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HEALTH CARE SERVICES DELIVERY  
IN PAPUA NEW GUINEA :  
AN ARGUMENT FOR POLICY CHANGE

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*(yal hel-le)*

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## **Abstract**

This thesis is researched, reasoned and structured on an argument that Papua New Guinea (PNG) Health Services Delivery and Distribution are inadequate and must see appropriate policy changes, because the inadequacy is the nature of civil services which permeates key areas such as funding allocation, staffing volume, drug supplies and distribution, geographical challenges, demographic fluctuations, mission-run health centres, and government structures; an inadequacy-generating provincial political-interference demands reformulation of policies to benefit consumers rather than individual power players.

Therefore, this thesis further proposes that since health services delivery is evidenced to be inefficient due to mismanagement of systems by the provincial government and lack of financial support from the National Government (bearing in mind that all social sectors' departments in Papua New Guinea - such as Education, Youth and Home Affairs, Agriculture and the like - have similar experience), an emphasis must be placed on the National Government diverting more funds into the well-being of its population, by means of purchasing more pharmaceutical supplies, increasing staffing volume, and placing specialist medical officers in all provinces in the country.

This thesis concludes with key recommendations for more appropriate policy changes to the Papua New Guinea National Health Policy at the root of which lie provincial politics and financial mismanagement in the area of health care in reference to Simbu.

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## **Dedication**

**To my extraordinary father *Teine Philip Maine*  
(*Mom Bel Yal*), a dokta, a kaunsola, and  
Chief of Yaugauma tribe;**

**and**

**to my birth mother *Anna Kopa Teine* as well  
as my nurture mother *Aknas Olmi Teine*;**

**and**

**to my Yurekane clan of the Karilmaril  
village, Dom Census Division, Simbu Province.**

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## **Chapter One**

### **Introduction**

#### *Papua New Guinea (PNG)*

Papua New Guinea is a nation of more than 10,000 tribes, governed in the Westminster system. However, in reality PNG is based on tribal, cultural and regional identity in which the political parties are formed according to those affiliations.

During the election period people do not vote for political party-policies; instead, voters vote for their own cultural or tribal political party. When one party begets power (Government), it appoints only its own tribal people to high executive positions within government departments. In the provinces lie the roots of corruption and misuse of public funds.

Therefore, little consideration has been given to social sector policies such as health, education and agricultural development. Public funds are used mostly for administration and personnel allowances rather than for the welfare of the citizens.

This thesis is researched, reasoned, argued and structured on a proposition that the delivery of Papua New Guinea's (PNG) health services is inadequate and must see appropriate policy changes, because this inadequacy is located in the nature of the civil service which permeates key areas such as funding allocation, staffing volume, drug supply and distribution, geographical challenges, demographic fluctuations, mission-run health centres, and government structures. An inadequacy-generating provincial political-interference in bypass national policy guidelines which demands reformulation of policies to benefit consumers rather than individual power players.

While the focal interest of this thesis is on examining the health needs of the citizens, and also on arguing with existing health policies in PNG, a greater intensity is placed on the future health needs and the existing health facilities of the Simbu Province. Never has there been any research conducted into the provincial life of the Simbu people, let alone an opportunity for a member of this province to research the condition of his own people for academic purposes.

*A Brief Overview of PNG's Health Services and Population*

PNG is entering the resource development era, facing both challenges and opportunities for the first time. If the current generation and posterity are to ensure the full enjoyment of developmental benefits, PNG must plan for and ensure a discerning management of human resource. Any delay or neglect in this process squanders a chance which does not repeat itself. Thus, an integrated and comprehensive human development policy is a fundamental and vital point.

The National Health and Population Policy sets the foundation of PNG's development process. To meet national policy objectives, a health and population policy must be a plan both to reduce population growth rate and to improve the quality of life all citizens.

The above National Policy is used to detail focal areas, including strategies to improve maternal and child health, primary health care services, the status of women, and to improve both urban and rural living conditions - these are just some of the key elements foregrounded in the thesis.

The National and Provincial Governments, regardless of regional and cultural conflict, are primarily concerned to ensure that their people can expect to not only live longer, but also live better.

As shown in Taufa and Bass's *Population Family Health and Development* (1993), the impact of past health services has already been reflected by an increase in the average life expectancy at birth. A child born in the 1990s can expect to live an average of over 50 years. Only 20 years ago, the average child could live for merely 40 years long. In the light of the above impressive achievements, this thesis argues that there is still significant room for improvement in keeping with one of the goals of PNG's national and population policy.

Another goal covers the area of fertility. Chapters Three and Four mention that PNG has a total fertility rate of 5.4 per woman, which is moderate by Third World and Melanesian standards. However, PNG's success in recent decades is significantly visible in the reduction of infant and mortality statistical levels, and the increase in life expectancy figures. This pattern suggests that if PNG were to show a decline in the total fertility rate levels, population growth

and better health would continue for several decades to come.

In such situations, a consistent and persistent family planning programme is necessary, and it is necessary now. In each of the available health facilities (detailed in Chapter Four below), family planning is of vital importance to the country.

Previous and existing Health Care plans and programmes have been and are still aimed at generally improving welfare policy through improved primary care, clinical services, ante natal care, family planning, drinking water safety and the like. In particular, the new policy seeks to continue, significantly accelerate, and upgrade the improvements already achieved; it therefore seeks to ensure that greater energy and resources are directed towards these tasks in the future.

Preventive, rather than curative health care, especially among women and children did enjoy a high national priority. Family planning activities were both strengthened and expanded. They played a leading role in reducing growth rates, as well as in serving to reduce maternal and child mortality rate. Families and couples, who

wished to use contraceptives to plan and control birth, had received assistance in the form of contraceptive and alternative availability and supply, access to family planning services, and education towards informed decisions.

Adopting an informed decision, the government recognises that family planning services are a significant avenue for widening women's opportunities. The services enable women to exercise greater control over decisions affecting their daily lives. For this reason, family planning services and information were integrated with maternal and child health care, nutrition, family health education, income and employment opportunities for the 'working woman' generation.

#### *Towards the Aim of the Thesis*

A narrowing down of the primary aim of this thesis (stated above), finds itself initially exploring, analysing, and describing Simbu Provincial Health Care Policy as well as the province's delivery of health and administrative services to the consumers.

To the thesis-backdrop (Papua New Guinea as a whole), the above exploratory descriptive analysis of facilities' infrastructures (already available in the provinces) and policy planners (intended policy formulation in the year to come) stand in argument.

The second aim of the thesis is to examine challenges currently faced in the PNG health sector with a focus specifically on Simbu province. The actual delivery of health services has been hampered and suppressed directly or indirectly through lack of resources and facilities, affecting consumers. These challenges are foregrounded, and so are the alternative means to combat the situations and to continue providing effective services.

In the light of the prevailing PNG economic climate, the emphases and aims of this health-services mentioned in the thesis are summarily to

- (a) improve the quality and efficiency of existing services and infrastructure;
- (b) promote equity in the distribution of scarce health resources among provinces, between primary and secondary health services and between rural and urban health centres;

- (c) increase the emphasis on self reliance and community participation in health development and management activities, using the 'basic minimum need' approach; and
- (d) provide more effective health education and information to assist all members of the community reduce illness and lead healthier lifestyles as part of a healthy society.

The task of indentifying current health problems, in the thesis, implies political overtones for the PNG authorities to take informed note of. The hypothetical discussions, around concepts of identity, power and implementation of services (detailed in Chapter Three), are to set an argument in the context of the present PNG political climate and current policy debates, in order to explore records of communicable disease victims, and documents of health objectives by which achievement can be assessed. The analyses (in Chapter Four) of the existing facilities, the policies in place, and of the institutional obligations such as 'duty statements' are exemplified by three case studies of the most common diseases (detailed in Chapter Six) found in Papua New Guinea. These three diseases, in which the Health Service invests all its efforts to eradicate, are presented in order to examine the development and provision of health services in Papua New Guinea.

*The Structure of The Thesis*

Chapter One of this thesis identifies the subject matter ( that is, an inquiry into the effectiveness and efficiency of the Simbu Province Health Delivery against a backdrop of inadequate National Health and Population Policy).

The methodology, in Chapter Two, covers research and extended reasoning as well as argument which gives the structure its articulation whereas the literature review basically summarises and argumentatively interacts with scholarly opinions about Pacific Islands Health Care concepts in relation to relevant and concurrent socio-economic, demographic and other variables.

An incisive look at the political and administrative structures, of the Simbu Provincial and National Government situations, includes (in Chapter Three) the issues of bureaucratic power, systems, control, institutions, players and victims already in place.

The indepth descriptive discussion of the Simbu Province, in Chapter Four, covers the geographical challenges; the demographic fluctuations; the existing health facilities; the staffing volume, distribution, and their

responsibilities. It is worth noting that Chapter Four is derived from data which was well in hand before graduate studies at Massey University. Chapter Five analyses and critiques the Simbu Provincial health policy currently in place, covering the areas of funding for health care in the Simbu Province in particular and Papua New Guinea as a whole, and spelling out the sources of funding especially in the form of Australian aid and other donors.

The three case studies in Chapter Six have foregrounded in the first instance the various strands of malaria, namely dengue fever and filariasis. Tuberculosis study reveals that the disease is easily communicable. Water supply, the third case study, reveals the primary cause of diarrhoea and other water related problems. These case studies function as examples of the identity of government health policy targeting each disease in PNG.

In conclusion, Chapter Seven summarises the key financial constraints, focusing on specific impediments to the efficient delivery of PNG Health Services and distributions within the provinces and districts. This chapter also covers the inefficiency of

the administration, within the provincial administrative structure, which has failed to audit financial records and monitor health resources. As such, suggestions and recommendations for policy change in the general health delivery and distribution are made in this chapter. These recommendations are for the authorities to notice, if need be for policy changes in PNG Health Care Services to take effect.

In summary the task of the thesis is to examine health services in Simbu Province of Papua New Guinea, with three case studies specifically used to illustrate major issues. The examination of the health services is set in the context of political and administrative structure of PNG.

## Chapter Two

### Literature Review and Methodology

#### Introduction

This chapter reviews health care situations in the Pacific Island Countries of Fiji, Samoa, Tonga, PNG, French Polynesia and Guam, with special reference to socio-economic and demographic variables. This review of the health and mortality situations faced by the above Pacific Island countries shows them to be similar, and the same situational trend exists in the Simbu Province in particular and Papua New Guinea as a whole. These similarities allow the chapter to focus on some relevant health issues which need to be addressed in Papua New Guinea.

The second part of Chapter Two centres on the methods by which the writer researches and collects data and collates them to generate further arguments at the core of this thesis.

**2.1(A) *Health Situation in the Pacific Island Countries in relation to Socio-economic, Political, Health Service and Other Variables***

The demographic and health situations that are occurring in developing countries are associated with profound changes in disease incidence, and have important implications for development priorities, disease control programmes and therapeutic services.

Coale (1973:53) notes that

*[t]raditional societies often experience high fertility and mortality both of which fall during transition to low levels now observable in industrialised populations. Transition is usually characterized by a period of rapid population growth since fertility decline often lags behind mortality decline.*

Transition is also characterised by a change in the main causes of morbidity and mortality, from infectious and respiratory diseases to a pattern dominated by non-communicable diseases and accidents.

Scattered across the Pacific are some of the globe's smallest nations and territories. Seven Pacific Island countries have fewer than 15,000 people, and only Papua New Guinea and Fiji have over 500,000 people (*Medical Research Symposium*, University of Sydney, 1993). Fifteen of the twenty-one island groups are either

independent, or internally self-governing in free association with a metropolitan power.

Limited land area and a scarcity of natural resources, small population size, distance and isolation, all pose serious problems for development. Both deep sea commercial fishing and mining are the realm of high technology and capital intensive industries, requiring dependence on outside investment and expertise.

