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Family Planning in the Pacific Islands: Current Status and Prospects for Re-Positioning Family Planning on the Development Agenda

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List of Acronyms

AusAID  Australian Agency for International Development
BCC  Behaviour Change Communication
CI  Confidence Interval
CPR  Contraceptive Prevalence Rate
DHS  Demographic and Health Survey
FSM  Federated States of Micronesia
HIV  Human immunodeficiency virus
ICPD  International Conference on Population and Development
IPPF  International Planned Parenthood Federation
IUDs  Intrauterine Device
MDGs  Millennium Development Goals
MOH  Ministry of Health
NGO  Non-Governmental Organization
NZAID  New Zealand Aid
PIC  Pacific Island Country
RHCS  Reproductive Health Commodity Security
RHS  Reproductive Health Survey
RMI  Republic of Marshall Islands
TOR  Terms of Reference
TFR  Total Fertility Rate
UNFPA  United Nations Population Fund
UNICEF  United Nations Children’s Fund
WHO  World Health Organisation
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Executive Summary

It has become evident that many developing countries in various world regions and sub-regions have experienced “stalled” fertility. This phenomenon is also evident in the Pacific Islands sub-region of Oceania. There is a group of Pacific Island countries in which Total Fertility Rates (TFR) have remained between 3.5 and 4.0 for more than a decade after initially falling rapidly from around 7 or 8 in the 1960s and 1970s. A plausible explanation for this is that family planning programmes were much stronger in the past than they are today. It would follow from that proposition that if family planning programmes were “strengthened”, the fertility transition might be induced to continue until replacement level was reached.

To explain fertility levels and trends, however, it would be essential to take into account all the factors that could contribute to fertility change (or its absence) in a specific country or group of countries, not only family planning programmes. There is a large literature that discusses the relative importance, for example, of socio-economic factors, mortality decline, as well as changes in norms and values and other “ideational” determinants of fertility. While the extent of contraception is obviously a key proximate determinant of fertility levels, the socio-economic conditions that lead to contraceptive use or non-use need to be considered in any complete explanation.

The central facilitating role that family planning programmes play in contributing to fertility decline is supported by the generally close association between contraceptive prevalence rates and total fertility rates. In some countries it appears that the stalled fertility transition is related to a slow increase, or even decline, in contraceptive prevalence.

In the Pacific, contraceptive use has remained well below the average for less developed countries, even 50 years after family planning programmes were first introduced, and in several countries contraceptive use appears to be declining. Furthermore, many countries have a high level of “unmet need” for family planning. Thus, it is plausible, therefore, that a “re-positioning” of family planning in the region would have a positive effect in reducing the level of unmet need, raising the contraceptive prevalence rate, and accelerating the decline in fertility levels.

This paper shows that among Pacific countries with populations of 100,000 or more, only Fiji and the French and American territories have experienced a continuous uninterrupted fertility decline from the peak levels reached in the 1960s and 1970s up to the present—essentially following the pattern of the Less Developed Countries as a group. In the other countries (PNG, Solomon Islands, Vanuatu, Federated States of Micronesia,
Samoa, Tonga), the pace of fertility decline slowed down once the TFR reached around 5. A “stepwise” pattern is apparent in some countries (Tonga is the extreme example) whereby the TFR has dropped, levelled-off, dropped again and levelled off again.

As of the latest estimates, several Pacific countries with quite different levels of fertility in the 1970s have converged within a narrow range between a TFR of 4.0-4.6 with little sign that a further decline is imminent. The impression is given that some type of barrier is present that prevents average fertility from declining below four children per woman.

A review of Contraceptive Prevalence Rates (CPR) for modern methods in the Pacific shows that only three out of the 14 countries for which data are available have a CPR above 40 percent and most are under 30 percent. Some countries show a decline over the past decade (Samoa and Tonga, for example); other appear to be stable or declining. It is possible that CPRs are understated in some countries because contraception obtained from private doctors or pharmacies is not included.

Attempts to explain the use of modern contraception in terms of such indicators as age, urban/rural residence, education, wealth and parity, do not show consistent patterns in cross-country comparisons. Generally women over 35 have the highest contraceptive prevalence but this is not universally the case. Similarly, the use of contraception is higher in urban areas than in rural areas in most countries but in others there is no difference. Patterns of contraceptive use by education are inconsistent: in general, more educated women are more likely to use contraception but in some countries this is not the case.

The relationship that is consistent across all countries is that between contraceptive use and parity. Among women who have yet to give birth (nulliparous), contraceptive use is extremely low in all countries (ranging from 0 to 6.6 percent). With the single exception of Kiribati, the highest CPRs are found in women with 5 or more children (ranging from a low of 23 percent in Kiribati to 60 percent in Marshall Islands. In the three countries having data on this variable, contraceptive use was significantly higher among women who had visited a health centre.

The relationship between fertility (as measured by TFR) and a number of macro-level development indicators were tested. Although all the associations were in the expected direction, the only ones that exhibited a close association were life expectancy and infant mortality. The associations between fertility and poverty, GDP per capita, CPR, were generally weak. Also, no relationship was found between the TFR and the teenage fertility rate on cross-country comparisons. This finding suggests that teenage fertility is determined by a different set of factors than general fertility. That is, even if overall fertility is declining, it doesn’t necessarily mean that teenage fertility will also decline. The two rates appear to be loosely connected in the Pacific.
If contraceptive use is generally low, the reason could be that women desire many children and therefore are not strongly motivated to use contraception other than to space births. Conversely, women may wish to limit the number of children that they have but for one reason or another are not using contraception. Women who wish to space births or stop having children but are not using contraception are said to have an “unmet need” for family planning. Among the seven countries that have comparable data from recent DHS, unmet need ranges from a low of 7.7 percent in Solomon Islands to a high of 46 percent in Samoa.

Patterns of unmet need by age tend to be quite varied among these countries. In some (Samoa and PNG) unmet need rises with age whereas in others (Marshall Islands and Solomon Islands) the pattern is reversed. It would be expected that unmet need would be higher in rural areas with poor access to contraception but this is not consistently the case. Similarly unmet need does not vary much by education except in Papua New Guinea where women with no education have the highest rate of unmet need.

Data from recent DHS conducted in seven Pacific Island countries were explored to attempt to explain why women who wish to space their pregnancies or stop childbearing are not using contraception to do so (i.e., they have an unmet need for family planning). An attempt was made to classify responses to the question of why women who are not currently using contraception, for whatever reason, do not intend to use contraception in the future according to the “Ready-Willing-Able” framework. This framework suggests that women may be “ready” to use contraception in the sense that they can see that it is advantageous to them to use it but may be “unable” to do so due to lack of access to a contraceptive method or “unwilling” because of fear, health concerns, religious opposition and so forth.

In six of the countries having such data, the vast majority of women gave responses suggesting that they were “unwilling” to use contraception, not “unable”. The exception was Papua New Guinea where 51 percent of women responded that they had insufficient knowledge or didn’t have access to a contraceptive method. In several countries (Marshall Islands, Solomon Islands, Kiribati and PNG) a significant proportion of women specified other reasons or “didn’t know” why they were not intending to use contraception. suggesting ambivalence, uncertainty or confusion or lack of confidence about the use of contraception.

Of the possible reasons for being unwilling to use contraception, “fear of side effects” was the most common response. In Tuvalu, 77.4 percent of women who did not intend to use contraception cited a health-related reason such as side effects or “health”. In two countries (Kiribati and Nauru) religious opposition was the main reason given while in Samoa it was overwhelmingly “respondent opposed”. Opposition from husbands or partners was not a significant response and only reached a maximum of 5.5 percent in Tuvalu.
The programme implications of the findings from recent DHS are clearly not the same for every country because of the variation in the relationships between TFR, contraceptive prevalence, unmet need, rural-urban residence and the reasons women give for why they are unwilling to use contraception. The obvious programme response to the most frequently-stated issue—health concerns or side effects is to improve counselling and assessment for suitability by family planning nurses as well as ensuring that alternative methods are available for women who experience difficulties with a method. Generally, the provision of full information in advance of the possible side effects of a method will reduce discontinuation and dissatisfaction.

In countries where specific groups can be identified that have a high level of unmet need (such as poor, uneducated, young or rural women) programme responses can be tailored to such disadvantaged or vulnerable groups. In other settings, targeting may not be possible because of the lack of variation between groups and programme responses may need to be directed at improving quality of service across the board for all groups.

There is a range of other barriers to the use of contraception in the Pacific from the service provision side that is not captured by DHS questions. These include the unwillingness of health workers to provide contraception to unmarried individuals, even where the law and government policy specify that adolescents have a right, above a certain age (which varies by country), to receive contraception. Many public health workers apparently see their role as guardians of the moral order (as they perceive it) and make a personal or emotional decision on who has a right to be supplied with contraception and, by implication, be sexually active.

**Recommendations**

**Improve information and knowledge through research**

Health information systems to ensure that all sources of contraception are captured to provide a more accurate and complete measure of contraceptive use. Dedicated RH surveys in selected countries to verify contraceptive use patterns and their determinants.

Conduct further analysis of DHS data to identify the determinants of unmet need for family planning and to resolve counter-intuitive and contradictory survey results.

Conduct qualitative studies using such methods as focus groups and intensive interviews to determine the basis for opposition to the use of family planning.

Further research on problems of access in rural areas in those countries in which DHS results suggest that unmet need is unaffected by urban-rural residence.
Conduct qualitative studies to develop approaches to family planning education and awareness for poor, and poorly educated or illiterate women.

Review of the socio-cultural obstacles to contraceptive use among young, unmarried people (adolescents) and older women, both of which groups have special needs.

Assess the extent to which family planning and sexual and reproductive health programmes are identifying those groups that are disadvantaged in terms of access for reasons of cost, transportation or low levels of education.

**Improve the quality, scope and accessibility of FP services**

Strengthen primary health services (as endorsed in the *Madang Commitment* by Ministers of Health in 2009), particularly in rural areas, including the provision of incentives for health personnel to work in remote areas (housing, remote area bonuses).

Ensure that family planning services remain free at service delivery points.

Expand and improve training programmes for RH nurses and other health workers to improve the quality of counselling provided to clients prior to adopting a contraceptive method.

Ensure that all service delivery points have available the widest practicable choice of contraceptive methods and that RH/FP nurses have the skills and correct attitudes to provide comprehensive and accurate counselling.

Greater use of out-reach, including home visits, particularly to follow-up on women with health concerns. Explore methods to encourage more frequent visits to health facilities.

Promote condom programming including the development of a rapid needs assessment toolkit for condom programming and promoting community based distribution through training of peer educators and supply of commodities.

**Address socio-cultural barriers**

Emphasize rights-based approach in training for family planning and other health staff, including rights of adolescents.
Remove barriers to supplying contraceptives to sexually active adolescents so as to enable them to achieve their educational and life aspirations while taking into account their reproductive needs.

Design tailored methods for providing contraceptives to young people in settings where health care providers and pharmacists are themselves the main barriers facing young people in accessing the supplies and services they need.

Improve outreach for condom programming, particularly for most at risk young people, involving parents and religious and cultural leaders, given their status as gatekeepers in many Pacific societies, as well as the young people themselves.

Programming efforts should seek to identify the most at risk young people. A network of sustainable NGOs focusing on behavioural change communication, provision of IEC materials and contraceptives is needed in most countries. Social marketing techniques should also be explored in different communities.

Strengthen policies and strategies

Reinforce the central role of family planning in reproductive health policies and programmes. Clarify the relationship between reproductive health and family planning.

Place greater emphasis on reproductive rights, including the rights of adolescents and older people to receive services.

Identification of national figures as advocates for sexual and reproductive health, including family planning, in all countries.

Male involvement in family planning decisions to be encouraged through appropriate training and programmes.

Advocate for gender equality and the rights of women and girls to achieve a high standard of sexual and reproductive health, including access to family planning methods of their choice. Universal primary education for girls where it has not been achieved.

Promote access for all women and men, especially young people, living in peri-urban and informal settlements, rural areas and outer islands, and disadvantaged or marginalized groups, to a full range of sexual and reproductive health information, family planning services and commodities. Improve awareness about high risk behaviour and culturally determined behaviours that act as barriers to the use of services.
**Improve commodity security**

Intensify efforts to improve RH Commodity Security through training in logistics, inventory management, warehousing, and appropriate staffing, as per commodity security plans in each country.
A. INTRODUCTION

1. Family planning and fertility decline: research questions

a. Family Planning and contraception

The IPPF defines family planning as:

*The conscious effort of couples and individuals to plan for and attain their desired number of children and to regulate the spacing and timing of their births. Family planning is achieved through contraception and through the treatment of involuntary infertility.*

This simple and clear definition belies the long and tortured history through which family planning has become accepted as normal behaviour across a wide spectrum of countries, both developed and developing, among all social classes and ethnic groups, and among members of all major world religions. As of 2008, 63 percent of married women in the world are using family planning, and 90 percent of these are using a modern method. The worldwide use of contraception has doubled between 1980 and 2008 and is currently increasing at about 1 percent per year. To the pioneers who commenced the family planning movement in the late 19th and early 20th Century these numbers and trends would be little short of amazing.

However, the undoubted success of the family planning movement must be qualified. The use of contraception varies widely at the country level—from 86 percent of married women in China to under 2 percent in Chad. In West Africa as a whole, only 9 percent of women use a modern method of family planning and in Middle Africa only 7 percent. Outside Africa, low contraceptive use can be found in Afghanistan (8.5 percent), East Timor (8.6 percent) and Azerbaijan (11.9 percent).

It is apparent that the world average contraceptive use rate is inflated by very high contraceptive prevalence in China. Among the less developed countries, contraceptive use drops from 56 percent of married women to 45 percent when China is excluded. Thus less than half of all married women in less developed countries other than China are using contraception. Furthermore, of the 210 million pregnancies that occur annually worldwide, only 47 percent result in a planned birth. Twenty-two percent of pregnancies end in an induced abortion and 17 percent are either unwanted or mistimed (Shah 2002). In less developed countries, 100 million married women would prefer to avoid a pregnancy but

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3 Population Reference Bureau (2008)
are not using any form of contraception to achieve this (Ashford 2003). Such women are said to have an “unmet need” for family planning.

An unmet need for family planning not only places women at risk of having an unwanted birth, but also increases the risk of maternal death or morbidity. Recourse to an illegal abortion increases the risk of maternal death. Unwanted births pose risks for children’s health and well-being, including the possibility of neglect and infant death.

b. Stalled fertility transitions

It has also become evident that many developing countries in various world regions and sub-regions have experienced “stalled” fertility transitions (Bongaarts 2008). This phenomenon is also evident in the Pacific sub-region. There is a sub-group of Pacific Island countries in which TFRs have remained between 3.5 and 4.0 for more than a decade after initially falling rapidly from around 7 or 8 in the 1960s and 1970s. A plausible explanation for this is that family planning programmes were much stronger in the past than they are today. It is a short step from that proposition to the view that if family planning programmes were “strengthened”, the fertility transition might be induced to continue until replacement level was reached. Such arguments need to be treated with caution. Firstly, to understand fertility levels and trends it is essential to take into account all the factors that could contribute to fertility change (or its absence) in a specific country or group of countries, not only family planning programmes. There is a large literature that discusses the relative importance, for example, of socio-economic factors, mortality decline, as well as changes in norms and values and other “ideational” determinants of fertility. While the extent of contraception is obviously a key proximate determinant of fertility levels, the socio-economic conditions that lead to contraceptive use or non-use need to be considered in any complete explanation.

The central facilitating role that family planning programmes play in contributing to fertility decline is supported by the generally close association between contraceptive prevalence rates and total fertility rates. In some countries it appears that the stalled fertility transition is related to a slow increase, or even decline, in contraceptive prevalence. These circumstances have led to various efforts to “re-position” family planning on national development agendas. This implies that family planning should be given higher priority within reproductive health programmes, including more funding.

