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Women's education and economic development in Melanesia

K. G. Gannicott and Beatrice Avalos

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n.a.	Not applicable
..	Not available
-	Zero
.	Insignificant

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ABBREVIATIONS

AIDAB	Australian International Development Assistance Bureau
EMMS	Equity and Merit Scholarship Scheme (AIDAB)
GNP	gross national product
OECD	Organisation for Economic Cooperation and Development
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Social and Cultural Organization
UNICEF	United Nations Children's Fund

I

THE VALUE OF EDUCATING WOMEN

The central issue emerging from this analysis is that educating women yields future benefits to women themselves, to their families, and to society at large, but the burden of costs is often borne by parents alone.

Women's education provides a classic example of a divergence between private and social costs and benefits (Table 1). The implications of this divergence are straightforward: the education girls receive is likely to be below the socially optimal level. The major advantage of an approach focusing on social and private costs and benefits is that it explains why parents may 'rationally' prefer to give their sons more education than their daughters: in a poor country, parents will perceive that the costs (both financial and psychic) of educating their daughters are much higher than the benefits they can expect to receive.

It might be argued that many of the benefits of educating girls, such as the health and fertility benefits, will in fact accrue to girls and their families, and therefore it is not clear why such benefits do not form part of the notional investment calculation by parents. Schultz (1991) has observed that in traditional societies parents may simply be unaware of such benefits.

THE MOST FRUITFUL POLICY FOR GOVERNMENTS is to try to speed up the process of disseminating information about the value of educating women.

Table 1
Costs and benefits of educating girls

	Market	Non-market
Current costs		
Private		
Parents	Uniforms Supplies Tuition Travel	Opportunity costs of time in school
Student	Forgone earnings (especially at higher levels of schooling)	Psychic costs
Social	Public expenditures for schooling	Forgone output of children when in school
Future benefits		
Private		
Parents	Higher family income	
Student	Higher earnings Greater occupational mobility	Longer life expectancy Lower infant mortality Better fertility control
Social	Higher GNP Increased labour productivity Higher GNP growth Higher taxes on earnings	Reduced population growth Healthier population Better functioning political processes

Source: Hill, M.A. and King, E.M., 1991, 'Women's education in developing countries: an overview', in E.M. King and M.A. Hill (eds), *Women's Education in Developing Countries: barriers, benefits and policy*, World Bank, Washington, DC:27.

The health, nutrition and fertility benefits associated with women's education are a relatively recent phenomenon.

In the past, when effective modern health inputs such as antibiotics, vaccines and oral rehydration salts were not readily available to low-income populations, the ability of a more-educated mother to shelter her child from health risk may have been more limited than it is today (Schultz 1991:66).

Similarly, the better educated woman today can control her reproduction with greater ease and certainty than in the past because of the better range of birth control techniques.

The majority of parents in a low-income traditional society may not understand these benefits, and parents will require time not only to digest but especially to act on this new knowledge. Schultz's line of argument is persuasive, and it suggests that as these benefits become more widely understood, information about the advantages of educating girls will itself affect parental and family behaviour. Even when a daughter is not expected to work in the formal labour force, parents, families, and future husbands will shift their preferences towards the education of women.

This in turn suggests that the most fruitful policy for governments is to try to speed up the process of disseminating information about the value of educating women. There is probably little to be gained—indeed, the risk of creating a counterproductive response is probably high—if a policy of information dissemination degenerates into a strident exercise castigating the lower level of women's education as being the result of bias or discrimination. Discrimination may, of course, exist in specific settings or markets, but it is not a useful contribution to dismiss parental or male values in a traditional society in such terms. The education of women in Melanesia is symptomatic of a wider pattern of discrimination that is deeply embedded in Melanesian cultural norms. In Papua New Guinea, for example, male dominance is increasingly exercised through wife beating, which has become a serious problem. The strength of cultural norms is exemplified in the fact that there is survey evidence suggesting that substantial proportions of women, even among the educated urban élite, do not condemn the practice of wife beating (Avalos 1993:5).

The international evidence is that the education of women makes hard-headed economic sense. The appropriate policy is to provide and publicise such information so that parents can factor it into their calculations and adjust their behaviour accordingly. In the countries of the South Pacific this 'hard-headed economic sense' is likely to show benefits in two important areas. First, the education of women is likely to result in improvements in health. Much of the sickness and disease in Vanuatu, Solomon Islands and Papua New

Guinea, especially for children, is a result of a few types of communicable diseases which often involve the interaction of infection and malnutrition (UNICEF 1991a, 1991b, 1993). Respiratory infections (asthma, tuberculosis, dengue fever), malaria and skin infections are the most common causes of sickness in the population as a whole. Malnutrition and diarrhoea are common in children, and

the synergistic link between malnutrition and infection is increasingly recognised. Infections such as diarrhoea, malaria and acute respiratory infections weaken the nutritional status of the child by lowering resistance and inhibiting absorption of nutrients. The child, more susceptible to further infection and nutritional deterioration, becomes locked in a pattern which can lead to death (UNICEF 1993:27).

Fiji provides a particularly sharp example of changing patterns of health and the difficult resource issues emerging from that change. Fiji has experienced a rapid rise in illness and death from 'modernisation diseases' such as heart disease, cancer, diabetes mellitus and accidents, while traditional patterns of disease have also persisted among some sections of the population (Thomas 1993).

While improvements to this picture require a broad combination of policies, major improvements can be achieved through simple and inexpensive methods such as the provision of relevant health and nutrition education to families and communities, the promotion of methods of disease prevention, the fostering of greater community participation in the provision of health services, and the provision of maternal and child health services. Educated women can play a vital role in ensuring the success of such policies. All the evidence for developing countries suggests that there is likely to be a substantial payoff in improved family and child health in the Melanesian countries from investing in the education of females.

PAPUA NEW GUINEA, SOLOMON ISLANDS AND VANUATU mean years of schooling for females are still well below primary school completion...policies to increase the quantity and quality of schooling received by girls are a vital, and probably indispensable, part of policies for population control in countries where such control is now urgent

The second major payoff is likely to result from the correlation between women's education and reduced fertility. Rates of population growth are high in Papua New Guinea, Solomon Islands and Vanuatu. Fertility rates are very high, and the World Bank has commented that

without more active family planning programs, population growth will continue to reduce substantially the benefits of growth and will further strain the limited capacities of governments to provide basic services and maintain adequate nutritional standards (World Bank 1991a:65).

If present rates of population growth continue for even ten more years, consequences for schooling and employment provision may border on the catastrophic (Cole 1993).

One of the major international findings is the evidence of a threshold effect for women's schooling and fertility reduction. That is, increased education tends to decrease fertility, with the decrease greater for the education of women than for the education of men, but in low-income/low-literacy countries educational levels for women had to cross the threshold of completed primary schooling before there is a significant negative effect on fertility. This is a particularly significant finding for the Melanesian countries, because in Papua New Guinea, Solomon Islands and Vanuatu mean years of schooling for females are still well below primary school completion (see Tables 2 and 3). The enrolment rates for girls imply that even for the present generation, girls do not on average complete primary education. Policies to increase the quantity and quality of schooling received by girls are a vital, and probably indispensable, part of policies for population control in countries where such control is now urgent.

