150 US$ when uncomplicated) compared to other surgical procedures, it remains out of reach for tens of thousands of women annually, especially adolescents (who have merely US$30 per month to spend). The impact on low income women and adolescents is therefore devastating. We estimated that because of financial restriction, one in five women seeking an abortion is unable to obtain one in Tunisia. Searching for funds delays the timing of their abortions and compromises their health by. Lack of government funding compounds other barriers to access. Rural and remote Tunisian women seeking to have abortions must travel more than 50 miles from home to obtain them. The private providers are usually established in Tunis, Sfax, Sousse, Hammamet and other populated urban cities. Tunisian government funds also provide a powerful response to the constellation of fear, shame and guilt in which unmarried and/or young, frail and poor women found themselves trapped.

Gender-based and sexual violence has multiple impacts on the reproductive health of women and girls. This is being more and more of an issue in Algeria over the last decade because of the increasing number of girl adolescent oriented violence, their kidnapping and rapes. The usual outcome, if the female teen survives, is teenage pregnancy.

Teenage pregnancy is regarded as a major problem in many countries. In South Africa, for example, 35% of women under 20 years have been pregnant or have a child. In Algeria and Tunisia no single data or indirect estimation is given by official sources on teenage pregnancies. However we count officially in Tunisia (ministry of public health) around 2,500

abandoned new borne per year (mainly from under 16 old mother girls, rural and obviously unmarried). In Algeria we reported above the minister of health and population figure of 170,000 abandoned children.

These figure constitute indirect acknowledgment of the very existence of teenage pregnancies in both countries. No governmental initiative has been taken to tackle the topic and yet, since marriage is late-very late, most of these young women are unmarried and in school-age. Teenage pregnancy reduces the likelihood of the mother completing schooling, reduces prospects for subsequent employment and earnings, compromises the financial position of her family's household (maintenance from the father is rarely forthcoming), and negatively impacts on the child, who is born into relatively greater poverty. The topic deserves in both countries more attention and less latency.

In South Africa, research into teenage pregnancy has shown that after adjusting for socio-economic and other factors, forced sexual initiation was found to increase the risk of teenage pregnancy by 14 times. Forced sexual initiation was found to have a major impact on the likelihood of pregnancy occurring years later. In the USA, women raped in childhood were three times as likely to have teenage pregnancies (Vundule, 1999). These are interesting information to study in depth and to learn from by Algerian RH/FP policy makers and programme managers when they finally decide to carry on a national programme that aims at the care management of raped girls and women.

High risk sexual practices (HRSP) are also a RH/FP concern in Algeria and Tunisia for a variety of reasons. It is a combined product of fast growing western acculturation, economic harshness and necessity and flourishing tourist industry, mainly for the latter.

HRSP -including having sex for material reward, having multiple partners and casual partners- are associated with a greater likelihood of unwanted pregnancy, STDs and HIV

infection. Research in several countries has shown that child sexual abuse is associated with increased risk of unsafe sexual practices. Handwerker (1993) showed that in Barbados, the most important determinant of high risk sexual activity amongst adolescents was child sexual abuse. In the USA, women raped in childhood were four times as likely to go into prostitution and twice as likely to have casual sexual partners.

In both Algeria and Tunisia, women who are married perceive that they cannot refuse their husband requests for sex. This undermines their ability to use this as a sanction to enforce condom use, even if their partner has a visible STD. This is probably more of an issue in Algeria where violence is very common and where women are bearing most of it.

Improving women's sexual and reproductive health has been a key objective of all governments after the International Conference on Population and Development (ICPD) in Cairo 1994. Gender-based violence impacts on all the most serious sexual and reproductive health problems facing women in both countries, but certainly much more in Algeria. If these health problems are to be effectively addressed, Algerian government must commit itself to effectively combating gender-based violence.

Chapter VII

Conclusion

VII.1 Summary, comparison and conclusions

The thesis set out with three main objectives:

- To study family planning and reproductive health (FP/RH) in Tunisia and Algeria;
- To understand the interaction of different factors, which led to the current reproductive health and demographic situations in Algeria and Tunisia;
- To try to suggest how to address FP/RH emerging issues.

Tunisia

In terms of development and economic performance a crucial distinction should be made at this stage: there are "two" Tunisia:

- Coastal Tunisia is wealthy, modern, developed, westernised and might be assimilated to southern Europe, it relies on tourism, industries, services and it comprises the main government offices, the universities, the banks;
- The other Tunisia is poorer, less developed, remote, "Africarab" could be the adjective to describe the African roots of, and the Arab-Muslim impact on, the people. If these "two" Tunisia are differently developed, people still move around and travel in between very easily. This has led to intensive internal immigration with the countryside being depopulated and the main cities overpopulated. In turn, this has created a situation where the main emerging RH issues are somehow evenly distributed (postponement and late marriage, sexuality and reproductive health among the unmarried, adolescence and girl adolescents, abortion).

During the last three decades, Tunisia has mounted, probably, the most comprehensive population and family planning (FP) programme in Africa and the Arab World.

One of the most important determinants of fertility decline in Tunisia is the regular rise of contraception use prevalence. Using the 1994-95 Tunisian PAPCHILD unpublished report (the most recent available source of information on the topic); we studied and calculated contraceptive use prevalence by different relevant differentials and combination of differentials. The overall contraceptive use prevalence is 59.7% with a clear urban/rural differential since it 64.5% in urban areas and 51.4% in rural areas. But the real differences show up in when considering method specific use prevalence: female sterilisation is 16% in rural areas compared with 10.5% in urban areas, IUD use is 28% in urban areas compared with 21% in rural areas, periodic abstinence (PA) use is 10.2% in urban areas and only 2.5% in rural areas, pill use is roughly the same in urban areas (7.9%) and in rural areas (6.3%). Using the 1988 TDHS dataset (the most recent reliable source of information on the topic), we studied and calculated contraceptive use efficacy by different relevant differentials and combination of differentials. Yearly pill use failure is 4.5% (3.2% in urban areas and 7.2% in rural areas). Yearly IUD use failure is 1.8% (1.6% in urban areas and 2.2% in rural areas). Yearly PA use failure is 10.9% (10.1%in urban areas and 14.6% in rural areas). As for the potential differentials, the substantive results are much expected:

- Effective parity is the most determinant one; it acts as a factor of contraceptive use efficacy and vigilance;
- Education is ambiguous, it acts alongside with parity, but it is much related to the use of periodic abstinence, an inefficient method with the highest record of failure rate. Education acts also within place of residence levels, which is, in turn, a crude composite of health and socio-economic factors.

The data does not contain the appropriate information, which gives more insights into the contraceptive use dynamics behaviour of the Tunisian couples.

Major pitfalls were identified:

1) Since its creation and up until 1998, the TNFPP has not been interested in collecting information on periodic abstinence, which is a widely chosen method among the young educated couples. There is no information on how correctly and consistently they use it, and, more much importantly, on where can they receive counselling and orientation when they need it.

2) The 1994-1995 Tunisian PAPCHILD is the poorest survey, ever carried out by the ONFP, in terms of collecting information to improve understanding, evaluating and rectifying the TNFPP. After 15 years (1973-1988) of excellence and leadership in all aspects of FP services provision and population data collection and correct use the Tunisian programme has stopped advancing, it has been fully politicised, putting the emphasis on historical achievement and rewarding of FP pioneers rather than tackling current and emerging issues such as abortion and its unknown levels of uses and differentials, sexuality outside the wedlock, fertility outside the wedlock, and, the emerging needs of adolescents in terms of sexuality, fertility and contraception.

3) Since 1988, the family planning programme has experienced a number of difficulties. The growth in the contraceptive prevalence rate has slowed down. Moreover, although contraceptive prevalence is over 60 per cent, contraceptive failure rates are high. The estimated number of unwanted pregnancies in 1996 was about 35,000. If this number leads to only 30,000 live births it would correspond to one sixth of the annual number of live births. We should also bear in mind that around 250,000 married women of reproductive age are unprotected against conception in urban Tunisia and around 200,000 in rural Tunisia.

Tunisia in the 1990s has been undergoing structural adjustment programmes encouraged by the World Bank and the International Monetary Fund. Major health reforms were undertaken including hospital and health services privatisation. This has led to questions being posed

about a potential adverse effect on the performance of the National FP programme, which offered FP services free of charge. In Tunisia, the effect of health privatisation is likely to be greater than in some other countries because of the method mix described above (IUD, TL relying heavily on health professionals, equipment and institutions).

Institutional problems in ONFP

The Tunisian situation will now be assessed as a model to study its application and relevance to Algeria. Tunisia has acquired some notoriety in the field of FP and reproductive health, this has been acknowledged in several occasions. The latest was the appointment of the head of the ONFP as President of the South-to-South Partnership. Recently she received a delegation of French parliamentary in order to show them some of the achievements of the ONFP ("Une délégation de parlementaires français en visite en Tunisie" La Presse du 5/9/98). In June 2001, she was shortlist for the top job of IPPF General Director with only one other candidate.

The question is whether the ONFP is still fulfilling its mission at the national level? and, most of all, whether it has modernised its staff and methods of work to face the emerging needs? (as opposed to still functioning according to the way it has since it was launched). The probable answers are "no" for both questions.