Many of these concerns are applicable to the Pacific Islands region. As already noted, in several countries, the fertility transition has slowed or “stalled”. In some cases there has been no change in the level of fertility in two decades. Similarly, contraceptive use has remained well below the average for less developed countries, even 50 years after family planning programmes were first introduced, and in several countries contraceptive
use appears to be declining. Thus, it is plausible that a “re-positioning” of family planning in the region would have a positive effect in reducing the level of unmet need and facilitating the further decline in fertility levels (Robertson 2009).

c. Family planning and the ICPD Programme of Action

To re-position family planning on the development agenda of Pacific Island countries, as in other world regions, it is first necessary to understand the current status of family planning programmes and to identify the factors that have contributed to this status. This is more complex than it first appears. Prior to the ICPD ‘94 plan of action (POA), the principle measure of success of a family planning programme was the Contraceptive Prevalence Rate or the “acceptor” rate. In most countries it could be assumed that there was a reasonably close relationship between the CPR and fertility levels (as measured by the TFR). If the CPR was rising as a result of family planning programmes, then reduced fertility could be expected. Thus, family planning reduced fertility and the reduction of fertility contributed to reduced population growth and more rapid economic growth. After ICPD ‘94, both the CPR and the TFR lost favour as policy targets because the use of such statistical measures appeared to violate the principle of voluntarism and the aim of meeting individual needs. The ICPD POA encouraged countries to move away from a macro-level focus on statistical indicators and the use of incentives and disincentives by family planning programmes to a micro-level approach focussed on the freely chosen reproductive goals of individuals and families. This was interpreted by many to mean that national population policies should not employ fertility or growth targets at all. A more extreme position was that population policies were no longer necessary and countries should be discouraged from formulating them.

The ICPD POA, in fact, attempted to maintain a fine balance between population goals at the societal level and the reproductive rights of individuals and couples. The reduction of population growth was treated as a “legitimate interest” of governments, particularly in the context of environmental sustainability and the reduction of poverty; but the legitimacy of this interest was conditional on the extent to which demographic rates and social, economic and environmental goals were imbalanced. Thus, “stabilization” of population growth rather than its rapid reduction was the key policy objective. While family planning is mentioned in various contexts, and family planning makes up a significant section in the chapter on Reproductive Rights and Reproductive Health, the ICPD POA goes to some length to insulate family planning from macro-economic concerns and to place it firmly within the context of reproductive health and rights. The principle of “informed free choice”, it argued, should govern family planning programmes. If education and services are provided, individuals can be expected to “act responsibly in the light of their own needs and those of their families and communities” (UN 2004, para 7.12). The
implication was that governments do not need to set the reproductive goals of individuals and families and should not.

Importantly, this argument was supported by a comparison of the fertility and contraceptive use targets contained in the development plans of 12 developing countries and the level of fertility that would be achieved only if the expressed fertility desires of individual women were achieved. This analysis by Sinding (1993) showed that by reducing the unmet need for family planning fertility levels would be the same, or lower, than the demographic targets specified in government development plans. He concluded:

Family planning still needs quantitative objectives by which to assess their performance. But these objectives can and should be addressed in terms of satisfying people’s stated needs rather than planners’ notions of what a society’s birthrate should be.

This principle was accepted in the formulation of the ICPD programme of action and has been the underlying philosophy of family planning programmes since then. Addressing unmet need rather than demographic targets has been the cornerstone of reproductive health and family planning programmes since ICPD ‘94.

In harmony with this voluntaristic formulation, governments were expected to assess the extent of the “unmet need” for family planning and to meet these needs by, among other measures, “removing all the major remaining barriers to the utilization of family planning services” (UN 2004, para. 7.19). The POA further states that “government goals for family planning should be defined in terms of unmet needs for information and services” (UN 2004, para. 7.12). The ICPD +5 review of the POA was more explicit and proposed that “where there is a gap between contraceptive usage and the proportion of individuals expressing a desire to space or limit their families, countries should attempt to close this gap by at least 50 per cent by 2005, 75 percent by 2010 and 100 percent by 2015” (UN 2004, para. 58).

The advent of the Millennium Development Goals (MDGs) saw the re-introduction of the CPR into international development frameworks, initially in the context of reducing exposure to HIV and AIDS and ultimately as an indicator of the target of ensuring “universal access to reproductive health”, along with the extent of “unmet need” for family planning for MDG 5b. It is important to note that in the MDG framework the CPR is not itself a target but is an indicator used to monitor progress toward universal access to reproductive health. On the other hand, ICPD+5 proposed specific numerical targets for the reduction of unmet need, which, it stated, should be eliminated entirely by 2015.
2. Explanatory frameworks

As already noted, any explanation of a slow-down in the fertility transition must go beyond family planning programmes as such; but the issue of family planning and the unmet need is an important point of departure. In the Pacific sub-region, however, the measurement of unmet need has received very little attention until recently. Only one country, Papua New Guinea, has a measure for two points in time. Seven Pacific Island countries have conducted DHS in the past four years that provide data on unmet need, but the analysis of these data has so far been quite limited. It is also important to acknowledge that the concept of unmet need is far from simple (Bushan 1997). The same level of unmet can have different meanings, depending on the demographic and social context. Analysis of unmet need for programming purposes needs to be complemented with measures of fertility preferences and the demand for contraception. Furthermore, a purely descriptive analysis is insufficient. It is essential to understand the causes of unmet need and how these vary among different groups and in different circumstances (Bushan 1997).

To facilitate such understanding it is essential to have an explanatory framework, or “theoretical model” to guide analysis. In particular, it is necessary to have a model that is not constrained by a specific disciplinary approach—such as economics, sociology or communication studies.⁴

A relatively simple, micro-level model of the factors conducive to the use of contraception to limit fertility was in fact elaborated by Ansley Coale nearly four decades ago (Coale 1973). Coale specified three “prerequisites” that had to be met before individuals would take up family planning leading to a major decline in fertility:

(1) Fertility had to be “within the calculus of conscious choice”. In other words, parents had to believe that it was an acceptable mode of behaviour to weigh the advantages or disadvantages of having another child.

(2) Reduced fertility had to be perceived as economically or socially advantageous to individual couples.

(3) Effective techniques of fertility reduction must be available. Practices that would in fact prevent births have to be known and there must be sufficient communication between spouses and sufficient sustained will in both to employ them successfully.

⁴ Explanatory models of fertility frequently appear to take an “essentialist” position, presupposing that fertility decisions are essentially “economic”, “social” or “cultural” in nature. But disciplinary approaches merely provide different ways of looking at aspects of a phenomenon, the essence of which cannot ultimately be captured by a single model or group of models.
As recently noted by Lesthaeghe and Vanderhoeft (2001), Coale’s conceptualization of the preconditions for sustained fertility decline received no further attention in the decades since it was introduced; yet it provides a useful means of integrating the approaches of various disciplines, particularly those of economics, sociology, anthropology and communication studies. Lesthaeghe and Vanderhoeft proceed to reconceptualise Coale’s model in terms of three dimensions relating to “Readiness” (Coale’s prerequisite 2), “Willingness” (prerequisite 1) and “Ability” (prerequisite 3). In short, the adoption of family planning to control the number or timing of births that a couple will have requires that they be “ready, willing and able’ (R,W,A for short)’. A further elaboration of these categories may be useful.

**Readiness.** This precondition reflects the approach of the economics school, which treats childbearing as a utilitarian choice involving the weighing of advantages and disadvantages (or costs and benefits), usually for the parents themselves. The cost-benefit framework can also incorporate situations in which the balance of advantages and disadvantages can be assessed from the perspective of the children themselves. From a “supply-demand” viewpoint, readiness can also be stimulated in circumstances in which the “supply” of children is increasing due to the increasing survivorship of children.

**Willingness.** An individual or couple may be ready to limit childbearing and adopt family planning if they have decided that the advantages of doing so outweigh the disadvantages, but they may not be willing to do so if such behaviour is contrary to the norms and values of the community or extended family in which they live. This precondition concerns cultural precepts and attitudes that determine whether or not interference with “nature” is considered to be legitimate behaviour. These precepts may derive from religion or from broader concepts such as “tradition” or “custom” and be accompanied by sanctions for non-compliance. At the individual level, the willingness to go against community norms will depend on psychological dispositions. Concerns relating to risks to health may also be included in this category. A perceived risk to health or the possibility of uncomfortable “side effects” may contribute to an individual’s unwillingness to use contraception, even if it would be advantageous to do so.

**Ability.** An individual or couple may be ready (R) and willing (W) but not able (A) to practice family planning because of a lack of knowledge of contraceptive methods or the inability to obtain the necessary supplies and services. Ability is a multi-dimensional concept that includes not only the knowledge of a contraceptive method but also the means of obtaining the method, such as the availability of transport to a service facility or the money to pay for it. Family planning programmes generally focus on ability or access,
rather less on willingness, and much less on readiness—which may be considered to be outside the domain of family planning as normally understood.

One advantage of the R-W-A conceptualization is that data collected in Demographic and Health Surveys (DHS) can be used to measure the impact of each of the pre-requisites. Furthermore, individual respondents can be classified as to which of the three groups they fall into and the results can be aggregated at the national or sub-national level.

3. Purpose of this paper

This paper attempts to place recent DHS results into the framework proposed by Lesthaeghe and Vanderhoeft in order to contribute to a better understanding of low contraceptive use, unmet need and the stalled fertility transition in some Pacific Island countries. At the same time, the paper explores some of the socio-economic factors that have been measured in recent Demographic and Health Surveys that may account for variations in contraceptive use and unmet need among different groups. Finally, the paper considers some of the “macro-level” factors that might account for variations in the level and trends in fertility among Pacific Island countries. The overall purpose is to contribute to the development of strategies to reduce unmet need for contraception in accordance with the principles laid out in the ICPD Programme of Action. By analysing the socio-economic factors at the micro- and macro-level, it is possible that the specific role of family planning programmes can be more precisely stated.

4. The geographical and demographic context

The island nations of the Pacific are shown in Figure 1. The Pacific Islands, together with Australia and New Zealand, make up the region conventionally known as “Oceania”. The Pacific Islands are also conventionally divided into three sub-regions: Melanesia, Micronesia and Polynesia. These divisions reflect both ethno-cultural variations and geographical characteristics. Melanesian people are descendants of the very first settlement of the Pacific which commenced approximately 40,000 years ago in New Guinea. Melanesians, along with more recent migrants, occupy the largest island nations of Papua New Guinea, Fiji, Solomon Islands, New Caledonia and Vanuatu. Micronesians are descendants of a much more recent settlement pattern from Southeast Asia (primarily the Philippines and Taiwan) and occupy the islands lying north of the equator and spread across the Pacific on an east-west axis. Most of the islands occupied by Micronesians are small and of atoll formation, although some are of volcanic origin. Polynesians are descendants of people who entered the Pacific from Southeast Asia 5,000 years ago and occupied the islands located from the central Pacific east of Fiji to Pitcairn Island in the eastern extremity of the region.5

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5 Hawaii and New Zealand were originally settled by Polynesians but are not included in the definition of Polynesia for the purpose of this paper.
Although originally formulated by 19th century ethnographers and explorers, the distinction between the sub-regions of the Pacific remain important today due to variations in social organization, culture and geography. Most importantly for population issues, the Melanesian sub-group makes up the largest proportion of the land area of the Pacific Islands region. In general, Melanesia is a resources-rich area, Polynesia less so and Micronesia much less so. The different resource endowments of the sub-regions have played a significant role in the way in which population issues, including fertility, have been addressed—both in traditional times and in the modern era.

The total population of the 22 countries and territories of the Pacific Islands sub-region is currently 9.85 million and is growing at approximately 1.9 percent per year (Table 1). At this growth rate the population will reach 10.0 million by the end of 2011. Current projections suggest that the population of the region could increase by another 6.5 million by 2050 before stabilizing (SPC 2010).

Population growth rates vary widely between countries and sub-regions. At the country level, the highest growth rates are occurring in the Melanesian countries of Papua New Guinea (2.2 percent) Solomon Islands (2.7 percent) and Vanuatu (2.5). These three countries presently account for 89 percent of the population growth of the region. At the other end of the scale are the Polynesian countries of Cook Islands, Samoa, Tonga and Tuvalu with annual growth rates of less than 0.5 percent. Some Micronesian countries, such as FSM, Marshall Islands and Palau also have low growth.

At the sub-regional level it is clear that Melanesia accounts for most population growth in the region (92.5 percent), and Melanesian growth is dominated by the largest country in the Pacific—Papua New Guinea. Future population growth in the Pacific will be concentrated in the Melanesian sub-region. Population growth in the Micronesian and Polynesian sub-regions is currently concentrated in Guam and French Polynesia, respectively. The other countries in these sub-regions have low population growth with the exception of Nauru and Kiribati.

A distinctive feature of the demography of Micronesia and Polynesia, which is relevant to the subject of this paper, is the relationship between natural increase and population growth. With some exceptions, most of the countries that have low population growth are subject to significant external migration, which offsets a considerable proportion of natural increase. In Samoa, Tonga and the Federated States of Micronesia, for example, external migration offsets about 80 percent of natural increase; in Marshall Islands, 90 percent of current natural increase is offset by external migration. The rate of natural increase in these countries remains around 2 percent per year. In the absence of external migration flows these countries would be subject to significant population increase in the coming years.
Figure 1: Oceania and the Pacific Islands
<table>
<thead>
<tr>
<th>Sub-region/ Country</th>
<th>Total population 2010</th>
<th>Projected population 2020</th>
<th>Current population growth rate (%)</th>
<th>Rate of natural increase (%)</th>
<th>Net migration rate (%)</th>
<th>Annual increment (number)</th>
<th>Percent of annual increment</th>
<th>Percent urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pacific Islands</td>
<td>9,853,023</td>
<td>11,801,200</td>
<td>1.9</td>
<td>2.0</td>
<td>-0.1</td>
<td>183,688</td>
<td>100.0</td>
<td>23</td>
</tr>
<tr>
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<td>10,465,000</td>
<td>2.0</td>
<td>2.1</td>
<td>-0.1</td>
<td>170,169</td>
<td>92.5</td>
<td>19</td>
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<tr>
<td>Fiji</td>
<td>847,793</td>
<td>890,400</td>
<td>0.5</td>
<td>1.3</td>
<td>-0.8</td>
<td>4,219</td>
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<td>51</td>
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<tr>
<td>New Caledonia</td>
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<td>1.1</td>
<td>0.5</td>
<td>4,046</td>
<td>2.2</td>
<td>63</td>
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<td>8,267,400</td>
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<td>2.2</td>
<td>0.0</td>
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<td>116,500</td>
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<td>1.9</td>
<td>-1.5</td>
<td>455</td>
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<td>1.3</td>
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<td>59,500</td>
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<td>-2.3</td>
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<td>-1.6</td>
<td>-18</td>
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<td>21,800</td>
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<td>0.6</td>
<td>0.0</td>
<td>119</td>
<td>0.1</td>
<td>77</td>
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<tr>
<td>Polynesia</td>
<td>663,795</td>
<td>712,000</td>
<td>0.8</td>
<td>1.6</td>
<td>-0.8</td>
<td>5,086</td>
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<td>37</td>
</tr>
<tr>
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<td>65,906</td>
<td>74,600</td>
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<td>1.9</td>
<td>-0.7</td>
<td>781</td>
<td>0.4</td>
<td>50</td>
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<tr>
<td>Cook Islands</td>
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<td>16,400</td>
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<td>1.2</td>
<td>-0.7</td>
<td>72</td>
<td>0.0</td>
<td>72</td>
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<tr>
<td>French Polynesia</td>
<td>268,767</td>
<td>297,600</td>
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<td>1.2</td>
<td>0.0</td>
<td>3,176</td>
<td>1.7</td>
<td>51</td>
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<tr>
<td>Niu                   es</td>
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<td>1,200</td>
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<tr>
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<td>11,800</td>
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<td>58</td>
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<td>47</td>
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<tr>
<td>Wallis and Futuna</td>
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<td>14,300</td>
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<td>1.1</td>
<td>-0.8</td>
<td>-43</td>
<td>0.0</td>
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</table>

**Source:** Secretariat of the Pacific Community, 2009 and 2010 Population data sheet. Accessed at [http://www.spc.int](http://www.spc.int). And author’s estimates. Note: Pitcairn Islands (Pop: 66) and Tokelau Islands (Pop: 1,151) are excluded from the table.
The extent of urbanization in the Pacific Islands region varies widely. Some countries (Guam, Nauru and Northern Mariana Islands) are classified as 90-100 percent urban. In the larger Melanesian countries of Papua New Guinea and Solomon Islands the level of urbanization is low with more than 80 percent of the population living in rural areas, mostly in villages along traditional lines. Samoa and Tonga, in Polynesia, also have a low level of urbanization with 79 and 77 percent, respectively, of the population classified as rural. Another situation is represented by Cook Islands, Kiribati, Marshall Islands and Tuvalu, in which between 44 and 65 percent of the population is living on one relatively urbanized island (usually the centre of government) with the balance distributed across a number of widely scattered islands.