*Socioeconomic, Mortality and Health Situations*

In some (but not all) countries, rural and urban lifestyles are differing. Large income differentials also exist between various sectors of populations in countries such as Guam, Papua New Guinea, New Caledonia, Samoa, French Polynesia, Fiji, Tonga and others. Although gender and ethnic-specific life expectancy and mortality estimates are available, and some information on rural/urban mortality differentials exist, there are no group specific socio-economic or descriptive data with which to correlate arguments. The relation between macro-economic indicators and health status in developing countries is still debated, although there are consistent

trends found in almost all studies. Cumper (1981: 49) observes a significant association of national income with lower income, mortality rate and higher life expectancy. He concludes that

*[i]ncreased income appears necessary for improvements in health status, but the proportion of national resource devoted to health services, efficiency of the use of these resources, foreign assistance and per capita income also influence population's health.*

He further observes that health status may be dissociated from economic indicators, particularly GDP per capita, since these indicators provide no information on income. An international comparative study, by Preston (1980:231), estimates that

*[g]rowth in income accounted for 10-25 % of growth in world life expectancy from the 30s to the 70s.*

Although Preston implies that the balance may be due to technical disease control measures, social development (particularly education) now has more currency. In this view, a correspondence between life expectancy and GDP was found, although both Nauru and Papua New Guinea were significant outliers with lower life expectancies than would be anticipated from their GDPs. In Papua New Guinea GDP per capita is not high, but life expectancy remains lower than anticipated.

Unequal income distribution partly accounts for this; more years of life may be lost by people with below average incomes, than are gained by people with above average income. It may also be the case that a proportion of resource industry profits is sent overseas and, although they appear in GDP, these profits are not accessible to the population. There may also be a disparity between economic and social developments, resulting in an inability to use available economic resources wisely. A similar situation exists in the wider international context for Asian and African nations.

Nauru has a very high per capita GDP, but a lower than anticipated life expectancy. Taylor and Thoma (1985:150) have shown that

*[i]n this case, considerable mortality rate from accidents and diseases of modernisation is associated with high consumption expenditure in the absence of appropriate social and legal norms. This situation resembles to some extent that observed in certain ethnic minorities in developing countries, such as Nauru and Australian Aborigines.*

This case may seem paradoxical, but Australian Aborigines have access to sufficient resources through welfare payments to consume large amounts of unhealthy products, such as alcohol, so that spending on other living expenses is kept minimal.

Imports per capita reflect population spending power and contact with the outside world, and this was the economic index best correlated with mortality data. Imports per capita correlated positively with most measures of life expectancy, and with causes (for example, low infectious disease, high cancer and cardiovascular disease types) of death structure characteristic of urbanised countries.

Aid per capita correlated positively with life expectancy (especially for females), and negatively with mortality rates. It is important to recognise that many Pacific Island Countries are highly aid dependent, and aid is a significant proportion of GDP. For example, Papua New Guinea highly depends on Australian aid.

It has been suggested by Grosse (1980: 99) that

*[s]ocial factors which affect health may operate through behaviour related to: infant feeding and child care, use of available primary health care services, personal hygiene, fertility, and diet. All these factors are associated with education (often measured by literacy) particularly of females. Social factors influence mortality decline, and may explain part of it independent of economic, health services or environmental factors.*

Pendleton and Yang (1980) find education to be an important predictor of mortality. The work of Cardwell et al (1984 and 1984)

shows that mothers' education, especially, exerts a strong independent influence on infant and child mortality. Education may improve familial food distribution and health service use, and cause other behaviour changes that give improved protection to the weakest and most vulnerable. Literacy rate is also an important predictor of mortality and a powerful explanatory factor of differential fertility. A study by the United Nations Department of Social Affairs (1984:17) states that

*[c]ertain countries and societies are outliers in relation to the standard international correspondence of mortality with economic indicators. Low mortality rates are associated with comparative low GDP per capita in the Peoples Republic of China, Sri Lanka, Cuba, Costa Rica and also in the state of Kerala in South India. High literacy rates and policies favouring social equity are implicated as an explanation for the dissociation of the usual nexus between health and economics. There are no countries in the Pacific in which health is better than one might expect from economic indices.*

In this study, education is shown to be a significant positive predictor of life expectancy and negative predictor of mortality rate. This is particularly so with women and children. The proportion of the population under 15 years correlates inversely with that of life expectancy, probably because of the age structure in the least

developed countries. The population between 15-40 years of age suffers a considerable mortality rate from external causes.

Urbanisation is also correlated with proportional mortality from external causes such as motor vehicle accidents.

There is continued debate concerning the role of health service as determinants of health status. McKeown (1976) concludes that health services contributed little to the mortality decline in Western Europe, whilst Stolnitz (1955) and Preston (1980) suggest that medical technology contributed greatly to the mid-twentieth century rapid decline in mortality in developing countries. The influences of socio-economic and health-service variables on mortality in developing countries were linked, in Pendleton and Yang's study (1980), but health services appeared to play a greater role for countries in early stages of demographic and health transition, rather than in the later stages of transition.

In this study by Pendleton and Yang, the availability of doctors was correlated negatively with mortality rates, and positively with life expectancy. There was no correlation between the provision of

hospital beds and mortality indices. The reasons for these findings are not clear; however, the availability of doctors is inter-correlated with economic indices.

Melanesian ethnicity was, more often than not, perceived as a prominent indicator of high mortality, especially for females, although this was probably confounded by malaria and socio-economic factors. The three Melanesian countries (Solomon Island, Fiji and PNG) with the lowest life expectancies were also malarious, underdeveloped and independent, with large dispersed and rural populations. Within each ethnic group a spectrum of health status is observed that correlates with overall development.

Political status is a particularly difficult variable, because it is the outcome of many interacting historical, geographical, strategic and cultural factors, and is highly correlated with economic and social factors. Pendleton and Yang's study shows that political status was a powerful predictor of life expectancy, but its effects could be removed by adjustment to advantage demographic and socio-economic factors.

Certain factors, which may be determinants of adverse health status (such as malaria, low levels of development and dispersed population), may also be related to the progression to political independence.

Significant ethnic admixture with the European, as seen in French Polynesia and Guam, and high level of migration to and from metropolitan countries (for example Samoa, Cook Islands, Niue and New Zealand), increase acculturation and may change health related behaviours. These factors may be separate determinants of low mortality and, also, of continued political attachment.

Many newly independent nations experience poor health status prior to independence, and several territories have had relatively good health status for some time.

Political status has both direct and indirect effects on aid flows and investments, and is linked to the extent and quality of health services, particularly therapeutic and hospital services. Population and population density are not easy to interpret as variables, since they may to some extent be direct causes or effects of political

status , and may be linked to mortality through such associations.

Malaria is an established determinant of high mortality rates and various studies have shown that mortality decline accompanies malaria control. This is further elaborated in Chapter Six Case Studies on Malaria. Gray (1975) studies post-war mortality decline in Papua New Guinea which coincided with the extension of health services: an anti-malaria campaign appeared to be responsible for an approximately 50% reduction in crude death rate, and accounted for most inter-provincial differences. Improvements in health services, nutrition and the economy contributed to mortality decline. In this study the presence of malaria was correlated with high mortality, and malarious countries had an average life expectancy of 10 years lower than that of non-malarious countries. Taylor and Lewis (1989:64) state that

*[t]he extent of the health and demographic transitions in each Island state can be determined from overall levels of mortality and the cause structure of mortality. As transition occurs, mortality drops and life expectancy increases; while less infectious and acute respiratory diseases are observed, it is to a varying extent replaced more by non-communicable conditions and external causes of mortality. This process of replacement of one group of diseases by another may lead to a stagnation*

*in decline of mortality such as occurred in males in many industrialized countries during the 1970s and 1980s. In other instances an actual increase in mortality may occur such as in male Nauruans and Fiji Indians.*

In summary, the less developed Melanesian malarious countries and dispersed nations experience a rate of mortality higher than that in other Pacific Island Countries, and proportionally higher, from infectious diseases. In general females had longer life expectancy than males. Certain Island states associated with metropolitan countries have relatively lower mortality rate, with higher proportional mortality rate from cardiovascular and other non-communicable diseases. Economic conditions and education variables appear to be intervening variables in this process.

The identification of factors, significantly associated with health status in Pacific Island Countries, should assist individual governments as well as donor nations and regional and international aid organisations to design and implement appropriate inter-sectoral development policies to reduce mortality and morbidity in the population of small Pacific Island States.

*(B) The Implication of Population Growth for the Provision of Rural Health Services*

The formulation of a national population and health policy and the consequent prospects of a rational as well as sustained population programme are encouraging moves which bode well for the long-term future of Papua New Guinea. It is not the consequences of this political decision that will largely determine the constraints to provision of health services over the next several years; it is the historical lack of concerted action on population issues and the continuing reluctance of the government to recognise the incontrovertible link between population growth and health services requirements. In the medium term, the people of Papua New Guinea will be paying the price for past sustained high levels of population growth. One likely cost of this will be a decline in provision of health services in terms of coverage, scope or quality.

*(a) The Current State of Rural Health Services*

The current National Health Plan (*Department of Community Medicine, University of Papua New Guinea, 1992*) outlines a strategy which focuses on improvement of quality and efficiency of

existing health services and infrastructure. However, recent reviews of rural health services indicate that the lack of human and material resources is already hampering their effective delivery.

Thomason and New-Brander (1991) state that per capita expenditure for health has declined in real terms since 1988. There are also significant inequalities in the distribution of health resources between provinces which cannot be justified by the health needs of the population. These disparities are also reflected in the inequitable distribution of staffing between provinces.

Thomason and New-Brander further state that shortages of skilled human resources have been reported in the rural areas, already.

Twenty four percent of health centres and subcentres - the first referral level (see Chapter Four) have only an orderly or nurse aide on duty in outpatients. This makes the level of initial diagnosis at those facilities equal to an aidpost, except that aidposts would be able to refer more rapidly to a more highly qualified person. Many aidposts are reported to be unstaffed, with anecdotal reports indicating that as many as 25 % of aidposts may be unstaffed at

any one time. Within provinces, there has been a steady decline in the proportion of non-salary recurrent costs since 1989, and Thomason and New-Brander, again, state that this has adversely affected the provision of health worker supervision, health patrols, and facility maintenance, while the target for supervision visits of peripheral health workers should have come to four per year.

Twenty one percent of health subcentres and 37 % of health centres staff had not made even one visit to their aidposts during 1989. No supervisory visits had been conducted by 42 % of the facilities in the month preceding their study.

The same year showed that 31% of facilities had not received any clinical supervision over the preceding twelve months. Poor supervision has since been cited as a major factor in the deterioration of the aidpost system in the country. Bouten (1990) finds that patients' examination by aidpost orderlies was inadequate, and drug dosages given often incorrect, which is also suggestive of already declining standards in the provision of rural health services.

Another symptom of the recurrent cost problem which has been

highlighted, in Kolehmainen and Thomason's study of *Distribution and Performance of Rural Health Workers in Papua New Guinea* (1991), is that in 1990 33 % of health centres and health subcentres had building and maintenance problems. This represented only 6.4 % of the recommended level for maintenance expenditure.

Further emerging problems in rural health services, indicating inadequate recurrent financing, are poor vaccine stocks, inadequate refrigeration, declining frequency of maternal and child healthclinics, and a consequent concentration of staff on curative care, with 60 to 70 % of their time spent on curative care and less than 25 % on the vital area of preventive health. In summary, there is evidence to suggest that the system is already failing to respond appropriately to the increasing demands of the population and the slow economic growth.

*(b) Resource Requirements to Meet National Health Policy Targets*

The PNG National Health Plan 1991-1995 has outlined the objectives for health service provision over the next five years.

Although some objectives can be reached within existing resources, as the population inevitably continues to grow, the resource

requirements for health will increase. The main categories of resources for rural health services are human resource, essential drugs, travel and transportation, and properly maintained facilities.

*(c) Human Resources*

The staffing implication of meeting the targets (made explicit in the new five year National Health Plan) combined with continuing high levels of population growth, are considerable. Currently there are estimated numbers of staff in rural areas to handle current utilisation levels. The National Health Plan has indicated a desire to improve performance in the area of maternal care so that 60% of all pregnant women make at least three antenatal visits; 80 % deliver their babies under supervision; and 50 % of fertile women utilise family services.