During the last decade it has been overly politicised and has shifted from its main task, as the main provider of FP and reproductive health services that should, in principle, respond to the evolving needs of the Tunisian couples. The following inefficiencies can be reported:

1- The only recognised Tunisia data set is the 1988 DHS. This is a major drawback since it is inconceivable that we do not have any mean of assessing or rectifying the programme for the last 10 years and for the next 2 years to come (the 1999-2000 plan does not indicate any intent to carry out a DHS-like survey). The 1994 Tunisian PAPCHILD is not only ignored at the International level, it has also been questioned all over since the first results show up. No

national report has ever been released officially -though three intermediate reports have been written. The whole exercise appears to have been a waste of time, money and resources.

2- Abortion data collection is confined to the number of abortions performed in the ONFP clinics. This excludes any details about age, marital status, previous abortions, providers, contraceptive use and other relevant variables. However, as discussed previously, a chronological series of detailed and relevant information on abortion can very well inform on the programme performance and inefficiencies, in the absence of large-scale survey data.

3- Sexuality is common among unmarried adolescents, students and adults is a fact. A serious survey reported for those aged 23 years and less that around 25% of the male and 12% of the female have had sexual activity (respectively 18% and 8% with, full penetration; 40% and 18% among university students). Contraceptive knowledge and use were practically non-existing).

Alongside with the camouflage of the abortion issue, here is probably the least understandable official reaction to tabooing the sexuality and contraceptive use of adolescents and unmarried couples. By addressing the topic in the most direct and scientific way Tunisia would have been not only benefiting from its policy but could also have also been referred to as the pioneering in both adolescent rights and women rights. The political situation is much softer than when Tunisia took the lead in 1956 and declared war on obscurantism by allowing the Tunisian women their full rights in all fields.

Obviously, the local implication is that a large and growing proportion of couples in need of reproductive health specific services is occulted from the national programme.

This contradicts the official discourse, which calls for Tunisia to prepare to join the Western way of living. This is in fact happening, and it is resulting in a sizeable contribution of the unmarried to fertility, and to the overall contraceptive use of Tunisian couples.

4- The ONFP has been run since 1985 by three medical doctors; one is a professor of paediatrics and the current minister of health; the current General Director is also a professor of paediatrics. This might explain the multiplication by 10 of medical officers in the ONFP since 1985. But it does not explain the disappearance of the entire division of population affairs that formed the backbone of the ONFP at its creation and during the 1970s and 1980s. Most of the key demographers and statisticians have either received international assignments, promotion within the heavy Tunisian administration, or have retired. In the formerly leading divisions of research and documentation there is no personnel turnover. Yet Sciences and technologies are continually advancing, bringing new procedures, new means of communication and new information. Meanwhile most of the non-medical ONFP officers are aged 50 years and over; their expertise is no longer up to date with the new developments. These facts might explain the failure of the 1994 Tunisian PAPCHILD and the reluctance, or perhaps the fear, of running DHS-like surveys, which international experts could assess.

Algeria

Algeria is a country in transition on many interlinked fronts. It is facing a deep economic transition from a state-controlled oil-dependent economy to a private sector-led one; a social transition due to shifts in social values, demographic changes; and a political transition from a centralized structure to a democratic system. The economic agenda facing Algeria is huge. While, during the oil boom years (1975-84) economic inefficiencies could be masked by mounting oil revenues, the economic adjustment was all the more severe when the oil price collapsed in 1986. The 1986 oil price drop resulted in a 50% decline in Algeria's terms of trade. The internal impact was further compounded by extreme reliance of the budget on oil receipts and the gross inefficiency of the large public enterprise sector and of public investment.

Algeria had an unclear and hesitating population control policy for the last thirty years. The population of Algeria has tripled over the last thirty years to reach 29 million in 1996. It will add 0.6 million each year to reach about 32 million by year 2002.

In 1994 there were 3.2 million married women in reproductive age, 50.7% were not using any method, 38.7% were using pills and 7.3% were relying on natural family planning methods.

For 1997, we estimated that there would be 1,865,500 Algerian MWRA who are unprotected against conception and that among the 1,634,500 reversible contraceptive method MWRA users 129,535 would have mistimed pregnancies.

There is a web of interactions leading to the current economic, political and demographic situation. The country needs to find cost-effective scenarios to sustain fertility control within the framework of harsh and unsure future perspectives.

In particular it has to address the following:

- How to recruit more contraceptive users,
- How to recruit more efficient contraceptive users,
- How to monitor and ensure the efficacy of contraceptive use among 1.48 million pill users and 300,000 natural family planning methods users.

Comparison and Conclusions

Historically, Algeria and Tunisia are very similar of language, religion, ethnic origins and composition; the two countries have a lot of shared history in terms of rulers and even invaders and colonizers. They share a maritime border and a land border of 965 kms. There have been over 10 centuries of inter-marriages and family and tribal ties between the two countries. However since independence, each of Tunisia (in 1956) and Algeria (in 1962) has taken a completely different path in terms of political and economic systems, women emancipation and empowerment, population policy and fertility control commitment.

Both Algeria and Tunisia are undergoing the IMF-World Bank forced structural adjustment reforms. These reforms have increased health frailty, social unrest, poverty and unemployment hitting most of all the vulnerable groups: frail women, rural and per urban inhabitants. As it is the case for many Third World countries, both Algeria and Tunisia are now experiencing a discouraging halt after exhilarating progress in the 1960s. Both countries are suspended in an intermediate, transitional condition -they are far from primitive, but not yet fully modern. They have been touched by modernity, in a process that should have continued on to complete development, but that is now stalled. The stalled condition is a frustrating one, full of imbalances and contradictions. Most of the Algerians and Tunisians are in 1998 literate, and many are educated beyond literacy. However the jobs in which they can apply their education are too few, and available jobs have little relation to those their education led them to expect. They have graphic access through television and otherwise to the way of life in developed countries, but its luxury is withheld from them.

The stalled condition is well reflected in the field of fertility control and reproductive health services planning and provision.

Algeria and Tunisia have a large measure of death control, but both countries lack the indispensable birth control that has to go with it. The emphasis has always been put on increasing the use of contraception regardless of the efficacy or the appropriateness of the method and regardless of the client demand and needs. Three methods were effectively marketed (Intra-Uterine Device, Tubal Legation and Pill) only because it has been so from the beginning of both programmes. There is very little known on contraceptive use failure or on the quality of services in both countries.

They are facing new reproductive **and sexual** health needs from million of sexually fit, potentially active and **unmarried** people (6 in Algeria and 2.5 in Tunisia), but **neither country** has the minimum programmatic requirements to deal with these. Their state

sponsored programmes were designed in early 1960s and 1970s and they have been replicated with no attempt to adapt to emerging contexts. These programmes are exclusively designed for married people (less than half of the Algerians and the Tunisians in age of reproduction).

Using Algerian PAPCHILD, and Tunisian DHS and PAPCHILD findings, we have verified that contraceptive use failure is an important contributing factor in the excess of mistimed pregnancy. A large proportion of MWRA are at high risk of unwanted or mistimed pregnancy (MP).

It is clearly obvious that because of the abortion services and care facilities deployed in Tunisia, the Tunisian MWRA who have mistimed pregnancies (MP) will have much more inclination to abort. Algerian MWRA will have much less of the same opportunity.

When we compare the ratio of MP to natural increase in the two countries we found that it is one to four in Tunisia whereas it is one to five in Algeria. One major explanation to speculate on, and probably which should be researched separately, is that the excess of MP is not contributing that much to the natural increase in Tunisia and that abortion is taking full care of it.

Each country has to deal with its specific issues.

For Algeria, most of the MP come from pill users, these having been served by the community based pill providers, usually people with minimum contraceptive technology training not to mention they lacking of medical and counselling skills. The number of pill users amount to 1,384,000 women among the MWRA. The failure of the pill implies the tough challenge of offering an alternative contraceptive method for those who either failed with the pill or refute it for health side effects because of the lack of counselling and the lack of proper client management. What alternative? We might consider improving pill use instruction.

This implies a nationwide mobilization of well-qualified pill service providers, which is costly and time consuming. The findings show that we are really in "one-method show" situation since there is only the IUD, which is left as an efficient alternative method.

Unfortunately, with the regard to the overwhelming number to potential IUD measures, the IUD is a demanding method, a sufficient number of qualified IUD inserters (midwives, nurses, physicians, gynaecologists), it requires thorough medical assessment, and long term follow-up.

For Tunisia, which is undergoing deep structural adjustment-lead health reforms, most of the security comes from the relying on the IUD, which is the responsibility of the provider whether a medical doctor, a midwife or a nurse. Here we pose the question specifically to the Tunisian situation: if the donors stop pouring money into the country, and if the whole IUD-led FP programme fails ensuring a provision of the method with the same quality to which the Tunisian users have been used for decades, will abortion solve the problem, but then we get into a ambiguous web of reproductive health and women rights contradictions.

For both of Algeria and Tunisia, the real challenge is to recruit among the tremendous load of non-users: 1,910,000 and 503,000 respectively. Have they already succeeded to manage efficiently and to serve with sufficient standards of service quality the programme clients? The answer is straightforward. No they do not.

The Algerian FP programme is one-method effort that just distributes actively the pill in a such a manner that the prevalence of contraceptive use has jumped in the last two decades from 13% to 50%. The Tunisian FP programme has been discarding since its inception all those users who choose spontaneously the rhythm method, their number amount in 1998 to 90,000 couples most of them are highly educated and disciplined. This is not to mention the total absence of an official policy to address the reproductive health needs and services of the

unmarried couples who might ask for it, it is worth recalling that the median age of marriage among women was 28 years in April 1994.