With the exception of the larger Melanesian countries, Pacific Island countries have high social indicators relative to the level of per-capita income (Table 2). Several countries have life expectancy above 70 years and high literacy. The incidence of absolute poverty is low in the Pacific but “basic needs” poverty ranges from 13 percent in Niue to 50 percent in Kiribati. Access to improved water sources and sanitation is good in most countries but more than half the population of Papua New Guinea, Solomon Islands, FSM and Kiribati lack adequate sanitation.

Most of the independent countries of the Pacific would be classified as lower-middle income but Papua New Guinea, Solomon Islands, Kiribati and Vanuatu are low-income countries. While some countries have experienced real economic growth, in most the pace of economic growth over the past two decades has been slow.
<table>
<thead>
<tr>
<th>Sub-region/Country</th>
<th>Expectation of life at birth (both sexes)</th>
<th>GDP per capita ($US) PPP (2007)</th>
<th>GNI per capita ($US) Atlas method(2007)</th>
<th>Percent of population below basic needs poverty line</th>
<th>Proportion of population using improved water source and sanitation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Melanesia</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Fiji</td>
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<td>4,072</td>
<td>3,750</td>
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<td>92.7</td>
</tr>
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<td>New Caledonia</td>
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<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Papua New Guinea</td>
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<td>850</td>
<td>39.6</td>
<td>40.0</td>
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<td>750</td>
<td>22.7</td>
<td>29.8</td>
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<td>4,052</td>
<td>1,840</td>
<td>15.9</td>
<td>75.3</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSM</td>
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<td>2,879</td>
<td>2,280</td>
<td>29.9</td>
<td>94.0</td>
</tr>
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<td>--</td>
<td>--</td>
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</tr>
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<td>20.0</td>
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<td>81.7</td>
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<td>1999-01</td>
<td>--</td>
<td>--</td>
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</tr>
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<td></td>
<td></td>
<td></td>
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<td>--</td>
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<tr>
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<td>71.2</td>
<td>1996-02 89,100</td>
<td>9,986</td>
<td>28.4</td>
<td>95.1</td>
</tr>
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<td>French Polynesia</td>
<td>74.1</td>
<td>2005-07</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Niue</td>
<td>71.5</td>
<td>2001-06</td>
<td>--</td>
<td>13.0</td>
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</tr>
<tr>
<td>Wallis and Futuna</td>
<td>74.9</td>
<td>1996-03</td>
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### Table 3: Reproductive health and vital indicators for Pacific Island countries

<table>
<thead>
<tr>
<th>Country/Sub-region</th>
<th>Total Fertility Rate</th>
<th>Teenage Fertility Rate</th>
<th>Reference year for TFR and Teen fertility</th>
<th>Infant Mortality Rate</th>
<th>Reference year for IMR</th>
<th>Contraceptive prevalence rate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Pacific</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Melanesia</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiji</td>
<td>2.6</td>
<td>37</td>
<td>2003</td>
<td>17.1</td>
<td>2006-08</td>
<td>43 (2007)</td>
</tr>
<tr>
<td>New Caledonia</td>
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<td>20</td>
<td>2007</td>
<td>6.1</td>
<td>2007</td>
<td>na</td>
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<tr>
<td>PNG</td>
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<td>65</td>
<td>2001-06</td>
<td>56.7</td>
<td>2001-06</td>
<td>24 (2006)</td>
</tr>
<tr>
<td>Vanuatu</td>
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<td>64</td>
<td>2009</td>
<td>25.0</td>
<td>2001</td>
<td>38 (2008)</td>
</tr>
<tr>
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<td></td>
<td></td>
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<td>FSM</td>
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<td>48</td>
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<td>37.5</td>
<td>2000</td>
<td>26 (2007)</td>
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<td>45.8</td>
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<td>25 (2007)</td>
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<td>69</td>
<td>1999-01</td>
<td>4.9</td>
<td>2006-08</td>
<td>na</td>
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<td>54</td>
<td>2000</td>
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<td>Cook Is</td>
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<td>62</td>
<td>2005-06</td>
<td>11.6</td>
<td>2005-09</td>
<td>46 (2005)</td>
</tr>
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<td>5.8</td>
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<td>2006</td>
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<td>27 (2009)</td>
</tr>
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<td>17.3</td>
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<td>22 (2007)</td>
</tr>
<tr>
<td>Wallis and Futuna</td>
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<td>9</td>
<td>2008</td>
<td>5.2</td>
<td>2005-08</td>
<td>na</td>
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</table>

B. FERTILITY LEVELS AND TRENDS

1. Fertility trends
   a. Has fertility decline “stalled” in the Pacific?

   Fertility levels in most Pacific Island countries did not reach their peak until the 1960s or 1970s. In general, fertility peaked at a considerably higher level in the Pacific than in other developing regions. In Samoa, Tonga and Kiribati, for example, the TFR reached well above 7 before it started to fall. In the Cook Islands the TFR peaked at 7.9 at the national level and at 9.2 in some outer island groups (UNESCAP 1982). This compares with a TFR of 5.9 for the less developed countries as a group around the same time. Thus, fertility in the Pacific had much further to fall than in other less developed regions. And in many countries it did fall rapidly from peak levels.

   An extreme example of the speed with which fertility fell after it peaked in the 1960s can be seen in the case of the Micronesian country of Kiribati. As illustrated in Figure 2, in the 1960s, the TFR fluctuated between 6.5 and 7.5. Between the late 1960s and mid-1970s, however, it dropped by almost three births to 4.5, an extremely rapid decline. For the next 25 years, however, the TFR fluctuated between 4 and 5, and only dropped below 4 in 2000.

   Figure 2: TFR trends in Kiribati 1950s to 2005 based on census estimates

   ![Graph showing TFR trends in Kiribati from 1950 to 2005](Source: Secretariat of the Pacific Community, Statistics and Demography Programme; Levin, M 2005.)
While Kiribati is an extreme case, Figure 3 shows that several of the larger Pacific countries (>100,000 population), including FSM, Samoa, Tonga and Solomon Islands have had similar trends. After peaking between 1960 and 1975, the TFR dropped steadily (in some cases rapidly) in these countries before levelling-off between 4 and 5 in the 1990s (Rallu & Robertson, 2008). Although there is no technical definition of what constitutes a “stalled” fertility transition there is certainly a strong impression in these countries that the pace of fertility decline slowed-down significantly after reaching a TFR of 5.\(^6\)

**Figure 3: Trends in TFR in 10 Pacific Island countries 1960-2010**

The periods in which fertility decline has stalled vary from country to country: in Tonga fertility decline stalled for 10 years between 1970-75 and 1980-85 when the TFR stood at around 5.5. Similarly, fertility decline in Papua New Guinea stalled between 1975-80 and 1980-85 at a similar level. In Samoa, the TFR stalled at just under 5 between 1975-80 and 1995-00. In Tonga the decline in TFR stalled again at around 4.2 in the 1995-00 period and has remained at that level since. Although a slow-down in the pace of fertility decline can be expected toward the latter stages of

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\(^6\) In this paper a “stalled” transition is defined simply as a period during which little change in TFR is evident by visual inspection of graphs. A more precise measure that includes assessment of statistical significance, as found in Bongaarts (2008), has not been attempted, but is necessary before final conclusions can be drawn.
the fertility transition, the reduced pace of fertility decline in these countries has occurred less than halfway through the transition.

It is also apparent from Figure 3 that there is another group of countries (comprising Fiji, French Polynesia, Guam and New Caledonia), in which the TFR did not become stalled but continued to decline beyond the 4-5 plateau before slowing down between 2 and 3. It is noteworthy that three of these countries are dependent territories of France or the United States, Fiji being the only independent country in this group. In these countries the TFR has followed a pattern of decline which is very similar to that observed in the less developed countries as a group (Figure 3).

Figure 4 shows that among the politically independent countries with populations of 100,000 or more, it is only in Fiji that the TFR followed a similar course to the LDCs as a whole. In fact, the rate of decline in Fiji exceeded that of the LDCs for the period 1960-1990. Fiji’s rapid fertility decline can be explained in part by the fact that the Indo-Fijian population (which has made up between 40 and 50 percent of Fiji’s population over this period) experienced an extremely rapid decline in fertility from the 1970s and the TFR for this group has now dropped to below replacement level. There is little doubt that Indo-Fijians were quick to take up family planning when government programmes were first introduced. This can in turn be attributed to the economic and political situation of the ethnic Indian population of Fiji, which was weakening after the first military coup took place in 1987. Indo-Fijians followed a multiple strategy of reducing fertility, investing in the education of fewer children and seeking opportunities to emigrate abroad where employment was available.

There is also little doubt that socio-economic factors have also contributed to the steady decline in fertility in Guam and the French territories. These countries are heavily subsidised by their metropolitan centres (directly or indirectly) and have relatively high per capita incomes. Similarly, both public and private medical systems are well developed and health insurance arrangements are comparable with developed countries. Such conditions are not easily replicable in the larger independent countries of Western Melanesia where fertility levels remain higher, average incomes are much lower and the delivery of primary health services is much more difficult. The Polynesian countries of Tonga, Samoa and Tuvalu are already linked to more developed countries such as New Zealand, Australia and the United States through migration, and therefore benefit from the flow of expertise, development aid, and intra-family transfers. But these countries are not likely to
become further incorporated into metropolitan centres or to receive large-scale subsidies from them other than in the form of private remittances and official aid.\textsuperscript{7}

Figure 4: Long-term fertility trends in the Pacific, independent countries only\

\*Data are not available for countries under 100,000 population from this source
Source: UNDESA (2008)

b. Why has fertility decline stalled in some Pacific countries?

Several arguments have been proposed to explain why fertility transitions have “stalled” in some independent Pacific countries while proceeding quite rapidly in others. It has been suggested that the stalled fertility declines in some Pacific Island countries and the relatively slow declines in others can be attributed to weaknesses in family planning programmes, whether operated by governments or NGOs. Some have attributed this weakness to the diversion of family planning funding in particular, and reproductive health funding in general, to deal with the HIV epidemic. While this may be true in some contexts, it is not a sufficient explanation in others. Other

\textsuperscript{7} It is important to note that abortion is legal in the French territories and in incorporated U.S. territories such as Guam. Elsewhere in the Pacific abortion is illegal except to save the life of the mother. The extent of illegal abortion has not been assessed statistically but is not uncommon in Fiji and Papua New Guinea.
explanations put forward include the rise of religious fundamentalism and the preference for large families arising from traditional cultural norms and values. Weak or waning political commitment has also been cited. Another explanation that has been proposed includes the assertion that high rates of emigration remove the need for fertility reduction as “surplus” children are eventually able to emigrate and find work overseas, while supporting their family at home. While this relationship appears logical, it is difficult to support with empirical evidence and some high-emigration countries such as Cook Islands, Palau and more recently Fiji have achieved low fertility.\(^8\)

Conventional demographic transition theory points to another range of macro variables, including mortality decline, education, urbanization, and industrialization. Before reviewing how some of the factors relate to fertility change in the Pacific it may be useful to provide a brief review of family planning.

### 2. Family planning and population control in historical perspective

Advocates of family planning programmes in the Pacific have frequently supported their arguments by referring to the widespread use of various forms of birth control in traditional Pacific societies. Such arguments are intended to demonstrate that the idea of deliberate birth control is not alien to Pacific cultures and therefore should not be seen as a foreign imposition. This was an important consideration in the 1970s and 1980s when international family planning programmes were controversial.

The ethnographic evidence provides little doubt that birth control was widely practiced across the Pacific prior to sustained contact with external societies (Tesfaghiorghis 1995; Lucas & Ware 1981; Connell 1977; Borrie et al. 1957; McDowell 1988; Bulmer 1971). Methods of inducing abortion were well known and variably applied across all sub-regions, including the ingestion of herbal potions and massage. Various concoctions made from herbs or the bark of particular species of trees were used as a means of preventing conception, although some of these methods may have resulted in sterility (Bulmer 1971). When additional births were considered a threat to family and community survival, infanticide was practiced. This also occurred when twins were born because breast-feeding two children placed particular strain on the mother and placed both children at risk (Connell 1977). The survival of one child required the sacrifice of the other.

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\(^8\) Bryant (2008) notes that the ability to enter labour markets outside the country may have reduced pressure to constrain fertility in Ireland and Japan in earlier periods and currently in the West Bank, Gaza and Philippines.
The widest range of practices probably occurred in the small, resource-poor atolls or islands. For example, in the tiny Polynesian atoll of Tikopia, studied by the eminent anthropologist Sir Raymond Firth, community leaders proclaimed that “the heads must be measured against the food” (Firth 1936). Methods to achieve this included preventing some young men from marrying and the expulsion of others from the island to seek new land. These types of practices are a form of population control under conditions of extreme resource scarcity.

A number of other social practices had the effect of keeping fertility rates significantly lower than they would otherwise have been, regardless of whether this was a conscious intention. Extremely long periods of breast feeding (up to five years) were common in pre-contact Pacific cultures due to the absence of suitable weaning foods. This resulted in long periods of lacational ammenorhea and sub-fecundity. There was also a widespread belief that sexual intercourse should be avoided while breast-feeding because of potential contamination of breast milk by semen, resulting in the child becoming sick. The length of post-partum abstinence could extend up to 5 years in some Melanesian societies (Heider 1976), probably the longest to be observed in any pre-contact culture area.

Post-partum abstinence was facilitated in part by residential patterns. In most parts of Western Melanesia, men did not live with their wives and children but lived separately in men’s houses (sometimes called “long houses”) along with older sons. Similar resident patterns are recorded in Polynesian atolls (Carroll 1975). Women lived separately with their daughters and younger children. Women were also isolated from others during menstruation and lived in special houses during this time. Male homosexuality has been reported in some areas as providing a separate sexual outlet. Richer and higher-status men who had multiple wives had access to other sexual partners when one wife was pregnant or breast-feeding. In some areas of Melanesia, long post-partum abstinence was not associated with homosexuality, adultery or polygyny (Heider 1976); but polygyny is generally associated with long post-partum abstinence and lower fertility (Hern 1992).

Another practice that limited fertility was late marriage. Marriage in many parts of the Pacific required, and in some areas still does, the payment of “bride price”. Bride-wealth is normally paid in the form of pigs, but for a man to accumulate the necessary number of pigs (typically five) would require several years, thus delaying marriage. Other ceremonial gifts may also be required and these would take time to accumulate. In some parts of Melanesia, the birth of a child would also require a payment to the mother’s family. Should the father be unable to make the payment he would remain indebted to his wife’s family and would lose social status. Such conditions would tend to limit and space births by whatever means were available.
The continuation of many traditional social practices that limited fertility into the modern era is most evident in the highlands of Papua New Guinea, the last culture area of Pacific to experience contact with the outside world. An important feature of these practices was an underlying belief in the capacity of women to “pollute” men, and an associated belief that male warrior spirit could be dangerous to children. These beliefs, which continue to some extent, had the effect of keeping the sexes separate and antagonistic to each other. Some anthropologists have linked male fear of female pollution with resource scarcity, suggesting that “fear of pollution is a form of ideological birth control” (Lindenbaum cited in Faithorn 1975). In any case, the ritual avoidance of sexual intercourse during a wide range of occasions (before going fishing, conducting war, or during planting or harvesting, for example) would have limited fertility but only to the extent that coital frequency is linked to the probability of conception.

In some Polynesian societies a high value was placed on premarital virginity, particularly among women of high status. This practice reached probably an extreme in Samoa, where the ceremonial virgin (taupou) was honoured (Pirie 2000). Elsewhere, the age at which women commenced sexual relations was largely determined by age at menarche. In Melanesia, the age of menarche was much older in traditional times than it is today due to the limited amount of protein in a diet dominated by root crops. As protein intake increased with higher consumption of meat and more equal access to protein between men and women, the age at menarche has steadily declined.