Using the indicators of staffing needs (ISN) - a formula developed for assessing staff requirements for nurses and community health workers in rural health centres and subcentres), as indicated by Kolemäinen and Thomason (1991) - by 1995 the number of nurses required in rural areas was 2,797 and that of community health

workers 2,999. The numbers of existing staff in rural areas in 1990 were 1,357 and 1,344 respectively. This means an additional requirement of 1,440 nurses and 1,655 community workers. The cost of such expansion would be in the vicinity of K9.29 million per year.

Aside from the obvious economic implications of human resources requirements, there are also those for training. Currently there are approximately 150 nursing graduates and 220 community-health workers graduates annually. In the next five years, 750 nurses and 1,100 community health workers could be trained. Over the forthcoming five years, at present training rates, without accounting for attrition from services, only 52 % of nursing requirements and 66 % of community-health work requirements can be subjected to training.

*(d) Essential Drugs*

Over the past few years, reports of essential drug shortages are becoming increasingly common. It is easy to see why such shortages have occurred, and it is inevitable that these will become more common. The procurement of drugs requires scarce foreign exchange.

When the Kina was devalued in 1990, by the end of that year the Division of Pharmaceutical Services was over-committed by 10 %, simply as a result of orders placed prior to devaluation. The devaluation, coupled with static appropriations for purchase of drugs over the past five years, has made it increasingly difficult for the Division of Pharmaceutical Services to maintain levels of procurement. The volume of drugs, purchased currently, remains at levels similar to that purchased in 1989. Yet, as the population has increased, and patterns of morbidity and mortality have remained essentially the same, the volume of drugs needed to treat people has increased. Although some savings may be possible through intensification of efforts to reduce wastage and to improve health workers compliance to correct prescribing practice, requirements for expenditure on essential drugs over the next five years will be driven by population growth and the market price of the drugs; and there is no doubt that both of these are rising.

*(e) Resource Expectations*

Uncertainty regarding the future growth of the economy of Papua New Guinea makes it difficult to predict the level of resources for

the health sector available over the next five years into the year 2000. However, projections based on explicit assumptions are useful in illustrating possible future scenarios. There have been two different sets of projections already made. The first, made by New-Brander and Thomason (1990), uses 1990 as the base year and assumes that population growth would remain in the range of 2.2-2.3 %, and GDP would rise by 1.3-1.4 % annually.

It is also estimated that the proportion of GDP for health would be maintained. It was estimated that in 1991 there was a gap of K8.8 million, based on shortfalls in operations and maintenance expenditures. By 1998 it was estimated that the gap between the resources required and those available from government was to reach the level of K18.6 million.

The second projection, by Rosenthal et al. (1990), assumes that the required level of resources would be the maintenance of the 1991 health expenditure in real terms. Projections were made, using the 'best case scenario' for population growth of 2.3 % and the 'worst case scenario' of 1.25 %. In the best case scenario GDP growth is

also assumed to be 3.5 % per annum, which is based on World Bank medium term projection. ( Figures based on *World Bank, Papua New Guinea: Policies and Prospect for Sustained and Broad-based Growth*, published by World Bank Washington, 1990.)

In the worst case scenario, GDP growth is estimated to make no change. The projection of government expenditure on health is estimated to remain the same. The best case scenario projects a shortfall of K8 million in 1995, which would reduce to about K3.4 million by 1998. The worst case projects a K24.7 million shortfall in 1995, which would grow to K40 million by the year 1998. The population growth variant plays a key role in determining the difference between the best and the worst scenarios.

Both sets of projection clearly predict that there will be significant shortfalls in expenditures for health services in 1998, ranging between K8 million and K24 million. The simple message is that financial and human resources for health are becoming scarcer.

The anticipated gap between requirements and availability of resources will necessarily mean that it will no longer be possible to

provide the same level of services as before. The effects on services may be in one or more of the following ways: reduction in coverage or reduction in quality of services.

*(f) Reduction in Coverage*

Coverage implies the extent to which services are being appropriately utilised by all those who would benefit from them. Inevitably, growing population pressure means that coverage will decline. This is likely to compound existing problems with inequity of service provision. Access and political power are related, and the increasing and vocal demands for health services of a growing urban population will inevitably result in an effort to meet their demands. The isolation and relative 'silence', in a political sense, of the most remote rural dwellers will tend to mean that services to them will suffer first. Population pressure will mean that coverage will decline. The most likely reduction will be seen in the closure of aidposts and health subcentres; and in the reduction of preventive services.

(g) *Reduction in the Scope and the Quality of Health Services*

When there are limited resources, it is impossible to do everything at once. One alternative is to maintain high levels of coverage, but also to limit the range and the scope of services provided.

Conducting this in any rational way requires the establishment of priorities amongst the range of available health interventions. A debate on such issues has arisen in recent years regarding the inability of governments to respond to the resource requirements of comprehensive primary health care, which has been demonstrated to be costly. Proponents have suggested that there are specific medical interventions which could be applied at reasonable cost and which would have a significant impact on infant and child mortality. The measures suggested were immunisation, oral dehydration, breastfeeding and the use of anti-malaria control programmes. The government could select a deliberate strategy of putting resources into key programmes with identifiable impact on mortality, and of redirecting resources away from programmes (such as dental health, mental health, rehabilitation) with lower impact. The PNG National Health Plan outlines the services to be provided at each level of

facility. At the lower services level, further elaborated in Chapter Four, the following functions are listed:

*Aidpost Functions include:*

Outpatient Services,  
Family Planning Promotions,  
TB and Leprosy Patients Follow-up,  
Water, Sanitation and Nutrition Counselling,  
Basic Human Needs Promotions,  
Maternal and Child Health Post-clinical Assistance,  
Patient's Referral Health Centres,  
Disease-outbreak Reporting Services.

At the health centre, the functions are expanded to include inpatient-care, full provision of maternal child health and family planning services as well as a range of administrative and managerial functions including supervision, training and drug distribution. Plans are articulated in the National Health Plan for a wider variety of activities as listed below.

*National Health Technical Plans include:*

Respiratory Disease control,  
Mosquito-borne Diseases Control,  
Disease of Poor Hygiene and Sanitation,  
Aids and other STD,  
Hepatitis B Control,

Tuberculosis,  
Leprosy,  
Yaws,  
Diseases of Eye and Ear,  
Nutrition,  
Cardiovascular Diseases,  
Cancers,  
Tobacco Associated Diseases,  
Traumatology,  
Mental Health,  
Oral Diseases,  
Primary Health Care,  
Health Education,  
Immunisation,  
School Health,  
Reproductive Health and Family Planning,  
Geriatric Health,  
Environmental Health,  
Support Services.

If the selective primary health care approach is followed, these health activities could be prioritised on the basis of such factors as, prevalence, mortality, morbidity, feasibility and cost of control, and the use of technology. Walsh (1991) suggests that in establishing priorities for health expenditure, a distinction should be made between rural primary health services which require planned allocations to promote growth, and hospital services that tend to expand spontaneously under demand pressures and must have resource limits put on them to constrain their growth.

It is difficult to make such choices, but to make the choice in a logical and rational way may be preferable to the alternatives. The alternative to a deliberate policy intervention is that the scope of services will be reduced anyway, through attrition rather than sound and rational planning. For example, maternal and child health extension work may cease due to lack of staff and transportation, while the curative work of the health facilities continue.

The impact of health services on the health status of a population depends on:

- (i) the efficacy of the interventions provided;
- (ii) the diagnostic accuracy of the health worker;
- (iii) the compliance of the health worker to correctly provide the intervention or health practice;
- (iv) the compliance of the patients to correctly use it; and
- (v) coverage.

It has been pointed out, above, that there is a risk that coverage will be reduced. The diagnostic accuracy of health workers and their compliance to correct intervention and health practice, depend heavily on pre-service and in-service training and supervision.

Compliance to the correct intervention also depends on the available drugs. As discussed earlier, the availability of drugs will

be increasingly constrained as population pressure increases. The conduct of in-service training and supervision relies heavily on recurrent funding for travel and transportation. As already witnessed, health workers supervision is on the decline. The combination of population demand and sluggish economic growth suggests that there will be little hope of improving these areas in the near future. As a result, it is inevitable that the quality of services provided in the rural areas will decline.

This discussion has focused primarily on the implications of population growth, and on the provision of health services and health status. Some may correctly argue that there are other important means of improving health which should be considered. The World Bank Washington (1990), for example, has called the evidence of significance of the relationship between education and health, unequivocal. Other factors have also been linked to improved health status, so the concentration of scarce resources on health services alone may not be the most effective intervention to make changes in people's health status. For example, a number of key areas were found to be important in reducing mortality in Costa

Rica, (Kerala) India, and Sri Lanka (Walsh, 1991), including female autonomy, improved education with equal opportunities for both sexes, adequate nutrition, accessible and efficient health services providing antenatal and postnatal health services, fully trained birth attendants, and universal immunisation. On the basis of these findings, it may be that a judicious combination of selected health interventions, and a channelling of remaining resources into interventions to improve education and the status of women, could be the most successful means of dealing with resource constraints. Regardless of how the choices are made, one thing is clear: the combination of high levels of population growth and slow economic growth means that there are choices to be made. In the medium term at least, there will simply be inadequate public resources to respond to public demand. Inevitably, either the coverage or the scope of health services will decline; probably either scenario will be accompanied by a deterioration in the quality of those services. These reductions may be carefully planned to minimise their negative effects, or they may be allowed to occur in an *ad hoc* manner, possibly with the worst effects on the most needy areas.

There is a need for concerted action on the part of the national and the provincial governments, the central government agencies and the Department of Health to act to minimise the negative consequences on the provision of health services in a rational and planned way. Clear acknowledgement should be given, in the budgetary process, to the relationship between population growth and requirements for health services. There is also a need for concerted action to implement the national population policy as a rational and sustained population programme, so that the future provision of health services can be managed within existing resources. Finally, it would be wise to consider a multi-sectoral approach to the improvement of health, with due consideration to the status of women and education, which elsewhere has been found to be an important complement to the delivery of effective health services in the improvement of health status.

### **2.2(A)      *Methodology***

This graduate work is researched, reasoned, argued and structured on a thesis statement that the delivery of Papua New Guinea's

(PNG) health services is inadequate and must see appropriate policy changes, because this inadequacy is the nature of civil service which permeates key areas such as funding allocation, staffing volume, drug supply and distribution, demographic fluctuations, geographical challenges, mission-run health centres, and government structures; an inadequacy-generating provincial political-interference in bypassing national policy guidelines which demands reformulation of policies to benefit consumers rather than individual power players. Population pressures and demands on limited resources create powerful pressures for change.

The research process itself is dependent on secondary data source. The data location is some distance from the institution where the researcher resides. Also, due to financial difficulties and other resource scarcities, this thesis-writing researcher initially depended entirely on letters sent to PNG (See Appendix A) and other available information. The personal experiences of this thesis writer - once a social planner with the National Planning Office in Papua New Guinea - is in this case significant. Other data have come from the OXFAM office in Auckland; and from the libraries of

Waikato University, the University of Auckland, and Massey University.

In regard to the response from the letters, only a handful came in directly from resource persons in PNG. The requests for data were informal, in letter format, asking for information on a particular subject matter, and they had been sent to different key people within government departments, such as:

National Health Department Secretary,  
Simbu Provincial Health Department Secretary,  
National Planning Office Director,  
Department of Women and Youth,  
University of Papua New Guinea Library,  
National Medical Research Office Goroka,  
Australian National University Library,  
National Population and Statistics Office.

In addition, some respondents were former colleagues from within the Health Department in Papua New Guinea.

The 1997 letters coincided with the National Parliamentary Election year, and the key people in government positions had been appointed by political friends. During the elections they were not comfortable about the continuity of their positions, and as key officials they had to contribute time to campaigns for political cronies.