Contraceptive use continuation and FP service provision quality in Algeria and Tunisia: Failure of data collection and its implication

Both Algeria and Tunisia have had their PAPCHILD respectively in 1992 and 1994-95. They differ completely in that the former constitutes a best-recognised source of FP/MCH information survey ever carried out in Algeria, while the latter constitutes the least reliable ever carried out in Tunisia. However, both share a major weakness regarding the absence of collection of the genuine information useful to evaluate quality of services and to further the understanding of the contraceptive use dynamics of the Algerian and Tunisian users.

One of the significant advances of the Demographic and Health Survey (DHS) programme over them is the detailed information on recent episodes of contraceptive use that is routinely gathered in countries characterised by relatively high levels of overall use (59.7% and 50.8% according to Tunisian and Algerian PAPCHILD respectively). These data permitted, for the first time, the evaluation of the FP programme performance, the quality of services, the contraceptive use dynamics over a period of five years time (contraceptive use prevalence, discontinuation and failure, and their differentials).

This new information is particularly welcomed because few nationally representative studies of the ability, or willingness, of clients to persist with contraceptive use have been conducted in the last decade in both Algeria and Tunisia.

The only information, which is gathered, is the one in place for at least twenty years; it is about the family planning government clinics acceptors. It constitutes merely a routine component of monitoring and evaluation of the classical activities of the programmes of the two countries. It does not even reflect the switching of the FP clients between the public and private sectors. The latter being heavily involved as can be illustrated by the fact that two

abortion out of three are performed in private clinics in Tunisia (TDHS 1988) and that the latest official Tunisian figures show the nationwide governmental programme offers its services through some 2,000 government and 1,000 private health clinics.

These routine components of monitoring transversal information are becoming insufficient. They were useful to monitor sterilisation and the IUD -for which failure and continuation are less of an issue. But for other contraceptive methods, failure and continuation are a much greater issue.

The way the pill is distributed in developing countries and the act of accepting oral contraceptives is not marked -unfortunately for the users- by any clinical assessment and is not any more ensured as it should be the case by health professionals.

The proliferation in the 1980s of social marketing and community-based distribution schemes doomed any attempts to maintain complete registers of acceptors of the pill, thus preventing large-scale follow-up surveys of clients.

VII.2 Policy implications

There are a number of policy implications of these findings. To face the situation of fertility control sustainability we have to consider it in the context of reproductive health services. Ideally, these should "include freedom from the risk of sexual diseases; the right to regulate one's own fertility with full knowledge of contraceptive choices; and the ability to control sexuality without being discriminated against because of age, marital status, income, or similar considerations" (ICPD, 1994).

Combining family planning with other reproductive health services may improve care, but raises questions about limited resources. Reproductive health services should be provided all over the life, beginning even before women and men attain sexual maturity and continuing beyond a woman's childbearing years.

Theoretically, In Algeria and Tunisia family planning consists of providing, during a particular time of life and to **married couples**, safe, effective and affordable contraception. In addition to family planning, reproductive health care includes pregnancy and postpartum care, prevention and treatment of sexually transmitted diseases, pregnancy termination, cancer screening and infertility counselling, among other services.

We elaborated several times on the socio-economical context and showed that it has a detrimental impact on the state sponsored family planning programmes in both countries, although much less marked in Tunisia. Practically, the two programmes fail in providing the reproductive health services, including family planning, with a minimum level of quality and efficacy, especially among poor and the deprived married couples.

A growing proportion of **unmarried** adolescents and adults Tunisians and Algerians (with special reference to the raped ones in Algeria) require different reproductive health services: access to effective contraceptive methods, pregnant women need dependable emergency care that is quickly available, women with reproductive tract infections, and women who have terminated unwanted pregnancies may need special counselling. The two programmes fail in collecting the minimum information on the emerging needs of these new groups.

It is quite obvious that the Tunisian performance in terms of fertility control, relatively to that of Algeria is mainly explained by its unique position as the sole Arab and Muslim country which has allowed, implemented and enforced full scale women's rights and equal opportunities, which in turn were at the origin of all FP success. Furthermore, there was over the last 10 years a relaxation of the ONFP performance, and yet the momentum already built up prevented a huge decline in the FP performance indicators. Hence there is an urgent need to give a boost to the ONFP management and leadership and to ask for a more concrete local effort rather than continuing on marketing the Tunisian experience abroad, which is becoming the main concern for the decision makers.

Given the past performance of the health system in Tunisia in serving the primary health care needs of the population, including reproductive health care, programmes that can supply reproductive health care services through existing community channels and local NGOs rather than through the formal health sector are likely to be more effective. The formal health sector is very close to a private one and much less community oriented and rather business oriented.

VII.3 Further work

Fertility change, FP service demand and provision: more clues to figure out

There is more to study about it in Tunisia and even more in Algeria. The more glues we figure out, the more cost-efficiently we manage our FP programmes and the better we serve the clients.

Fertility change, celibacy, and adolescent sexuality

Unlike in the West where marriage is not necessarily the precursor of childbearing, any change in nuptiality would influence the fertility of women, as procreation (and not pregnancy) is almost entirely within marriage in Algeria and Tunisia. Therefore, it is important to inquire whether the age at marriage is continuing to increase. The most recent Tunisian data shows that marriage is declining and that female median age at marriage had risen to 30 years (INS, 1999).

As the proportion of unmarried youth continues to rise. Changing sexual behaviour and unwanted pregnancies of the unwed are emerging policy concerns in Tunisia. The national family planning programme usually targets married couples only. However, unmarried females represent one of the "unreached" groups that are at great risk of becoming pregnant owing to changes in sexual behaviour; almost all unwanted pregnancies among this group are terminated by induced abortion.

These issues, far from being trivial, have never been studied in the Maghreb context as it deserves to be simply because it was not of "an issue" ten years ago. In this work we have just presented figures drawn from routine data collection sources. It is highly advisable to study the distribution and the associated factors of celibacy more in depth, probably according to the Anglo-Saxon way, as it is going to shape new features of fertility changes in Algeria and Tunisia.

We have also pointed out to the very obvious reality of adolescent sexuality and fertility. While very few surveys have documented trends in adolescent sexuality and fertility in Tunisia, relatively few data are available that describe factors associated with the onset of sexual activity in a Arab Muslim context. An obvious next stage is to consider studying a series of variables hypothesized to be associated with early sexual debut, such as family structure, parental education, academic performance, peer-group influences, use of drugs and alcohol, and attitudes toward sexuality and early parenthood.

Contraceptive use and contraceptive efficacy and abortion

Contraceptive use

In Tunisia, the big issue is natural FP methods. The users of these methods are important in number and in their educational and professional achievement. As shown in this thesis, there is a total absence of concern or interest from the ONFP. A non-partisan group or research organisation should be called to address the issue and made the appropriate recommendations.

In Algeria, the urgent issue is about offering ("distributing") more than just the pill.

Contraceptive efficacy

In both countries, it is urgent to study the distribution and the associated factors of the efficacy (continuation, failure, switching) for each contraceptive method more in depth, probably according to the Anglo-Saxon way.

Abortion

Finally, we questioned the mystery surrounding the unknown abortion rates, differentials and determinants. Claiming that because of the relative accessibility of obtaining abortion services in Tunisia many rely on it frequently as a FP method. Removing the need for women to have abortions is at the very centre of women's rights and women's reproductive health priorities.

Again, the obvious next stage is to consider studying the reasons why women have induced abortions. The immediate explanation that women often give for seeking induced abortion is that the pregnancy was unplanned or unwanted. However, the diverse social, economic and health circumstances that underlie such explanations have never been explored in Tunisia.

The decision to have an abortion is usually motivated by more than one factor. While improved contraceptive use can help reduce unintended pregnancy and abortion, some abortions will remain difficult to prevent, because of limits to women's ability to determine and control all circumstances of their lives.

The understanding of the intimate reasons governing abortion would increase the chance that policy makers and providers respond effectively to the varied situations and needs that lead to the decision to resolve unwanted pregnancy through abortion.

In countries where abortion is illegal, this understanding could motivate better treatment of women who seek medical care for complications from unsafe abortions. I all the other settings (including those where abortion is safe), a greater appreciation of the roles that partners and other family members play may convince policy makers and counsellors of the need to stress social and family support for women at risk of unintended pregnancy.

Abortion is in the Tunisian context "the last resort Pill" of the National FP programme, being used to achieve its declared demographic goals designed and maintained the same over the last twenty-six years.

However, it is worth noticing that there are no demographers nor demographic division or studies since in this agency as of 1998. Besides, this agency is serving at most 50% of the women in reproductive ages, namely those married.

The unmarried, over 50%, are totally ignored, but we all know that they do resort to abortion, even more frequently and obviously in much less comfortable and less safer circumstances.

The scarcity of research on why women have abortions points to the need for more work in this area, and most of all in Tunisia where abortion is unusually and overly accessible and recommendable (for married and wealthy women)!

Researching on abortion leads directly to address sexuality outside the wedlock, a real and unexplored topic in Tunisia where any delay in this direction means an accumulation of the very well known complications and side effects.

Researching on abortion in Algeria has far reaching implications since it is still illegal. On the other hand, abortion is rather a critical and decisive topic since it is intermingled with the gender-based and sexual violence vicious cycle that has been taking place for the last thirteen years. It has multiple impacts on the reproductive health of women and girls.

This is being more and more of an issue in Algeria because of the fast growing number of girl adolescent (and unmarried women) oriented violence, their kidnapping and rapes. The usual outcome, if they survives, is teenage pregnancy and unwanted pregnancy.

Gender-based violence impacts on all the most serious sexual and reproductive health problems facing women in both countries, but much more in Algeria. If these health problems are to be effectively addressed, Algerian government must commit itself to effectively combating gender-based violence.