As a consequence of the wide range of social practices across the Pacific that were either consciously intended to limit fertility, or had that effect, it is highly probable that traditional fertility levels were not particularly high (Carroll 1975). There is also evidence that during traditional times and well into the modern period, women were not particularly enthusiastic about having many children (Connell 1977; Carroll 1975). In Kiribati, historical data suggests that fertility was relatively low, probably around four children per woman, prior to 1920s (Tesfahiorghis 1995). It is therefore unlikely that high fertility was necessary to compensate for high infant mortality, as presupposed by some versions of demographic transition theory. Pirie (1995, 2000) has argued that in Polynesia general mortality due to disease was not particularly high in traditional times (given the absence of the diseases found in Europe or Asia).

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9 The existence of a population of nearly 800,000 people in the New Guinea highlands only became known in the 1930s when mineral prospectors ventured into the area.
10 Given that the separation of men and women was greatest when women were most likely to be infecund (during menstruation and breast-feeding, for example) the link between female pollution and population control is questionable (Faithorn 1975).
11 Women had less access to protein in traditional times because men had the first call on protein, justified by their warrior status and higher prestige.
so periods of high fertility would have resulted in resource pressures and counter-
measures such as infanticide and abortion would have been employed.

As demonstrated by Harris and Ross (1987) all pre-industrial societies have a 
particular “mode of reproduction” that is associated in broad general terms with its 
mode of production. Hunter-gatherer societies, for example, tend to limit fertility 
through abortion or infanticide because the ability of women to move with the group 
would be constrained by having too many young children, given that long periods of 
breast-feeding were essential to child survival. At higher levels of economic 
development that permits a more sedentary way of life, higher fertility can be 
tolerated, because there is less conflict between childcare and women’s work. As 
industrialization develops, the conflict between women’s work and child-bearing 
increases again and the tendency to apply fertility control increases.

While remnants of traditional practices and ideologies associated with fertility 
limitation still exist in some Pacific countries (Pulea 1986), reference to traditional 
“modes of reproduction” as a way of encouraging Pacific Island people to adopt 
family planning has not proven to be an effective strategy. The reasons for this are 
many and complex. First, initial contact with European visitors resulted in the 
importation of diseases that previously did not exist and to which Pacific peoples had 
no immunity. The epidemics that followed increased the death rate well above the 
birth rate resulting in low or negative population growth and fears of “depopulation”. 
Missionary and later colonial authorities adopted pronatalist policies and suppressed 
memory of earlier fertility and mortality control practices that in any case were 
considered immoral. The suppression of collective memory took place over several 
generations to the point where most Pacific Islanders today would deny that any such 
practices ever occurred in traditional times. Colonial authorities with the support of 
churches ensured that abortion and infanticide were criminalized. Formal laws 
regarding marriage, births and deaths were for the most part derived from church 
law. The decline in traditional population control methods such as post-partum 
abstinence and abstinence from sexual activity during ceremonial events resulted in 
an increasing “supply” of children, encouraged by the belief instilled by the church 
that children are a “gift from God”.

It took several decades for mortality levels to decline and fertility to rise to the 
point where natural increase became positive. In some Pacific groups this did not 
occur until the 1940s (Bayliss-Smith 1975). By the 1950s, many Pacific countries were 
approaching the “natural” fertility levels presupposed by demographic transition 
theory to characterize all pre-industrial societies. By the 1950s in some areas and the 
1960s in others, fertility levels had reached high levels with TFRs of 7-8 quite 
common at the national level and even higher in some sub-regions. At the same time,
while overall mortality had declined relative to the period following missionization, infant mortality rates remained quite high. Thus, the demographic regime operating in most Pacific societies began to approximate the pre-transition situation of “high mortality, high fertility” envisioned by demographic transition theory. When family planning programmes were first introduced by colonial administrations, the demographic circumstances were quite different than those that prevailed in traditional times.

3. Modern family planning programmes

Family planning programmes in the Pacific were initiated in the late 1950s and early 1960s to enhance socioeconomic development through reduction of the population growth rate as well as to improve women’s and children’s health (House 1999a). The earliest programmes were established in Fiji and Tonga in the late 1950s with an official, government policy in place by 1962 (Pirie 1995; Ivarature 2000). In Fiji the Medical Department took on the responsibility of family planning but Family Planning Associations (affiliated to International Planned Parenthood Federation (IPPF)) also became active. IPPF surveys that revealed high fertility and rising population growth rates provided the initial impetus for these Family Planning programmes. The Fiji programme was considered a success as fertility rates among Indo-Fijian women immediately declined while the fertility of ethnic Fijians began to decline a decade later and at a rather slower pace (Levin and Retherford 1986). Differential rates of fertility and contraceptive use between the two major ethnic groups in Fiji have persisted until today, with TFR for Indo-Fijian now below replacement level.

In Tonga, the Family Planning Programme was supported by the King, who expressed concern about increasing population, the rising population density of the Tongatapu urban area and the difficulty of providing traditional land allotments to all eligible males. The programme was institutionalized when a Tongan medical officer became responsible for the Family Planning Programme, a family planning clinic was opened and the number of family planning acceptors increased over time (Ivarature 2000). The integration of the family planning programme with the maternal and child health programme occurred around 1968 and contributed to high levels of acceptors being reported. The formation of the Tonga Family Planning Association in 1969 further strengthened advocacy for family planning. In the 1970s and 1980s, the inclusion of family planning in national development plans heightened the commitment to family planning. In 1976, a survey reported 45.7 per cent of all

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12 Demographic transition theory asserts that in traditional or pre-industrial societies population growth was slow because a high fertility rate was offset by a high mortality rate, whereas in industrial societies population growth is again low because both fertility and mortality have fallen to low levels. During the transition from the first demographic regime to the second, the rate of population growth will be high.
women of reproductive age were using contraception with the highest level of 63.3 percent recorded in Kolonga, Tongatapu. The survey revealed that acceptors were young, were using highly effective contraceptive methods and had fewer children once they adopted family planning (ref).

In Kiribati, family planning was initiated in the 1960s and the family planning campaign was officially launched in 1968 (Tesfagiorgi 1995). While fertility declined in all age groups between the 1960s and 1990s, the pace of decline was much slower after 1973, concomitant with the waning of the family planning programme (Booth 1994). In 1972, the percentage of family planning users among women of reproductive age was 40.1 per cent. However, there was significant opposition to the family planning programme, particularly by the Catholic Church and traditional leaders. The family planning programme stalled in the 1970s and the percentage of users dropped to 15.8 per cent. By 1990, the contraceptive prevalence rate (CPR) was approximately 27 per cent; a level which fell short of the national target of 35 per cent. The relatively high percentage of users on injectables (60 percent) was noted in the 1980s but with time, the ovulation method became the more frequently used method and the use of injectables declined to 39 per cent. Fertility studies have found significant religious and geographic variations with higher fertility rates in outer islands and among Catholics. The geographic differences in fertility mostly reflected the religious composition of the islands. Higher fertility rates were also noted among women with lower education.

Other countries in the Pacific also initiated family planning programmes with modest success (Kenyon & Power 2003). The Republic of the Marshall Islands (RMI), Federated States of Micronesia (FSM), Papua New Guinea (PNG), Solomon Islands and Vanuatu – countries considered to have high fertility and some of the atolls with high population densities-- all showed some decline in fertility (Pirie 1994). But negative reactions, in part fuelled by fear of side effects, were often reported by women. Papua New Guinea and Solomon Islands adopted population policies aimed at fertility reduction in the early 1990s, but data on patterns of contraceptive use over time remains limited in these countries and their success is unclear.

Following ICPD 1994, stand-alone family planning programmes were given lower priority worldwide while countries established more integrated and comprehensive approaches to reproductive health. This occurred in the Pacific as well. The effort to construct an integrated reproductive health strategy that included young, unmarried people and moved away from a maternal and child health (MCH) approach absorbed energy and resources and in the process weakened family planning. Globally, and in some Pacific Island countries, funds and human resources were
diverted to fight the HIV and AIDS epidemic.\textsuperscript{13} But family planning had also received set-backs in the 1970s and 1980s when the abuses associated with forced sterilization, defective IUDs and long-acting hormonal contraceptives became well known. The rise of religious and political conservatism and the unwillingness to acknowledge the role that universal access to voluntary family planning could play in reducing poverty and inequality were also contributing factors.

While the impact of family planning programmes on fertility rates has been highly significant in many Asian countries, possibly exceeding the impact of such socioeconomic factors such as rising income (Bloom et al. 2002), the situation in the Pacific is more complex. Despite the existence of virtually-free, government-run, voluntary family planning programmes, the utilisation of safe and effective voluntary contraception services based on informed choice and a wide range of options, remains well below potential (Robertson 2007).\textsuperscript{14}

Before reviewing the socio-economic determinants of fertility change at the macro-level that may have contributed to the slow or stalled fertility transition in some Pacific Island countries, it may be instructive to look at patterns of contraceptive use and their determinants as evident in recent Demographic and Health Surveys.

C. CURRENT PATTERNS OF CONTRACEPTIVE USE AND UNMET NEED

1. Current use of contraception and trends at national level
   a. Contraceptive prevalence

   With seven of the 15 Pacific Island countries with UN programmes having had a DHS within the past 5 years, it is now possible to compare contraceptive prevalence rates across countries using comparable methodology, and without recourse to incomplete service statistics. The figures in Table 4 show that the CPR for currently married women in the period 2005-09 ranges from a low of 17 percent in Palau to a high of 46 percent in Cook Islands. The countries at each end of the range are not, however, among those which have had a recent DHS so the method of measurement is not necessarily comparable and the accuracy of the figures is questionable. Given

\textsuperscript{13} The possibility of the AIDS epidemic having a negative effect on funding for family planning was recognised more than 20 years ago (Black 1989), but it would seem that such warnings went unheeded. In the Pacific the main impact of the diversion of funds to HIV/AIDS programmes has been felt in Papua New Guinea.

\textsuperscript{14} This generalization excludes the dependent territories of the United States and France in which family planning is available through a well-developed private medical system supported by government and private health insurance.
that Palau has one of the lowest TFRs in the Pacific (2.0), the reported CPR of 17 percent is quite likely to be an underestimate.

Table 4: Contraceptive prevalence rates (%) and trends in the Pacific Islands: 1990, 2000 and latest available (currently married women, modern methods)*

<table>
<thead>
<tr>
<th>Country and region</th>
<th>1990s</th>
<th>2000s</th>
<th>2005-09</th>
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<tr>
<td><strong>Melanesia</strong></td>
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<td><strong>Micronesia</strong></td>
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<td>Nauru</td>
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<td><strong>Polynesia</strong></td>
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*Figures are rounded to nearest percent.

It is also likely that Fiji’s reported CPR of 43 percent is underestimated given that contraceptives are increasingly available from private practitioners and pharmacies and are not captured in Health Information System data. It is likely that urban CPRs have been particularly understated in Fiji’s service statistics given that the CPR in rural areas populated largely by poor tenant farmers, such as in the Northern Division, has occasionally exceeded that of the most urbanized Central Division in which a much higher proportion of the labour force is in white collar and professional occupations.¹⁵ In rural areas, government health facilities are the main sources of contraceptives, whereas in urban areas other sources are available—but not necessarily captured in health information systems.

¹⁵ Data from unpublished records, Fiji Department of Health. Lee (1995) has pointed out that even 20 years ago, 10 percent of contraceptive users in Fiji were obtaining their supplies from private sources.
When only the CPRs estimated from DHS are considered, however, a similar range of variation is evident. At the high end of the range is the Marshall Islands with a CPR of 42 percent; at the low end of the range is the neighbouring country of Kiribati with a CPR of only 18 percent. The (unweighted) average CPR for the seven countries that have had a DHS is about 30 percent.

Clearly, by the standards of the less developed countries as a group (with a CPR of 45 percent if China is excluded or 56 percent if China is included) current contraceptive prevalence in this sub-set of Pacific countries is surprisingly low, given the long history of family planning programmes in the region.

b. Trends in contraceptive use 1990-2010

An assessment of contraceptive trends in the Pacific is complicated by variations in methodology and the potential for error or incompleteness in earlier figures. It is often unclear whether published CPRs include women using so-called “traditional” methods or whether only those using modern methods are considered as using contraception. Also, it is not always clear if the denominator employed is all women of reproductive age or only married women. Given that estimates of CPR for earlier periods generally derive from service statistics based ultimately upon attendance at family planning clinics or rural health centres, couples using “withdrawal” or “rhythm” may not be included as no attendance at clinics is required to practice these. On the other hand, some health departments in the Pacific do give advice on the use of “natural” family planning, in which case users of these methods would be recorded and included in the CPR estimates.

Taking a cautionary approach to the figures presented in Table 4, it would appear that most countries in the Polynesia sub-region have experienced declining or barely changing CPRs over the past 15 years. In Micronesia only Marshall Islands shows evidence of an increasing CPR while in other countries the estimates are fluctuating (FSM) or show little change (Kiribati). In Melanesia, however, three countries (Papua New Guinea, Solomon Islands, and Vanuatu) show a rising trend. Although there are doubts about the accuracy of its earlier estimates, the Solomon Islands has had the fastest rate of increase in its CPR since the 1990s, whereas PNG’s CPR has risen quite slowly (0.5 percent increase per year) in the decade 1996-2006.

That some of the poorest countries in the Pacific have experienced increasing CPRs in the past decade and a half whereas some relatively better off countries have had declining or at least static CPRs suggests that the rate of contraceptive up-take at an early stage of the fertility transition is likely to be higher than at later stages.
This phenomenon can possibly be explained by a fairly general pattern whereby family planning programmes achieve an early success followed by a plateau and stagnation. As Back (1989) has observed:

The work on enhanced international distribution of contraceptives shows a pattern of initial success that at first looks encouraging but often reaches a plateau. In the introduction of new contraceptive methods to a community, the tapped are those who are highly motivated to prevent future pregnancies and with these recruits the enterprise succeeds. In order to reach beyond these initial recruits, however, to the less motivated the availability of easy contraceptive methods is not enough and the clinic programme frequently stagnates.

This description would appear to describe the situation of many Pacific Island countries in the 1990s. Women who might otherwise have given birth to six or seven children, a situation that prevailed when family planning programmes were instituted in the 1960s and 1970s, were very motivated to adopt family planning. Once average completed fertility had dropped to between three and four children, the motivation to reduce it further to between two and three is significantly weaker. This proposition would appear to describe the recent situation of several countries, including Samoa, Tonga, Tuvalu and among the Melanesian population of Fiji.

c. Socioeconomic determinants of current contraception use at micro-level

An alternative, or possibly complementary, explanation is that the stagnation or very slow increase in the use of contraception, and therefore fertility, is linked to an overall stagnation in the pace of economic growth and development. This is the explanation tentatively offered by Bongaarts in explaining the slow-down in the pace of fertility decline in sub-Saharan Africa in the 1990s, although he also acknowledges that the decreasing priority given to family planning programmes over this period may also have contributed (Bongaarts, 2008).

A slow pace of economic growth and development would presumably be reflected in a more or less static labour force structure. In the absence of economic growth fewer people would be moving up the occupational hierarchy to more skilled and higher paying occupations. If contraceptive use is higher among the more educated and skilled technical and professional workers, overall contraceptive use would tend to stagnate if these occupational groups were not increasing in proportion to other groups.

In the Pacific, however, the association between contraceptive use and socio-economic status at the micro-level appears to be weak. In three out of the seven countries that have had a DHS (Table 5) contraceptive use is higher among less educated women than among more educated women. In Solomon Islands, the
difference in contraceptive use between women with no education and those with more than secondary education is very small and probably not statistically significant. In Kiribati the CPR appears to go down the more education that a woman has. The lack of a close association between educational achievement and contraceptive use was noted in one of the earliest "KAP" studies in Vanuatu (House 1998).

Also contrary to expectations is that in three countries (Marshall Islands, Solomon Is. And Kiribati), the CPR is higher in rural areas than urban, whereas one would expect this relationship to be the reverse, given that “rural” in this context refers to remote islands with poor transport, communications, access to health services and a high proportion of the labour force working in subsistence production.