However, all incoming responses were scrutinized, summarised, documented and made available for the thesis. Chapter Four comprises the thesis writer's own past experiences in dealing with the existing facilities - they were data collected prior to graduate studies at Massey University.

The hypothesis at the beginning of this chapter is, therefore, derived from perspectives gained through the above research methods, and through theoretical readings and reviews in the field.

### ***(B) Towards Thesis Statement Formulation***

#### ***(a) Perspectives***

The place of this thesis writer can be discerned in a number of different ways. Coming from the Simbu Province and the PNG on which the thesis is based, he stands in the direct context of situations where the immediate Health Care Services are deteriorating, and affecting him personally. On the other hand, as an educated person he is capable of identifying problems arising from lack of policy input and government resource allocation - these being brought about by nepotism, favouritism and other corrupt dealings in the

delivery of limited health resources to the needy.

As researcher he undertakes in this thesis to discuss and argue the delivery mechanisms, with the purpose of assisting the bulk of the PNG population who have suffered in the face of public servants who have been bestowed with the mandate to oversee and co-ordinate the delivery of basic services in support of health networks such as aidposts, mobile clinics, health subcentres, health centers and rural hospitals.

Underpinning the above perspectives, a way of identifying the current climate of illnesses (both communicable and non communicable diseases existing in the area) is considered by examining the context of outpatients' records. The framework of the perspectives for this thesis draws on Merton's idea applied to bureaucratic organisations in general and delivery of services, although there are reasons that the idea is particularly applicable to public administrations (as detailed in Chapter Four below).

Merton's idea sees public officials placed in a particularly difficult position vis-a-vis their clients, as the officials may make political

decisions with which they themselves disagree when they are facing a public who cannot normally go elsewhere in the case of dissatisfied demands which often can be met by private enterprise; the justice of their action is then open to public scrutiny by politicians and, sometimes, in a court of law. Christopher Ham and Michael Hill (1993:136) state that

*[t]hey are thus under particular pressure to ensure that their acts are in conformity with rules. Rules are bound to play a major part in their working lives.*

The manner of delivering basic medical supplies to the needy people of PNG and those of the Simbu Province are accountable to the state.

*(b) Power and Manipulation*

Underpinning Dahl's (1957:203) critique of what is a definition of power spelt out more fully:

*A has power over B to the extent that he can get B to do something that B would not otherwise do.*

He further asserts that this draws attention to the fact that power involves relationship between political actors who may be individuals, groups or other human aggregates; and that the emphasis

lies in the necessity of studying power in case there is difference of preference between actors. In addition, actors whose preferences prevail in conflict over key political issues, or policy implementation, are those who exercise power in a political system. Chapter Three further elaborates on the concept of power and governance within the National and Provincial government of PNG. Dahl finally points out that it is equally important for those who exercise power to be in control of basic health services delivery. Considering the PNG geographical challenges, demographic fluctuations and the effects on the overall structure of delivery of medical services, this thesis also argues that power also has a major effect on controlling the health system. The overall structure and locations of health institutions such as Rural Hospitals, Health Centres, Health Subcentres and Aid Posts provide a useful illustration of Christopher Ham and Michael Hill's (1993:22) argues that

*[s]tate institutions are located at various levels: national, regional and local. Peripheral institutions vary considerably in the degree of freedom they enjoy from central agencies. The autonomy of peripheral bodies is important, not least because this will influence whether control policies are implemented at the local level. The growth of state intervention has tended to increase the power of central institutions,*

*although there are important variations between political systems on this point. The existence of the state agencies at different levels means that considerations must be given to the role of local states as well as to the role of national states.*

These health institutions mentioned in chapter Four have been under the decentralised functions of the Provincial Government. Also, PNG has decentralised its functions of services delivery to the second most recognised and corrupt government, the Provincial Government. The extent of corruption is shown in the fact that 14 Provincial Governments were suspended between 1990 and 1994 due to misuse of public funds. These Provincial Governments are assisted by the third level of government, the Local Government Council. This PNG governing organisational structure, of serving the country in a way which only those in power see fit, consolidates the argument of Ham and Hill above.

The purpose of policy implementations as detailed in the Case Studies in Chapter Six, is to draw on ideas from a range of diseases in order to interpret the causes and consequences of government actions, in particular by focusing on the process of policy formulation. Gunn (1978:1) argues that

*[a]cademics have often seemed obsessed with policy formulation while leaving the practical details of implementation to administrators.*

He further makes distinctions between policy making, policy implementation, and evaluation of policy outcome. And even when policies are not symbolic, it is important to recognise that the phenomena upon which action must be based are products of migrations and compromises. As Barret and Hill (1981:89) expand on the argument:

- (a) Many policies represent compromises between conflicting values.*
- (b) Many policies involve compromises with key interests within implementation structure.*
- (c) Many policies involve compromises with key interests upon whom implementation will have an impact.*
- (d) Many policies are framed without attention being given to the way in which underlying forces (particularly economic ones) will undermine them.*

Barret and Hill's argument, has been that the implementation process has many problems in identifying what is being implemented and achieved, because policies and objectives lack manpower to enforce and assess and measure the achievement. A further complication for implementation would be that many government actions do not directly involve or try to measure the mentioned policy activities.

The above argument is particularly pertinent to the features of PNG national and provincial governments where, generally, they do explicitly fund programmes but accept donations in medical supplies from the Red Cross, the Salvation Army, UNICEF and the like. Indirect funding means that the relationship between policy and implementation conflicting in values from government and non government organisation.

### **Summary**

Chapter Two has used demographic and other data, on Pacific Island countries, to provide a perspective of PNG's demographic situations in the late 1990s. At the same time some measure of consideration was given to regional-and-provincial variations levels in birth and death rates and their implications for the provision of health services.

Although there are doubts about the accuracy of Papua New Guinea's census, the population growth rate appears to have changed little, if at all, during the past two decades. The birth and death rates, for the country as a whole, are the product of wide

statistical differences between regions and provinces, to the extent that PNG's overall birth rate is lower than might be expected. The reason can be found in the relatively lower fertility levels in particular highland regions. Therefore, the low birth rate was not the result of the use of modern contraceptives, as in other Pacific Island countries, but was more likely determined by socio-cultural and other factors. The demographic reasons may have come from the national government population control policies. The hypothetical discussions on policy planners and the government structure are based on the manipulation of the system. Chapter Three will further elaborate on the concept of Governance in reality: the hierarchy of government structure and the manner in which the policy making is conducted with relevance to PNG's social sector department of Education, Health, Agriculture and the like.

## Chapter Three

### Policy Making Machinery in Papua New Guinea

#### Introduction

This chapter explains and discusses the organisation structure at the government levels, and the hierarchy of bureaucrats who are in the position to make and break policies. The policies addressed are top-down policies where policy-planners do not consult the grass-roots people on what they want done. Instead, the policies are formulated from top-offices and spoon-fed to implementers. This chapter also contains detailed pictures of the manner of misuse of public funds in regard to spending, management and control of social sector departments such as education and health - just to mention a few. This chapter also explains and discusses the policy-making machinery, from the National and the Provincial Governments in PNG.

#### Governance

Underpinning Dahl (1957) critique of power and *governance* has received prominence in development debates in Papua New

Guinea. At its broadest level governance refers to the authority, control and management functions of government. The manner in which a country is governed is the result of a host of historical, cultural and social factors. Development experience has demonstrated that there is no uniquely superior model of governance.

There should be a clear separation of powers among the legislative, judicial and executive arms of government. The administrative arm of government should be capable of providing clear and independent technical advice. Strong government institutions yield considerable benefits. Systems of effective accountability can make an important contribution towards promoting good governance. In a number of areas Papua New Guinea has made progress. The constitution provides for effective limits on powers of the executive, and the judiciary operates under a considerable degree of autonomy. Genuine progress has been made in reducing abuse of power, by the introduction of Leadership Code and the operation of the Ombudsman Committee. However, in other areas problems remain. Accountability in administration in public sector enterprises and at a broad political level is weak. Although a remarkable degree of

democracy has been achieved, effective political accountability requires an independent reporting system, freedom of information, and an effective media (radio, newspaper and television). Even given these prerequisites, the availability of this information can only be translated into effective accountability if there is sufficient participation in the interpretation of this information. Where the general level of education is low, governments can assist by actively promoting and protecting systems of accountability, with a focus on the management of economies and financial resources, where the scope for misuse is the greatest.

With a few exceptions, Papua New Guinea has not been able to establish strong state institutions. Given the low level coverage of education services at the time of independence, this is not surprising. However, this - in conjunction with the legacy of traditional ties and the system of governance - has created problems. Traditional ties have often dominated weak state institutions, particularly at the provincial level. In addition, the state has failed to adequately address the issue of the interface between national and community systems of governance. This failure has been particularly evident in

the sphere of law and order. Weaknesses in the effectiveness and integrity of state institutions have contributed to rising social disorder.

*(1) Framework for Policy Making and Planning*

In market-based economies, governments plan for two basic reasons, that is, firstly to make the best long-run use of the limited set of financial, physical and human resources over which the government has control; and secondly to maximise the growth of the broader subject of economy to meet a set of policy objectives. Best-practice planning does not involve a command and control approach to economic and social developments' setting of rigid targets and specific requirements for all sectors of the economy. Planning is the management tool to help clarify and communicate government objectives; set priorities; identify strengths, weaknesses and strategies; and improve accountability in the public sector . This entails governments being involved in a range of different types of macroeconomic and policy planning, sector planning, and functional or organisational planning. In addition, there is a need for effective priority-setting and for coordination and monitoring mechanisms.

There is a wide range of different technical approaches; however, there is an increasing trend towards a strategic planning approach. Policy making is a key function of government. To be effective, policies must be designed with the intention of meeting specific objectives, and the effectiveness of their implementation must be assessed relative to these objectives. The government has a mandate to determine national objectives and to adopt appropriate policies to achieve these objectives. It is the responsibility of the administrative arm of the government to provide independent technical assessments of policy options, and to advise the government as to the consequences of different courses of action. There are a number of pre-requisites for policy making and implementation to be effective, namely that

- (a) clear and consistent objectives must be established;
- (b) the civil service must have the technical and administrative capacity to assess policy options and to implement the government's chosen policies;
- (c) the government must give due consideration to the advice of civil servant;
- (d) a mechanism for screening, coordinating and channeling policy advice must be in place and must be adhered to.

Sector planning involves decisions over the organisation of resources and the use of policy instruments to achieve specific sector objectives such as the improvement of child immunisation and malaria control programmes in the health sector, or the increase of crop yield in the agricultural sector. Sector planning cannot take place in isolation, as the plans of each sector frequently have implications on other sectors and on the macroeconomic situation. Effective sector planning requires both sector-level planning capabilities and centralised co-ordinating; it involves establishing work plans and responsibilities at the level of individual operational units. Planning is a function that should take place throughout the different levels of government. To be effective, planning functions must be fully integrated into the activities of government. Planning should not be seen as a function that is of little operational relevance. Neither should it be seen as the sole responsibility of a central agency. In addition, planning systems must emphasise the coordination of inputs and the establishment of priorities, both within and among different sectors.

(2) *Policy-making Machinery in Papua New Guinea.*

The National Planning Council, a council of senior ministers, is the

planning body of the highest authority in Papua New Guinea. It provides advice to the National Executive Council (NEC), the equivalent of Cabinet, which determines government policy. Policy input comes from those Ministers' own departments: from the planning division of the Department of Finance and Planning, and from the policy and planning division of the Prime Minister's Departments. A number of external inputs are also received.