In conclusion, for an unprepared sexually active Algerian and Tunisian teenagers or unmarried women the 2000s present a minefield of potential problems in addition to the most obvious problems of unplanned pregnancy and sexually transmitted disease. Promoting the importance of a healthy sexual and reproductive life to young people and unmarried adults requires openness, better sex education, realistic discussion of related issues, and provision of contraception, as well as support if things go wrong. Advice is given on topics such as substance misuse and smoking as well as on family planning. Preventing unwanted teenage pregnancies would appear to require either reduced exposure to risk (that is, sexual intercourse) or effective contraceptive use. These courses of action may appear obvious to those who have to fund and deal with the outcomes of teenage sexual behaviour. To teenagers such planned, highly rational action may be less easy to achieve.

References

Adepoju, A. and Todaro, M. P. (1994). The impact of structural adjustment on the population of africa - the implications for education, health and employment Population and Development Review, Vol.20, No.1, pp.226-227

Afrique Asie (1998) Algérie: ça Suffit! N101 - Fevrier 1998. pp.6-17

Ali M. and Cleland J. (1995) Contraceptive Discontinuation in Six Developing Countries: A Cause-Specific Analysis International Family Planning Perspectives, 21:92 97, 1995)

Alvarez, F. Branche, V. Fernandez, E. (1988). New Insights on the Mode of Action of Intrauterine Devices in Women. Fertil Steril, vol. 49, pp. 768-773.

Anderson, D. (1998). Abortion, Women's Health and Fertility. IUSSP Policy-Research Paper N°15.

As-Sabah (1996). Economic Growth Rate of 5.7% Expected in 1997, 2 December pp.1.

Ayed, M. Sayed, A. and Way, A. A. (1991). Policy Implications of the DHS Findings for Egypt, Morocco, and Tunisia. In "Proceedings of the Demographic and Health Surveys World Conference, August 5-7, 1991, Washington, DC." Vol. III, pp. 2037-2052.

Baffes, J. and Gautman, M. (1993). Egypt - impact of structural adjustment on agriculture. American Journal of Agricultural Economics, Vol.75, No.5, pp.1299-1299

Bailey, J. and Alan, K.r (1982). Post-family planning acceptance experience in the Caribbean: St. Kitts-Nevis and St. Vincent in Studies in Family Planning, Vol. XIII No. 2, pp. 65-78.

Ben Ali, Zine-El-Abidine (1989). Women Rights-Speech. Carthage, Tunis. March 31st.

Ben Ali, Zine-El-Abidine (1996). The Globalization of the Economy and the Countries of the Mediterranean-Speech. "Maison du RCD", Tunis. November 4th.

Ben Ali, Zine-El-Abidine (1996a) SOn the 48 Anniversary of the Universal Declaration of Human Rights-Speech. Carthage. December 10th.

Benson, R. C. (1976). Current obstetric and gynecologic diagnosis and treatment. Los Altos: Lange Medical Publications.

Bernstein, G. (1978). When Avoiding Pregnancy is the Issue. Patient Care, vol. 12.

Blumenthal, P. D. and McIntoch, N. (1996). Pocket Guide for Family Planning service providers, 1996-1998. 2nd edition. Baltimore, John Hopkins Program for International Education in Reproductive Health.

Bone, M. (1978). The Family Planning Services: A Survey Carried out on Behalf of the Department of Health and Social Security. London: Her Majesty's Stationary Office.

Bongaarts, J. and Rodriguez G. (1991). A New Method for Estimating Contraceptive Failure Rates. In Measuring the Dynamics of Contraceptive Use. ST/ESA/SER.R/106 United Nations, pp 52-62.

Bongaarts, J. and Westoff, C. F. (2000). The Potential Role of Contraception in Reducing Abortion. Policy research division working papers No. 134. The Population Council.

Boukhris, M. M. (1991). "Plan d'Action 1991". Office National de la Famille et de la Population (Tunisie).

Bousnina, M.A. (1981). Tahar Hadda: The Islamic Teaching and theReformist Movement in The Zitouna Mosque. Translated from Arabic, Tunis Tunisie.

Bouthina, M. (1995). Tahar Hadda 1899-1935. Silsilat Machahir (Celebrity Series) N 117 Hammamet Tunisie.

Bread for the World Institute (1996). What governments can do,Hunger 1997. pp.118-119

Brinkman, Richard (1995). Economic growth versus economic development: Toward a conceptual clarification. Journal of Economic Issues, Vol.29 (December) pp.1171-1188

Brown, K. L. (1981). The campaign to encourage family-planning in Tunisia and some responses at the village level.Middle Eastern Studies, Vol.17, No.1, pp.64-84

Cancer and Steroid Hormone Study of the Centers for Disease Control and the National Institute of Child Health and Human Development (1987). The reduction in risk of ovarian cancer associated with oral-contraceptive use. New England Journal of Medicine, 316(11), pp.650-655.

Cancer and Steroid Hormone Study (1987). Combination oral contraceptive use and the risk of endometrial cancer. Journal of the American Medical Association, 257(6), pp.796-800.

Centers for Disease Control and Steroid Hormone Study (1983). Oral Contraceptive Use and the Risk of Ovarian Cancer. J.A.M.A., Vol. 249, pp. 1596-9.

Cleland, J.G., E.E. Hardy & E. Taucher (1990) Introduction of New Contraceptives into Family Planning Programmes: Guidelines for Social Science Research. Special Programme of Research, Development and Research Training in Human Reproduction. World Health Organization. Geneva.

Cliquet, R. L. et al. (1977). Effectiveness of contraception in Belgium: results of the second National Fertility Survey, 1971 (NEGO II) Journal of Biosocial Sciences Vol.9 pp 403-416

Coburn, C. Crone (1990). Financial sustainability of family planning programmes. In: Family planning for life: experiences and challenges for the 1990s, papers presented at the Conference on Management of Family Planning Programmes, Harare, Zimbabwe 1-7 October 1989 edited by M. Bouzidi and R. Korte. London, England, IPPF (May) pp.182-6

Coburn, C. Crone (1992). Sustainability of family planning programmes in the 1990s. In: Family planning programme sustainability: a review of cost recovery approaches. Papers presented at the Seminar on Programme Sustainability through Cost Recovery, Kuala Lumpur, Malaysia, 21-25 October 1991, edited by Lori S. Ashford, Med Bouzidi. London, England, IPPF (March) pp.18-23

Coeytaux, F. et al. (1987). The role of information, education, and communication in family-planning service delivery in Tunisia. Studies in Family Planning, Vol.18, No.4, pp.229-234

Coeytaux, F. et al. (1989). An evaluation of the cost-effectiveness of mobile family-planning services in Tunisia Studies in Family Planning, Vol.20, No.3, pp.158-169

Davis, K. (1963). "The theory of change and response in modern demographic history" Population Index Vol 29(4) pp. 345-366.

Deschampheleire, I. (1981). Integrated family-planning activities in maternal and child health centers in cap-bon, Tunisia. Methodology and results J. Tropical Pediatrics, Vol.27, No.4, pp.190-195

Deschampheleire, I. (1981a). Integrated family-planning activities in maternal and child health centers in cap-bon, Tunisia. 2. Use of a family-planning technical card in an integrated maternal and child health-program Journal of Tropical Pediatrics, Vol.27, No.4, pp.196-198

Deschampheleire, I. (1981b). Integrated family-planning activities in maternal and child health centers in cap-bon, Tunisia. 3. Impact on some maternal and child health indicators Journal of Tropical Pediatrics, Vol.27, No.6, pp.304-307

Deschampheleire, I. (1982). Induced-abortion in maternal and child health centers in a general family-planning program in cap bon, Tunisia. Tropical Doctor, Vol.12, No.2, pp.77-80

De Silva, W.I. (1997). The practice of induced abortion in Sri Lanka. Paper presented at the Harvard School of Public Health, Harvard University, Boston, MA, 21 April.

Flynn, A. M. and Lynch, S. S. (1979). Cervical mucus and natural family planning. In "Human Ovulation: mechanisms, prediction and induction". North-holland Publishing, pp. 419-500.

Gueddana, N. (1994). Population Policies and Programmes: Determinants and Consequences in Tunisia.The London School of Hygiene & Tropical Medicine, and, United Nations Population Fund.

Gaslonde, Santiago and Enrique Carrasco (1982). The impact of some intermediate variables on fertility: evidence from the Venezuela National Fertility Survey 1977. World Fertility Surveys Occasional Papers, No.23.

Gilbert, A. (1994). Third-world cities-poverty employment Gender roles and the environment During a time of restructuring Urban Studies, Vol.31, No.4-5, pp.605-633

Goldman, N. et al. (1983). Contraceptive failure rates in Latin America. International Family Planning Perspectives, vol.9, No.2 (June).

Goulet, Denis (1971). The Cruel Choice: A New Concept in the Theory of Development. New York, Atheneum. pp.23 and 87-94

Grady, William, R. et al. (1983). Contraceptive failure and continuation among married women in the United States, 1970-75. Studies in Family Planning, vol.14, no.1.

Grady, William, R. et al. (1986). Contraceptive failure in the United States: estimates from the 1982 national survey of family growth. Family Planning Perspectives, vol.18 pp. 12-9.

Guo, G. and Rodriguez, G. (1992) Estimating a Multivariate Proportional Hazards Model for Clustered Data Using the EM Algorithm, with an Application to Child Survival in Guatemala. Journal of American Statistical Association, 87:969-76.

