

# HIV/AIDS: adding to the Pacific nightmare

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## Introduction

In 1993 the National Centre for Development Studies published *Pacific 2010: Challenging the Future*<sup>1</sup> which made population projections for seven Pacific island countries (PIC) to the year 2010. In writing up a nightmarish outlook for these countries Rowan Callick paints a picture where the population has doubled, unemployment in the towns is very high, the rural sector has had to absorb about 3 million extra people, expenditure on education has doubled or tripled, deaths from AIDS, heart disease and cancers have greatly increased, crime has increased, pollution and land degradation have spiralled, and rain forests and fisheries have been heavily over-exploited<sup>1</sup>.

This paper speculates on how a HIV/AIDS epidemic in the PIC might change the future which have been envisioned so far. This exercise layers a large uncertainty on top of other highly uncertain events. However, the possibility of a HIV/AIDS epidemic is a threat which has to be taken very seriously and there is good reason to anticipate the likelihood, scope and nature of such an eventuality and its consequences. The objective is to help forestall an epidemic and to plan to minimise its impact within vulnerable sectors and groups.

## HIV/AIDS risk profiles of Pacific Island countries

Evaluating the development impact of a HIV/AIDS epidemic in the Pacific has to be a very speculative activity. First, there has to be a reasoned judgement about the future development of the pandemic in these countries. This involves developing a risk profile of the countries. Next,

there has to be speculation about the macro and micro-economic effects, utilising knowledge of the countries' risk profiles and their economic and other characteristics.

From previous work there exists a reasonably good understanding of the risk profiles of countries likely to develop high or low incidence of HIV/AIDS. Countries with a relatively low proportion of homosexuals practising unprotected anal sex and partner exchange; a low prevalence of drug injectors; a low prevalence of sexually transmitted diseases (STD); and a low incidence of males and females engaging in multiple heterosexual relationships are likely not to develop a high HIV/AIDS incidence. Conversely, a country with the opposite risk profile is likely to develop a high incidence. There are other factors which can intensify the risk profile, viz: ineffective screening of the blood supply; a high level of tourist activity; large military activity (domestic or international); high intensity of population movement throughout the country; large urban concentrations; migratory work patterns (both international and

domestic); and a high intensity of enclave activity, e.g., mining (having effects similar to military bases).

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HIV/AIDS incidence in the PIC is comparatively low at present, at least according to the cases reported. Table 1 shows the rate of AIDS cases persons in selected PIC and comparator coun-

tries as at July 1994.

No cases of HIV/AIDS infection were reported by Cook Islands, Nauru, Niue, Solomon Islands, Tuvalu and Vanuatu as of 1st July 1994, and only one case of HIV/AIDS in Western Samoa. The HIV/AIDS incidence may be as much as measure of ignorance, as of its incidence. According to the PNG Institute of Medical Research, the widespread lack of testing in Papua New Guinea means that the spread of HIV in that country is poorly understood<sup>2</sup>. From data available to the South Pacific Commission, as of 1st December 1994, 226 persons in Papua New Guinea were reported infected with the HIV including 62 with AIDS. The reported AIDS incidence of 1.5 per 100 000 persons seems very low, given Papua New Guinea's risk profile (discussed below). Moreover, the high ratio of AIDS case to HIV infections suggests a substantial under reporting. Estimates by the WHO and other authorities<sup>3</sup> suggests that the number of HIV/AIDS cases could be between 3 000 and 10 000.

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Despite the comparatively high AIDS incidence in the USA (estimates of HIV incidence are less than 0.5% of the population) the spread of HIV/AIDS does seem to have stabilised. It is suggested that this is due to the US incidence being confined mainly to homosexuals and drug injectors who are concentrated in urban areas<sup>4</sup>. Heterosexual transmission is very low, basically because of the low incidence of STD.

In Africa however, intravenous drug use and homosexuality play a small role. Heterosexual transmission is the most important medium because of the high incidence of STD and the promiscuous behaviour of males, particularly those earning higher incomes in the urban areas. Therefore, male and female infection rates are about the same. Which means that infection of infants through their mothers is common. In some African countries HIV infection levels in urban areas are in the 20 to 30% range: in rural areas the levels are in the 5 to 10% range. The difference in infection levels between urban and rural areas is attributed to the clustering of female sex workers in urban areas and the difficulty of rural-urban travel<sup>4</sup>.