In the Marshall Islands, the higher CPR in rural than urban areas was found to be statistically significant with higher odds of contraceptive use among rural women, even when controlling for other covariates. In Solomon Islands the higher odds of use among rural dwellers did not remain when education and other variables were controlled for (Robertson 2009).

Another measure of socio-economic status that is available from DHS data-sets is household wealth, as measured by the stock of physical assets in each household. This measure can be seen as a proxy indicator of income, assuming that assets and income are correlated. It would normally be expected that women in wealthier households would be more likely to use contraception given their greater access to health services and the higher chance that they will be working in wage and salary occupations. As can be seen in Table 5, however, there is no clear, linear, relationship between household wealth and the use of contraception. Only in Samoa does the richest wealth quintile have the highest CPR. In Kiribati the relationship is the obverse of what would be expected while in other countries there is little variation between the wealth quintiles.16

The two variables that do have a clear relationship with the contraceptive prevalence rate are age and parity, which are obviously related to each other, and which are socio-demographic rather than socio-economic variables. For every country other than Kiribati, contraceptive prevalence increases with age up to age group 35-30. Similarly, the CPR rises linearly with parity in all but one country reaching its highest level among women with 5 or more children. In Kiribati, women with between three and four children have the highest CPR. These data are consistent with a reproductive strategy which involves little use of contraception until the desired family size has been reached, followed by sterilization.

16 Tests of significance have yet to be carried out on these associations.
Table 5: Contraceptive use (modern methods) in selected Pacific Island countries by socio-economic characteristics (currently married women)*

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<td>14.5</td>
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<td>20.6</td>
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<td>27.5</td>
<td>13.8</td>
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<tr>
<td>Quintile 1 (highest)</td>
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<td>36.7</td>
<td>41.6</td>
<td>25.4</td>
<td>32.0</td>
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<tr>
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<td>17.9</td>
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<td>Quintile 5 (lowest)</td>
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<td>37.9</td>
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<td><strong>Parity</strong></td>
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<td>6.0</td>
<td>6.6</td>
<td>3.4</td>
<td>1.7</td>
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<td>1 or 2</td>
<td>16.2</td>
<td>13.0</td>
<td>29.8</td>
<td>19.4</td>
<td>18.2</td>
<td>16.0</td>
<td>20.3</td>
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<tr>
<td>3 or 4</td>
<td>30.5</td>
<td>34.1</td>
<td>53.1</td>
<td>32.4</td>
<td>33.8</td>
<td>27.7</td>
<td>25.1</td>
</tr>
<tr>
<td>5 and over</td>
<td>42.6</td>
<td>46.3</td>
<td>60.3</td>
<td>37.5</td>
<td>34.6</td>
<td>23.0</td>
<td>30.4</td>
</tr>
</tbody>
</table>

Source: DHS reports for specified countries.
*Refers to modern methods, except for use by wealth quintiles. ** Nauru is 100% "urban".

Robertson (2009) carried out tests of significance on the relationship between contraceptive use and age using DHS data for Nauru, Solomon Islands and Marshall Islands. Tests showed that differences in contraceptive use between younger and older women were statistically significant at the 95 percent confidence interval. In RMI and Solomon Islands, women in the youngest group had four times lower odds
of using modern contraceptives than their older counterparts. Contraceptive use rises from the youngest to oldest age groups, with women in the <20 year age group having 0.2 times odds of using modern contraceptives than women aged 45-49 years, while women 40-45 years had 1.5 times odds compared to the older women. Similarly, contraceptive prevalence increases with parity, reaching its highest level among women who have had 5 or more children.

As shown in Table 6, there is also an apparent association between religious affiliation and contraceptive use in that women identifying as Catholic have lower CPRs than those who identify with “other” religions, but it is interesting to note that the CPR for Catholic women in Nauru is three times that of Catholic women in Solomon Islands, so factors other than religion are involved. In Nauru and Solomon Islands, the differences between Catholic and other women was statistically significant, even when the effects of other covariates were controlled (Robertson 2009).

Table 6: Contraceptive use in selected Pacific Island countries by other social and demographic characteristics (currently married women)*

<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Age of marriage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;20</td>
<td>36.8</td>
<td>47.5</td>
<td>24.2</td>
</tr>
<tr>
<td>20-25</td>
<td>41.7</td>
<td>41.2</td>
<td>21.1</td>
</tr>
<tr>
<td>&gt;25</td>
<td>33.7</td>
<td>33.2</td>
<td>15.9</td>
</tr>
<tr>
<td>Visited a health centre?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>42.4</td>
<td>44.4</td>
<td>21.9</td>
</tr>
<tr>
<td>No</td>
<td>29.8</td>
<td>32.2</td>
<td>13.2</td>
</tr>
<tr>
<td>Visited by FP nurse?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>36.0</td>
<td>43.3</td>
<td>26.4</td>
</tr>
<tr>
<td>No</td>
<td>36.9</td>
<td>35.4</td>
<td>15.3</td>
</tr>
<tr>
<td>Religious affiliation</td>
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<td></td>
<td></td>
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<tr>
<td>Catholic</td>
<td>28.1</td>
<td>na</td>
<td>9.4</td>
</tr>
<tr>
<td>Other</td>
<td>38.2</td>
<td>na</td>
<td>20.2</td>
</tr>
</tbody>
</table>

Source: DHS reports for specified countries. *Modern methods only.

It can also be seen that women who have attended a health centre or been visited by a family planning nurse tend to have a higher CPR, although in Nauru being visited by a nurse made no difference. In these three countries, women who had
visited a health centre or were themselves visited by a family planning nurse had a higher contraceptive prevalence rate compared to those that did not and the difference was statistically significant (Robertson 2009).

A statistically significant association has also been found between contraceptive use and age at first marriage with the lowest use being observed among women who had married at an older age compared with women who had married younger. When all women of reproductive age were compared, it was also found that married women had statistically significantly higher odds of using modern contraceptives than single women (Robertson 2009). There was also some association between employment status and contraceptive use with “unemployed” women less likely to be using contraception.

Contraceptive use is an imperfect indicator of the success of family planning programmes, although it is reasonable to assume that there is a link between them. However, preliminary analysis of DHS data on contraceptive use has produced unexpected results. The association between contraceptive use and education, for example is weak. It is normally the case that educated women are more knowledgeable about family planning, are more confident in using contraception, and more motivated to limit their fertility. In the Pacific these linkages appear to be weak (House 1999a), although they can be discerned in some countries (Papua New Guinea and Samoa, for example). Similarly, other socio-economic indicators such as household wealth and rural-urban residence are weakly associated with the use of contraception. That some Pacific countries exhibit higher contraceptive use in rural as compared with urban areas is puzzling and needs deeper study.

On the other hand, the effects of religion and age are as would be expected with Catholic and younger women less likely to be using contraception. Similarly, contact with a health facility of nurse is associated with higher use of contraception, as might be expected. Parity also has a clear relationship with contraceptive use, with women having five children more likely to use contraception than those with three or four.

2. Relationship between fertility and mortality

Classical demographic transition theory placed a strong emphasis on mortality decline, particularly infant mortality, as a cause of fertility decline. Traditional high fertility regimes, it was argued, were intended to ensure sufficient surviving children to provide household labour and parental support in old age. As already noted, in pre-contact times it is likely that mortality was not as high in the Pacific as it later became after initial outside contact. The importation of foreign diseases elevated
mortality which necessitated in turn a pronatalist policy if depopulation was to be avoided. Thus Pacific countries eventually approximated the demographic conditions pre-supposed by transition theory. Under these circumstances, mortality decline was seen as a precondition for fertility decline.

Figure 5 presents cross-country comparison showing that there is a clear relationship between mortality and fertility levels in the Pacific, as measured by life expectancy and the Total Fertility Rate, respectively.\(^{17}\) As life expectancy increases, the TFR decreases. However, in spite of a general trend in this direction, there are a number of countries (including some in which fertility decline has stalled) that do not fit the general pattern. These are countries that have relatively high life expectancy but also high fertility. These countries are clustered in the top right corner of Figure 5. Another group of countries is clustered at the bottom right corner of the graph. These are the countries that fit the pattern expected by transition theory. There are no countries that occupy the lower left corner of the graph, which would signal low fertility and low life expectancy. In the set of countries shown in the graph, a life expectancy of around 70 is required before replacement fertility is achieved, but a life expectancy of 70 does not guarantee that fertility will be at or anywhere near replacement level. In other words, high life expectancy may be a necessary condition for low fertility, but it is not a sufficient condition.

A similar argument follows from Figure 6 which shows the relationship between fertility and infant mortality, as measured by the TFR and the IMR, respectively. None of the countries that have a TFR under 3 have an IMR above 20 per thousand, but several countries with an IMR around 20 have TFRs between 3 and 4. Similarly, two clusters of countries can be observed in the graph—those below the trend line that fulfil the expectations of classical transition theory and those clustered above the trend line that do not fit theoretical expectations. Thus, it can be concluded that while an IMR of 20 or less is a necessary condition for low fertility, it is not a sufficient condition. In fact, what is striking about the graph is that among countries with a TFR in the range 3.0-4.5, the infant mortality rate ranges extremely widely from a low of 10 per thousand to a high of 55 per thousand.

\(^{17}\) Tests of statistical significance have not been carried out on this relationship.
Figure 5: Relationship between life expectancy and TFR in Pacific Island countries

Source: Tables 2 and 3.

Figure 6: Relationship between infant mortality and fertility in Pacific countries

Source: Tables 2 and 3.
Cross-country comparison suggests that while there is a broad general association between mortality and fertility levels, high fertility cannot be explained by high mortality alone, whether measured by overall life expectancy or by the infant mortality rate. There is a significant cluster of countries that have higher fertility than would be expected on the basis of their mortality level.

3. Fertility levels and development indicators: macro-level

A full explanation for the slow-down in fertility decline in some countries and periods over the past 10-20 years would require a detailed analysis of development patterns and trends, which is beyond the scope of this paper. Nevertheless, it is important to assess to the extent possible whether the relationship between contraceptive use and socio-economic factors at the micro-level are also observed at the macro-level—as reflected in standard development indicators. This is particularly important from a programme perspective, because family planning programmes cannot be expected to address broad development conditions. If the relationship between economic indicators and contraceptive use, for example, is weak, it may suggest that there is scope for programmes to address non-economic issues, such as knowledge, perceptions and availability of family planning.

As already mentioned most Pacific island countries reached their peak fertility in the 1960s, but in two countries, Solomon Islands and Federated States of Micronesia, peak fertility was not reached until the mid-1970s and at a high level (TFR: 7.3 and 6.9, respectively). In these countries fertility decline has been more gradual than in countries in which the TFR peaked in the 1960s. Countries that reached peak fertility in the 1960s generally experienced a very rapid initial decline until the mid to late 1970s when the pace of decline slowed and the TFR levelled-off between 4.5 and 5. As already noted, some of these countries also experienced a second slow-down in the 1990s.

It is difficult to determine with precision if the fertility plateaus that have occurred at different stages of the fertility transition in some Pacific Island countries can be attributed to the strength or even existence of family planning programmes. Systematic and comparative data measuring the “strength” of family planning programmes through time are in any case not available for the Pacific. In some countries, the initial establishment of a family planning programme engendered a backlash by the Roman Catholic Church with or without the support of traditional leaders. Kiribati appears to be an extreme case of this but there was also an element of demographic rivalry present between Catholic and Protestants.
Fertility declines have also continued linearly in some countries without an obvious plateau even while contraceptive prevalence rates appear to have remained unchanged for many years—a situation represented well by Fiji and the Cook Islands. The most sustained fertility declines have occurred in the non-independent territories of French Polynesia, New Caledonia, Guam and the Northern Mariana Islands, which have not had organized family planning programmes comparable with those established in Fiji, Kiribati or Tonga.

In some countries it is apparent that historical factors have played a part. In Papua New Guinea, for example, fertility decline stalled after independence in 1975. One reason for this was that the rate of decline in infant mortality also slowed due to the weakening of health delivery systems—in particular the abolition of regular government patrols in remote areas that had been a feature of the colonial period. The fertility plateaus in Samoa and Tonga have stretched over a period of 20-25 years, during which time family planning programmes have received varying amounts of support from governments and donors.

The relevance of socioeconomic factors can be questioned in the light of the lack of or weak associations between contraceptive use and the socio-economic status of DHS respondents. Presumably, macro-level variables reflect social change only to the extent that they are evident in the micro-level behaviour of individuals. The DHS results appear to question the effect of broader social and economic conditions at the level of individual and family. Nevertheless, it is important to consider the socioeconomic factors that may have played a contributing role in fertility decline or its absence. It is important to note, however, that standard macro-level development indicators do not necessarily capture the dimensions of socio-economic change that are relevant to socio-economic theories of fertility change (Bryant 2007). At the individual or family level, incentives to reduce fertility may be just as strong, or stronger, when economic conditions are worsening as when conditions are improving in as much as a strategy of fertility limitation may be aimed at ensuring that family welfare does not deteriorate further.

Potential cross-country macro-economic variables that may be linked to fertility are per capita income (GDP) and the proportion of the population below the poverty line. A full set of data for all Pacific countries is not available for these variables, but the data for those countries having the available statistics are plotted in Figures 7 and 8. In the case of GDP per capita measured according to purchasing power parity (PPP), the trend is certainly in the expected direction: as GDP per capita increases,

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18 Note the previously-mentioned point that the CPR is understated in countries with a significant private medical system.
the TFR declines,⁹ but it cannot be concluded that there is a necessary relationship between per capita income and the TFR in this group of countries. Among the countries with a TFR between 4.0 and 4.5, GDP per capita ranges from $US1,500 to $US4,300. Conversely, among countries with per capita GDP above $3,500, the TFR ranges from 2.6 to 4.2. Thus, it is not possible to specify the level of GDP per capita that is necessary to achieve a given fertility rate among these countries.

Similarly, the percentage of the population living below the “basic needs” poverty line is very weakly linked to the level of fertility. Although the TFR tends to rise with the proportion of the population below the poverty line, countries in which the TFR is around 4.0 and above have poverty levels ranging from around 20 percent to over 40 percent. While poverty may be linked to family size at the household level, this relationship does not show up clearly at the country level.

Figure 7: Relationship between TFR and GDP per capita in eight Pacific countries

![Graph showing the relationship between TFR and GDP per capita with R² = 0.1666](Image)

Source: Tables 2 and 3.

⁹ This assessment is based on visual inspection of the trend line. The association remains to be tested for statistical significance.
If GDP per capita is only loosely related to TFR, then presumably contraceptive use, as one of the “proximate determinants” of fertility (Bongaarts 1978), will also be loosely related to GDP per capita. As Figure 9 shows, contraceptive use rises with per capita GDP, largely because two countries at the upper end of the contraceptive prevalence range are also at the upper end of the GDP per capita range. Nevertheless, countries with contraceptive prevalence (modern methods) between 25 and 30 percent among married women can be found right across the per capita GDP scale from around $1,500 to over $4,000. Nevertheless, it is notable that two corners of the graph are unoccupied: there are no countries with a per capita GDP above $US3,000 and a contraceptive prevalence rate below 25 percent. Conversely, there is no country with per capita GDP below $3,500 with a CPR above 35 percent. In this group of countries, a relatively high per capita GDP may be a necessary condition to achieve a CPR above 40 percent, but it is not a sufficient one.
Figure 9: Relationship between GDP per capita and contraceptive prevalence rate in eight Pacific countries

If the TFR and the Contraceptive Prevalence Rate are both loosely associated with per capita GDP in cross-country comparisons, it would presumably follow that TFR and CPR are also rather loosely related. That this is the case in the Pacific can be seen from Figure 10. While there is an apparent association between the two variables in the expected direction (higher CPR is associated with lower TFR), there are outliers that do not fit the trend. On the one hand, there are no countries with a TFR below 3.0 and a CPR below 44 percent, so a relatively high (in the context of these countries) CPR contributes to low fertility. On the other hand, there are two countries in the group with a CPR near the upper end of the range (around 40 percent) that also have high TFRs between 4.0 and 5.0.