Haddad, T. (1927). "Al ommal atounissioun wa dhohour alharaka anakabia" (Tunisian Workers and the emergence of the labour syndicate movement" Editions de Tunis.

Haddad, T. (1930). "Imra-atouna fi ashshariaa walmojtamaa" (Our women in the Shariaa and the Society). Editions de Tunis.

Hall, P. E. (1994). The introduction of cyclofem into national family-planning programs - experience from studies in Indonesia, Jamaica, Mexico, Thailand and Tunisia. Contraception, Vol.49, No.5, pp.489-507

Hamzaoui, Rim et al. (1996). Contraception with subdermal levonorgestrel implants. Presse Medicale, Vol.25 No.23, pp.1063-1065

Hammerslough, C. R. (1987). Contraceptive failure in the United States: results from the 1982 National Survey of Family Growth. Paper presented at the 1987 Annual Meeting of the Population Association of America, Chicago.

Hammerslough, C. R. (1991). Overview. In Measuring the Dynamics of Contraceptive Use. ST/ESA/SER.R/106 United Nations, pp 1-12.

Handwerker, P. (1993) Power, Gender Violence and High Risk Sexual Behaviour: AIDS/STD Risk Factors Need to be Defined More Broadly. Humboldt State University, Department of Anthropology.

Harris D. R. (1990). Tunisia: Physical and Social Geography In The Middle East and North Africa 1991. 37 th Edition Europa Publications ltd, pp 845-876.

Hatcher, R. A. (1990). The Menstrual Cycle. In Contraceptive Technology 1990-1992. 15th Revised Edition. New York: Irvington Publishers, pp. 39-46.

Hatcher, R. A. (1990). Intrauterine Device (IUDs). In Contraceptive Technology 1990-1992. 15th Revised Edition. New York: Irvington Publishers, pp. 355-386.

Hatcher R.A. et al. Cates (1992) Intrauterine Devices(IUDs) in Contraceptive Technology. New York: Irvington Publishers, Inc. pp. 355-385.

Hatcher, R. A. et al. (1994). Contraceptive Technology. 16th Edition. New York: Irvington Publishers.

Hatcher, R. A. et al. (1997). The Essentials of Contraceptive Technology. Baltimore, Johns Hopkins School of Public Health, Population Information Program.

Heilbroner, Robert (1973). Economics as a 'value-free' science. Social Research, Vol. 40 (Spring) pp.129-143.

Hernandez, D.J. (1984). Success or Failure? Family planning programmes in the Third World. Greenwood Press, London.

Hicks, L. Normand and Streeten, L. Paul (1979). Indicators of Development: The search for a basic needs yardstick. World Development, Vol.7 (June).

Huezo, C. M. and Carignan, C. S. (1997). Medical and service delivery guidelines for family planning. London, International Planned Parenthood Federation (IPPF) in collaboration with AVSC International.

Ifaoui, A. (1992). Etude Comparative de la Pratique Contraceptive Orale au Maroc et en Tunisie EDS 87-88. Unpublished Doctoral Dissertation. Facult, M,decine Monastir, Tunisia.

IMF updated (1996). The IMF and the World Bank How Do They Differ? In The World Wide Web, IMF Publications (August).

Ingham, Barbara (1993). The meaning of development: interactions between 'new' and 'old' ideas. World Development, Vol.21 (November) pp.1816-1818.

Institut National de la Statistique (INS)

Recensement Général de la Population & de L'Habitat (8/5/75)

Recensement Général de la Population & de L'Habitat (30/3/84)

Recensement Général de la Population & de L'Habitat (30/4/94)

Recensement (min) Général de la Population & de L'Habitat (30/5/99)

Vol.1 Ménages et Chefs de Ménages.

Vol.3 Caractéristiques Démographiques.

Vol.4 Caractéristiques de L'Education.

Vol.5 Caractéristiques Economiques.

International Labor Organization (1976). Employment, Growth and Basic Needs. (Geneva: ILO).

Jejeebhoy, S. (1991). Measuring Contraceptive Use-Failure and Continuation: an overview of new approaches. In "Measuring the Dynamics of Contraceptive Use". ST/ESA/SER.R/106 United Nations, pp 21-51.

Jones, H. W. (1988). Epithelial ovarian cancer. In: Jones H W 3rd, Wentz, A C and Burnett, L S Novak's Textbook of Gynecology.

Jones, E. F. and Forrest, J. (1992). Contraceptive Failure Rates Based on the 1988 NSFG. F.P. Prespectives.Vol. 24, pp. 12-19.

Keller, A. (1981). Limitations of life table analysis: empirical evidence from Mexico. Studies in Family Planning, vol.12,4.

Kendrick, J. S. and Ory, R. W. (1984). Risks and benefits of using oral contraceptives. Presented at the 7th European Sterility Congress, Monte Carlo.

Klak T. (1996) Distributional impacts of the free zone component of structural adjustment - the Jamaican experience. Growth and Change Vol.27, No.3, pp.352-387

Kleinman, R. L. (1988). Oral Contraception. FP Handbook for Doctors, IPPF, pp. 29-76.

Kleinman, R. L. (1990). Combined Oral Contraceptives. Hormonal Contraception, IPPF, pp. 29-76.

Kleinbaum, D. et al. (1996). Survival Analysis: A Self-Learning Text, Springer-Verlag, New York.

Kaufman, J. (1993) The Cost of IUD Failure in China. Studies in Family Planning, 24(3):194-196.

Kirk, D. (1969). "Natality in developing countries: recent trends and prospects". In S.J. Behrman, L. Corsa and R.

Laing, J. E. (1984). Measurement of contraceptive protection for fertility analysis. Presented at the IUSSP/WFS seminar on integrating proximate determinants into the analysis of fertility levels and trends, London.

Laing, J. E. (1985). Continuation and effectiveness of contraceptive practice: a cross-sectional approach. Studies in Family Planning, 16, pp. 138-153.

Lanctot, C. A. Natural family Planning. Clinics in Obstetrics and Gynaecology Vol. 6, pp. 109-127.

La Presse (1996). 97 Budget to Further Boost Major Economic Sectors, 26 November pp.4.

La Presse (1998). FMI-Algérie: Satesfecit pour l'ajustement Structurel, 30 August pp.9.

Laurell, A. C. and WENCES, M. I. (1994). Do poverty programs alleviate poverty - the case of the mexican national solidarity program. International J. of Health Services, Vol.24, No.3, pp.381-401

Lawless R. (1996). Algeria: Economy In The Middle East and North Africa 1997. 43rd Edition Europa Publications ltd, pp.280-304.

Lecomte, J. and Marcoux, A. (1976). Contraception and Fertility in Morocco and Tunisia. Studies in Family Planning, 7, pp.182-7.

Lee, E. (1992). Statistical Methods for Survival Data Analysis, Wiley.

Lee, K. et al. (1996). Population policies and programmes: Determinants and consequences in eight developing countries (Tunisia and Algeria, Bangladesh and Pakistan, Thailand and the Philippines, Zimbabwe and Zambia). London School of Hygiene and Tropical Medicine. London. England, U.K. pp.1-12.

Lee, K. et al. (1998). Family Planning population policies and programmes in eight low-income countries: a comparative policy analysis. Soc. Sci. Med. Vol. 47, No. 7, pp. 949-959.

Le Monde Diplomatique (1997) Rumeurs d'un Coup d'Etat: L'Algerie Sous la Terreur. N°523-44ème années Octobre 1997.

Le Monde Diplomatique (1998) A L'Ombre de la Terreur: L'Armée Algérienne Confisque le Pouvoir. N°527- 45ème années Fevrier 1998.

Lewis, W. Arthur (1963). Is economic growth desirable. In The Theory of Economic Growth. London: Allen & Unwin pp.420.

Lodewijckx, E. and K. Impens (1987). The impact of the contraceptive transition on the recent and future development of fertility in Flanders. Paper presented at the European Population Meetings.

Magnani R. J., D. R. Hotchkiss D. R., Curtis S. F., and Shafer L. A. (1999) The Impact of the Family Planning Supply Environment on Contraceptive Intentions and Use in Morocco. Studies in Family Planning 1999; 30[2]: 120-132.

Makdessi, Y. and Tamouza, S, (1999). l'Etat de santé des mères en Algérie et au Liban (CEPED, Paris). Paper presnted at the 'Conférence Arabe sur la santé de la mère et de l'enfant (PAPCHILD. Le Caire 7-9 juin 1999 http://www.poplas.org/conference)'.

Manisha, G. (1997). Abortion needs of women in India: a case study of rural Maharashtra. Reproductive Health Matters, No.9, May 1997, pp.77-86

Marcoux, A. (1975). Tunisia in Family Planning Programs: World Review 1974. Studies in Family Planning, 6, pp. 307-310.

Marshall, J. (1963). The Infertile Period: Principiles & Practice.

Mauldin, W. P. (1975). Assesment of National Family Planning Programs in Developing Countries. Studies in Family Planning, 6, pp. 30-36.

Mauldin, W. P. and Ross, J. (1991). Family Planning programmes: Efforts and results, 1982-89. Studies in Family Planning, 22, pp. 350-367.

Mbaku, J.M. (1994). Bureaucratic corruption and policy reform in Africa. Journal of Social Political and Economic Studies, Vol.19, No.2, pp.149-175

Ministère du Plan et du Développement Régional (1971).

Le IVème Plan 1972-1976. Imprimerie Officielle de la République Tunisienne.

Ministère du Plan et du Développement Régional (1976).

Le Vème Plan 1977-1981. Imprimerie Officielle de la République Tunisienne.

Ministère du Plan et du Développement Régional (1981).