II

**EDUCATING WOMEN: THE
MOST
INFLUENTIAL INVESTMENT****A DIFFERENT PERSPECTIVE**

While equity with men is a prominent aspect of the case for improving women's education, another argument is beginning to emerge—the education of women makes hard-headed economic sense. Recent research indicates that the attainment of development goals (such as economic growth, reduced infant mortality, increased life expectancy, decreased population growth and improved human resources) is linked not only to the education of women, but to the size of the gap between the education levels of women and men. In this paper the equity arguments are taken as given. The focus here is on the substantial body of international literature on the contribution of women to development, and on the implications of that literature for Melanesia.

Education in the Melanesian countries of the South Pacific (Fiji, Papua New Guinea, Solomon Islands and Vanuatu) has been much studied in recent years. While Fiji embarked on independence with a well-developed system of schooling and a generally well-educated population, Papua New Guinea, Solomon Islands and Vanuatu all moved out of colonial rule with a daunting legacy of limited school systems and low levels of work force skills. Political turmoil in Fiji in the late 1980s, and the ensuing emigration of many of that country's most educated (primarily Indian) citizens engendered renewed interest in the supply capacity of the Fijian education system. All these countries experienced low rates of economic growth during the 1980s, and the main theme of much of the recent literature has been the formidable task faced by Papua New Guinea and the island countries of the South Pacific (the Melanesian group in particular) in supplying the skills necessary to improve their rates of economic growth (see, for example, World Bank 1991a, 1991b).

Much of the writing has focused on quantitative and qualitative issues in schooling from the viewpoint of education's role in economic development, but there has also been a continuing interest in equity issues. Solomon Islands and Vanuatu are classic South Pacific archipelagoes, scattered across vast distances of ocean, and provincial access to schooling is a vital social as well as political concern. Similarly, it would be a rare piece of writing today which did not tackle equity aspects of women's education. For example, in a series of country situation analyses, UNICEF has provided a major data resource on the education and health of women and their children in the South Pacific (UNICEF 1991a, 1991b and 1993 for Vanuatu, Fiji and Solomon Islands respectively).

It is an empirically robust observation that in many countries parents have traditionally preferred to give their sons more education than their daughters. The standard argument explaining this parental preference is that it is a rational response to the constraints imposed by poverty and to the expected returns determined by labour market conditions and cultural traditions: when the expected returns from sending daughters to school are lower than the costs of doing so, female education becomes an unattractive investment to parents (Hill and King 1991:23). In this sense parental preference for the education of their sons can be described as 'rational', rather than discriminatory behaviour.

Yet what seems to be rational from the perspective of the parents, may not be rational from the perspective of the society and economy at large. International research suggests that the education of women has substantial benefits for developing economies. From the perspective of policymakers and development planners, improving the education of women may be the most efficient approach to attaining development goals.

This paper begins with an overview of women's education in the four Melanesian countries. It then turns to an assessment of the contribution of women's education to economic and social development, drawing on evidence from a wide variety of developing countries. The situations of the four Melanesian countries, Fiji, Papua New Guinea, Solomon Islands and Vanuatu are then considered in light of the international evidence.

WOMEN AND EDUCATION IN MELANESIA: AN OVERVIEW

Consider first the most common indicator of educational attainment. Literacy is one of the principal goals of every system of formal education around the world, and the ability to read and write is one of the fundamental indicators of educational attainment. In the Melanesian countries, as in other developing countries, literacy rates for women are below those for men (Table 2).

Table 2
Adult literacy
 (percentage of population aged 15 and over)

	Earlier year	Latest year	Females as percentage of males for latest year
Fiji			
Males	78 (1966)	90 (1986)	
Females	64	83	92
Papua New Guinea			
Males	48 (1980)	65 (1990)	
Females	30	38	58
Solomon Islands			
Males	..	27 (1991)	
Females	..	17	63
Vanuatu			
Males	57 (1980-85)	68 (1989)	
Females	48	60	88
All developing countries			
Males	..	75 (1990)	
Females	..	55	72

Sources: Fiji data are from Fiji, Bureau of Statistics, 1989, *Social Indicators for Fiji*, Suva:38. Data for Papua New Guinea are from Booth, H., 1991, *Papua New Guinea: a statistical profile on men and women*, UNDP/AIDAB/UNIFEM Mainstreaming Project, Port Vila:7 for 1980 and from UNDP, 1993, *Human Development Report 1993*, Oxford University Press, Oxford:145 for 1990. Literacy rates for Solomon Islands are from Solomon Islands National Literacy Committee, 1991, *A Survey of Literacy and Language March-November 1991*, Honiara:20. Vanuatu data for the period 1980-85 are from Asian Development Bank, 1991, *Education and Development in Asia and the Pacific*, Manila:83 and those for 1989 are from Booth H. and Muthiah, A.C., 1992, *Pacific Human Development Report: Statistical database*, prepared for UNDP, Suva (unpublished): Table 5. Average for all developing countries is from UNDP, 1993, *Human Development Report 1993*, Oxford University Press, Oxford:145.

It needs to be recognised that considerable uncertainty surrounds the measurement of literacy rates. By definition, literacy rates measure the proportion of the adult population which can read or write, but methods of measurement differ among countries. Data on adult literacy are usually collected from national censuses, but such data are often self-reported and of doubtful accuracy. In Fiji, estimates on adult literacy are also derived from census questions, but a person is only considered to be literate if he/she has completed at least 4 years of primary school. The Solomon Islands provides a striking example of these measurement issues, with the National Literacy Committee finding that 47 per cent of survey respondents claimed ability to read and write in Pijin, but only 16 per cent were considered literate in Pijin when tested (Solomon Islands National Literacy Committee 1992:20–1). Literacy data used by Hill and King (1991:3) are based on the UNESCO criterion of whether a person can ‘with understanding both read and write a short, simple statement on his everyday life’. This is a useful working definition, but those who can pass such a test are not necessarily functionally literate in the sense of being able to make productive use of literacy skills. Many developing countries (and this is true of the Melanesian group) contain a number of groups speaking a wide variety of dialects or languages, and an adult who is literate in the local dialect may not be literate in the national language.

These measurement difficulties mean that inter-country comparisons of literacy rates need to be treated very cautiously: the apparently superior record of one country may reflect little more than its particular method of measurement. However, the focus of this paper is not predominantly on comparisons between countries, but on comparisons between men and women. While the lack of uniform definitions means that comparisons between countries should be seen as approximations, there is no reason to suppose that male/female differentials within a given country are subject to any particular measurement bias.