Policy formulation and planning in recent years have suffered under a number of handicaps. Policy input to the NEC comes from several sources. There is conflicting advice, leaving resolutions to busy ministers with no time for administrative machinery necessary to make the best decisions. NEC is an active body which is sometimes required to make policy decisions without sufficient analytical support. It also lacks an institutional arrangement to monitor the implementation of its decisions. There exist several of NEC decisions, formally documented, that have yet to be fully implemented. In addition, without effective processes for channelling policy advice, and given widespread weaknesses in planning on occasions, the NEC had acted without seeking or receiving the

advice of the relevant government or ministry. Aware of these difficulties, in 1992 the incoming national government established the Policy Coordination and Monitoring Committee (PCMC). Chaired by a former politician and the three secretaries of the Department of Finance and Planning, the Prime Minister's Department and the Department of Personnel Management, this 1992 government had a wide brief which included:

- (a) assisting with translating political objectives into agency programmes;
- (b) screening all NEC submissions;
- (c) resolving implementation and management problems within the bureaucracy;
- (d) making recommendations on major policy issues to NEC and the National Planning Council;
- (e) overseeing development of government programmes; and
- (f) co-ordinating the implementation of NEC decisions.

PCMC also established its own programmes. It had 14 staff members, occupied in the following activities in 1994:

- (a) undertaking a census of Port Moresby settlements, and of local government councils (in conjunction with the Village Services Programmes);

- (b) establishing law and order programmes;
- (c) establishing a micro credit scheme for women (also in conjunction with the Village Services Programmes);
- (d) in the social and economic sectors, assisting in AIDS awareness, environmental conservation, childhood survival, sustainable development strategies, and coastal management.

To date PCMC also provides policy input into the major restructuring moves underway in government. It also has the potential for providing a much needed strengthening of policy formulation and consideration by the NEC. However, it can still be bypassed, and so the PCMC has recently been involved in NEC submission-screening committee. Papua New Guinea has established top level policy advisory bodies on previous occasions, few of which have survived. PCMC does represent an opportunity to strengthen the vital policy formulation and monitoring process; however, it is important that the PCMC operates as a part of an established process, and does not seek to take over in areas that it perceives to be of priority.

The creation of formal submission procedures for the NEC, and the follow-up on NEC decision, would capitalise on this opportunity.

Prime responsibility for the provision of policy advice and for the implementation of sector-specific policies must rest with the relevant sector ministries. Any attempt to circumvent these lines of responsibility is unlikely to be sustainable.

Policy capabilities at the level of individual ministries suffer from several weaknesses. While a shortage of technical skills is common, weaknesses in planning and a lack of clear and specific objectives are the constraints of an effective performance.

The *Planning Machinery in Papua New Guinea* is as follows:

(1) *National Planning*

Planning was originally the responsibility of a separate National Planning Office, disbanded in mid 1989. The function was taken over by the Department of Finance and Planning. Since then, planning has been dominated by essentially short-term budgetary considerations. There is no documented medium-term national plan. The budget papers are the closest approximation to a national development strategy, supplemented by sectoral and issue papers produced by government agencies. The budget paper provides a

macroeconomic framework for the budget and includes a medium-term perspective. The technical basis of the framework has fluctuated considerably over the years, reflecting in part the expertise of particular planning-function remains dominated by short-term budget considerations, and the function of examining the economy-wide impact of various not-well-developed fiscal measures. When the National Planning Office was disbanded, the Department of Finance and Planning created two divisions, social and economic divisions. In 1994, the planning divisions were combined into one, and an additional implementation and monitoring division was created. This division concentrated on development projects, and was to monitor physical progress, to fund draw-downs, and to help resolve implementation problems. There was unlikely to be any conflict between the above mentioned division and the PCMC, as the latter was to be monitoring mainly policy implementation. The new division was probably to seek technical assistance. It did represent an opportunity to correct some of the issues facing the country, particularly those of large projects. Many of these projects originated from weaknesses in routine administering practices, including those

in the Department of Finance and Planning. In correcting implementation issues, the division needed to work with the PCMC and with units responsible for implementing the recommendations of the task force on rationalisation of the public service. The new division was also to have an evaluative role, feeding its findings into the finance and planning division and into the planning of new projects in the sectoral departments. The coordinated oversight of project-monitoring-and-evaluation is an important function.

Although the division is couched in a strong ministry, there are ineffectual national monitoring and evaluation systems in developing countries. Simple systems that provide direct help to departments in identifying and resolving difficulties are more likely to be successful than complex computer-based surveillance and reporting system. Similarly, evaluations that seek to strengthen policy and planning processes are more useful and more acceptable than those that lay blame. A helpful programme will be more likely to gain acceptance.

(2) *Provincial Government Policy-making and Planning*

Policy-making and planning are ineffective in many provinces.

There are several reasons for this: the transfer of functions that had occurred, when provincial governments were established, was not matched by a transfer of skilled personnel; provincial staff were insufficiently trained; and a shortage of funds had weakened provincial administrations. In many provinces, including the Simbu Province, the prerequisites for effective policy making and implementation are not in place. Clear and consistent objectives are not established, often due to the dominance of short-term political considerations. Provincial civil servants often lack the technical and administrative capacity to assess policy options, and senior positions are commonly filled according to political preferences. Many provincial governments have not encouraged the development of independent policy advice; and few effective mechanisms for screening, coordinating and channelling policy advice have been developed.

The separation of the major service sectors into different national responsibilities also severs planning and policy formulation from

implementation. The national department plans cover agriculture, health and education, while those 19 provinces (provincial governments) implement their own separate programmes. Agriculture research-and-extension funding may not reach the provinces; extension workers who labour with farmers are often unaware of national marketing opportunities; text books may not reach further than the provincial capitals; and there is minimal interchange of personnel between the centre and the provinces. In many sectors there appears to be an unbridgeable gap between the national office in the capital, and the provincial operations. This has undermined the integrity of national sector planning and contributed to a marked variation in provincial performance according to the relative priority attached to different sector programmes.

Most large projects of the Public Investment Programme (PIP) are funded by international donors, and coordinated by the central government departments. The implementation of education, health and rural development projects is largely a provincial responsibility, although funded through the centrally approved PIP. The PIP covers only developmental expenditures. Provinces provide counterpart-and-

local-expenditure funding through their recurrent budget. During implementation, this counterpart funding is made available through the Department of Finance and Planning's allocation to the PIP. Counterpart funding after project completion, however; comes from the limited result; projects which require continued recurrent budget financing fail to be sustained. The impact of the project and any attempt to redress imbalances are, therefore, largely lost. An additional problem is that the PIP has tended to be the dominant department that has better contacts with the donor community. One method to ensure greater coordination between the national and the provincial departments is to create one national body for each major sector, covering all provinces.

The recent National Forest Authority is an example. Prior to the creation of the authority in 1992, forestry was divided into 'the national department' and 'the provincial department'. The district forestry officer in the provinces reported to the district manager and to the provincial headquarters in the same way as did district officials in education, health, primary industry, and commerce. The provinces were under no obligation to comply with policies

established by the national department. Plagued by the shortage of funds, and with their own assessment of provincial priorities, the provinces set their own forestry programmes.

This was largely decided by provincial politicians and the more powerful elements in the land-owning councils. The forest authority has been restructured as a national body and a national council, and with staff transferred from both national and provincial organisations. This restructuring divides the country into four regions, each with an area manager reporting to the operation manager in the national capital. Each area manager has six to eight project-supervisors covering the forest areas of the country.

However, it is not a guarantee of success. There are many examples of field operations in developing countries where the line of command extends from the national capital to the lowest officer in the field, but where the extension officer has no transport, the school teacher is without books or the aidpost attendant has no supplies.

Other organisational and administrative arrangements are possible. In

Indonesia, for one, the field outpost of a national department often shares the same building with the provincial staff for that sector. In PNG during budget preparation, conferences between national and provincial staff across all key sectors are part of the policy formulation process. A national conference, canvassing the planning and budgetary requirements of all levels of government and across all sectors, is urged to ensure consistency. These processes establish formal and informal links to assist in the coordination of development efforts almost as much as the more formal mechanisms do. The coordination of national and provincial planning functions is a priority issue in PNG. In addressing this issue, the national government will have to decide what level of autonomy it wishes to grant the provinces in key areas of health, education and agricultural services.

### *(3) Organisational Planning*

Another significant deficiency is the lack of planning at the functional units, particularly at the provincial level. Establishment of strategic objectives and work plans for functional units in the

district would bring benefits. These strategies need to fit into an overall development plan for each sector and for the province. Many extension staff, for instance, have only the vaguest strategy for achieving higher agricultural incomes. They have no clear work plans, and no precise schedule of extension messages and farmer interaction. The district organisation itself often does not have a strategic plan for the economic well-being of the area that it serves. The training and the provision of assistance in strategic planning at district and provincial levels in the subsequent development of work plans and budgets, and the management of implementation, both need to be expanded considerably. Planning and scheduling of workload of an organisational unit in the public service in general (whether it be an agricultural extension office in a district, or a policy group in the Prime Minister's Department) is a necessary part of effective management. One weakness of public services in PNG is a tendency to avoid such planning, to be reactive rather than pro-active. Most public sector organisational units, even policy or research units, require strategic planning. There are problems to be overcome, issues that need resolving, development opportunities

that could be exploited. Analysing these issues, putting a priority on them, and assessing the availability of resource, are the essence of a strategic plan, be it for the nation or for a district health programme. Once these strategies are decided, the work plan sets out the methods, timing and cost of putting them into effect. Work plans bring several benefits, that is, they assist in maximising the performance of a unit by facilitating the setting of objectives, the establishment of optimum timing, and achievement of cost.

By having responsibilities assigned to each staff member in the unit, the person assists in the assessment of individual performance. The work programme for the department, for each organisational unit within it, and for every staff member, shows designated responsibilities. The monitoring of performance becomes an intergral part of managing the department.

As the designated members of the department show the work programme of the year ahead, they also facilitate budget preparation. The timing and size of salary and non-salary expenditures are clarified; budgets become more accurate and are more easily updated

as a result. Efficient work plans, however, are in themselves inadequate to bring about effective management. Individual staff members or organisational units may not undertake the work as scheduled, or may undertake it at a slower pace or lower quality than originally planned. A more extensive use of systems of monitoring and follow-up, from weekly progress meetings to more elaborate monitoring procedures, is a desirable step in improving the overall performance of the public service.

### **Summary**

In social sectors, policies and planning involve decisions over the allocations of funds by the highest officials within the social sector departments. Most of the decisions are made in the interest of one own tribal group, which is not mentioned in Chapter Three.

However, the perception of policy-planners are implicitly clear.

In most social sector policies, the power of decision-making are decentralised to provincial and regional government levels.

Education and Health Departments seem to have duplications of planning and decision-making. As in the case of decentralisation

all 19 provinces are currently decentralised, with *19 different primeministers and with 19 different ministers for health* (19 premiers and 19 provincial minister for health) representing one province each which in reality the country (PNG) is over-governed. They make decisions which affect their own provinces. As such, Chapter Four necessarily looks at the Simbu Province and its provincial health structure. This Chapter also describes the existing health facilities with administrative structures and duty statements of frontline health workers already explained and discussed previously.

## **Chapter Four**

### **Simbu Provincial Health-Care Services**

#### **Introduction**

This chapter explain and discusses the fertility and mortality rates, and the overall health administrative structure of the Simbu Province, with special reference to Simbu Church Health Services and Traditional Health Practices.

The latter part of the chapter gives a descriptive analysis of the existing health facilities of Rural Hospitals, Health Centres, Health Subcentres and Aid Posts. Included are the duty statements of all frontline health workers who tried their best to bring the health services to the proximity of where users live. Some constraints and achievements are identified, and recommendations for future changes are made.

#### **(A) Simbu Province Background**

Geographically, the Simbu Province lies in the heart of mainland Papua New Guinea. (See map in the Appendix B). The Province itself is mountainous which makes it difficult for developments,

such as roads and other infrastructure, to exist.

Simbu province is overwhelmingly rural. The only major income is through cash crops. Crops like coffee and other foods are sold for income. However, money is not a priority. The people are content with living off their land. Sickness and diseases are major concerns, so are health services. The health services described in this Chapter do exist, but to have access to them is another major concern.

People have to walk for hours to reach the nearest health services.

Missionaries and other concerned groups, such as non-Government Organisations (NGOs), have tried their very best to bring health services as closely as possible to the people, but it will take another twenty to thirty years to fully reach them.

It has become apparent that a brief coverage of the background of the Simbu people - their health services and structure, and the position of power with a few individuals within the health division in the Simbu Province - necessitates a more detailed examination of, first, the demography.