Le VIème Plan 1982-1986. Imprimerie Officielle de la R,publique Tunisienne.

Ministère du Plan et du Développement Régional (1986).

Le VIIème Plan 1987-1991. Imprimerie Officielle de la R,publique Tunisienne.

Ministère du Plan et du Développement Régional (1991).

Le VIIIème Plan 1992-1996.Imprimerie Officielle de la R,publique Tunisienne.

Ministère du Plan et du Développement Régional (1996).

Le IXème Plan 1997-2001.Imprimerie Officielle de la R,publique Tunisienne.

Ministry of Social Affairs (1995). Social and Economic Development in Tunisia 1990-1994 Imprimerie Officielle de la R,publique Tunisienne.

Moghissi, K. S. (1972). The Function of the Cervix in Fertility. Fertility and Sterility, vol. 23, pp. 295-306.

Moghissi, K. S. (1981). Recognition of the Fertile Period by Cervical Changes. Fertility and Sterility, vol. 35, pp. 101.

Moreno, L. (1991). Differentials in Contraceptive Failure Rates in Developing Countries: Results from the Demographic and Health Surveys. In "Proceedings of the Demographic and Health Surveys World Conference, August 5-7, 1991, Washington, DC." Vol. I, pp. 695-716.

Moreno, L. and Goldman, N. (1991). Contraceptive Failure Rates in Developing Countries: Evidence from the Demographic and Health Surveys. International Family Planning Perspectives. Vol. 17, pp. 44-49.

Morishita, H. et al. (1979). Cervical Mucus and Prediction of the Time of Ovulation. Gynaecologic and Obstetric Investigation, vol. 10, pp. 157-162.

Morris, J. (1973). Mechanisms involved in progesterone contraception and estrogens interception. AJOC, 117, pp 167-76

Morris, D. Morris (1979). "Measuring the conditions of the World's Poor: The Physical Quality of Life Index", London. Cass.

Ness, G. D. (1997). Population and Strategies for National Sustainable Development. IUCN - EARTHSCAN - UNFPA.

Nyangoro, J. E. et al. (1993). Beyond structural adjustment in Africa, the political-economy of sustainable And democratic development. Africa Today, Vol.40, No.4, pp.96-99

Obermeyer, C.M. (1993). Culture, maternal health-care, and womens' status - a comparison of Morocco and Tunisia. Studies in Family Planning, Vol.24, No.6(Pt1), pp.354-365

Obermeyer, C.M. (1994). Reproductive choice in Islam - Gender and state in Iran and Tunisia. Studies in Family Planning, Vol.25, No.1, pp.41-51

Obermeyer, C.M. (1996). Fertility norms and son preference in Morocco and Tunisia - does womens' status matter. Journal of Biosocial Science, Vol.28, No.1, pp.57-72

Office National de la Famille et de la Population (1982).

Rapport sur les résultats de l'Enquête tunisienne sur la fécondité 1978. Vol I, Vol II. (1985).

Rapport sur les résultats de l'Enquête tunisienne sur la Prévalence de la Contraception 1983.

Office National de la Famille et de la Population (1985a).

Acte du Colloque National: La Fécondité en Tunisie, Situation Actuelle et Perspectives (Tunis, 29 et 30 Avril 1985).

Office National de la Famille et de la Population (1989).

Rapport Final sur les résultats de l'Enquête Démographique et de Santé en Tunisie 1988.

Office National de la Famille et de la Population (1989a).

Rapport Annuel, Statistiques des Activit,s de Planning Familial Ann,e 1989.

Office National de la Famille et de la Population (1990).

Les Déterminants de la Fécondité en Tunisie 1966 - 1975 - 1984 - 1988.

Office National de la Famille et de la Population (1995).

Family Planning in Tunisia: Foundations, Results, Prospects.

Office National de la Famille et de la Population (1996).

7 November 1996: Nine Years of Increasing Political Support to the National Family Planning and Family Health Programme

Office National de la Famille et de la Population (1998).

Rapport Final sur les résultats de l'Enquête Tunisienne sur la Santé de la Mère et de l'Enfant: Nov_1994-Jan_1995.

Office National de la Famille et de la Population (1999).

National Report on Population 1994-1998 International Conference on the Implementation of the I.C.P.D. Programme of Action The HAGUE February 1999.

Olweny, C. (1994). Bioethics in developing-countries - ethics of scarcity and sacrifice. Journal of Medical Ethics, Vol.20, No.3, pp.169-174

Ory, H. (1982). The noncontraceptive health benefits from oral contraceptive use Family Planning Perspectives 14(4) pp 182-4

Owens, Edgar (1987). The Future of Freedom in the Developing World: Economic Development as Political Reform. New York, Pergamon Press. pp.XV.

Pearl, Raymond (1932). Contraception and fertility in 2,000 women. Human Biology, vol.4, pp. 363-407.

Perkins, D. (1987). Economic development: the role of values. In "International Ethics in the Nuclear Age", Robert J. Myers (ed.) Baton Rouge: Louisiana State University Press, Chap.8

Phillips, James F. (1982). A logit regression method for the multivariate analysis of contraceptive attribution. In The Role of Surveys in the Analysis of Family Planning Programmes, Albert I. Hermalin and Barbara Entwisle, eds. Liege: Ordina Editions.

Poff, D. C. (1994). Reconciling the irreconcilable - the global economy and the environment, Journal of Business Ethics, Vol.13, No.6, pp.439-445

Poirier, R. A. (1995). Tourism and development in Tunisia. Annals of Tourism Research Vol.22, No.1, pp.157-171

Popke, E. J. (1994). Recasting geopolitics - the discursive scripting of the IMF, Political Geography, Vol.13, No.3, pp.255-269

Population Council, (1963). Tunisia: Proposed Family Planning Program. SFP vol. 2, pp. 3-4.

Population Reference Bureau, (1976). World Population Growth and Response, 1965-1975. A Decade of Global Action.Tunisia, pp, 59-62.

Population Reference Bureau. 1991-2001 World Population Data Sheet.

Population Report. (1988). Lower Dose Pills. A7.

Potter, Robert (1966). Application of life table techniques to measurement of contraceptive effectiveness. Demography vol.3.

Potter, R. and Philips J. F. (1982). Fitting and extrapolating contraceptive continuation curves by logit regression. In The Role of Surveys in the Analysis of Family Planning Programs, Albert I Hermalin and Barbara Entwisle, eds. Liege: Ordina Editions.

Pradip, K. Ghosh (1984). Third World Development: A Basic Needs Approach. Westport, Conn.: Greenwood Press.

Preston, S N (1974). A report of the correlation between the pregnancy rates of low estrogen formulations and pill-taking habits of females studied. J Reproductive Medicine, 13, pp. 75-77.

Pritchett, L.H. (1994). Desired fertility and the impact of population policies. Population and Development Review vol. 20, pp. 1-56

Renaud, R. L. (1980). Echographic Study of Follicular Maturation and Ovulation During the Normal Menstrual Cycle. Fertility and Sterility, vol. 33, pp. 272-276.

Revue du CENEAP N° 14 (1999). Eléments de réflexion sur la politique de population en Algérie.

Robertson, E (1987) OC use for 1 year or more cuts endometrial cancer. Con. Tech. Upd 8, 47-48.

Rock, J. (1970). Manual of Family Planning, pp. 376-381.

Rodrik, Dani (1992). The limits of trade policy reform in developing countries. Journal of Economic Perspectives, Vol.6, No.1, pp.87-105

Russof, D. (1986). Country Profile Republic of Tunisia. International Demographics, vol.5, pp. 1-7.

Sachedina, Z. (1990). Islam, Procreation and the Law. International Family Planning Perspectives, vol.16, pp. 107-111.

Sahn, D. and Bernier, R. (1995). Have structural adjustments led to health sector reform in Africa Health Policy, Vol.32, No.1-3, pp.193-214

Schirm, Allen L. et al. (1982). Contraceptive failure in the United States: the impact of social, economic and demographic factors. Family Planning Perspectives, vol.14, pp. 68-75.

Seager, J. (1986) Women in the World: An International Atlas. New York, Simon & Schuster, Inc.

Seers, Dudley (1969). The Meaning of development. Paper Presented at the XI World Conference of The Society of International Development, New Delhi pp.3.

Sen, A. (1983). Development: Which way now? Economic Journal, Vol.93 (December) pp.754-757

Srinivasan, T. N. (1994). Human development: A new paradigm or reinvention of the weel? American Economic Review, Vol.84 (May) pp.238-243.

Steel, F. (1993) The Determinants of Sterilization and the Duration of Contraceptive Use in China. Unpublished MSc Dissertation, Department of Social Statistics, University of Southampton.

Steel, F. D. Wang & I. Diamond (1994) The Determinants of the Duration of Contraceptive Use in China: An Illustrative Analysis of Multinomial Multilevel Discrete Hazards Modelling. A Paper Presented at the Annual Meeting of Population Association of American. Miami, May.

Steele, F. D. Siân, S. and Choe, M. (1999) The Impact of Family Planning Service Provision on Contraceptive-use Dynamics in Morocco. Studies in Family Planning 1999; 30[1]: 28-42

Sundstrom, K. (1993). Abortion – a reproductive health issue. Background paper for a World Bank Best Practices paper on Women's Health Stockholm, Washington July 1993. Funded by SIDA.

Timby, B.K. (1976) Ovulation method of birth control. American J. of Nursing. Vol. 76, pp.928-9.

Treiman, K. Liskin, L. (1988). IUDs: a New Look. Population Reports (Series B), No 5, pp. 1-31.