A MAJOR EXPLANATION FOR THE LOWER ADULT LITERACY RATES of women in Melanesia is that the average amount of schooling accumulated by women is below that of men

Keeping in mind these caveats, a number of observations are apparent from the data in Table 2. First, literacy rates for the region are consistent with the pattern of evidence right around the developing world. That is to say, literacy rates for females are substantially below those for males. Second, only in Fiji are literacy rates for men and women unambiguously higher than the developing country average. Third, the relative position of females in Papua New Guinea and Solomon Islands is substantially below the international average. Fourth, although there are only limited data on improvements over time, two interesting and opposing phenomena are clear. The first of these is that the male/female differential has been closing very rapidly in Fiji. Among ethnic Fijian students, primary enrolment ratios have never differed much between males and females. The low literacy rate for females in earlier years was mainly a function of social and economic customs among Indian Fijians: Indian females were not encouraged to attend school or to participate in the labour market. During the last 20 years this custom has changed, and the proportion of Indian females who have completed four or more years of schooling has increased from 45 per cent in 1966 to 74 per cent in 1986 (Fiji 1989:38).

Papua New Guinea provides an example of the opposite phenomenon. The female adult literacy rate is currently 58 per cent of the male rate and this is actually a worse relative position than ten years ago. In 1980 the comparable percentage was nearly 63 per cent. This arithmetic needs to be interpreted cautiously. In recent years females in Papua New Guinea have made substantial progress in closing the male/female gap in school attendance, and it cannot be ruled out that this worsening of the relative position of females is more apparent than real, reflecting not much more than measurement problems. It is worth noting that UNDP (1993:153) reports a worse relative position for women in 1990 than 1970, and Avalos (1993:9) reports that despite an expectation that illiteracy rates would be lower in the younger age groups of the population, there is a critical age group (20–24 years) in Papua New Guinea where the male/female gap in literacy is particularly large.

Adult literacy is not precisely correlated with amounts of formal schooling since literacy can be acquired outside the school system. A major explanation for the lower adult literacy rates of women in

Table 3
Mean years of schooling, 1990

	Males	Females	Total
Fiji	5.6	4.6	5.1
Papua New Guinea	1.2	0.6	0.9
Solomon Islands	1.2	0.8	1.0
Vanuatu	4.3	3.1	3.7
All developing countries	4.6	2.7	3.7

Source: UNDP, 1993, *Human Development Report 1993*, Oxford University Press, Oxford:144-5.

Melanesia, however, is that the average amount of schooling accumulated by women is below that of men (Table 3). Only in Fiji, where the amount of schooling achieved by both men and women is well above the developing country average, does the average amount of schooling received by women approach that of men. By contrast, in Papua New Guinea and Solomon Islands, not only is the average amount of schooling for men and women considerably below the developing country average, but the average for women is barely half that for men.

While both Tables 2 and 3 show the consequences of past decisions and investment allocations, the data in those tables are not necessarily a reliable guide to current policies and practices. This deficiency is remedied by looking at current enrolments at different levels of the countries' education systems (Table 4). Fiji is clearly performing well by the standards of other developing countries, and Fiji's achievement in bringing virtually universal coverage of 10 years of schooling to females as well as males is reflected in Table 4. The evidence from previous tables that Papua New Guinea, Solomon Islands and Vanuatu are all performing poorly by international

F IJ I IS PERFORMING WELL by the standards of other developing countries...Papua New Guinea, Solomon Islands and Vanuatu are all performing poorly by international standards

Table 4
Enrolments in education, 1990

	Females as a percentage of males		
	Primary	Secondary	Post-secondary
Fiji	101	104	57
Papua New Guinea	85	63	38
Solomon Islands	79	56	47
Vanuatu	89	75	..
All developing countries	94	74	51

Note: All figures are expressed in relation to male enrolment, which is indexed to equal 100. The smaller the figure shown in the table, the larger the gap between male and female enrolments. A figure greater than 100 indicates that the female average is higher than the male.

Sources: Data for Solomon Islands and Vanuatu are calculated from World Bank, 1993, *Pacific Regional Post-Secondary Education Study*, Report 10522-EAP, World Bank, Washington, DC: Table 1.1. Data for Fiji, Papua New Guinea and All Developing Countries are taken from UNDP, 1993, *Human Development Report 1993*, Oxford University Press, Oxford:153.

standards is also confirmed (Table 3). In all three countries the proportion of females receiving education is generally low, and Solomon Islands is particularly noticeable in this respect. Papua New Guinea is characterised by a very low proportion of women receiving post-secondary education.

WOMEN'S EDUCATION, ECONOMIC DEVELOPMENT AND FAMILY WELFARE

Differential schooling: costs and benefits

While there are gaps in data and substantial difficulties in making reliable international comparisons, it is clear that most of the Melanesian countries conform to the broad developing country pattern that women receive on average less education than males. Indeed, we cannot escape drawing the conclusion that Papua New Guinea, Solomon Islands and Vanuatu fall well below the average performance for developing countries. Even in Fiji, where the male/female discrepancy in schooling has effectively closed at the

primary and secondary levels, the historical legacy of lower female enrolments means that the average amount of education received by women is still substantially below that of men.

There is little specific evidence from the South Pacific to explain male/female differences in schooling, but there is now a substantial literature on the determinants of school enrolments in developing countries elsewhere and there is no reason to suppose that the countries of the South Pacific do not conform to the international picture. A decision by parents to send their children to school can be thought of as an investment choice in which parents compare costs and expected returns. Even when public education is tuition-free, school attendance still entails costs such as contributions to the school and the purchase of books and materials. Most importantly, it needs to be emphasised that the costs are not just financial. 'Psychic' costs such as long distance to school, very poor school facilities, and the costs imposed on the family through a child's absence from home all play a crucial role.

At least some of these costs differ by gender. For example, parents may be reluctant to send daughters to school without appropriate clothing, or may have greater concerns about the safety of young daughters in travelling long distances to school (Hill and King 1991:23). Avalos (1993:17) notes that in Papua New Guinea a major determinant of different male/female completion rates in lower secondary school, unlike primary school, is the distinctly higher attrition rate for female students. For the 1986-89 cohort, the proportion of girls retained through the lower secondary cycle was 63 per cent against 71 per cent for boys. There are no clear research findings to explain this difference in completion rates (see Yeoman 1985), but it seems likely that they are a function of sharpening cultural and social issues in female education once adolescence is reached.

Primary education is village-based, but once a girl attends secondary school (particularly with the prospects of moving away from home to attend upper secondary school) parental concerns become stronger: worries about relationships between the sexes, about a girl becoming involved with, or pregnant to, someone outside her village, the lack of security in upper secondary and university female accommodation, and above all, the potential for a

girl to enter a world which may be radically different from the one represented by her family and clan will all impinge on parental attitudes to female schooling at the more senior levels of the system (Avalos 1993:17). These factors increase the perceived 'psychic' costs of daughters' schooling, and no doubt play a role in a family's decision to enrol sons and/or daughters.

There is evidence from a variety of developing countries that the sheer presence of primary and junior high schools in the community leads to increased enrolment and that distance to school is negatively associated with enrolment and schooling attainment (Hill and King 1991:22). However, Stromquist (1988) concluded from his review of 80 studies on the determinants of educational participation and achievement of women in developing countries that such school-related variables did not help much in explaining the gender gap. The crucial explanatory factors were family economic conditions and expectations about the role of women.