The AIDS pandemic in the Asia-Pacific region is developing much later than in Africa and the industrial countries. However, as is evidenced by the rise in HIV infection levels in Thailand, the HIV is spreading faster than in Africa or the industrial countries. This difference is explained by a combination of two factors: the high incidence of sexual relationship between males and a pool of commercial sex workers with high STD incidence and increasingly higher HIV infection levels. Given this profile, the spread of the HIV among the female population is also rapid.

The risk profiles of the PIC suggested that some of them have a high probability of extensive incidence of HIV/AIDS. All countries have significant tourism activity and some of them have very extensive international movement of the domestic population. This opens the door widely for entry of the virus. Where there is a high incidence of other STD and concentrations of prostitutions in urban areas or in other areas such as mining camps or military bases, then the spread of the virus among the heterosexual population – both males and females – could be rapid. Where there is high population movement between urban and rural areas the impact can be magnified. Other activities in the PIC which pose risks are practices such as scarification/circumcision/tattooing traditions as, for example, in Papua New Guinea, Solomon Islands, Samoa, and Vanuatu, initiation

ceremonies involving homosexual practices in Papua New Guinea, and transvestite sex workers in Polynesian cultures.

The incidence of HIV/AIDS infection of IV drug users appears to be low in the PIC. Also, the incidence among homosexuals and heterosexuals is presently at similar levels, suggesting that IV drug users and homosexuals are not providing a large base for the spread of the virus. The fact that over two-thirds of HIV and AIDS cases are males suggests that the main form of transmission is through commercial sex encounters via the medium of other STD.

However, in Papua New Guinea the male/female incidence is similar, consistent with other STD being even more widespread by possibly reflecting the fact that the transmission of the HIV is higher than the number of reported cases suggests.

According to a report by the Institute of Medical Research<sup>2</sup>, Papua New Guinea is experiencing one of the fastest increasing rates of STD in the world. They also comment on the high level of casual sex by both males and females. For young females in urban areas such activity is seen as a means of earning cash<sup>5</sup>. There is also frequent rural/urban movement in both directions with migration from the rural areas in search of formal jobs and return to rural areas for family reunion. Given these circumstances, the PNG Institute of Medical Research expects a rapid rise in HIV/AIDS rates in Papua New

Guinea.

STD is also a significant health problem in Fiji, Marshall Islands, New Caledonia, and Vanuatu<sup>3</sup>. Casual sex among teenagers has a reportedly high incidence in most of the PIC. The two characteristics in combination are the most potent of the risk parameters in the development of a HIV/AIDS epidemic.

## Impacts of HIV/AIDS on economic development in the Pacific Island countries.

Here I speculate on the likely impacts on economic development – at both a macro and micro level – of a HIV/AIDS epidemic in the Pacific islands countries. Speculation is based on the conclusions derived for other countries, particularly African countries, because of the many similarities with the PIC, on the economic/demographic characteristics of the PIC, on their HIV/AIDS risk profiles, and on the economic/demographic projections for these countries.

**Table 1. Rate of AIDS cases, July 1994**

Country	AIDS cases/100 000 persons
French Polynesia	17.0
New Caledonia	19.2
Fiji	0.8
Papua New Guinea	1.5
Tonga	6.2
Australia	27.0
France	52.4
New Zealand	12.5
United Kingdom	15.6
United States	161.4

*Source: South Pacific Commission, Noumea, New Caledonia.*

## A. Macro-economic effects

**Population growth:** Population growth rates can be affected by an AIDS epidemic directly through its impact on mortality and indirectly through its impact on the fertility rate. Its impact on fertility is ambiguous as fertility could be lowered through infected adults avoiding having children or raised through uninfected adults having more children because expected mortality rates have increased<sup>6</sup>. There can also be indirect effects on population growth through feedback effects from the epidemic on economic growth. Lower economic growth as a result of increased health costs, lower savings, and loss of income earning power by people suffering with AIDS could lead to changes in fertility behaviour. Results from research on the impact of the HIV/AIDS epidemic on African countries had led to the conclusion that HIV infection rates would have to be at high levels (up to 20% of the population) to reduce the population growth rate by 0.1 %<sup>6</sup>.