The foregoing analysis, although rudimentary in terms of precise statistical measures of association, suggests that development indicators explain some of the variation between in terms of contraceptive use and fertility levels, but also leave much of the variance unexplained. From a broad cross-country perspective, higher GDP per capita and a lower proportion of the population in poverty are associated with lower fertility and higher contraceptive use, but the relationships are sufficiently weak that there is no guarantee that an increase in per capita income or a reduction in poverty would necessarily produce higher contraceptive use or lower fertility.
These weak associations at the macro-level, essentially complement the findings of the Demographic and Health Surveys at the micro-level where it was found that the associations between contraceptive use and individual socio-economic variables such as completed education and household wealth was weak.

Figure 10: Relationship between Total fertility rate and contraceptive prevalence rate in 12 Pacific countries.

Source: Tables 2-4.

4. Age patterns and gender issues

The main issue with regard to family planning and age in the Pacific is the low use of contraception among teenagers and resulting levels of teenage fertility. By the standards of the least developed countries as a group, the Pacific Islands region is not characterized by high teenage fertility rates, but some countries have quite high levels. In the region as a whole, the teenage fertility rate is somewhat higher than South-Eastern Asia but lower than South-Central Asia. The teenage fertility rate currently ranges from 9 in Wallis and Futuna Islands to 127 in the Marshall Islands (Table 3).

A distinctive feature of teenage fertility in the Pacific is the lack of a clear relationship between teenage fertility rates and the Total Fertility Rate. As illustrated in Figure 11, the association between the TFR and the teenage fertility rate is
extremely loose when the two “outliers” are removed from the sample. Although there is a slight tendency for teenage fertility to decline with the TFR, it is unlikely to be statistically significant. If the line between relatively “high” and relatively “low” teenage fertility rates is set arbitrarily at 45 per 1,000, it is clear from Figure 10 that “high” teenage fertility can be found in countries with a TFR ranging from 4.7 to 1.6, and “low” teenage fertility can be found in countries with a TFR ranging from 4.5 to 1.9. This suggests that teenage fertility is determined by a different set of factors than fertility in general. A plausible explanation is that socio-cultural factors play a larger role in teenage fertility than general fertility. In particular, the barriers that restrict access to contraceptive information and services are much greater for teenagers than for older women. Teenagers are also more likely to be unmarried, and sexual activity before marriage is still not broadly acceptable, even though widely practiced.

Figure 11: Relationship between TFR and Teenage Fertility Rate

Source: Tables 2-4.

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As previously noted, Wallis and Futuna Islands has a reported teenage fertility rate of 9, similar to that of Western Europe. On the other hand, the Marshall Islands has a rate of 127. These two extremes have been removed from the sample of countries.

The generalization advanced by Harris and Ross (1989) that in traditional societies marriage begins with childbearing rather than the other way around is widely applicable in Pacific Island societies, even though this is not consistent with cultural norms and values.
5. Unmet need for family planning: recent evidence

a. Conceptual issues

As previously noted, the ICPD POA recommends that “Government goals for family planning should be defined in terms of unmet need for information and services”. Subsequently, ICPD+5 recommended that the “Where there is a gap between contraceptive use and the proportion of individuals expressing a desire to space or limit their families, countries should attempt to close this gap by at least 50 percent by 2005, 75 percent by 2010 and 100 percent by 2015” (UNFPA 2004). The concept of “gap” comes from early generation KAP (Knowledge, Attitude and Practice) studies from which was coined the “KAP-gap” to refer to a situation whereby a woman expressed a desire to limit or space births but was not using any form of contraception. Closing this gap by 2015 was an extremely ambitious goal.

The concept of “unmet need” has undergone further refinement in recent years with increasingly encompassing definitions of the categories of women who can be considered as having an unmet need. The current definition of unmet need according to the UN Population Division is:

Unmet need for family planning is the number of women with unmet need for family planning expressed as a percentage of women of reproductive age who are married or in union. Women with an unmet need are those who are fecund and sexually active but are not using any method of contraception, and report not wanting any more children or wanting to delay the birth of their next child (UNDESA 2009).

This definition is identical to that used in Demographic and Health Surveys. The method of computation requires that surveys identify women who are married or in a sexual union in various statuses requiring a complex branching process based upon answers to questions appearing at various points of the DHS questionnaire.

Women who are excluded from the numerator include those who:
1. Are using contraception to delay their next birth;
2. Are using contraception to stop childbearing;
3. Are currently pregnant or amenorrheic and the pregnancy was:
   a. Intended, or
   b. Due to a method failure;
4. Infecund (according to an objective set of criteria);
5. Want a child within the next two years.

By a process of elimination, a residual is obtained that includes women who:
1. Are not using contraception;
2. Are not pregnant or amenorrheic;
3. Do not want another child or do not want it within the next two years;
4. Are pregnant or amenorrheic and,
   a. Did not want the child
   b. Wanted the child but at a later date;
5. Unsure about wanting the child at a later date.

The denominator is all women who are married or in a sexual union.\textsuperscript{22}

The concept of unmet need defined by these criteria is considered to be consistent with a rights-based, voluntaristic approach to family planning because it is the respondent herself who states whether she wishes to have another child, or have a child later, or didn’t want to have the child that she is currently pregnant with, and not the state or a family planning worker. However, the process of measurement is complex and presupposes that women have a high level of awareness about their own state of mind with regard to childbearing, something that may not necessarily be the case.

The concept of unmet need also produces anomalies that are difficult to interpret. One anomaly arises from the fact that women who want more children, or wanted the child they are currently pregnant with, or became pregnant while using a contraceptive method, or are infecund are included in the denominator when calculating the percentage of women having an unmet need. One result of this is that where a high proportion of women want another child or more children than they presently have, unmet need for family planning may be low (Outlook 2008). This does not necessarily mean that family planning services are unavailable or not used by those women who do want to space or limit childbearing, but some proportion of the women with an unmet need may not be using contraception because of their inability to obtain contraception for whatever reason. Thus, the measure confounds three quite different circumstances: one in which women have difficulty obtaining contraception (resulting in high unmet need); one in which only a small proportion of women actually want to control their childbearing (resulting in low unmet need); and one in which a high proportion of women who want to limit childbearing are able to obtain and use the means to do so.

As Bushan (1997) has pointed out, “unmet need can be low in two entirely different settings: (1) in places where motivation for fertility regulation is low; and (2) in places where motivation for fertility regulation is high but it is easy to implement

\textsuperscript{22} Unmet need can also be calculated, and increasingly is, for all women of reproductive age regardless of their marital status. In this paper only currently married women are included in the numerator and denominator. If all women of reproductive age are included, some method of excluding women who are not sexually active must be applied. Otherwise, unmet need will tend to be overstated.
one’s preferences”. This proposition can be verified by comparing unmet need in Solomon Islands (7.7 percent according to recent DHS estimates shown in Table 7), with the United States, which has a reported unmet need of 7 percent. Although the unmet need for family planning is similar in both countries, their fertility circumstances are completely different. In the Solomon Islands the contraceptive prevalence rate is 27 percent (Table 4) whereas in the United States it is 69 percent. Similarly, the Total Fertility Rate in Solomon Islands is 4.6, whereas in the United States it is 2.1.

In another respect the two countries are similar, which is to be expected given a similar level of unmet need: In the United States, 89 percent of the demand for family planning is met; in Solomon Islands, 76 percent of the demand for family planning is met (Table 8). The proportion of demand met in the two countries is roughly similar because, although the proportion of women of childbearing age who wish to limit births is much higher in the United States than in Solomon Islands, a high proportion of those women are able to meet their contraceptive needs. In the Solomon Islands, a much smaller proportion of women of childbearing age wish to regulate their childbearing, but a similar proportion of these women is also able to meet their contraceptive needs.

The implication of these considerations is that statistics on unmet need must be interpreted with caution and used in combination with other measures of the demand for family planning services.

b. Unmet need and socio-economic factors at micro-level

In the Pacific, unmet need by country among married women ranges from 7.7 percent in Solomon Islands to 45.6 percent in Samoa (Table 7). Solomon Islands and Marshall Islands seem to be in a group of their own, with much lower levels of unmet need (7.7 and 8.1 percent, respectively) compared to the other countries. As already noted, Solomon Islands has a low level of unmet need because fertility preferences remain high. This may also be the case in Marshall Islands, although Marshall Islands has one of the highest CPRs in the region (42.4 percent). Solomon Islands has the highest TFR in the region but the lowest level of unmet need.

---

23 Guttmacher Institute (2010). This is the percentage of women at risk of an unintended pregnancy but not using contraceptives.
Table 7: Percent of currently married women (15-49) with an unmet need for family planning in selected Pacific Island countries by socio-economic characteristics*

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<td>15.0</td>
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<td>31.1</td>
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<td>41.9</td>
<td>26.3</td>
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<td>17.5</td>
<td>2.8</td>
<td>8.5</td>
<td>46.4</td>
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<td>45.4</td>
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<td>0.0</td>
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<td>11.6</td>
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<td>43.5</td>
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<td>8.9</td>
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<tr>
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<tr>
<td><strong>Wealth</strong></td>
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<td>Quintile 1 (highest)</td>
<td>22.6</td>
<td>27.6</td>
<td>6.2</td>
<td>6.0</td>
<td>41.4</td>
<td>31.0</td>
<td>na</td>
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<td>Quintile 2</td>
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<td>43.6</td>
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<td>Quintile 3</td>
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<td>Quintile 5 (lowest)</td>
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<td>17.2</td>
<td>14.1</td>
<td>14.5</td>
<td>46.8</td>
<td>24.4</td>
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</tr>
</tbody>
</table>

Source: DHS reports for specified countries.

*Note that the method of estimating unmet need in PNG is not identical to the method used in the other countries. In PNG the figures refer to the unmet need for stopping and not spacing. Also, some other categories of unmet need are excluded. The PNG figures are therefore underestimates when compared with the other countries. In all other countries, the figures given are the sum of the unmet need for spacing and the unmet need for stopping.

Patterns of unmet need by age vary widely between countries. For several countries (Samoa, Nauru and Kiribati) there are insufficient married women aged 15-19 in the sample to provide a valid measure of unmet need. In Solomon Islands, Marshall Islands and Kiribati, this age group has the highest rate of unmet need. In the countries with low unmet need, the highest levels are found in younger age groups and the lowest in older age groups. In Samoa, Kiribati, Papua New Guinea..
and Tuvalu the differences between age groups is not large. In Samoa and Papua New Guinea, the highest levels of unmet need are in the 45-49 age-group.

A surprising finding in Table 7 is that unmet need is similar in urban and rural areas within countries. Although unmet need is slightly higher in rural areas in four countries, the differences are small. In Tuvalu and Kiribati unmet need is higher in urban than rural areas. The relationship between education and unmet need is also quite different in each country. The highest levels of unmet need are among women with only primary education in Samoa (54.8 percent) and women with no education in Papua New Guinea (51.4 percent). In Solomon Islands, the highest level of unmet need is also among women with no education or only primary education.

There is no clear relationship between unmet need and household wealth. Only in the Marshall Islands is unmet highest in the poorest fifth of the population. Elsewhere unmet need is highest in the middle wealth quintile, except for Kiribati where the second highest quintile has the highest unmet need.

In summary, as was the case with the CPR, unmet need is not strongly associated with socio-economic factors at the micro-level on a cross-country basis. While unmet need is generally higher in rural areas, this is not true in all countries. Similarly, in some countries unmet need is higher among women with secondary education but in other countries uneducated women have higher unmet need. Furthermore, neither high nor low wealth is associated with unmet need. The strongest relationship in most countries is age, although it is not linear. In Solomon Islands and Marshall Islands, countries with the lowest level of unmet need, the highest levels were found in younger age groups. This was also the case in Nauru and Kiribati with much higher overall unmet need.

Another measure of the extent to which the family planning needs of a country or sub-groups within a country are being met is the “total demand” for family planning. This is the sum of women presently using contraception and those who have an unmet need. The proportion of the total demand that is met is current users divided by the total of users and non-users. Where unmet is low, it can be expected that the proportion of the total demand that is met will be high. This can be confirmed with reference to the Pacific Island countries with recent DHS (Table 8). The two countries with the lowest level of unmet need (Marshall Islands and Solomon Islands) have the highest proportion of total demand satisfied—84.6 percent and 75.6 percent, respectively.
Table 8: Percent of the total demand for family planning that is satisfied in selected Pacific Island countries by socio-economic characteristics (currently married women)*

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<td>43.0</td>
<td>56.6</td>
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<td>5.0</td>
<td>37.0</td>
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<tr>
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<td>37.6</td>
<td>44.2</td>
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<td>25-29</td>
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<td>81.7</td>
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<td>37.4</td>
<td>47.0</td>
<td>41.8</td>
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<td>84.0</td>
<td>42.7</td>
<td>51.8</td>
<td>36.2</td>
</tr>
<tr>
<td>40-44</td>
<td>62.0</td>
<td>--</td>
<td>97.6</td>
<td>94.6</td>
<td>41.4</td>
<td>46.9</td>
<td>29.4</td>
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<tr>
<td>45-49</td>
<td>58.8</td>
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<td>100.0</td>
<td>98.5</td>
<td>30.7</td>
<td>41.5</td>
<td>16.3</td>
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<td><strong>60.3</strong></td>
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<td><strong>75.6</strong></td>
<td><strong>38.6</strong></td>
<td><strong>44.2</strong></td>
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<td>71.0</td>
<td>Na</td>
<td>100.0</td>
<td>23.9</td>
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<td>93.8</td>
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<td>Quintile 1 (highest)</td>
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<td>87.7</td>
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<td>70.0</td>
<td>37.6</td>
<td>57.0</td>
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</tbody>
</table>

Source: DHS reports for specified countries. -- = number in sample too small. *In PNG, women who want more children are excluded from the calculation.

As was found with other fertility and contraceptive indicators, the percent of total demand for contraception that is satisfied is not clearly associated with the socio-economic characteristics of women at the micro-scale. To some extent, the proportion of demand satisfied is higher in urban than rural areas, but not in all countries. Women with primary or less education are more likely to have lower proportions of their total demand satisfied, but again this is not true in all countries. In general, as with the other indicators, younger women under 30 have a smaller
proportion of their total demand satisfied, thus demographic factors have a stronger impact than socio-economic ones.

c. Explaining patterns of unmet need

As Bushan (1997), Casterline and Sinding (2000), and others have pointed out, from a programme perspective the key issue in responding to unmet is to identify the country-specific causes of it. As Casterline and Sinding also note, there is a temptation for policy-makers to address unmet need by focusing almost exclusively on improving access to services; but lack of access is not always the primary reason for unmet need and detailed research may be required to uncover the actual reasons among various groups of women.

Although Demographic and Health surveys are not generally finely adapted to the specific country in which they are conducted, the results from DHS provide a useful point of departure for more detailed research on the underlying causes of unmet need. A standard DHS question asked of currently married women who are not using contraception is whether they intend to use contraception in the future. The responses to this question in seven Pacific countries are shown in Table 9.

Rather than employ the standard DHS format, however, the data in Table 9 have been arranged according to the “Ready, Willing, and Able” conceptualization of Lesthaeghe and Vanderhoeft referred to previously. Because women who are already practicing contraception can be considered as fulfilling all three conditions, they are excluded from the table. The two remaining categories of women are those who either are unable to use contraception and those who are unwilling. The inability to use contraception may be caused by lack of knowledge, the difficulty of locating a source, or the lack of money to pay for transportation or for the method itself.

Unwillingness to practice contraception arises from a number of factors, ranging from religious objections, spousal opposition to fear of side effects and general health concerns. A third category “not specified” is included to show the extent to which respondents give other reasons or are unable to give a response.