International evidence demonstrates the differences in the time spent by girls relative to boys on home and market activities such as herding livestock, ploughing fields, fetching water, cooking, cleaning, and caring for younger children (Table 5). Boys in Botswana and Ivory Coast perform a greater share of such family labour, although the difference is not great (Table 5). In most countries, however, girls spend much more time than boys on these home and market chores. In some age groups and some countries, girls spend more than twice as much time as boys on household and farm tasks. Clearly, girls who work substantially more than their brothers will be less likely to attend school and more overworked (with the probability of poorer academic performance) if they do (Hill and King 1991:24). Although the data are not disaggregated by income level, Stromquist (1988) has argued that the tendency for parents to rely more on daughters than sons for domestic and family production work is greater the poorer the household.

THE POORER THE HOUSEHOLD, THE GREATER the tendency for parents to rely on daughters for domestic duties

Table 5
Differences in market and household time spent by girls
relative to boys

	Definition of work and time dimension used	Age group		
		6-8	9-11	12-14
Java	Home and market production Hours per day	0.97	1.74	1.85
Nepal	Home and market production Hours per day	1.32	1.29	1.36
Malaysia	Home and market production Annual participation rates	1.82	1.17	1.10
	Malays	2.50	1.78	1.31
	Chinese	2.18	1.79	1.35
	Indians	1.21	1.74	1.75
	Average weekly hours if working	1.00	2.19	1.35
	Malays	1.76	2.49	1.80
	Chinese			
	Indians			
Philippines	Participation rates		7-10	11-14
	youths in school		0.60	0.29
	youths out of school		..	0.37
	Average annual hours of home and market production	0.93	6-8 9-11 12-14 1.49	1.02
Ivory Coast	Participation rates		7-14	0.94
Botswana	Proportion of total time spent in home and market production		7-9	10-14
			0.93	0.92
Peru	Participation rates		5-7	8-10 11-13
	youths in school	0.56	0.89	0.88
	youths out of school	1.07	1.03	1.14

Source: Hill, M.A. and King, E.M., 1991, 'Women's education in developing countries: an overview', in E.M. King and M.A. Hill (eds), *Women's Education in Developing Countries: barriers, benefits and policy*, World Bank, Washington, DC:24.

While there is no comparable quantitative evidence for the South Pacific, available indicators are fully consistent with international data. The limited explanatory value of the availability of school facilities and the importance of family economic activity is well exemplified in Solomon Islands. At King George Secondary School the catchment area is the whole of the capital Honiara and boarding facilities are not necessarily a problem, yet only 23 per cent of the Year 12 class is female (UNICEF 1993:46). The more important explanation is that 'girls are enlisted at an early age to assist in agricultural, household and domestic tasks...and may be withdrawn from school early to help their mothers with gardening and domestic duties' (UNICEF 1993:45). Similarly, in Vanuatu 'girls are expected to assist their mothers with household tasks and subsistence agriculture...and may not be readily spared from these tasks for schooling' (UNICEF 1991a:47).

The strong emphasis placed by recent literature on family economic factors which affect parental decisions on schooling for sons and daughters does not mean that the role of cultural and religious factors is overlooked. Cultural and social expectations about the role of women underlie the gender differences in economic activity. In some societies educating a daughter may make it more difficult for her to be married, and if an educated daughter leaves home on marriage to live in the husband's household or village the parents receive little return in exchange for what may have been substantial financial and household costs. The earlier girls marry and move into their husbands' families, the less parents enjoy the benefits of their daughters' education. In Bangladesh, 75 per cent of women who have ever been married were married by the age of 17. In India, 75 per cent of this group were married by age 19. When girls do not marry so early, but spend some time in the labour force, parents are more willing to educate their daughters (Schultz 1991; Acharya and Bennett 1981). Cultural expectations such as early marriage, or views about the appropriate role of women, were major factors explaining the low level of schooling (until recent years) of Fiji's Indian female population.

Such cultural factors reinforce the impact of low socioeconomic class on girls' education (Haddad et al. 1990:10), and contribute to parental perceptions that the costs (in the widest sense) of educating

daughters may be significantly higher than for sons and the benefits may be low or even non-existent. Moreover, school and family influence interact: low-income parents do not encourage girls to attend school and schools in a low-income environment do not encourage families to send daughters to school. Although (as we argue below) educating a girl benefits not only the girl herself but her future family and society at large, from the parental perspective a preference for keeping girls at home and sending sons to school can be readily explained in terms of relative costs and benefits.

Higher productivity of educated women

The framework of high opportunity costs and low expected returns provides a conceptually simple model for cutting through the complex economic, cultural and social factors which determine parental and family attitudes to female education. The essence of this framework is that gender differentials in schooling persist because those who pay the costs of educating girls—that is, her parents and family—will often not receive the benefits of their investment. What this private perspective leaves out, however, is the now formidable amount of evidence on the social benefits of educating females. In recent years much has been learned from a wide variety of developing countries about the potential contribution of educated women to economic and social development.

First, there is now overwhelming evidence that women constitute an enormous source of human capital. Carnoy (1985) noted that women constitute an important source of skills in many contemporary internationally mobile industries. An educated female labour force has been an important factor in determining the location of industries such as electronics, finance, and computer services. While it is true, as Sivard (1985) pointed out in his survey of women's labour force and educational characteristics, that women's wages are

GENDER DIFFERENTIALS IN SCHOOLING PERSIST because those who pay the costs of educating girls—that is, her parents and family—will often not receive the benefits of their investment.

What this private perspective leaves out...is that education for women pays off in productivity advance at least as much as education for men

Table 6
Effect of additional schooling on wages and farm output

Country and year	Percentage increase in wages		Percentage increase in farm output
	Male	Female	
Ivory Coast (1987)		12 (Primary) 21 (Secondary)	
Ghana (1988/89)		5	
South Korea (1976, 1974)		6	2
Indonesia (1986)	8	12 (Secondary)	
France (1987)		11	
Peru (1986)	13 8	12 (Primary) 8 (Secondary)	3
Malaysia (1987)	16	18	5
Nicaragua (urban 1985)	10	13	
Philippines (1980)		18	
Spain (1979)		10	
Thailand (1986, 1973)	17 7	13 (Primary) 25 (Secondary)	3
United States (1967)			
Whites	6	7	
Blacks	5	11	

Notes: Where entries are designated as primary or secondary the percentage increase in wages results from an additional year of schooling at that particular level; where there is no separate designation by level, it signifies that the percentage increase in wages results from an additional year of school averaged across all levels. All results were estimated after controlling for other factors such as work experience and other individual characteristics.

Source: World Bank, 1992a, *World Development Report 1991: the challenge of development*, Oxford University Press, Oxford.

lower than men's, there is clear evidence that a one-year increase in women's education increases women's wages by high percentage rates (Table 6). Under the standard assumptions of human capital theory that wages reflect marginal productivities, the clear inference to be drawn from the data is that education for women pays off in productivity advance at least as much as education for men.

A one-year increase in schooling can raise farm output by up to 5 per cent, even after allowing for other factors. It cannot be inferred that this output rise is attributable to the education of women rather than men, but it should be noted that agriculture is the principal employer of women in developing countries (Sivard 1985). In Vanuatu, the available information suggests that the contribution of women to subsistence agriculture is at least as great as that of men, and that they have a significant input into smallholder cash crop production (UNICEF 1991a:53). In Solomon Islands, women play a larger role than men in the subsistence sector, and there is clear evidence that women spend significantly larger amounts of time on total smallholder cultivation (UNICEF 1993:56).