Trussell, J. and Menken, J. (1982). Life table analysis of contraceptive failure. In The Role of Surveys in the Analysis of Family Planning Programmes, Hermalin and Entwisle. Ordina Editions.

Trussell, J. and Grummer-Strawn, L. (1991). Further Analysis of Contraceptive Failure of the Ovulation Method. Supplement to American Journal of Obstetrics and Gynecology, pp. 2054-2059.

Tunis Hebdo (2001). Algériennes sans domicile fixe. Page 7.

Tunisia Updates (1996). Industrial Upgrading Program to Benefit 2,200 companies, In The World Wide Web, Tunisiaonline 3 December.

Tunisia Updates (1996a). 1997 State Budget Submitted to Chamber of Deputies In The World Wide Web, Tunisiaonline 10 December.

Unites Nations (1979). Manual IX: the Methodology of Measuring the Impact of Family Planning Programmes on Fertility. Population Studies. No. 66. Sales No E.78.XIII.8.

Unites Nations (1986). Manual IX (Addendum): the Methodology of Measuring the Impact of Family Planning Programmes on Fertility. Population Studies. Sales No E.86.XIII.4.

Unites Nations (1989). Levels and Trends of Contraceptive Use as Assessed in 1988. Population Studies. No110. SaleE.78.XIII.8.

United Nations Development Programme (1992). Human Development Report 1992. New York, Oxford University Press. pp.26-33.

United Nations Development Programme (1994). Human Development Report 1994. New York, Oxford University Press. pp.13, 15.

Unites Nations Population Fund (1992). Women Population and the Environment.

Unites Nations Population Fund (1996). Programme of Action adopted at the International Conference on Population and Development, Cairo, 5-13 September 1994.

Unites Nations Population Fund (1997). The state of World Population 1997.

Vundule, C. et_al. (1999). "Risk Factors for Teenage Pregnancy Amongst African Adolescents in Metropolitan Cape Town: A Case Control Study". South African Medical Journal

Walt, G. and Gilson, L. (1994). Reforming the health sector in developing countries - the central role of policy analysis. Health Policy and Planning Vol.9, No.4, pp.353-370

Wang, D., I. Diamond & S. Curtis (1993) Contraceptive Use and Failure in China. In Contraceptive Use Dynamics in Developing Countries. Edited by I. Shah and T.W. Pullum. Geneva: WHO.

Wang, D. L. and Diamond, I. (1995). The impact on fertility of contraceptive failure in China in the 1980s. Journal of Biosocial Science, 27, pp. 277-284.

World Bank (1991). World Development Report 1991.

New York, Oxford University Press. pp.4

World Bank (1995). Claiming the Future: Choosing Prosperity in the Middle East and North Africa. The World Bank. Whasington D.C.

World Bank (1996). Tunisia's Global Integration and Sustainable Development: Strategic Choices for the 21st Century. Middle East and North Africa Studies The World Bank. Whasington D.C.

World Bank (1996a). Staff Appraisal Report: Democratic & Popular Republic of Algeria, Social Safety Net Support Project Middle East and North Africa Regional Office Maghreb and Iran Department. The World Bank. Whasington D.C.

World Bank (1996b). Proposed Structural Adjustment Loan toThe Democratic and Popular Republic of Algeria Middle East and North Africa Regional Office The World Bank. Whasington D.C. Report No P-6855-AL

World Health Organization (1987). Natural Family Planning: A guide to provision of services.

World Health Organization (1996). Improving access to quality care in family planning: Medical eligibility criteria for contraceptive use. Geneva, Family and Reproductive Health.

World Health Organization (1997). Communicating Family Planning in Reproductive Health: Key Messages for Communicators. Family Planning and Population WHO/FRH/FPP/97.33

World Health Organization (1998). Unsafe Abortion: Global and Regional Estimates of Incidence of and Mortality Due to Unsafe Abortion with a Listing of Available Country Data, 3rd Edition, Geneva: WHO, 1998, Table 2, p. 8.

Woutersz, T. B. (1981). A low-dose combination oral contraceptive: experience with 1700 women treated for 22489 cycles. Journal of Reproductive Medicine, 26, pp. 615-620.

Zaidi, S. A. (1994). Planning in the health sector For whom, by whom Social Science & Medicine, Vol.39, No.9, pp.1385-1393

Zemmour-Khorsi, N. (1994). Mères célibataires et enfants abandonnés an Algérie. Journal de Pédiatrie et de Puériculture, 6, pp.259-366.

ANNEX I

Code de la famille ou de l'infamie ?

Algérie, chronique économique et sociale

http://troubles.multimania.com/ecosoc.htm

Le code algérien de la famille, imposé en 1984 par le régime du parti unique, est en contradiction complète avec le projet d'une société pluraliste et socialement progressiste, en ce qu'il consacre l'inégalité des droits entre les femmes et les hommes, et fait des premières des "mineures à vie", sous tutelle des hommes de leur naissance à leur mort. "Il n'y a pas d'article en faveur des femmes dans ce texte de loi", écrit l'Association indépendante pour le triomphe des droits des femmes. Les quelques exemples que nous donnerons ici pourront mieux qu'un long plaidoyer démontrer à quel point ce "code de la famille", surnommé "code de l'infamie" par le **président assassiné Mohammed Boudiaf**, manifeste les aspects les plus rétrogrades de la société, au point d'être en contradiction avec la Constitution algérienne elle-même, et avec de nombreux traités et conventions signés par l'Algérie, et qui proscrivent la discrimination entre les sexes.

Art. 7 La capacité de mariage est de 21 ans pour les hommes et de 18 ans pour les femmes

Peut-on d'ailleurs parler de "capacité de mariage" en ce qui concerne les femmes ? L'article 11, la femme est à jamais déclarée incapable de contracter mariage elle-même, seul son tuteur pouvant le faire en son nom.....

Art. 8 Consécration de la polygamie

Cette disposition est en contradiction flagrante avec la Constitution algérienne, qui proclame elle l'égalité des sexes. L'homme est donc autorisé par le Code à avoir jusqu'à quatre épouses à la fois (inutile de préciser que la femme n'a "droit", elle, qu'à un seul mari...). L'article 30 du Code place quelques limites au droit à la polygamie : l'homme ne peut pas épouser pour la quatrième fois la même femme (dont il aurait donc divorcé déjà trois fois)... à moins qu'elle ait entre-temps été mariée à un autre homme dont elle serait divorcée ou veuve. L'homme ne peut pas non plus épouser simultanément (mais il peut le faire successivement) deux soeurs, ou une femme et sa tante maternelle. L'homme doit en principe demander le consentement de son épouse (ou de ses épouses) avant de prendre une épouse de plus. Si elles n'y consentent pas, elles peuvent demander le divorce -mais compte tenu de ce que signifie le divorce pour les femmes selon le Code, elles sont en réalité pratiquement obligées d'accepter le nouveau mariage de leur mari.

Art. 11 La conclusion du mariage d'une femme incombe exclusivement à son tuteur homme (père, oncle, frère, fils, cousin, ou à défaut de proche parent mâle, juge)

La femme ne se marie pas, on la marie. Cet article, qui consacre le statut de "mineure à vie" de la femme, est violemment dénoncé par les associations de femmes algériennes. Aucune femme ne peut donc conclure son propre mariage, et toute femme doit s'en référer pour cela à un tuteur. Une femme professeur d'université est réputée par le Code incapable de se marier, mais un petit cousin analphabète pourra, lui, la marier. Des femmes ont dû ainsi se placer sous la tutelle de leur propre fils pour pouvoir se remarier après le décès de leur premier époux... Au surplus, le "tuteur" indispensable pour le mariage n'a aucune obligation légale de protection ou d'aide à l'égard de l'épouse au cas où le mariage éventuellement arrangé par lui tournerait mal.

Art. 13 Le consentement de la femme à son mariage est obligatoire

La loi ne précise cependant pas de quelle manière la femme (qui au terme de l'article 11 ne peut se marier de son propre chef) est supposée exprimer ce consentement. Nombre de mariages sont conclus en l'absence et sans même la consultation de la fufute épousée, et on voit mal comment celle-ci pourrait refuser le mari choisi pour elle par son tuteur. En outre, si le Code interdit en principe le mariage forcé, aucune sanction n'est prévue si cette interdiction est violée.

Art. 20 Le futur conjoint peut être représenté lors de la conclusion du mariage par un mandataire

La future épouse représentée par son tuteur et le futur époux par un mandataire : curieuse cérémonie de mariage, sans mariée ni marié. Au moins l'époux aura-t-il eu son mot à dire sur le choix de son représentant -alors que l'épousée n'aura peut-être choisi ni son mari, ni son tuteur, ni de se marier...

Art. 31 Interdiction pour la musulmane d'épouser un non-musulman

Le mariage d'une musulmane avec un non-musulman est frappé de nullité. En revanche, l'homme musulman, lui, peut épouser jusqu'à quatre non-musulmanes....

Art. 32 Le mariage est déclaré nul si l'apostasie du conjoint est établie

En vertu d'une disposition semblable inscrite dans la loi égyptienne, la femme d'un professeur d'université a été divorcée de force de son époux, alors que ni lui, ni elle ne voulaient divorcer et que l'époux se considérait toujours comme un musulman. Mais certains de ses écrits avaient déplu aux théologiens de l'université Al-Azhar, qui les décrétèrent oeuvre d'un apostat. C'est à des aberrations pareilles que cet article du code algérien ouvre la porte : un apostat n'est en effet plus considéré comme un musulman, et ne peut donc plus être épousé par une musulmane (voir l'article précédent)...