It is clear from Table 9 that lack of knowledge of or access to contraception is only a significant impediment to contraceptive use in Papua New Guinea, where 50.9 percent of women who say that they do not intend to use contraception in the future give this reason. Only in Solomon Islands (13.5) and Nauru (12.7) does the percentage of women citing this reason rise to above a few percentage points.
Table 9: Reasons for lack of intention to use contraception in the future among currently married women who are not currently using contraception, selected Pacific countries (%)

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<td>1.4</td>
<td>3.7</td>
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<tr>
<td>Access difficult/knows no source</td>
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<td>4.2</td>
<td>0.2</td>
<td>0.2</td>
<td>6.9</td>
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<tr>
<td>Too expensive/costs too much</td>
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<td>0.0</td>
<td>0.0</td>
<td>0.6</td>
<td>0.5</td>
<td>0.0</td>
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<tr>
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<td>0.5</td>
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<td>9.6</td>
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<td>1.3</td>
<td>1.4</td>
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<td>Health concerns</td>
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<td>5.1</td>
<td>15.5</td>
<td>7.1</td>
<td>17.5</td>
<td>9.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Fear of side effects</td>
<td>62.1</td>
<td>19</td>
<td>42.7</td>
<td>46.4</td>
<td>2.1</td>
<td>14.6</td>
<td>13.8</td>
</tr>
<tr>
<td>Inconvenient to use</td>
<td>0.5</td>
<td>2.5</td>
<td>8.9</td>
<td>0.3</td>
<td>0.0</td>
<td>0.5</td>
<td>0.0</td>
</tr>
<tr>
<td>Interferes with body's normal process</td>
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<td>6.3</td>
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<tr>
<td>Total (w)</td>
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<td>76.1</td>
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<td></td>
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<td>Other reasons</td>
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<td>1.3</td>
<td>12.7</td>
<td>2.8</td>
<td>0.5</td>
<td>15.6</td>
<td>16.1</td>
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<tr>
<td>Don’t know</td>
<td>3.8</td>
<td>2.5</td>
<td>1.9</td>
<td>7.0</td>
<td>1.1</td>
<td>1.6</td>
<td>4.9</td>
</tr>
<tr>
<td>Missing/ non response</td>
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<td>1.3</td>
<td>1.9</td>
<td>0.6</td>
<td>0.0</td>
<td>1.6</td>
<td>0.0</td>
</tr>
<tr>
<td>Total not specified</td>
<td>7.1</td>
<td>5.1</td>
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<td>1.6</td>
<td>17.2</td>
<td>21.0</td>
</tr>
<tr>
<td>TOTAL</td>
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<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>(N)</td>
<td>(182)</td>
<td>(79)</td>
<td>(213)</td>
<td>(644)</td>
<td>(561)</td>
<td>(377)</td>
<td>(1,030)</td>
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<tr>
<td>a/w ratio</td>
<td>0.01</td>
<td>0.15</td>
<td>0.01</td>
<td>0.18</td>
<td>0.02</td>
<td>0.07</td>
<td>1.80</td>
</tr>
</tbody>
</table>

Source: DHS reports for specified countries.

Note: Excludes women who are past menopause or have had a hysterectomy, have infrequent sex, are infecund or sub-fecund, or want as many children as possible. The group of women included in the table is not the same as those who currently have an unmet need for contraception because some of the women who currently have an unmet need may intend to use contraception in the future in which case they would be excluded from this table. Women with an unmet need who do not intend to use contraception in the future would be included in this table.
It appears that the inability to access contraception is not a major cause of unmet need in most of the Pacific countries recently conducting a DHS. That a majority of women in Papua New Guinea would cite this reason is understandable given the low level of female literacy, low urbanization and the extreme isolation of many rural villages in that country. To some extent these characteristics are also present in Solomon Islands, and this would explain why the proportion of women citing lack of access as a reason for not using contraception is second highest after PNG.

In other countries, however, the majority of women who do not intend to use contraception in future are “unwilling” to do so because of some form of opposition (their own or others) to family planning or concerns about health and side effects. In Tuvalu and Samoa, more than 90 percent of respondents report these concerns, whereas only 28.2 percent of women in Papua New Guinea do. The proportion of women who provide other (unspecified) reasons or don’t know is low in Tuvalu, Nauru and Samoa, but higher in the other countries, especially Papua New Guinea.

The final row of Table 9 shows the ratio of ability/willingness as an explanation of the lack of intention to use contraception. In six out of seven countries this ratio is low, showing that unwillingness, not inability, is the main factor underlying the unmet need for contraception, aside from fertility preferences. The exception is, as already noted, Papua New Guinea where difficulty of access is the main barrier to the use of contraception.

Of those who are “unwilling” to use contraception, a fear of side effects is the predominant reason given in three countries. In the other countries, some form of opposition is the main reason. When fear of side effects is combined with health concerns or “interferes with the body’s normal processes”, issues relating to health and side effects account for the largest number of responses among women who do not intend to use contraception. In Samoa and Kiribati, however, opposition to family planning is the predominant response. In Samoa, 70.2 percent of women who do not intend to use contraception in the future mentioned individual opposition to family planning as the reason. But in no country did husband’s opposition account for more than 5.5 percent of responses. Religious opposition to family planning was significant in only Kiribati and Nauru, countries that have a large Catholic population.

Several preliminary conclusions can be drawn from these data: 1) access to contraceptives do not appear to be the main cause of high unmet need, other than in Papua New Guinea which is a somewhat special case. This is consistent with other findings in the DHS that show that knowledge of contraception methods is relatively
high and most people know where to obtain them; 2) the principle cause of unmet need is not the unavailability of contraceptive methods but the unwillingness of women to use them; 3) the main reason that women are unwilling to use contraception have to do with the methods themselves and their impact (real or perceived) on women’s health or the physical or psychological discomfort that the methods might cause; 4) opposition to contraception by husbands or other persons is a negligible factor but religious opposition is significant in some countries; 5) opposition on the part of the respondent herself is very significant in Samoa and somewhat significant in Nauru, but not elsewhere. (In Samoa, there is a possibility that the very high proportion of “respondent opposed” may be a result of poor interview methods, particularly insufficient probing).

6. Programme implications of DHS findings

a. Opposition to family planning

The implications of the DHS results discussed above depend on the country in question as there is considerable variation between countries. The first point to be made is that DHS results need to be supplemented by further focused social research. The finding that 70 percent of women in Samoa who do not intend to use contraception in the future mention that they are “opposed” to family planning is a clear example. Before planning interventions to address such opposition, it is important to determine if this is a valid result or rather a consequence of interview methods. It is possible, for example, that interviewers over-used this broad category and did not distinguish between the various reasons why women could be opposed. In itself, “opposition” on the part of the respondent is not very informative. In Nauru, respondent opposition was also significant, but unlike Samoa, religious opposition was also an important reason for not intending to use contraception. In Kiribati, religious opposition was also the primary reason for women being unwilling to use contraception—substantially overshadowing health issues or fear of side effects.

Religious opposition to family planning is a difficult issue to address as all individuals have the right to practice their religion and follow its precepts. It is not the role of family planning providers to change religious views. Since most religious opposition in the Pacific comes from the Catholic Church, the issue to be investigated is whether respondents understood that “natural” family planning is acceptable to the Church. The “ovulation” method is taught by family planning nurses in most countries, even though it is understood that the failure rate is high.
b. Side effects and health concerns

It is clear that the primary issue that needs to be addressed in most countries where unmet need is high is the perceived health consequences of contraception, including the question of “side effects”. That some women experience side effects, especially with hormonal methods and IUDs, is indisputable. But whether the women who cite fear of side effects have actually experienced them themselves or are responding to generally held beliefs within the community cannot be determined from DHS. Further investigation, possibly using focus group methods might be needed to clarify this question. In small communities, one or two bad experiences with a contraceptive is likely to become well known throughout a community, raising the fear level even higher. More generalized concerns may well be based on incorrect information, such as claims that a method could result in sterility. Studies are needed that focus on what women and men actually know about various methods, including how they work and what their potential health consequences might be. Only when the basis of women's fears can be identified will it be possible to design programmes to address them, although forewarning women about the possibility of side effects can reduce the likelihood of discontinuation.

Where unmet need is low due to family size preferences, the central question is whether it is the function of a family planning programme to attempt to change family size preferences. ICPD championed individual sovereignty over family size decisions and promoted individual needs over demographic targets. This would appear to rule out the promotion of small families in general by governments, including family planning workers. However, family planning workers obviously have a role to play in promoting the concept of birth spacing in the interests of maintaining mother and child health. As Bushan (1997) has pointed out, however, there is something of a paradox in the concept of unmet need: “[O]ther things being equal, increase in contraceptive use decreases unmet need, whereas increase in potential demand increases unmet need”. Thus, the effort to promote child-spacing among women who do not already have an unmet need for spacing will increase unmet need by increasing potential demand—unless the additional unmet need created is immediately compensated for by an increase in contraceptive use.

This essentially brings the issue back to the reasons why women who currently have an unmet need do not intend to use contraception in the future. An increase in

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25 As Skinner (2008) notes, in matters of contraceptive complications in small communities, “bad news travels fast” and even one bad experience can have a significant impact on confidence among other women.

26 The principle of individual sovereignty in family size choices was already established in earlier international conferences on population.
demand without addressing current health concerns might be considered counter-productive.\textsuperscript{27}

c. Access

In situations such as that found in Papua New Guinea, where a large component of unmet need is related to lack of knowledge and lack of access, the policy implications are clearer. As noted earlier, in the 2006 DHS of PNG, 43.4 percent of currently married women who said that they did not intend to use contraception in the future indicated that they had no knowledge of a method of contraception, as compared with 14.4 percent who mentioned some form of opposition and 13.8 percent who mentioned fear of side effects. Clearly, in PNG there is a need to expand knowledge of family planning, but, as already noted, expanding knowledge has to go hand in hand with increasing services and supplies as well as addressing opposition and side effects. It would appear that the reverse is also true: expanding supplies and services without improving the quality of couples’ and individuals’ knowledge about methods would not necessarily increase contraceptive use.

d. Targeting specific groups with an unmet need

Because fertility preferences change through time, it has been argued (Casterline and Sinding 2000) that individuals can move in and out of the state of unmet need making it impossible to monitor which individuals have an unmet need at a specific point in time. These authors argue that it is inappropriate to expect health and family planning workers to monitor the fertility preferences of individuals. The approach they advocate is for programme managers to “be well informed about the societal-specific causes of unmet need and, accordingly, develop interventions to overcome those obstacles”. However, they also acknowledge that the socio-economic characteristics of persons with unmet need may be more stable than the status of specific individuals whose circumstances change through time. Accordingly, there is a case for developing programmes that are aimed at those groups that are more likely to have an unmet need than other groups.

Until the recent round of Demographic and Health Surveys were conducted in the Pacific, it would have been reasonable to assume that women living in rural and remote areas would be much more likely to have an unmet need for family planning than women living in urban centres. In the Pacific the term “rural” residence often implies outer-islands that suffer from infrequent and costly transport, poor health services (including difficulties of retaining staff and keeping stocks of medicine up to date). But DHS results indicate that there is no strict determinism between rural and

\textsuperscript{27} As Chung (2000) has pointed out, promoting the knowledge and use of contraception among adolescents while failing to make contraceptives easily available is unethical.
urban residence in cross-country comparison, whether the indicator employed is the CPR or the percent of women with an unmet need. As already noted, in some countries unmet need is higher in urban areas than in rural areas and this is also true of the CPR. In some countries there is little difference. It is notable that in the two countries with the highest unmet need (Samoa and Papua New Guinea), there is no apparent difference between rural and urban areas.  

On the basis of such data, it is not possible to say that family planning programmes are generally weaker in rural than urban areas. The only possible generalization from the data is that each country is different and programmes need to be tailored to specific national circumstances.

As with rural-urban differences, it would have been reasonable on logical grounds to assume that more educated women would have lower unmet need and higher contraceptive use. This expectation arises from the probability that more educated women would have more knowledge of family planning methods and more likely to be employed in paid work outside the home. But the association between education and reproductive behaviour was already questioned in earlier “KAP” studies conducted in the Pacific. The 1995 KAP study carried out in Vanuatu found that unmet need for effective family planning among currently married (or in union) women was 49.1 percent for women with college or university education and 49.7 percent for women who had “no schooling” (House 1998). When all methods (both ineffective and effective) were included, unmet need among women with only primary education (30.9 percent) was virtually identical to that of women with some college or university education (30.8 percent). After looking at several indicators of fertility behaviour, House (1999a) concluded “... fertility seems to have a limited response to increasing education at this stage of Vanuatu’s development and demographic transition”. This finding foreshadowed by more than a decade the findings of the recent DHS in seven countries, which produced similar results.

To some extent, however, the actual associations between education and unmet need vary between countries. In PNG, women with no education have much higher unmet need than women with secondary education and in Samoa women with only primary education have higher unmet need than women with more than secondary, so in these countries the relationship is in the expected direction. Again, the programme response would have to be tailored to the particular circumstances of each country.

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28 Although a test of statistical significance has not been carried out as yet, for all intents and purposes there is no difference between urban and rural CPR and unmet need in Samoa: national, rural and urban rates are 46, 46 and 45 percent, respectively.
The ICPD Programme of Action recommended that in seeking to assess the extent of unmet need for good-quality family planning services, countries should “pay particular attention to vulnerable and underserved groups”. As the analysis in this paper has shown, Demographic and Health Surveys do not fully accomplish this task in all settings and additional research using both quantitative and qualitative methods is needed. There is little doubt, however, that young, unmarried people are both “vulnerable” and “underserved”. To some extent this is evident in the teenage fertility rate, which is high in some countries and does not appear to follow the general fertility trend. Recourse to illegal abortion by young people is another indicator, although statistical data are hard to come by.29

D. COMMODITY SECURITY

1. Commodity security Plans

Reproductive health commodity security (RHCS) has received a great deal of attention in the Pacific Islands region over the past decade. In 2003, Pacific Ministers of Health agreed to a Reproductive Health Commodity Security Plan of Action for the region. A Regional Workshop on RHCS was subsequently conducted in 2004 for health personnel from Pacific Island countries. In 2008, Pacific Ministers of Health endorsed the Pacific Policy Framework for Achieving Universal Access to Reproductive Health Services and Commodities. During the period 2005-2008, the UNFPA Sub-Regional Office in Fiji carried out detailed assessments of the status of reproductive health commodity security in 10 Pacific Island countries. Some of these assessments were follow-ups on earlier assessments conducted within the previous five years, thus changes through time have also been assessed. Evidence-based Guidelines in Family Planning for Health Personnel have also been prepared for several Pacific Island countries, which also cover commodity security and related topics.

These assessments have been comprehensive, covering the full range of issues connected to commodity security, including:

- Legislative framework and its impact on contraceptive availability and quality control
- Policy framework and the level of political commitment
- Coordination between components of the health system, NGOs, and others
- Logistical systems for managing stock
- Methods of forecasting and procurement arrangements

29 A clue to the extent of illegal abortion is the number of women admitted to hospital suffering from complications arising from abortion. In Papua New Guinea, 23 percent of gynaecology admissions to the Port Moresby General Hospital in 2001 were associated with complications arising from illegal abortions (Hayes 2002).
• Inclusion of contraceptives on “Essential Drugs List”
• Maintenance of records and compilation of statistics
• Supervision

The quality and scope of these assessments is somewhat variable and therefore the results are not easily summarized. In general, much less attention has been paid to the situation in rural areas or outer islands, mainly because of the lack of or high costs of transportation and limited amount of time available to the assessors.

The results of these assessments cannot be discussed in detail here, but the overall impression they give is that there are no significant legislative barriers to the purchase or supply of contraceptives in these countries and the overall policy stance of governments is positive. Some countries still have regulations in place that require a husband’s signature before a tubal ligation procedure can be carried out, and this requirement is seen by some women to be a constraint upon their reproductive rights, but such regulations are undergoing review. While “stock-outs” are reported in most countries, there are no precise figures on how frequently these occur and to what extent women are unprotected against unwanted pregnancy and for how long. In most countries, contraceptives have been placed on the “Essential Medicine List” in order to guarantee security of supplies.

So far as the supply of contraceptive commodities is concerned, the general arrangement in the Pacific is that the UNFPA purchases and pays for contraceptives and other supplies and equipment on behalf of governments for distribution by government-operated health facilities, usually public health centres or clinics or, in larger centres, a dedicated reproductive health clinic attached to a hospital or other health facility. In one or two countries, UNFPA purchases commodities on behalf of the government on a “third party” procurement arrangement with the costs covered in the government budget. Another modality of purchase and supply is through NGOs, often Family Health Associations (FHA) affiliated with IPPF. FHAs obtain supplies through the IPPF, generally at low or no cost. Finally, in some countries, contraceptives are available in pharmacies which purchase their supplies from normal wholesale suppliers based overseas. Because of its high HIV prevalence rate, Papua New Guinea is a somewhat special case with several international donors providing condoms. Other contraceptives and commodities are provided through the health budget and the Family Planning Association.