Rates of return to educating females

There is substantial variation among countries in the direct productivity benefits of women's education and there are some instances (for example, primary schooling in Ivory Coast and Kenya) where the returns to women's education are much lower than for men (Table 7). But there is no evidence at all that the social returns to women's education are systematically below those for men. Many of the differences between male and female returns are well within the margin of error of the technique, but there is also evidence (primary school in Brazil, secondary school in Ivory Coast and Puerto Rico, higher education in South Korea) which implies that there is considerable under-investment in women's education relative to that for men (see also Box 1).

Women's education and economic growth

Hill and King (1991) explored the direct relationship between female education and GNP per capita (see also World Bank 1992a). Using data for almost 300 countries on female secondary enrolment rates in 1975 and per capita GNP ten years later, they found that it is not just

IT IS NOT JUST THE LEVEL OF WOMEN'S EDUCATION but the size of the gender disparity in educational attainment which matters for economic growth...large gender disparities in educational attainment actually appear to reduce GNP, all other things equal

Table 7
Returns to education by school level and gender (per cent)

Country and year	Primary		Secondary		Higher	
	Male	Female	Male	Female	Male	Female
Andra Pradesh, India (1977)	8.9	11.8	8.7	11.9	6.2	8.9
Brazil (1960)	17.9	38.6	..	..	..	..
Columbia (1965)	18.2	..	34.4	18.9	4.5	5.3
Ivory Coast (1985)	18.3	5.5	17.0	28.7	21.1	13.6
Kenya (1960)	21.7	7.1	23.6	19.5	..	..
Malaysia (1960)	9.4	9.3	12.3	11.4	10.7	9.8
Peru (1985)	..	12.0	..	8.3	..	15.5
Puerto Rico (1959)	29.5	18.4	27.3	40.8	21.9	9.0
South Korea (1971)	..	..	13.7	16.9	15.7	22.9
Taiwan (1982)	8.4	16.0	..	..	..	..

Sources: Data for Peru are reported by King, E. and Bellew, R, 1989, *Gains in the Education of Peruvian Women*, PRE Working Paper 472, World Bank, Washington, DC. The figure for secondary returns for Peru is the average of King and Bellew's returns to secondary general and secondary technical. All other figures are from Schultz, T.P., 1991, 'Returns to women's education', in E.M. King and M.A. Hill (eds), *Women's Education in Developing Countries: barriers, benefits and policy*, World Bank, Washington, DC.

the level of women's education but the size of the gender disparity in educational attainment which matters for economic growth. Using a multivariate model in which the size of a country's labour force and capital stock were held constant, they found that at a given level of enrolment the educational gap between men and women has an independent effect on social indicators. In the equations where GNP was the dependent variable, they found that increased female secondary enrolment had a small positive effect on future GNP. More strikingly, they found that large male/female enrolment disparities have a large negative effect on GNP. Those countries where the ratio of female enrolments was less than 75 per cent of male enrolments can expect levels of GNP approximately 25 per cent lower than those countries which are otherwise similar but for the gender gap. That is, large gender disparities in educational attainment actually appear to reduce GNP, all other things equal (Hill and King 1991:19).

Box 1
The most influential investment

'Educating girls quite possibly yields a higher rate of return than any other investment available in the developing world. Women's education may be unusual territory for economists, but enhancing women's contribution to development is actually as much an economic as a social issue...Parents in low-income countries fail to invest in their daughters because they do not expect them to make an economic contribution to the family: girls grow up only to marry into somebody else's family and bear children. Girls are thus less valuable than boys and are kept at home to do chores while their brothers are sent to school—the prophecy becomes self-fulfilling, trapping women in a vicious cycle of neglect. An educated mother, on the other hand, has greater earning abilities outside the home and faces an entirely different set of choices. She is likely to have fewer, healthier children and can insist on the development of all her children, ensuring that her daughters are given a fair chance. The education of her daughters then makes it more likely that the next generation of girls, as well as of boys, will be educated and healthy. The vicious cycle is thus transformed into a virtuous cycle...The social improvements brought about by educating women are more than sufficient to cover its costs. Given that education also yields higher wages, it seems reasonable to conclude that the return on getting more girls into school is in excess of 20 percent, and probably much greater. In fact, it may be the single most influential investment that can be made in the developing world.'

Summers, L. 1992, 'The most influential investment',
Scientific American, 247(2):5.

Of the Melanesian countries, only Fiji was included in the sample estimated by Hill and King, and it is therefore not strictly admissible to apply their specific results directly to other countries. Nevertheless, two features are worth emphasis. First, the statistical robustness of their regression coefficients strongly suggests that their findings will be relevant, at least in broad terms, to other developing countries not included in their sample. Second, both Papua New Guinea and Solomon Islands are countries with a large male/female disparity in enrolments (58 per cent and 63 per cent respectively) (see Table 2). While the quantitative impact of these disparities on the countries' GNPs cannot be precisely estimated, the implication of the work of Hill and King is that both Papua New Guinea and Solomon Islands are paying a substantial price in forgone GNP growth because of the persistence of large gender differentials in enrolments.

Educated women and increased family welfare

While the worldwide evidence on the directly productive value of women's education is striking, much of what has been learned in recent years focuses on the wider social benefits. For example, in the home women's education has a greater effect on family welfare than men's education. Greater schooling of the mother appears to lead to better hygiene, improved nutrition practices, and greater effectiveness in caring for the family's health. Caldwell (1979) found that in West Africa the education of the mother enabled her to exploit local public health more effectively. In the Philippines, Barrera (1990) found that the mother's schooling had a larger protective effect on child health in communities without piped water and water-sealed toilets and in communities that were farther from health care facilities than in areas that were better off. In short, schooling equips mothers with knowledge needed to be more effective in their roles at home. Cochrane et al. (1980) found that literacy was the most important variable explaining life expectancy, even more important than number of doctors per capita. One additional year of a mother's schooling resulted in a reduction of 9 per thousand in infant mortality, an effect twice as great as that of the father's education and

WOMEN'S EDUCATION HAS A GREATER EFFECT on family welfare
than men's education

a result which has been replicated in many studies (Schultz 1991:55; Mensch et al. 1986).

Women's education is closely related to child health (Cochrane et al. 1980). In Nigeria, Gans (1983) found that the weight of children with literate mothers was greater than those with illiterate mothers. Christiansen et al. (1974) found a positive association between parental education and children's nutrition in Colombia. Levinson (1974) found that literate mothers in rural Punjab had a smaller percentage of third-degree malnourished children, results that were confirmed for Kathmandu by Graves (1978). These findings are important because of flow-on effects: it is known that improved child nutrition and health play an important role in school achievement (Moock and Leslie 1986). It should also be noted that there is some contrary evidence. Cravioto and Delicardi (1975) found no significant difference in parental education between well-nourished and malnourished children in Southwestern Mexico.