#### ***4.1 Population Statistics***

Periodic census enumeration is the basis for population statistics in the Simbu Province in particular and Papua New Guinea as a whole. Although there is a Civil Registration Act, requiring the notification of births and deaths, it is not enforced and there is no effective registration of these vital events in the country.

Census enumeration have been conducted in Papua New Guinea in 1966, 1971, 1980, 1990 and 1994. The 1966 and 1971 census were undertaken on a sampling basis; full enumeration was conducted for the first time in 1980. The most recent demographic estimates are derived from the 1990 census. The 1994 census data has not been made available yet.

Although these censuses were conducted on varying bases, calculations on the changes of demographic data between 1966, 1971, 1980 and 1990 have since been made, and so have projection forecast for what may happen in the period until the end of the century.

The 1990 census shows the following population characteristics.

Papua New Guinea's population total 3,661,000; the Simbu Province population total 190,700. (*PNG Population Statistic Figures, 1991*).

Simbu's population is overwhelmingly rural. 97 % are classified as 'resident' in rural village and a further three percent in rural non-villages (defined as rural settlements such as administrative station, mission stations, plantations, forestry camps and resettlement schemes).

Simbu has a young population, with more than 30 % under 17 years and another 30 % under 20 years old. The remaining 40 % of the population are adults between 20-50 years. Life expectancy at birth was estimated in 1990 to be 55.5 years, with a median age of 21.5. The gender ratio was 110 female to 100 males. (*National Population Statistics Figures, 1991*). The 1990 population was estimated by the National Statistical Office to be 190,700. Population projections for the next 10 years were made on the basis of three demographic variables: fertility rate, mortality rate and migration patterns. Their joint impact will affect not only the sizes of the population, but also its structure and service infrastructure distribution.

#### **4.2 Fertility Rates**

The fertility rate declined by approximately five percent between 1980 and 1990, but remained high. (*National Research Institute, 1992*). This bears implications for the pace of development, since the provincial economy must continue to absorb and support the increasing population. The difference in the level of fertility among districts is large, although not as extreme as for mortality.

Generally speaking, the lowest levels of fertility are found in the Dom Census Division, and the highest in the Kerowagi District also of the Simbu Province. Fertility rates have possibly remained high due to changes that have been occurring in the social environment and the living conditions of the people. For example, traditional practices, such as prolonged lactation and restrictions on post-natal intercourse, have been weakened in many communities through increased contact with modern influences.

#### **4.3 Mortality Rates**

Improvements in nutrition, health care and living conditions have resulted in a dramatic decline of mortality rates and the overall

crude rates for the 1980-1990 period. Infant mortality and child mortality rates declined approximately by 50% from 1980 to 1990 which, coupled with high fertility rate, expanded the under 17 age groups to more than 30 % of the population. Since the infant and child mortality rates are considered to be still high, a major thrust of the 1990 Simbu Provincial Health Plan is to achieve considerable further reduction in them. A high proportion of the under-age dependent group in the population will, however, continue for several decades to come. By the same token, reduction of other age groups' specific death rates are expected to rapidly increase the life expectancy and the total population in the province.

#### ***4.4 Migration***

Net migration of citizens at the national level is negligible, but inter-provincial migration for some provinces is extensive. Migration has occurred for a number of reasons. Plantation employment opportunities, the search for urban employment, settlement of new areas, changing clan ties and local warfare are common reasons for migration. Of these, the primary cause of male migration has been the search for better opportunities for the Simbu people. The

better the opportunities, the greater the migratory pull of the urban centres. Thus, the National Capital (Port Moresby) in 1990, for instance, had the greatest number of both male migrants and male wage/salary jobs. (*PNG Population Statistic Figures 1991*).

Migration has allowed the more affluent provinces to support portions of the population moving up from disadvantaged areas. Thus, there has been a shift in provincial populations. Emigrations: (out of the province into the National Capital of Port Moresby) are of greater portions. There is seasonal migration from the Simbu Province into coffee plantations of the Eastern Highlands Province of Goroka, and the Western Highlands Province of Mt Hagen.

Urban migration in the Simbu Province in particular and Papua New Guinea as a whole has perhaps not reached the levels of many developing countries. Although it is still higher than the national rate of population growth, the urban growth rate between 1980 and 1990 was lower than that in the previous decade, except for smaller districts in the province where the effects of decentralisation had led to increased administrative, economic and service activities.

One feature of the migrations into urban areas has been the increase of women in urban centres between 1980 and 1990 (a 50 % increase compared to 31 % for men), according to the 1991 *PNG Population Statistic Figures*. This shows that more women now also live with their husbands or their parents in the urban settlements.

Of greater consequence for the economy, is the dependency ratio (the population of under 15 years and over 64 years old, divided by the population between 15 and 64 years). In 1980 the dependency ratio was estimated by the 1991 *PNG Population Statistic Figures* to be about 0.8 dependents per person in the 15 to 64 age groups. By the year 2000 this dependency ratio would increase to 1.6 dependent person for every person in the 15 to 64 age group. Hence, it is important that the government implement the proposed population policy to reduce levels of fertility and rates of population growth in the Simbu Province in particular and Papua New Guinea as a whole.

#### *4.5 Health Status in the Simbu Province*

Health is defined by the World Health Organisation as a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity. Health in a society is usually measured by three main indicators, the infant mortality rate, the childhood mortality rate and life expectancy (Cardwell, 1986).

During the period 1980 to 1987, substantial improvements were seen in the health of the population. Walsh, in his studies on primary health-care in Papua New Guinea, states that in the Simbu Province infant mortality decreased from 20/100 live births in 1980 to 7/100 in 1989, while childhood mortality (deaths of children born between one and four years of age) decreased from 15/100 to 4/100 (Walsh, 1988).

Maternal mortality which is also an important indicator of health, has shown improvement since 1980 but still remains too high, with an estimated two maternal deaths per 100 births. Wide variations in each of these indicators exist between different districts and communities in the province. Other indicators of health, more commonly called 'disease indicators', relate to particular diseases.

They show how and where morbidity and mortality occur and, when analysed over a period of time, will indicate trends and patterns of disease incidences, prevalence and mortality. The disease surveillance systems in the health services is the mechanism for collecting information for disease indicators.

#### ***4.6 Surveillance of Diseases***

An analysis and interpretation of disease statistics meaningfully require an understanding of the surveillance system through which data are being collected. In the absence of effective registration of deaths, provincial morbidity and mortality statistics are available from the following sources:

- (a) Analyses of the diagnoses of patients discharged from hospitals, health centres and health sub-centres.
- (b) Reports submitted by special clinics such as Sexually Transmitted Disease (STD) and specialised programmes such as malaria, TB and leprosy.

All these data sources present problems for detailed analysis and interpretation. The more important problem is that both mortality and morbidity statistics, derived from hospitals and health centres, are weighted by those who have access to or who seek institutional

treatment. Thus, increases in some morbidity and mortality figures reflect the expansion of health services as well as the improvement in acceptance of services by the people, rather than actual increases in the rate of illness and death in the population.

STD clinics issue statistics partly on laboratory confirmed cases and partly on clinically diagnosed cases, whereas the health centres report on clinically diagnosed cases. Occasionally, there is duplication of statistics. In malaria surveillance, only the laboratory confirmed cases used to be reported until 1990. There is enough evidence in the malaria case study below to suggest that this system will be changed to include clinical malaria, treatment failure malaria, and severe and complicated malaria.

TB and leprosy are reported separately by the health centres to the provincial TB/Leprosy officer who forwards the provincial summary to the provincial disease control officer. Records on these diseases are not updated in many health centres and health subcentres, and the reports submitted are not reliable.

All reports on disease statistics from the reporting institutions are

required to be submitted to the provincial health office by the fifth of the following month. At the provincial level, the provincial disease control officer analyses this data, takes necessary action on outbreaks and other problems identified, and submits a provincial summary to the National Department of Health. Copies of all reports, other than the patient discharge reports, are sent to the Regional Support Unit for study and feedback. Filtration through these channels does not seem to improve the quality of statistics reaching the Provincial Department.

#### ***4.7 Organisation and Administration of Health Services***

Health services are available to the individual from the following, sometimes overlapping, systems:

- (a) the public health care system;
- (b) the private health care system;
- (c) the traditional health care system.

##### *(a) Public Health Care System*

In the Simbu Province, the public health care system means the services which the provincial government and the churches provide and which address the main health problems of the community. It

includes promotive, preventive and curative services. These services are delivered at three levels.

- (1) Primary health services, which aim to be close to the community and as universally available as possible. They use the most appropriate and least expensive manpower that can adequately deliver the required services.
- (2) Secondary health services, which support the primary services, and involve the more sophisticated diagnostic and treatment facilities available at the hospital.
- (3) Tertiary health services, which provide more advanced care such as radiotherapy. In the Simbu Province and perhaps Papua New Guinea, such services are very limited. In the delivery of the services the Provincial Government and the Churches function as a single unified system.

However, for purposes of discussion, they are described separately.

*(b) Administration of Health Services*

Prior to independence in 1975, the government health services were controlled and centrally administered by the Department of Public Health in Port Moresby, through regional and provincial health officers (then known as district health officers). As health services developed and their organisation in the periphery improved, the central government, so necessary in the past, was becoming an impediment to efficient delivery of services.

(c) *Decentralisation of Health Services*

Since independence, the government has actively pursued a policy of decentralising responsibility for the delivery of health service to nineteen provinces, of which Simbu Province is one. Early in 1977, the National Executive Council approved a submission which provided for the slotting of government's health service functions between national and provincial governments. These functions were classified into two groups.

\*Transferred Functions

The responsibility of the health departments, below, was transferred to provincial governments:

- Aid posts;
- Health sub-centres;
- Health centres;
- Home medicine and self care;
- Health committees and health boards;
- Ambulance services;
- Family health services and;
- Supervision of disease control programmes.

\*Nationally Delegated Functions

The responsibility for other activities was delegated to the province, to be performed by the provincial health staff under the direction of

the Provincial Health Officer. The National Department of Health retains ultimate responsibility for these functions, in consultation with the provinces, and was charged with the establishment of the monitoring system to ensure that they were utilised correctly.

Although it was envisaged that complete responsibility for most of these activities would be given to provincial governments at a later date, this has not transpired.

Delegated national functions include:

- the provincial hospital;
- Malaria control;
- extension services (which include control of tuberculosis, leprosy, sexually transmitted diseases, dental health, nutrition, and health inspections).

#### ***4.8 Simbu Province Health Structure***

The Simbu Provincial Department of Health has three divisions, namely Primary Health Services, Services and Administration, and Policy Planning and Evaluation Unit, which all report directly to the Provincial Secretary of Health who then reports to the Head of the National Department. The Primary Health Services Division is the largest, consisting of six sections: Community Health Development, Dental Health, Environmental Health, Family Health,

Nutrition and Disease Control. The Administration Division comprises Finance and Management Services, and Health Training. The Policy, Planning and Evaluation Unit of the Department has responsibilities, which relate to all three divisions, and is maintained as a separate section, reporting directly to the Secretary for Health.

*(a) Simbu Provincial Division of Health*

After decentralisation, most provinces adopt a standard administrative and organisational structure. The Assistant Secretary for Health, formerly known as the Provincial Health Officer, is the head of the division of health, and is directly responsible to the Secretary of the Department of the Provinces and indirectly to the Provincial Assembly or Provincial Cabinet, through the Provincial Minister for Health. He is assisted by the Provincial Health Extension Officer (PHEO) who is the overall supervisor for the Health Care delivery system, throughout its health centres, aid posts and clinics.

The provincial hospital is headed by a medical superintendent who reports directly to the Assistant Secretary, and is assisted in administration of the hospital by a hospital secretary and matron.

Various functions within the division - such as malaria control, tuberculosis/ leprosy control, nutrition and environmental health - are supervised by a sectional head and, in some cases, have their own specialised staff throughout the districts within the province.