**Per capita income:** The impact of HIV/AIDS on a country's per capita income has been defined as depending upon the proportion of the population sick with AIDS, the particular age groups affected and their educational levels and gender, the nature and cost of health care, its impact on savings and, in turn, on capital accumulation and other costs such as the cost of care of dependants of those afflicted with AIDS<sup>6</sup>. However, the economic impact of a HIV/AIDS epidemic goes much deeper than such a specification would suggest. Its incidence can affect important income-earning opportunities, such as tourism. Among the PIC, only in Fiji and Vanuatu is tourism an important activity. It is an activity which has significant potential in the PIC, however, given their rich endowment of resources attractive to tourists. Constraints such as high costs of travel and limited accommodation will have to be overcome before the potential is realised – a potential which could be damaged severely by an AIDS epidemic.

As described earlier, several countries have significant levels of emigration and, in turn, are heavily dependent on remittances from emigrants. Concern in the destination countries over HIV/AIDS infection in the PIC could lead to restrictions on emigration rates which would lower incomes and also raise population growth rates. This is particular concern for Fiji, Tonga and Western Samoa, and somewhat less so for Kiribati.

The potential impact of HIV/AIDS on economic activity is of major concern because of countries with the risk profiles of the PIC the group most affected is prime-aged males at the most productive stage of their life. If this group includes

people with above-average education and skills levels as well as the political elite, as in Africa, the impact could be critical. A high percentage of early deaths of key public and private sector decision-makers could adversely affect development over many years. According to data made available by the South Pacific Commission for the PIC and by the STD/AIDS Unit of the Department of Health in Papua New Guinea, reported HIV and AIDS cases are concentrated in the 20 to 40 years age group with 20–29 years the age group with the highest concentration of HIV cases and 30–39 years the age group with the highest concentration of AIDS sufferers. In Papua New Guinea, AIDS case are concentrated in the 20–29 age group suggesting earlier infection times than in the other PIC, a faster incubation rate or a significant degree of under-reporting that makes firm conclusions hard to draw. No information is available on the education levels and incomes of these reported cases. It is impossible at this stage, therefore, to draw firm conclusions about the likely workforce effects of HIV/AIDS in the PIC.

It has been suggested that under certain circumstances an AIDS epidemic could slow the growth of gross domestic product less than it slows the growth of the population and the labour force such that the end result could be a rise in per capita income<sup>6</sup>. Such an impact sounds so improbably like “lifting oneself by one's own bootstraps” that the effort that various authors have put into showing it to be unlikely hardly seems worth it. The fact that in developing countries AIDS is usually concentrated in the more highly educated segment of the population – at least for males – and that medical costs are so high makes it even more improbable. In a sense, the impact of an AIDS epidemic on a society is similar to rapid ageing, as the base of productive people declines and the proportion of those in need of care, including orphans increases.

There are no reports of research into the impact of a HIV/AIDS epidemic on income distribution within a country. There could be differential effects between rural and urban populations, between males and females, between the young and the aged, and between the educated and the uneducated. But apart from knowing that individual families which have one or more members afflicted with AIDS will suffer a loss of savings and future income-earning capacity, there is no basis on which to speculate about the distributional effects.

**Savings:** An important issue for the PIC is the need to increase and mobilise savings. A contraction of foreign aid could make this need even more critical. Customary land practices in the Melanesian countries make the issues of savings mobilisation more acute because it is difficult to use

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land as collateral for raising funds for investment. Through the impact of rising medical treatment costs on savings, an AIDS epidemic would have damaging effects on savings and investment. In countries where those suffering from AIDS are more likely to be cared for by their families, the overall cost of care may be higher than where public facilities are used, because they forego the economies of scale from care provided on a multiple-patient basis. But whether the health costs are met indirectly by the public through taxpayer-funded public facilities or directly through private patient care an AIDS epidemic will mean a reduction in savings and investment and therefore lost opportunities for increases in physical and human capital. If an AIDS epidemic is concentrated within the educated elite, this could lead to the rapid destruction of a large part of the country's human capital, as has been the case in African countries.

While there have been no estimates made of total expenditures on AIDS treatment in PIC, some estimates have been made for other developing countries. For example, in Thailand it is estimated that annual health care costs for AIDS patients could be between US\$ 658 and US\$ 1 016 per patient<sup>7</sup>. These authors also estimated the indirect income foregone due to the ill health and premature death of AIDS sufferers at US\$ 22 000 per person – 17.6 times per the capita income in Thailand in 1991.