Barrera (1990:69) has commented that the most important health worker for children is their mother: how well she performs this task depends on 'her schooling, which equips her with general and specific knowledge, and the means and confidence to seek new ideas'. This is consistent with Caldwell's hypothesis (1979) that in West Africa a mother's education enabled her to exploit local public health care more effectively. It is consistent, too, with what would otherwise be a puzzle. The duration of breastfeeding is an important input to child health, but is inversely related to the mother's education in many countries (Blau 1984; Wolfe and Behrman 1982; United Nations 1987). The answer to this paradox is that breastfeeding is beneficial to child health primarily when it is supplemented by other appropriate foods by the end of the baby's first year. In his study of the rural Philippine population, Barrera (1990) argued that the optimal duration of breastfeeding and the introduction of supplementary foods depended on the education of the mother. Women with low education level made poor decisions; more educated levels mothers breastfed less but their children's health was better.

Mothers' schooling also improves their own health status. Additional schooling seems to give the mother more control over the

frequency and spacing of children, and to influence her use of health services during pregnancy and birth. The higher prevalence of contraception among better-educated women in Latin America and Asia has brought declining fertility rates. Education of the wife has a much stronger negative effect on fertility than the husband's education (Hill and King 1991:26). In a review of existing studies Cochrane (1979) found that increased education tends to decrease fertility, with the decrease greater for the education of women than for the education of men. She found, however, that in low-income/low-literacy countries, educational levels for women had to cross the threshold of completed primary schooling before having a significant negative effect on fertility. In a survey of 22 developing countries, the United Nations (1983) found that increased education for men and women were equally good at explaining declining fertility rates, but confirmed Cochrane's finding of a threshold effect at completed primary schooling. Zachariah and Patel (1984) examined the determinants of fertility decline in India between 1961 and 1981 and confirmed the importance of socioeconomic factors such as female education.

A UN study of education and fertility in Africa, Latin America and Asia found that the total fertility rate declined with women's education, but the major decline came with the completion of seven or more years of schooling (United Nations 1987: Tables 11, 115). Schultz (1991:60) observed that the countervailing effects of decreased breastfeeding on fertility as mothers' education increases may remove a month or so from the interbirth intervals of the most educated mothers, but the much greater prevalence of contraception among the more educated women more than compensates for this shorter duration of breastfeeding.

Education for mothers improves the education of their children. In many cases, it has been found to have a larger impact on children's schooling than father's education, and to exert a greater effect on the schooling of daughters than sons. A study of female students in the Cairo public school system found that differences in self-confidence

VIRTUALLY WITHOUT EXCEPTION THE EVIDENCE points to the widespread benefits that accrue from educated women

were associated with the education of the mother. The more formal schooling a mother had, the greater the standards and expectations she had for her daughters compared to those of less educated mothers (Hill and King 1991:26).

The international evidence cited above covers a wide range of developing countries and an almost bewildering array of findings. Virtually without exception the evidence points to the widespread benefits that accrue from educated women. Schultz (1991:55) has noted that data are now widely collected from women in low-income countries on their education and their children's health, that the results are not particularly sensitive to differences in measurement, and indeed that a characteristic of the results is the 'statistical strength of the relationship and its replicability across surveys and societies'.

Measuring the increase in wellbeing

The effects on social wellbeing of women's education are neatly encapsulated in the work of Hill and King (1991). In addition to measuring the effects of female school enrolments on national income, they also used a variety of social indicators as the dependent variables. Their finding was that both the level of female enrolments and the size of gender disparity in enrolments influenced social wellbeing, even after accounting for intercountry differences in GNP (Table 8).

Higher levels of female primary and secondary enrolments are associated with longer life expectancy (with comparable benefits for men and women), lower infant and maternal mortality, and lower total fertility rates. For example, the infant mortality coefficient of -0.41 implies (other variables held constant) that an increase in the female primary enrolment rate of 10 percentage points can be expected to reduce the infant mortality rate by 4.1 deaths per 1,000 live births. If female secondary enrolment rose by 10 points, a further reduction of 5.6 deaths per 1,000 live births would be experienced.

In addition, large gender gaps in educational attainment reduce social wellbeing. For example, the coefficient of -2.75 for men living in those countries in which the female/male enrolment ratio lies between 0.42 and 0.75 indicates that such men would experience reductions of nearly three years in average life expectancy relative to men in those countries that were otherwise comparable apart from the educational gender gap. In that same group of countries, the

Table 8
Female education and social wellbeing

Education indicators (independent variables)	Social indicators (dependent variables)				
	Female life expectancy	Male life expectancy	Infant mortality	Maternal mortality	Total fertility
Female					
Primary enrolment	0.10	0.09	-0.41	-3.31	-0.01
Female					
Secondary enrolment	0.12	0.11	-0.56	3.02*	-0.03
Female/male					
Enrolment ratio	-4.80	-3.85	21.16	98.82*	0.73
0.42-0.75	-3.41	-2.75	11.37	111.84*	0.73
0.75-0.95	-0.69*	-0.52*	1.88*	82.56*	0.26*

Notes: Table 7 summarises only the educational coefficients from a larger multivariate model. The complete listing of variables and regression results can be found in Hill and King 1991:40. Variables designated with an asterisk are not statistically significant at 90 per cent or greater level.

Source: Hill, M.A. and King, E.M., 1991, 'Women's education in developing countries: an overview', in E.M. King and M.A. Hill (eds), *Women's Education in Developing Countries: barriers, benefits and policy*, World Bank, Washington, DC:20.

equivalent figure for female life expectancy is nearly three and a half years lower (coefficient of -3.41) than in countries which are comparable but for the large gender disparity in education. Hill and King concluded their regression analysis saying that

both the level of female education and the gender gap in education are each important determinants of (aggregate) family well-being and economic growth. The benefits of improving female education go beyond increasing individual productivity and income. By decreasing desired fertility, population pressure eases; by improving the family's health, life expectancy increases and the quality of life rises, not only for the family, but also for the community. Indeed, our results demonstrate that a country's failure to raise the education of women to levels equal to those of men imposes substantial costs for their development efforts. Unless the gender equity in education is improved, desired improvement in social indicators can be achieved only at much higher levels of economic growth (Hill and King 1991:22).

THE PROGRESS OF WOMEN'S EDUCATION IN MELANESIA

III

PAPUA NEW GUINEA

Average schooling for Papua New Guineans is very low by international standards, at 1.2 years for males and 0.6 years for females. Access to school is therefore an important problem for the entire population, despite considerable improvement in primary gross enrolment rates (7–12 years of age) from 56 per cent at independence to 71 per cent in 1990. A lower proportion of girls than boys was enrolled in primary school, but the gap has narrowed dramatically. Between 1986 and 1990 the proportion of females in primary school increased to 44.3 per cent. The judgment of Papua New Guinea's recent Education Review is appropriate: 'while we must continue to encourage more female enrolment, the present proportion is quite good given the 48:52 female:male distribution in the population at large' (Papua New Guinea 1991:44). In 1990 the gross enrolment ratio for girls was 69 per cent, compared to 73 per cent for boys.