Art. 37 Les obligations de l'époux

L'époux doit subvenir à l'entretien de l'épouse, dans la mesure de ses moyens, et doit agir en toute équité envers ses épouses s'il en a plusieurs. Le texte est ici assez vague, et autorise tous les abus.

Art. 39 Les obligations de l'épouse

L'épouse doit obéir à son mari, lui accorder les égards dûs à sa qualité de chef de famille, allaiter sa progéniture, respecter ses parents et ses proches. Il s'agit d'obligations à sens unique : le mari n'a aucune obligation de respecter les parents et les proches de l'épouse, par exemple...

Art. 48 Le divorce intervient par la volonté du mari, par consentement mutuel ou, dans certains cas seulement, à la demande de l'épouse.

"Par la volonté du mari" signifie le reconnaissance de l'antique (et unilatéral) droit de répudiation de la (ou des) femme(s) par le mari. La femme, elle, peut demander le divorce pour sept motifs, explicitement et exhaustivement énumérés à l'article 53 (voir plus loin). L'adultère, les insultes ou les sévices même graves ne comptent pas au nombre de ces motifs. En clair : le mari -qui n'a besoin d'aucun motif pour divorcer- peut tromper sa femme, l'insulter et la battre sans que cela donne à celle-ci le droit de divorcer.

Art. 52 En cas de divorce, et pour autant que le droit de garde des enfants lui ait été reconnu, la femme a droit à un logement si...

...si son mari en possède plusieurs. La femme n'a aucun droit au domicile conjugal si celui-ci est l'unique domicile du mari. Elle perd tout droit à un logement si elle se remarie ou est "convaincue de faute immorale dûment établie". Compte tenu de la grave crise du logement qui sévit en Algérie, le nombre de maris possédant plusieurs logements et donc en mesure d'en céder un à leur épouse divorcée est infime. La femme divorcée n'a donc d'autre choix que de retourner avec ses enfants chez ses parents ou chez son tuteur, lesquels sont aussi frappés par la crise du logement et ne sont souvent pas en mesure de l'héberger. Ne reste alors à la femme divorcée que la rue. Les associations féminines algériennes estiment à plusieurs milliers le nombre de femmes divorcées avec enfants qui tentent tant bien que mal de survivre avec leurs enfants dans les rues des villes d'Algérie.

Art. 53 Les raisons qui permettent à l'épouse de demander le divorce

Ces raisons sont au nombre de sept -pas une de plus- et sont en réalité bien moins fréquentes que les situations conjugales ordinaires de violence et d'oppression que cette liste ne comprend pas :

1. Pour défaut de paiement de la pension alimentaire prononcée par jugement, à moins que l'épouse ait connu l'indigence de son époux au moment du mariage;

2. Pour infirmité de l'époux empêchant la conclusion du but visé par le mariage (en clair : si l'époux est impuissant ou stérile);

3. Pour refus de l'époux de partager la couche de l'épouse pendant plus de quatre mois (l'épouse n'ayant elle aucun droit de refuser de partager la couche de l'époux);

4. Pour condamnation du mari à une peine infamante privative de liberté pour une période dépassant une année, de nature à déshonorer la famille, à rendre impossible la vie en commun et la reprise de la vie conjugale;

5. Pour absence de plus d'un an du mari, sans excuse valable ou sans pension d'entretien;

6. Pour tout préjudice légalement reconnu comme tel, notamment pour la violation des dispositions des articles 8 (obligation du mari de demander le consentement de l'épouse pour prendre une épouse supplémentaire) et 37 (obligation du mari de subvenir en fonction de ses moyens à l'entretien de son épouse et de traiter ses épouses en toute équité s'il en a plusieurs).

7. Pour toute faute immorale gravement répréhensible établie. L'adultère du mari n'est pratiquement jamais reconnu comme une telle faute.

Art. 54 Possibilité pour l'épouse d'"acheter" la séparation d'avec son mari, moyennant réparation (khol'a) fixée d'un commun accord ou, à défaut, par le juge.

Dans certains cas, la femme peut donc acheter sa liberté -comme certains esclaves aux Antilles ou en Amérique, jusqu'au siècle dernier. Encore faut-il qu'elle (ou sa famille) en ait les moyens...

Articles 58 à 60 La "retraite légale" imposée aux femmes en cas de divorce ou de veuvage

Une "retraite légale" (c'est-à-dire l'interdiction de toute fréquentation masculine hormis celle de ses plus proches parents) est imposée aux femmes en cas de divorce ou de veuvage. Cette "retraite légale" est de "trois période de pureté menstruelle" pour la femme divorcée, de quatre mois et dix jours pour la veuve. Si la femme est enceinte au moment du divorce ou du décès du mari, la "retraite légale" court jusqu'à la "délivrance", soit en fait pendant 10 mois. Il s'agit d'une sorte de mise sous séquestre de la femme. En principe, elle reste au domicile conjugal pendant la durée de cette "retraite légale", mais elle peut en être aussitôt chassée en cas de "faute immorale" (par exemple si elle a rencontré un homme qui n'est ni son père, ni son frère, ni son fils). Inutile de préciser qu'aucune "retraite légale" n'est imposée aux hommes.

Articles 64 à 66 le droit de garde des enfants

Le droit de garde des enfants revient d'abord à la mère, mais cesse à l'âge de dix ans pour les garçons et de 18 ans pour les filles. Ce droit tombe en cas de remariage de la mère. Il s'ensuit qu'en ce qui concerne ses fils, la femme risque à tout moment d'en être brutalement séparée dès qu'ils ont dix ans, si le père décide de les reprendre. En ce qui concerne les filles, leur mère perd tout droit de regard sur elles dès lors qu'elles ont atteint l'âge du mariage et que leur tuteur (leur père, ou leur beau-père, ou leur oncle, ou leur frère etc...) décide de les marier.

Droit des successions

Les dispositions du droit des successions sont d'une complexité ahurissante et font, évidemment, de la femme un être inférieur. Les filles ont par exemple droit à la moitié de la succession si elles sont filles uniques, ou aux deux tiers si elles sont deux ou plus, mais à la condition qu'il n'y ait pas de fils. Les fils recevront toujours une part double de celle des filles. Les veuves touchent le quart de la succession de leur défunt mari, mais les veufs la moitié de celle de leur défunte épouse. On notera cependant une disposition égalitaire (article 138) : les personnes "frappées d'anathème et les apostats" sont exclus de la succession, les hommes étant -pour une fois- traités comme les femmes. C'est-à-dire aussi mal.

ANNEX II

15 July 2001 Press conference of the Newly appointed Minister of Health and Population

Journal Quotidien La Liberté du 16 Juillet 2001

Le ministre de la Santé, Abdelhamid Aberkane, a dressé le 15 juillet un constat accablant de l'état du secteur algérien de la santé. Pour le ministre, "les dévalorisations du personnel de la santé ne justifient pas (des) atteintes aussi sévères aux principes et à la morale de la santé" que celles qu'il a constatées, et résumées en une phrase : "la pagaille et chacun pour soi". Selon un rapport du ministère sur la dernière décennie, la situation dans le domaine est caractérisée "par une accumulation de problèmes (...) conduisant à un destructuration progressive du système de santé" : la désorganisation du secteur est due selon ce rapport à trois facteurs essentiels : le mauvais état des équipements, le manque de spécialistes et le manque de moyens financiers. Selon le rapport, les équipements médicaux algériens n'ont pas connu de "renouvellement significatif depuis 1982", d'où de nombreuses pannes (30 % des équipements sont en panne, en moyenne : 32 % des équipements exploratoires, 24 % des équipements d'imagerie médicale, 21 % des équipements de stérilisation et de désinfection). Cette situation frappant le secteur public, les patients qui en ont la possibilité se dirigent vers le secteur privé, mais celui-ci est inaccessible à la grande majorité de la population, les plus privilégiés allant se faire soigner à l'étranger. Les établissements publics sont en outre lourdement endettés (14 milliards de dinars de dette totale, soit 1,4 milliards FF, 350 millions FS, dont 8 milliards de créances détenues par les principaux fournisseurs et prestataires publics et 3,6 milliards d'arriérés de dépenses salariales et sociales). La dépense nationale de santé est passée de 6 % du PIB dans les années '80 à 4,6 % en 1983, et 3,6 % en 2000, et n'atteint pas 58 dollars par habitant, quand la Banque Mondiale recommande un minimum de 62 dollars pour les pays en développement. Les professionnels du secteur demandent que "pour les dix années à venir, la politique nationale de santé et de population (constitue) une priorité des stratégies de développement économique, social et culturel du pays". Ils ont élaboré un avant projet de "stratégies et perspectives" pour le développement du système national de santé, préconisant une réforme globale du secteur visant les objectifs suivants : l'équité en matière de droit à la santé, l'accès de tous aux soins curatifs et préventifs, la stabilité du système, l'amélioration de ses performances. Ils proposent l'élaboration d'une carte sanitaire pour une "répartition rationnelle des ressources" à partir d'une analyse des besoins et des ressources disponibles, la réhabilitation des unités sanitaires de base, le développement des alternatives à l'hospitalisation (soins ambulatoires, soins à domicile), le développement de la sous-traitance pour les services non strictement médicaux (entretien, maintenance, restauration etc...), l'introduction de la comptabilité analytique et une meilleure orientation du financement du secteur public, en l'axant sur la satisfaction des besoins. Ils recommandent enfin le développement de la production nationale de médicaments génériques, jusqu'à assurer une couverture de 45 % des besoins nationaux en médicaments essentiels.