**Foreign direct investment:** As well as affecting capital accumulation through its impact on savings, HIV/AIDS infection could adversely affect capital accumulation by making foreign investors less willing to invest because of perceived risks to their investments or to their expatriate staff working in the country. If the PIC are to move to higher income growth paths, as seems essential, it is critically important that they are able to attract a higher, sustained levels of foreign investment with the attendant benefits of improved technologies and improved human skills. The key step in this direction is adopting better and more stable economic policies<sup>8</sup>. However, development of high HIV/AIDS infection levels could undo the benefits of better economic policies by restricting foreign investment.

## B. Micro-economic effects

**Agriculture:** The PIC are primarily rural-based societies in terms of both production and population. In Africa, the HIV infection rate in the rural areas is about one-half that of urban areas. This result is basically a function of the clustering of higher risk groups in urban areas. Over and

Piot (1993) argue that if the most important reason for the difference is the higher frequency of unprotected sex with multiple partners among urban high-income males and low-income single females, and if this pattern continues, the difference in infection rates will persist<sup>9</sup>. Given the lower HIV/AIDS prevalence in rural areas and the large share of rural production, the direct impact of AIDS on such an economy will not be as great as in an economy with a larger, urban-based production structure. However, there may be important indirect effects because of the debilitation of the political elite in the urban centres as policy decision making capacity is eroded.

Given the predominance of agriculture in the PIC, they will have to increase the productivity of agriculture to broaden the savings base for development and to release labour for the utilisation of other sectors. Development of agriculture will mean more interaction between the urban and rural areas, including expansion of infrastructure such as roads. As experience in other developing countries has shown, increased transportation activity has provided a medium for wider transmission of HIV infection.

**Health services:** Ainsworth and Over (1994) illustrate the unfortunate impact that an AIDS epidemic can have on a country's health services by noting that in Kenya an estimated 40% of hospital beds are

occupied by HIV-positive patients<sup>6</sup>. In another illustration of how an AIDS epidemic can adversely affect people ill with other more treatable conditions, they note that a random sample of more than 200 admissions to a hospital in Zaire showed that half were HIV positive. The same study that they reference<sup>10</sup> argued that the unexpected high mortality rate among non-AIDS patients was evidence that other illnesses were being crowded out from hospital care by AIDS.

The poor per capita income performance of the PIC in recent years has placed pressure on government budgets and, in turn, on government services such as health, education, utilities, and law and order. Pacific 2010 has shown that per capita health expenditures have fallen over the 1982–92 period in Fiji, Papua New Guinea and Vanuatu<sup>1</sup>. Without better per capita income performance, further declines are inevitable. The recent fiscal stress in Papua New Guinea has resulted in a rapid deterioration of health services there. Past gains in health are in danger of reversal. Infectious diseases are still the main cause of illness and death in Papua New Guinea, Solomon Islands and Vanuatu – diarrhoea, hepatitis B, malaria, respiratory infections, and tuberculosis. In Fiji, Marshall Islands, Tonga and Western Samoa the most

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important public health concerns are heart disease, high blood pressure, respiratory diseases and diabetes. Treatments of these lifestyle-related diseases are high-cost, and under fiscal constraints there is pressure to reduce the quality of care until people opt out of the system. Declining per capita health and sanitation expenditures could result in a sharp reversal in improvements in the control of the infectious diseases. Introduction of a HIV/AIDS epidemic into such a deteriorating health care environment could mean the rapid development of very serious health problems.

**Urbanisation:** Pacific 2010 research has projected sharply increased urbanisation in some PIC by the year 2010, based on assumption of current rates of urban migration and only moderate population growth<sup>1</sup>. It was projected that 43% of Papua New Guinea's population could be living in major urban areas by 2010, compared with 16% in 1990. In the Solomon Islands the proportion of the population living in urban areas could double to 32% over the same period. These migrations can only eventuate, however, if agricultural productivity increases and the industrial and tertiary sectors grow to absorb the people leaving agriculture. If such urbanisation does take place, it could dramatically change the HIV/AIDS infection picture because of the higher infection rates observed in urban areas.