This picture of progress in girls' education has to be modified in two ways. First, retention rates in primary schools in Papua New Guinea have been consistently poor, and indeed have declined over time (Table 9). Within this general trend, the retention of girls was better than that of boys, but it is apparent that retention rates for girls have been declining at a more rapid rate, and now lie below those for boys, albeit by only a small margin.

Second, there is considerable provincial variation within Papua New Guinea in gender-specific primary enrolment rates. Chimbu, Enga and the Highlands and Sepik provinces have the lowest enrolment rates for girls (Table 10). Provincial differences also emerge in relation to retention rates. The reasons for provincial variations in female retention rates are not well understood, but Yeoman (1985) conducted a survey of 685 people in 16 provinces on

Table 9
Retention rates in primary schools, Papua New Guinea, 1975–91

Cohort	Males	Females
1975–80	67.1	74.6
1976–81	66.4	67.7
1977–82	65.4	67.1
1980–85	61.1	67.7
1986–90	61.2	60.0
1987–91	56.2	56.0

Source: Papua New Guinea, Department of Education, *Education Staffing and Enrolment Statistics: National Education System*, Education Printshop, Port Moresby.

Table 10
Primary enrolment ratios by province and sex, Papua New Guinea, 1990

Province	Gross enrolment ratio (7-12 age group)	
	Males	Females
Central	87	82
Chimbu	70	55
East New Britain	79	76
East Sepik	74	70
Enga	65	64
Gulf	84	71
Madang	70	66
Manus	91	90
Milne Bay	75	76
Morobe	82	72
National Capital	95	93
New Ireland	86	87
Oro	76	71
Southern Highlands	49	47
West New Britain	72	64
West Sepik	75	66
Western	90	85
Western Highlands	70	68
Papua New Guinea	73	69

Sources: Papua New Guinea, National Statistics Office, 1990 Census, Preliminary Figures (unpublished); Papua New Guinea, Department of Education, *Education Staffing and Enrolment Statistics: National Education System*, Education Printshop, Port Moresby.

their perceptions of the causes of school drop-out by girls. Yeoman's interpretation was consistent with evidence from other developing countries: where physical access to school was possible, the most important factor affecting enrolment and retention was parental attitude and encouragement.

After primary school the disparity between males and females sharpens. While females account for 44 per cent of primary school enrolments, at lower secondary and upper secondary the percentages fall to 39 per cent and 29 per cent respectively. It is worth noting that at lower secondary level a major determinant of the female/male difference is the distinctly higher attrition rate for female students. For the 1986–89 cohort, the proportion of girls retained through the lower secondary cycle was 63 per cent, against 71 per cent for boys. As noted earlier, it seems likely that this higher rate is a symptom of sharpening cultural and social issues in female education once adolescence is reached.

Students who complete provincial high school studies have a number of options for post-Grade 10 education. Each year a study is conducted to determine the number of students who are selected for these various options (Table 11) .

The average proportion of girls accepted for post-Grade 10 study is around 36 per cent. Only in nursing are women in the majority. The proportion of girls who enter National High Schools, the track which leads to matriculation and possible university entry, is only 31 per cent. Avalos (1993:17) has commented that although there is no clear evidence why so few female tenth grade graduates move on to upper secondary education, it can be assumed that cultural and social factors are heavily at work (see also Buse 1992). Girls who survive into National High Schools have to be exceptionally well motivated and well-supported by their parents. They also have to deal with a school situation that may be radically different from that familiar to their family and clan.

AFTER PRIMARY SCHOOL THE DISPARITY between males and females sharpens in Papua New Guinea...it seems likely that this higher rate is a symptom of sharpening cultural and social issues in female education once adolescence is reached

Table 11
 Students selected for post-Grade 10 studies, Papua New Guinea,
 1989 and 1991

Type of study	1989	1991
Matriculation		
Males	70	69
Females	30	31
Technical		
Males	75	72
Females	25	28
Teaching		
Males	57	52
Females	43	48
Nursing		
Males	36	36
Females	64	64
Arts/Librarian		
Males	80	68
Females	20	32
Other		
Males	79	84
Females	21	16
Total		
Males	64	64
Females	36	36

Source: Papua New Guinea, Department of Education, Guidance Branch, *Selection Analysis Reports*, Education Printshop, Port Moresby, 1989, 1990 and 1991.

In the light of the data presented it is not surprising that women are poorly represented at the university level, and, indeed, their numbers have not changed much since 1983. In the second semester of 1990 the University of Papua New Guinea had a female student population of 427, representing less than 23 per cent of its total student population. The University of Technology had even lower figures, with just over 14 per cent female enrolment in 1991. Low female enrolment in higher education stems, in the first place, from the fact that the female population in upper secondary constitutes barely 30 per cent of total enrolment. But it is also related to the

conditions of life at the universities: the state of residence halls (albeit recently improved), lack of sufficient recreational facilities, and threats, harassment and physical assault from male students (Oliver 1987).

SOLOMON ISLANDS

The Solomon Islands presents a mixed picture of progress in education. It is important to take care when interpreting basic enrolment data for the levels of the school system. In recent years Solomon Islands has made considerable progress in improving the collection and reliability of education statistics, and comparisons between the 1990s and the situation 10 years ago may reflect differences in measurement and coverage rather than genuine change. There continues to be considerable disagreement about educational coverage. World Bank and UNDP estimates suggest that over 90 per cent of the (7–12) age group is enrolled in primary school, whereas UNICEF, in an authoritative analysis of the situation of women and children in the Solomon Islands, has argued that some 25 per cent of school age children never start school (UNICEF 1993:41).

Whatever the precise figure, it is apparent that educational progress has been mixed. While the aggregate number of children attending primary school almost doubled in the 10 years to 1992, this was not sufficient to achieve universal primary enrolment in the face of a rapid increase in that age group. It is also clear that around 20 per cent of primary students drop out before completing the full six

Table 12
Enrolments by school level and sex, Solomon Islands (per cent)

	Earlier data		Latest data	
	Total	Of which female	Total	Of which female
Primary enrolment ratio	57 (1980)	43	93 (1992)	44
Completing primary level	86 (1985–90)		77 (1986–91)	
Transition to secondary	32 (1980/81)		25 (1990/91)	
Secondary enrolment ratio	13 (1990)	33	14 (1992)	
Tertiary enrolment ratio	..		5 (1992)	32

Source: Booth, H. and Muthiah, A.C., 1992, Pacific Human Development Report: statistical database, prepared for UNDP, Suva (unpublished).

for Indians; dropout rates are higher and examination pass rates are lower for indigenous Fijians. The result of all these differences is that in the late 1980s only 19 per cent of Fijians in the relevant age group completed 12 years of school compared to 31 per cent of Indians (UNICEF 1991b:14). A combination of sociocultural factors such as parental attitudes, the higher percentage of rural Fijians, and a lower standard of teaching and physical resources in the Fijian schools is believed to underlie the differences in educational attainment of the two ethnic groups.