Since 1989, Simbu Provincial Health Division has begun to experiment and adapt the standard provincial structure with the aim of improving the services at provincial, district and community levels. Where this has been conducted, each district's health level is managed by the District Health Officer (usually District Health Extension Officer) who is responsible for all aspects of health care in the districts. This involves running the district health centres, supervising associated health subcentres and aid posts, and managing all associated health services and programmes within the districts.

The role of the Provincial Health Office's sectional head is then more of a technical, supportive and monitoring kind, assisting integrated activities in districts. Simbu Provincial Health Division has become part of the larger Division of Social Services headed by a First Assistant Secretary.

*(b) Provincial and District Coordination*

Co-ordination between the provincial and the district levels is achieved by a variety of formal and informal means. The Provincial Health Officer (PHO) and the District Health Extension Officer (DHEO) consult and maintain close liaison on all matters affecting policies and standards of health services delivery throughout the provinces. The PHO is also able to advise and assist the DHEO in these areas. Staff at the Provincial Departments provide technical support, policy advice and planning assistance to the district. During district visits, workshops and in-service training courses are conducted. Provincial and district staff have an opportunity to learn from one another, discuss and resolve problems. Conferences are held by various groups of senior provincial and district staff each year. They provide an important forum for discussion and planning, and promote coordination not only in the province but also among the districts themselves. Conferences of DHEOs, malaria control supervisors, TB and leprosy controllers have been held at least twice a year.

**4.9 *Simbu Church Provincial Health Services***

Historically, the missions and churches have always played an

important role in health work in the Simbu province, and Papua New Guinea as a whole. Starting with assistance given by wives of the missionaries in the 1870s, through the start of work by trained nurses in 1894, and on to the more formal services of the century, the churches played a leading role in the provision of primary health care. They have since been particularly active in the areas of curative medicine, maternal and child health, TB and leprosy control, and health workers' training. Currently, church health-workers are largely confined to two main areas: the provision of health services in rural areas; and the training of nurses and community health workers. Catholic churches are now responsible for one health centre in Mingende, six health subcentres and 98 aidposts in the Simbu province. They also train all community health workers in the province. Two denominations currently provide rural health services and of these two, Catholic churches are responsible for 98 % of all health centres, health subcentres and aidposts; and two percent of the responsibility is assumed by Lutheran churches. The number of staff employed is similar to that of civil servants, except that the church employs fewer health extension workers.

(a) *Church Health-Service Financing*

To cover the cost of their health work, churches have two sources of funds: those which they raise themselves from fees or donations; and those provided as subsidies by the government.

\*Self-generated Revenue

In most cases, revenue raised by churches to support recurrent costs comes from within the province. Churches are rarely able to raise funds overseas to cover such costs. By contrast, often they can obtain donations for specific capital works projects.

\*Institutional Fees

Another source of income is institutional fees. In some cases, revenue from fees contributes a significant proportion of the running costs. For example, Mingende Health Centre was able to collect NGK40,000 (the equivalent of NZ \$ 41,000) in 1989 (*Simbu Provincial Health Nius, Feb. 1990*). In most cases, fees are charged only where it is felt that people can afford to contribute towards their health care.

\*Provincial Government Subsidies

Simbu Provincial Government subsidises the church health-service running cost. This process started in 1970 and in the 1990s was extended to include costs incurred by training schools. Since financial decentralisation in 1983 all subsidies, except those related to training, have come from the provincial budget. In 1989, church health-services review proposed modifications in the allocations which were subsequently incorporated by the Department of Finance in its annual circular to the provinces and church health-secretaries. This annual circular, issued in consultation with the division of health, specified the recommended levels for church subsidies. Budget submissions to the Department of Finance and Planning are expected to follow those recommendations.

There are three areas in which churches may receive assistance from the governments:

- (a) Salaries;
- (b) Institutional running costs;
- (c) Supplies.

The 1989 Government circular recommends that

- (a) church staff be paid at the same level as government employees;
- (b) salary subsidies be paid on this basis; and

- (c) The National Provident Employers Fund (government superannuations scheme) contributes seven percent to the scheme.

Concerning institutional running costs (previously known as establishment grants), the 1989 Government circular recommends that subsidies be paid to churches according to the number of approved senior staff employed at their institutions (doctors, health extension officers, nurses, dental therapists and the like). Medical Supplies, meaning minor equipment and most of the pharmaceutical supplies, are provided from the Pharmaceutical Service Section of the Provincial Health Department, through the Health Centres.

*(b) Provincial Government and Church Liaison*

In 1983 when the post for a church-government liaison officer was created by the Department of Simbu, the church medical board nominated an executive officer, but he was paid by the government. In 1986 when budgetary decentralisation took place, the board again appointed an executive officer to assume the liaison work. At the same time churches in the province established provincial councils to deal closely with their respective districts.

(c) *Constraints*

The provision of health services by the Churches is being negatively affected by the reductions in government funding for the health sector. Staff salary levels and other subsidy grants have not been changed since 1983 (with the exception of CPI increases). Staff salary levels for each category of workers are below the equivalent government levels. Churches are making an effort to localise their health staff but, in order to ensure a continuing level of quality of their services, need funds to train local staff. Below are some future policy initiatives the thesis writer suggested:

(d) *Future Policy towards Church Health-Services aims*

- (1) to make salary adjustments for church health-workers, in consistency with government salaries;
- (2) to review the ways of ensuring the payments of church health-subsidies;
- (3) to support Churches in their efforts to upgrade the managerial and technical skills of their work;
- (4) to continue giving Churches support, encouragement and subsidies throughout the services, including the continued improvement of close cooperation and integration between church and government services;

- (5) to encourage the province to enter renewable agreements with churches, so that services provided by churches are consistent with the government health services objectives and standards.

#### *4.10 Traditional Health Care System*

In the traditional society of the Simbu people, the methods used for diagnosis and treatment of illness reflect the traditional view of the causation of sickness. Common mild ailments are usually treated symptomatically with various plant products or simple surgery. The pain is relieved by the principle of counter-irritation, using nettles or by rubbing astringent substance into superficial cuts in the skin. Coughs, fevers and abdominal pains may be treated with a variety of herbal mixtures containing a wide range of plant products. In a few areas certain kinds of poison are believed to cause particular symptoms, and help is sought from healers known to have the antidote spells.

Diagnosis of serious illness is usually concerned with identifying the spirit or person who has caused the sickness, in order to try and appease the person, or find the antidote to the poison. The diagnosis is most often by divination. Many herbal mixtures are

used in treatment rituals for these kinds of sickness but it is their magical, rather than their pharmacological, value that seems to be important. Many symptomatic remedies are known to many members of the communities. However, herbal medicines and the spells which make them work are usually the secret knowledge of a much smaller group of people, either a particular family or perhaps the elders of a community.

Interest in the integration of traditional and scientific medical systems has been concerned with indentifying traditionally used herbal remedies which might supplement imported pharmaceuticals. The emphasis will be on establishing a policy guideline on the integration of traditional and scientific medicines in the Simbu province.

Traditional healing quite clearly excels in the psychological support of the sick person. This is achieved by treating the patient at home, surrounded by family and kin. Traditional societies prescribe and proscribe behaviour at all stages of life, from conception through pregnancy, infancy, childhood, puberty and to adulthood. They all have a rationale and are consistent with other beliefs and customs.

They may be either supportive or opposed to scientific ideas, particularly about child-rearing, nutrition and hygiene. In rural areas a fair proportion of people often seek the help of traditional healers first, but when the sickness has become serious or persistent they turn to scientific services.

Research - to document and classify plants used in traditional medicines in Simbu Province and Papua New Guinea as a whole, and to determine the presence of potentially useful alkaloids - has been conducted by the Medical Research Institute of Papua New Guinea in Goroka, but the research needs to be updated and improved. There has been no real in-depth research in the area of traditional medicine, and around the trials of their therapeutic value and toxicity undertaken.

Integration of scientific medicine and traditional healing is already actioned by sick people and their relatives. Provided with choice, people have learned the relative merits and weaknesses of both systems through a process of trial and error.

## (B) PNG Health Situations

### *4.11 Health Services Delivery in Simbu Province*

Primary health services are those provided by the formal health system at the first level of contact with individuals, families and communities. They are provided as closely located as possible to where the recipients live and work. In Papua New Guinea primary health services are the responsibility of the provincial government and its division of health, and are delivered through a network of aidposts, health centres, maternal and child mobile health clinics, urban clinics, and hospital outpatient departments.

**Table 1**  
***Simbu Primary Health Service Administration***

The administrative field of the health service comprises the following hierarchical structure :

Office	Area of responsibility
National Minister For Health:	PNG
National Secretary For Health:	PNG
Provincial Minister For Health :	Simbu Provincial Government
Provincial Secretary For Health:	Simbu Health Division

Medical Superintendent:	Kundiawa General Hospital
Medical Officer Incharge:	Rural Hospitals, such as Mingende and Kerowagi
District Health Extension Officers:	One for each Health Centre
Health Extension Officers:	One for each Health Subcentre
Aidpost Orderlies and Community Health Workers:	All Aidposts

**Table 2*****Simbu Provincial Health Service Delivery***

The delivery of the health service comprises the following pharmaceutical (delivery) and patient (referral) channelling:

## Kundiawa General Hospital

*Kerowagi R/H***Mingende R/H**

<i>Gumine HC</i>	<i>Karimui HC</i>	<b>Koge HC</b>	<b>Gembogl HC</b>	<b>Chuave HC</b>
<i>Kilau HSC</i>	<i>Bomai HSC</i>	<b>Kamtai HSC</b>	<b>Gogme HSC</b>	<b>Nambayufa HSC</b>
<i>Nomane HSC</i>	<i>Tua HSC</i>	<b>Sirikoge HSC</b>	<b>Mt. William HSC</b>	
<i>Neragaima HSC</i>		<b>Yongomugi HSC</b>		
<i>80 Aidposts</i>	<i>60 Aidposts</i>	<b>82 Aidposts</b>	<b>79 Aidposts</b>	<b>78 Aidposts</b>

The Simbu Province's existing facilities include, therefore,

- 1 General Hospital (G/H);
- 2 Rural Hospitals (R/H);
- 5 Health Centres (HC);
- 11 Health Subcentres (HSC);
- 379 Aidposts;

all serving a population of 190,000 people (*the 1990 Census*).

Simbu Provincial Health Services operate at four levels:

- at community or village level are aidposts and, in some areas, a limited number of village midwives and village health volunteers;
- in the larger village communities are health subcentres;
- at district levels are health centres or rural hospitals; and
- at provincial levels are the provincial or base (regional) hospitals. (See Table 2 above).

In urban areas, urban clinics and hospitals provide the services that in the rural areas are provided by aidposts and health centres. In the rural areas, the key to the development of primary health services is the health district with its district health centre. In each health district, a health centre is responsible for the management and supervision of all the health services, subcentres and aidposts within that district. The health centre may be run by government or church, and so church health-centres may be responsible for the professional supervision of government staff, and vice versa.

In some provinces where this has been applied, the arrangement with church institutions has been formulized by a contract which

specifies the responsibilities of each party. Wherever possible, health districts include whole census units.

#### ***4.12 Health Services Facilities***

##### *(a) Rural Hospital*

In certain exceptional cases, small hospitals with a medical officer in charge, form the base for the delivery of health services in a district. The inclusion of these rural hospitals for the first time in the plan represents a major policy shift by the Department of Health. The Health policy of shifting a medical officer from General Hospital to Rural Hospital has changed.

Over the next couple of years towards the year 2000, in stages the policy-shift is intended to clearly define standards for rural hospitals and to support the improvement of selected institutions. Rural hospitals serve geographically isolated areas or areas of high population density, and aim both to improve the standards of health care in those areas and to reduce the flow of minor level referrals to the provincial hospital. Rural hospitals perform the same functions as health centres, but have laboratory, Xray and limited operating

theatre capabilities. A rural hospital would be expected to serve a population of greater than 20,000, see more than 800 inpatients and 15,000 outpatients, and supervise in excess of 200 deliveries each year. Rural hospitals would be expected to see more than 5,000 attenders at child health clinics, more than 350 antenatal clinic attenders, and more than 300 family planning clinic attenders annually.