A Pacific 2010 report<sup>11</sup> states: "There is adequate evidence of failing urban management in the region – growing squatter settlements, inadequate water and power supplies. "The problem probably has multiple causes, among them inadequate industrial growth, poor local government management and inadequate provision of services, and in Melanesian countries, customary land ownership which restricts land use around urban areas.

**Education services:** Population projections show that the demand for education services in the PIC will increase dramatically<sup>1</sup>. Present indications are that the funds available for education, on a per capita basis, will be declining. The main source of relief will have to come from reductions in the unit costs of education which are relatively high-cost yet generating poor results.

An area of major concern in these countries is the poorer performance in respect of education of females. This issue has particular resonance in respect to HIV/AIDS incidence. In countries where females are poorer, less well educated, and have less socio-economic independence than males,

they have tended to become an important medium for the widespread transmission of HIV/AIDS<sup>12</sup>. If they had greater socio-economic independence – females, especially younger females who are often in an extremely vulnerable position, would be less likely to be partners in casual or commercial sex and therefore less likely to be a vehicle for HIV/AIDS transmission.

**Table 2. Female school enrolments as a percentage of male enrolments in 1990**

Country	Primary	Secondary	Post-secondary
Fiji	101	104	57
Papua New Guinea	85	63	38
Solomon Islands	79	56	47
Vanuatu	89	75	*
<b>All developing countries</b>	<b>94</b>	<b>74</b>	<b>51</b>

*Source. National Centre for Development Studies (1994)*

Females in the PIC often find themselves in an inferior socio-economic position. This is reflected in school enrolments at all levels as shown in Table 2 for four Melanesian countries. Fiji is the exception, as female enrolment in Fiji at primary and secondary levels is higher than for males. Still, at post-secondary levels, Fiji's female enrolment is only 57% of males. The other three countries compare unfavourably with the average for all developing countries, which argues for a special effort to be made to

achieve a better balance between male and female education opportunities. This could be particularly important for the control of HIV/AIDS.

## Conclusions

This paper has speculated on the economic impact of a HIV/AIDS epidemic in the Pacific island countries – a group of countries which has been experiencing rapid population growth and declining per capita incomes. Projections of continuing high population growth rates, manifesting in large increases in school enrolments in people of working age, and in urban expansion, pose economic management problems of significant magnitude<sup>1</sup>.

Assessment of risk suggests that several PIC have the behavioural characteristics and other pre-conditions for the rapid spread of HIV. Most menacing is where there is a high frequency of casual or commercial sex in urban areas, mining camps, or along transportation routes in the presence of a high incidence of STD. This activity is often between educated, higher-income males and young, less well educated, lower income females.

Countries such as Fiji and Vanuatu, with their relatively higher levels of tourist activity, and Tonga and Western Samoa, with their very high emigration rates, could find incomes depressed through restrictions on emigrants in destination countries and reductions in tourist traffic. If emigration rates are reduced, Tonga and Western Samoa would also be adversely affected through their population

growth rates increasing sharply and their school enrolments growing rapidly. Their employment opportunities would also have to grow much faster.

An AIDS epidemic would have damaging impacts on savings and investment because medical costs of AIDS patients become a heavy drain on their families' savings. Increased savings and investment is critical for the PIC if they are to move to a higher economic growth path. Both domestic and foreign investment would suffer from an AIDS epidemic.

As we have seen in Africa, an AIDS epidemic can transform a country from having a large productive labour force base supporting a relatively small proportion of aged in need of care, to a situation similar to a rapidly ageing society. The labour force is depleted and the proportion of those in need of care, AIDS patients and orphaned infants, increases. At the same time the human capital stock can be rapidly depleted, if the epidemic is concentrated in the educated, prime-age male segment of the population.

Because of their poor economic performance in recent years, PIC experiencing stress in the provision of educational health, and law and order services. Introduction of a HIV/AIDS epidemic into this deteriorating health care environment could mean a reversal of the gains which have been made in infant mortality and life expectancy.

An area of major concern within their education systems is the bias against the education of females. In developing countries where females are poorer, less well educated, and have lower socio-economic status than males, younger females active in commercial or casual sex have tended to become an important medium for the transmission of the virus. It appears, therefore, that raising the educational, and thereby, the economic and social status of women would be one of the most important actions which could be taken to reduce the spread of HIV/AIDS.

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**“ AIDS has exposed prevalent public health shortcomings and highlighted human limitations to conquer nature - a humbling reminder. ”**

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