In general, the distribution and dispensing of contraceptives in the developing Pacific countries is based upon a three-tier system:
1. Government-operated public health facilities associated with MCH services or reproductive health clinics. Services are generally free and supplies are provided by UNFPA.

2. Family Health Associations (Family Welfare Associations in some Countries) affiliated with IPPF and with supplies and commodities provided by IPPF. Other NGOs (such as YWCA or generic youth clubs) also distribute contraceptives and provide reproductive health services. In some countries NGOs are supplied by the government with UNFPA being the ultimate supplier.

3. Private pharmacies and/or doctors in private practice who dispense contraceptives either over-the-counter or by means of prescription. These outlets tend to be concentrated in urban areas.

Although there are shortcomings in the reliability of contraceptive supplies and there is room for improved logistical arrangements, commodity security has greatly improved in recent years and the prospects for further improvement remain quite good. As in so many other areas to do with the delivery of health services, Papua New Guinea (PNG) is a special case. This arises from the fact that PNG remains a predominantly rural, village society. A significant proportion of village-based health facilities (Aid Posts), have closed in recent years due to the difficulty of maintaining staff, law and order problems and the shortages of supplies. The extreme remoteness of so many rural villages makes commodity security very difficult to achieve.

2. Supply chain and logistics management

Ensuring a secure, timely and reliable supply of contraceptives for all persons who wish to use them is a strategy that has received substantial technical and financial support over the past several years in Pacific Island Countries. The key organizations providing it are: UNFPA, AusAID, NZAid, and IPPF.

As a result of this support, contraceptive choice has broadened from oral contraceptives, condoms and injectables to include emergency contraception pills, implants and female condoms. Tubal ligations are undertaken in many countries in urban areas and vasectomies are performed in a few countries, although demand for the latter is low.

3. Reproductive Health policies and strategies

The incorporation of reproductive health, including family planning, into national and sub-national development plans and sector plans is well advanced in most Pacific Island Countries, but sexual health and family planning initiatives targeting specific groups is less evident. Nearly all developing Pacific Island Countries (Cook Islands, Fiji, FSM, Nauru, Kiribati, RMI, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu) have developed or are in the process of developing national
reproductive health policies and strategies in which voluntary and rights-based family planning is a core component. As DHS surveys are very recent and as yet not fully analyzed, it has not been possible to target specific groups, other than adolescents, whose needs are addressed largely by Family Health Associations or other NGOs.

4. Funding sources

The UNFPA is the primary funding source for contraceptive commodities and other RH supplies in the majority of Pacific Island Countries (not including PNG and Fiji). UNFPA has been advocating for many years among Ministers of Health to include funds in their own health budgets for the purchase of contraceptives, with very limited success. Larger Island countries such as Fiji and Papua New Guinea purchase the bulk of their supplies through their own budgets, supplemented by donor funding—particularly in PNG where the HIV epidemic has reached a serious level (Hayes 2007).

E. LINKAGES TO OTHER REPRODUCTIVE HEALTH ISSUES

1. HIV and AIDS

Strategies for strengthening national capacity to identify and implement linkages for sexual and reproductive health and HIV are currently being developed in Vanuatu and the Federated States of Micronesia. These include pre- and in-service training in family planning and HIV counselling and testing.

2. STIs

While concerted efforts are being made in some countries to link and integrate STIs prevention and treatment with Family Planning, this has not been uniformly successful in some Pacific Island Countries. Some successes are noted in the area of provision of Youth Friendly Services for both contraception and STIs screening in some countries but also in Vanuatu with integration at the national and provincial level.

F. SOCIO-CULTURAL CHALLENGES TO FAMILY PLANNING

1. Demand and supply of children

The decline in infant and child mortality rates from the late 19th and early 20th century increased the supply of children likely to survive to adulthood, thus increasing the incentive to employ fertility controls within marriage. The abandonment of customary practices that had limited fertility in the pre-contact period also contributed to an increasing potential supply of children. There is no evidence to
support the proposition that any Pacific Island culture sought to produce as many children as was physiologically possible for a woman to bear, or as many as “God provided”. In areas where inter-tribal warfare was endemic there was a belief that there is “strength in numbers” and these beliefs linger today. In pre-contact times, however, pregnancy and childhood was well understood to carry risks to health and life, thus women were disposed to avoid excessive childbearing. From a male perspective, contact with women was potentially debilitating in any case and making women pregnant was considered “work”.

Missionary teaching did not stress large families as such but rather that the decision on the number of children that a woman would bear was not hers to make but rather God’s. Interference with God’s will in such matters was sinful. In those areas that had experienced a massive increase in mortality following the introduction of unfamiliar infectious diseases, missionary views were functional in ensuring that such decimated populations recovered their numbers. Pro-natalist attitudes remained strong for several generations afterwards.

There is a wide range of evidence that suggests that a family of 3 or 4 children is generally preferred among Pacific peoples who continue to live in the rural village universe. In some areas it is believed that a man is not fully mature and qualified to participate as a full member of the community until he has produced three children. The possibility that some of these children may find employment overseas or in local towns eases the resource constraints that operated in earlier times when land-tenure systems limited access to land beyond that owned by kin-groups. As is apparent from low levels of fertility in such countries as French Polynesia, New Caledonia and Northern Mariana Islands, low fertility is not a necessary component of the “Pacific Way” of life.

2. Adolescents and young people

In most Pacific cultures, young people between the age of puberty and early adulthood were given considerable freedom to experiment in matters of sex and sexuality, although there is much variation across and within cultures. A very widespread belief, remnants of which exist today, is that a young woman will only fall pregnant if she has repeated intercourse with the same partner. Switching of partners, it was believed, will ensure that a pregnancy will not occur. In Tahiti well into the modern era, mothers advised their daughters not to stay with one boy friend (Levy 1975) for this reason. It is also not uncommon for young men to prefer to

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30 In many areas in Papua New Guinea it was believed, and to some extent still is, that repeated acts of sexual intercourse are required to “build-up” a baby. This is the basis for a belief among youth that pregnancy cannot result from one act of sexual intercourse.
marry a woman who has already given birth as visible proof that she is not sterile, thus guaranteeing additional children.

Adolescent sexuality, however, remains a highly contested area in the Pacific and attitudes are changing very slowly. The view that sexuality education and the supply of contraceptives to young, unmarried people will lead to promiscuity resulting in unwanted pregnancy and bring shame to the family. In the Pacific, adolescent pregnancy generally occurs outside marriage, unlike in Africa or India where teenage births result from early age of marriage.

3. Gender and family relations

Gender equality is far from being achieved in the Pacific, although it is not clear to what extent the current status of gender relations affects fertility levels, the use of contraception, and the unmet need for family planning. In general, opposition from husbands is not cited by women as a major cause of their unwillingness to use contraception. However, the prevalence of gender-based violence is very high in those countries where research has been conducted and it is likely that coercive sexual relations results in unwanted pregnancy.

G. CONCLUSIONS AND RECOMMENDATIONS

1. Conclusions

This paper has reviewed recent micro- and macro-level evidence on relationships between fertility trends, contraceptive prevalence and unmet need for family planning in Pacific Island countries. The main conclusions from this analysis are as follows.

- There is evidence that the fertility transition has “stalled” in several Pacific Island countries. The Total Fertility Rate is currently around 4 in nine countries and in some of these countries fertility has hardly changed for over a decade or even longer. However, in several other countries and territories, fertility decline has continued unabated. With the exception of Fiji, the countries that have experienced an uninterrupted fertility transition to replacement or near-replacement level are those that are in some form of political dependency with metropolitan states.\(^{31}\) The particular features of these political links that are conducive to fertility decline have not been examined in this study, but it is

\(^{31}\) American Samoa is an exception to this generalization. The TFR in American Samoa is similar to neighbouring Samoa.
probable that a combination of higher per-capita incomes, the availability of private medical care and health insurance, higher levels of education and greater formal labour force participation among women are key factors.32

• Similarly, contraceptive prevalence rates in many Pacific countries have remained below the average for the less developed regions of the world and have increased at a slow pace or not at all over the past decade or more. In some countries it is likely that official rates are underestimated due to the non-inclusion of private health providers from health ministry statistics, but survey-based estimates generally capture all sources of supply. Notwithstanding these measurement issues, several Pacific countries appear to fit a common pattern of rapid take-up of family planning on the initial establishment of a programme followed by a plateau that may last for many years. This paper has not examined the historical evidence underlying the levelling-off of the rate contraceptive use, but it is likely that a combination of factors is responsible, including:

  • A preference for a family size of 3-4 children due to the need for old-age security in the absence of alternative sources of support;
  • Dissatisfaction with the available methods of contraception and the limited range of alternatives;
  • Actual or perceived side effects, particularly due to hormonal methods and IUDs;
  • The influence of some churches whose doctrines do not allow interference with the natural functioning of the human body, which includes opposition to sterilization—either of men or women.

• In several Melanesian countries, notably Papua New Guinea, Solomon Islands and Vanuatu, fertility decline has been slow, but the use of modern contraception has increased quite steadily over the past two decades, even against many obstacles. The slow pace of fertility decline in these countries is related in part to the slow decline in family size preferences, although in Papua New Guinea, the gap between the “wanted” TFR (3.0) and “actual” TFR (4.4) is now 1.4 children, rather smaller than it was 20 years ago. Limited access to health services in general—and reproductive health services in particular—is constraining the use of family planning in this country.

• The cross-country relationships between fertility and socio-economic factors such as GDP per capita ($R^2=0.017$)33 and the proportion of the population below the basic needs poverty line is weak ($R^2=0.018$). Similarly, the contraceptive

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32 Legal abortion no doubt contributes to lower fertility in some of these territories.
33 Note that GDP data were not available for the dependent territories, thus biasing the relationship between fertility and GDP.
prevalence rate is only weakly associated with the level of GDP per capita ($R^2=0.208$). TFR shows some association with infant mortality ($R^2=0.5165$), as transition theory would predict.

- At the micro-level, the expected relationship between the socio-economic status of women and contraceptive use was not found in all countries. Although contraceptive use rises with education in some countries, in others there is an inverse relationship. However, the weight of evidence suggests that women educated to secondary level or beyond are more likely to use contraception than women with little or no education.

- Similarly, rural urban differences in contraceptive use are non-existent in some countries while in others the reverse of expectations with higher contraceptive use in rural as compared with urban areas. This finding is anomalous in the geographical context of the Pacific.

- Contraceptive use is, however, closely linked to age and parity. Women aged 40 and over and women who already have 5 or more children are much more likely to use contraception than younger, lower-parity women. There also appears to be an association between contraceptive use and contact with a health facility.

- The unmet need for family planning ranges from a low of around 8 percent in Solomon Islands and Marshall Islands to a high of 46 percent in Samoa. Papua New Guinea is also at the high end of the range at 44 percent. Due to the omission of some categories of unmet need in the DHS in Papua New Guinea, it is highly likely that this country has the highest level of unmet need among all those countries that have had a DHS in recent years.

- The determinants of unmet need for family planning vary considerably between countries but other than in Papua New Guinea, lack of access, including lack of knowledge and inability to obtain services and supplies, is not the primary cause. The primary cause of unmet need is “unwillingness” to use the available methods of contraception. Unwillingness to use contraception arises from various types of “opposition”, either for religious or personal reasons or worries about side effects and other health concerns. Concerns about side effects and the health risks associated with contraception are the single-most important cause of unmet need in most countries. There is little doubt that such concerns are exacerbated in
small village communities in which face-to-face communication dominates social relations.  

- Although the relationship is far from linear, and in some countries inverse, women with little or no education tend to have higher levels of unmet need. The highest level of unmet need among any group in the countries having a DHS was found among Samoan women with primary or less education (55 percent).

- The absence of close associations between socio-economic factors at either the macro- or micro-levels and contraceptive use, fertility levels, and unmet need suggests that the primary obstacle to increased use of family planning and the reduction of unmet need may lie in the socio-cultural systems of Pacific societies. Further specification of the precise nature of these socio-cultural factors would require more detailed research using qualitative methods rather than fixed-response surveys. However, that does not negate the need to ensure universal access to quality contraception information and services in all countries.

2. Recommendations

Recommendations for consideration by countries and development partners, based on the current status and in trying to achieve universal access to quality family planning services in all countries include:

- Health information systems to be re-designed to capture all services dispensing contraceptives, including both public and private health services in order to provide a more accurate and complete measure of contraceptive use. Consider the use of a dedicated RH survey in selected countries to verify contraceptive use patterns and their determinants.

- Further analysis of DHS data to more precisely identify the determinants of unmet need for family planning and to resolve counter-intuitive survey results. Such research to determine, among other things, whether concern about “side effects” arises from personal experience or from second-hand reports.

- Review of the socio-cultural obstacles to contraceptive use among young, unmarried people (adolescents) and older women, both of which groups have special needs.

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34 “Quality concerns voiced among FP-seeking consumers seems to travel rapidly and widely (bad news travels fast) and if not followed up could threaten the credibility and acceptance of goods, may harm the reputation of RH services, and affect public confidence in the health supply chain” (Skinner 2008)
• The conduct of qualitative studies using appropriate methods such as focus groups and intensive interviews to determine the basis for opposition to the use of family planning. Such studies to measure the impact of reference groups within the community, opinion leaders and influential persons.

• Further research on problems of access in rural areas in those countries in which DHS results suggest that unmet need is unaffected by urban-rural residence.

• Conduct qualitative studies to develop approaches to family planning education for poor, and poorly educated or illiterate women.

• Wherever possible, strengthen primary health care services (as endorsed in the Madang Commitment by Ministers of Health in 2009), particularly in rural areas, including the provision of incentives for health personnel to work in remote areas. Ensure that family planning services remain free.

• Continue and if necessary expand training programmes for RH nurses to improve the quality of counselling provided to clients prior to adopting a contraceptive method. High quality counselling has the potential to address the fear of side effects, misinformation and clients’ discomfort with particular methods as well as decrease the discontinuation rates.

• Reinforce the central role of family planning in reproductive health programmes in RH policies and programmes.

• Continue efforts to ensure that all service delivery points have available the widest practicable choice of contraceptive methods and that RH nurses have the skills to provide comprehensive and accurate counselling.

• Consider on a country-by-country basis the greater use of out-reach, including home visits, particularly to follow-up on women with health concerns. Identify women at risk of discontinuation or who have high unmet need. Explore methods to encourage more frequent visits to health facilities.

• Continue and intensify efforts to improve RH Commodity Security through continued training in logistics, inventory management, warehousing, for health care professionals at all levels of the supply chain management including primary health care providers as well as national pharmacists.
• Identification of national champions as advocates for sexual and reproductive health, including family planning, in all countries.

• Continue to advocate for gender equality and the rights of women and girls to achieve a high standard of sexual and reproductive health, including access to family planning methods of their choice. Male involvement in family planning decisions to be encouraged through appropriate training.

• Promote access for all women and men, especially young people, living in peri-urban and informal settlements, rural areas and outer islands, and disadvantaged or marginalized groups, to a full range of high quality sexual and reproductive health information, family planning services and commodities. Improve awareness about high risk behaviour and culturally determined behaviours that act as barriers to the use of services.

• Assess the extent to which family planning and sexual and reproductive health programmes are identifying those groups that are disadvantaged in terms of access for reasons of cost, transportation or low levels of education.

• Continue to promote condom programming with the support of, including the development of a rapid needs assessment toolkit for condom programming and promoting community based distribution through training of peer educators and supply of commodities.

• Improve outreach for condom programming, particularly for most at risk young people, has involved parents and religious and cultural leaders, given their status as gatekeepers in many Pacific societies, as well as the young people themselves.

• Programming efforts should seek to identify the most at risk young people. A network of sustainable NGOs focussing on behavioural change communication, provision of IEC materials and contraceptives is needed in most countries. Social marketing techniques should also be explored in different communities.

• Barriers, including political, socio-cultural and service, to supplying contraceptives to sexually active adolescents need to be removed so as to enable them to achieve their educational and life aspirations while taking into account their reproductive needs. Specifically tailored methods for providing contraceptives to young people need to be designed in settings where health care providers and pharmacists are themselves the main barriers facing young people in accessing the supplies and services they need.
References


Caldwell, J. (1973) Conclusions. New Guinea Research Bulletin...