Although equity between the ethnic groups is a major concern, it is fair to observe that gender equity is not a major issue in Fiji's education system. Among ethnic Fijian students, primary enrolment ratios have never differed much between males and females. The low literacy rate for females in earlier years was mainly a function of social and economic customs among Indian Fijians: Indian females were not encouraged to attend school or to participate in the labour market. During the last 20 years this custom has changed, and the male/female differential has been closing rapidly. The proportion of Indian females who have completed four or more years of schooling increased from 45 per cent in 1966 to 74 per cent in 1986. Girls constituted almost 50 per cent of enrolments at both primary and secondary levels (UNICEF 1991b:14).

Of the 1,465 full-time Fijian students at the University of the South Pacific, some 44 per cent are women, a relatively high percentage. The proportion of women receiving Fiji Government scholarships was virtually the same at 43 per cent (World Bank 1993:78). It is noticeable, however, that in 1990 almost 10 times as many ethnic Fijian women received government scholarships to the University of the South Pacific than Indo-Fijian women (Country Overview Paper 1991:49). The government's policy of achieving ethnic parity in schooling and employment is understood, but it seems likely that this policy may be cutting across other objectives of gender equity.

VANUATU

Vanuatu embarked on independence with an extraordinarily low level of labour skills. The dominant feature of the human resource picture in Vanuatu continues to be the widespread lack of skilled ni-Vanuatu. According the 1989 Census, 90 per cent of the economically active population has only primary education or no schooling at all, less than 7 per cent has secondary schooling up to Year 10, and only 1 per cent has attended senior secondary school. Less than 1 per cent (fewer than 1,000 people) has some level of post-secondary education (Vanuatu 1991: Table B67). Formal education is low even in high level occupations: around half of those holding the highest level occupations (managers, professionals, and the like) have no more than primary schooling (Vanuatu 1991: Table B67). Non-citizens account for the overwhelming majority of those with secondary and tertiary qualifications. Vanuatu has made very little progress with the localisation of high level jobs, there are persistent vacancies in established public service positions and there is anecdotal but systematic evidence that significant proportions of those employed are inadequately trained for their current positions. Despite the limited quantitative evidence, there is no reason to question the judgments made in recent analyses that there are 'massive skill deficits in the Vanuatu economy', 'powerful indicators of the extreme paucity of ni-Vanuatu higher level skills', and that 'human resource constraints are a major impediment to development' (World Bank 1992b: xiii, 9).

Underlying these severe skill shortages is an education system which has been unable to supply the appropriate numbers of skilled people. The Vanuatu education system is extremely costly. In part this is due to the standard South Pacific problems of the provision of school facilities to a scattered population and to the costs of boarding, especially at secondary level. But some of the cost factors are home grown. Teacher-pupil ratios have been generous by

THE DOMINANT FEATURE OF THE HUMAN RESOURCE PICTURE in Vanuatu continues to be the widespread lack of skilled ni-Vanuatu... non-citizens account for the overwhelming majority of those with secondary and tertiary qualifications

international standards. A major feature of Vanuatu, which is steadily but only slowly being addressed, is the management and administrative cost of running what in effect are two separate school systems. One of the most expensive legacies of the Anglo-French Condominium was the survival after independence of English and French-speaking school systems, each with its own curriculum, examinations, textbooks, teacher training and administration. In the early 1980s, for example, tiny numbers of senior secondary pupils (214 in 1985) were divided between the separate Anglophone and Francophone school systems.

The major issue confronting education in Vanuatu today is the extremely restricted access beyond primary schooling. Pre-independence competition between Britain and France ensured that Vanuatu had a high ratio of both primary schools and teachers to the population. That meant that Vanuatu has had sufficient capacity to accommodate all children wishing to enter primary school. Fears are increasingly being expressed about the rapid rate of population growth (Cole 1993), but at present, primary school capacity is not the most serious constraint. The real problem lies in the capacity of the secondary system. Access to junior secondary education is limited to little more than 20 per cent of Year 6 leavers. Similarly, only 20–25 per cent of Year 10 graduates progress to senior secondary, with the result that barely 2 per cent of the 16–18 age group is enrolled in senior secondary school. It hardly needs to be emphasised that this very restricted access after Year 6 is a major determinant of the persistent shortages of middle and high-level skills in Vanuatu.

While Vanuatu faces problems of heavy expenditures for a costly system, a continuing reliance on expatriate secondary teachers, and low levels of secondary enrolment, much progress has been made over the last decade. Not only are more children attending primary school, but more are completing Grade 6 and obtaining the primary school certificate. In 1989, 49 per cent of the 15–19 age group and 41 per cent of the 20–24 age group had a primary school certificate—over twice the proportion of these age groups in 1979 (Vanuatu 1991:45). There are two important elements of the improvements in the distribution of schooling in Vanuatu (Table 13). First, education levels have traditionally been higher in urban than in rural areas, and this is still the case. The difference has narrowed substantially, from a

Table 13
Percentage of ni-Vanuatu aged 6 years and over who had attended school, 1979 and 1989

Region	1979			1989		
	Males	Females	Total	Males	Females	Total
Rural	73.6	64.4	69.3	81.1	74.6	77.9
Urban	91.0	90.7	90.9	94.3	93.2	93.4
Vanuatu	76.9	69.0	73.2	83.5	77.5	80.6

Source: Vanuatu, Statistics Office, 1991, *Vanuatu National Population Census 1989*, Port Vila: Table 14.1.

Table 14
Number of ni-Vanuatu aged 6–29 years in full-time education, 1989

Age	Number in school	Number in age group	Percentage of age group in school
Males			
6-9	6,349	8,855	71.7
10-14	6,633	8,950	74.1
15-19	1,789	6,954	25.7
20-24	176	6,017	2.9
25-29	58	5,365	1.1
Total	15,005	36,141	41.5
Females			
6-9	5,675	7,960	71.3
10-14	5,662	8,254	68.6
15-19	1,206	6,738	17.9
20-24	87	6,341	1.4
25-29	33	5,754	0.6
Total	12,663	35,047	36.1

Source: Vanuatu, Statistics Office, 1991, *Vanuatu National Population Census 1989*, Port Vila: Table B48.

21.6 percentage point difference in 1979 to a 15.5 percentage point difference in 1989. Second, improvements in the gender balance have been made. Females have continued to benefit from access to schooling. In urban areas the differences between males and females

were slight even in 1979. The real improvement in female schooling has come in rural areas: a difference of nine percentage points a decade ago has been reduced by one-third.

Despite the overall improvement in school attendance by females, the male/female differential continues to vary strongly according to level of education. School attendance of the 6–9 age group shows only a trivial difference between males and females, but as the age group (and therefore the school grade) increases, the male advantage becomes more pronounced. The overall sharp decline in enrolments beyond the primary and lower secondary years is apparent, but it is also clear that women suffer disproportionately from that decline (Table 14). Virtual parity of attendance between the ages of 6 and 14 gives way at age 20+ (corresponding roughly to tertiary education) to a male advantage of 2:1.

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Internationally, women's education has emerged as a significant aspect of economic growth and development. Research in many developing countries shows the value of women's education: educating women improves health, expectation of life, and GNP. Furthermore, it is becoming apparent that the gender gap—the difference between the education levels of men and women— is the most important factor. The larger the gap, the lower the GNP. The conclusion is clear. Educating women is the most important investment that can be made.

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