*\*Functions*

Detailed functions for rural hospitals have not yet been agreed upon, and cannot be specified in the Simbu Health Plan. To put it in general terms, rural hospitals will perform all of the functions of a health centre and will provide specified additional laboratory, Xray and theatre procedures. In order to implement the new policy, the following steps will be taken:

- (i) a survey will be undertaken of existing rural hospitals to gauge the adequacy of staffing, equipment and functions already in existence;
- (ii) clear guidelines will be established on the roles and functions of rural hospitals and the standards for their operation;
- (iii) the need for new rural hospitals will be determined in accordance with those standards;
- (iv) the capital and recurrent costs of upgrading existing facilities

and the establishment of new rural hospitals will be determined;

(v) donor support, to finance the development, will be sought.

*(b) Health Centres*

A health centre is the base from which a comprehensive health service is usually delivered to the population of the health district. The health centre is responsible for the supervision of health services provided within the district. The population served by a health centre ranges from 8,000 to 20,000, depending on population density, access and means of communication. A health centre would be expected to see 400-600 inpatients and 10,000 to 18,000 outpatients and supervise 100-150 deliveries each year. Annual clinic attendance for a health centre would be expected to be 4,000 to 6,000 for child health, 250 to 350 for antenatal care and, 200 to 250 for family planning services.

*\*Functions*

(i) Outpatients Service includes the following activities:

- # Intake and examination of new patients, with treatment according to the appropriate standard treatment manuals. The standard hours of operation cover weekdays

07.45-12.00, and 13.00-16.00; Saturdays 07.45-12.00; and Sundays 10.00-12.00.

- # Review repeat attenders: examine and continue treatment if necessary.
- # All referrals cover outpatients to be seen by a nurse or a Health Extension Officer (HEO).
- # Weigh attending children, check their immunization records, and advise or immunize if necessary.
- # Provision of a full range of contraceptive options to woman and men attending outpatient clinics.
- # Provision of a 24 hour emergency service, with a rostered first person and an on-call second person. The on-call person is a nurse or an HEO; and this service must be available when rostered. Display of on-call staff-names, so they are clearly evident to inpatients attending casualty after hours.
- # Perform minor procedures under local and ketamine anesthesia, including suture and dressing; reduction of simple fractures; tissue biopsy; abscess draining and packing; skin grafting for burns and ulcers.
- # Treatment of patients with sexually transmitted diseases, using appropriate drugs and in a non-judgmental way; active follow-up and treatment of STD contacts; documentation of cases for Division of Health statistics.
- # Follow-up cases of tuberculosis, leprosy, typhoid and the patients' family in contact with the diseases; follow-up in the case of patients' default during treatment.

(ii) Maternal and Child Health (MCH)

Maternal and child health activities encompass care provided to mothers and children both through clinics and at facilitation. All clinics should provide the full range of maternal, child health and family planning services.

# Family Planning comprises the following measures:

- Promote, advise and supply methods of family planning to all aidposts.
- Provide a full range of contraceptive options to woman and men through MCH clinics.
- Fit intra-uterine contraceptive devices, where specified, at the health centre.
- Use MCH services to help in directing information and services to couples who could benefit from family planning services.

# Child Health (The under 5 years of age) comprises the following activities:

- Organize regular and monthly MCH clinics to cover all the villages and hamlets falling under the allotted clinic area.
- Maintain updated records of the under five years of age living in these villages; and register all births and deaths.
- Vaccinate children according to the standard management manuals.

- Monitor nutritional status by means of regular weighing and charting in the child's health book; review children who are losing or underweight, and treat any illnesses; enquire into the mother's breastfeeding habits, and suggest modifications where appropriate.
- Treat sick children, and refer those needing further care.

# Maternal Care involves the following actions:

- Provide antenatal services for all mothers, and examine women as early in the pregnancy as possible; take a full obstetric history and conduct a general physical and pelvic examination in privacy; encourage mothers to deliver with health worker supervision; treat anaemia; provide standard prophylactic drugs and vaccines as per standard management recommendation.
- Identify and refer mothers in high risk category.
- The follow-up course for women, by way of clinics seeing low risk multigravidae twice during pregnancy; primagravidae and high risk women every 2 months, and in cases of failed attendance.
- Treat other sick people who attend MCH clinics.
- Provide regular care and follow-up for mothers in the post natal period.
- Liaise with the community health workers in the identification and follow-up of high risk mothers.

### (iii) Inpatients Services

Inpatients Services provide the type of care that follows the 1990

standard treatment manuals' guidelines for inpatients.

#### # General

- Provide inpatient care, with staff in daily attendance, and with staff rostered to give night-time drugs; and review particularly sick patients as necessary.
- Provide regular clinical monitoring of patients, such as daily temperature monitoring; record all drugs administered; and review the clinical condition of patients on a regular basis (including weekends) as dictated by the patient's condition, and record this information in the patient's records.
- Perform laboratory examinations accurately and promptly. Expected and specified basic tests are in the areas of sputum for acid fast bacilli, leprosy smears, cerebrospinal fluid and malaria parasite microscopy.
- Refer patients to the Provincial General Hospital.

#### # Obstetrics

- Provide a clean and comfortable delivery area, with toilet and washing facilities adjacent.
- Provide nursing-on-call of 24 hours a day for mothers in labour.
- Availability to monitor labour, using standard corvicographs.
- On alert for major common complications and emergencies, requiring IV fluids and oxytocic drugs.
- Refer complications to the Provincial General Hospital.

## (iv) Management/Administration

- Supervise activities of and treatment by Aidpost Orderlies/Community Health Workers (APOs/CHWs) in the district, and staff working in health subcentres.
- Supply the aidposts with pharmaceuticals and minor equipment; and support the APOs/CHWs in their work.
- Liaise with the community through district council representative and village health committees.
- Maintain financial and inventory records of food, fuel and pharmaceuticals received and used.
- Establish and ensure the proper functioning of a Health Management Board.
- Assume responsibility for the planning of health services in the district, including outreach and patrol activities.
- Provide periodic in-service training for district staff.
- Undertake basic analysis of health information and use it to monitor the provision.

## (v) Other Services

Other services to be provided at the health centre level include dental therapy, laboratory tests, malaria control and health inspection.

## # Staffing

The numbers and types of staff at the health centres depend upon

the workload size of the facility. It is a matter of policy that health centres be staffed with a health extension officer (HEO). The estimation of other staff requirements is based on annual workloads. For rural health, the requirement for nursing officers and community health workers (incorporating nurse aides, aidpost orderlies, hospital orderlies and community health workers) are calculated on the basis of the following components:

Annual admission;  
Annual outpatients;  
Annual supervised deliveries; and  
Annual clinic attendance.

The calculation for the recommended number of nursing officers is as follows:

Admission divided by 600 plus,  
Outpatients divided by 11,000 plus,  
Total of Clinic Attendances (MCH, antenatal, family  
planning) divided by 7,000 plus,  
Supervised delivery by 150.

The calculation for the recommended number of community health workers is as follows:

Admission divided by 300 plus,  
Outpatients divide by 6,500 plus,  
Total of Clinic Attendances (MCH, antenatal, family  
planning) divided by 9,000.

The number and mix of staff are dependent on the Index Staff

Number (ISN) assessment, but the basic minimum for a Health Centre is as follows:

- 1 HEO; in charge of the health centre.
  - 2 Nursing officers; one assigned to MCH; and the second to inpatient, outpatient and obstetric duties.
  - 4 CHWs or nurse aides; three assigned to outpatients and inpatients, one to MCH clinics and all four to participate in on-call duties; and two to work in outpatients and inpatients.
  - 1 Labourer.
- Other paramedicals as required by the functions of the facility such as health inspectors, disease controllers.

#### # Facilities Required

For the entire Health Centre, the outpatient department area with minor operation area should have the following:

- 20-40 Inpatients beds;
- Obstetric room;
- Office for the HEO and MCH Nurses;
- Drug store;
- Laboratory;
- Refrigeration and Sterilisation;
- Electrical or Solar power for Obstetric area;
- Running water;
- Ration store;
- Ablution block;
- Simple incinerator for disposal of infectious waste;
- Appropriate transport at the health centre;
- Radio or telephone contact with Division of Health in the province.

## (vi) Accommodation

Housing with tin roof, and water supply for staff, excluding labourers.

(c) *Health Subcentres*

A health subcentre is an institution which services a population ranging from 5,000 to 8,000, depending on population density and ease of communication. A health subcentre would be expected to see 300 to 500 inpatients and 12,000 to 20,000 outpatients and supervise 100 to 150 deliveries each year. The expected range of annual clinic attendances for a health subcentre would be 2,000 to 4,000 for child health, 100 to 250 for antenatal and 100 to 200 for family planning.

*\*Functions*

## (i) Outpatients Service.

- # Examine new outpatients, and treat according to the appropriate standard treatment manuals' guidelines during the following times: Weekdays 8.00-16.00, Saturdays 8.00-11.00, Sundays 10.00-12.00.
- # Review repeat-attenders, examine and continue treatment if necessary.
- # Check attending children's immunization records, and advise or immunize where necessary.

- # Promote, advise and supply family planning to all men and women.
- # Treat patients with sexually transmitted diseases (STD), using the appropriate services and in a non-judgmental way; actively follow up and treat STD contacts; record cases for Division of Health statistics.
- # Recognise possible cases of tuberculosis, leprosy or typhoid, and refer for confirmatory diagnosis or discuss with the district HEO or medical officer.
- # Provide MCH services to the whole population whom the centre is responsible for at the health centre and at outreach clinics.

(ii) Maternal and Child Health (MCH)

Maternal and child health services encompass care provided to mothers and children, both through clinics and at facilitation. All clinics should provide the full range of maternal, child health and family planning services.

# Family Planning

This service is to provide a full range of contraceptive options to women and men through outpatients' clinics, special family planning clinics, and through outreach mobile clinics. It also uses MCH services to help in directing information and services to couples who could benefit from family planning programmes.

## # Child Health (The under 5 years of age)

- Organise regular and monthly MCH clinics to cover all the villages and hamlets falling under the allotted clinic area.
- Maintain updated records of the under 5 years of age living in these villages, and register all births and deaths.
- Vaccinate children according to the standard management manuals.
- Monitor nutritional status by means of regular weighing and charting in the child's health-book; review children underweight or losing weight, and treat any illnesses; enquire into the mother's feeding habits, and suggest modifications where necessary.
- Treat sick children, and refer those needing further care.

## # Antenatal Care

These areas are the same as the Health Centre functions above.

## (iii) Inpatients Services

## # General

- Provide inpatient facilities for those too sick to be managed on an outpatient basis, or prior to referral to a health centre.
- Provide health-worker-cover for these patients, with staff rostered to give nighttime drugs and to care for particularly sick.
- Review the clinical condition of the patient on the basis (including weekends) dictated by the patient's condition;

document the patient's progress and all drugs prescribed and administered.

#### # Obstetric

These care areas are the same as those of the Health Centre above.

#### # Management and Administration

Where the supervisory health centre is geographically distant from an aidpost, it is compulsory to supply pharmaceuticals and materials, and to support as well as supervise the APOs/CHWs in their work. Health subcentre finances are managed where established grants are given; and transportation in the centres are maintained with vehicles.

#### # Staffing

As a matter of policy, staffing for health subcentres should be determined on the basis of the ISN formula. Minimum staffing, however, should comprise two nursing officers and two CHWs required to provide MCH and continuous obstetric/emergency cover; part time casual staff for labouring; and MCH equipment carried on foot patrol.

### # Facilities Required

For the entire Health Subcentre, the outpatients department area should have the following:

- 2-10 inpatient beds;
- Obstetric room;
- Office;
- Drug store;
- Refrigeration and sterilization;
- Electrical or solar power for obstetric area;
- Appropriate transport made available, through health centre, to clinics for transportation of patients;
- Radio or telephone contact with the district health officer in charge, or provincial health officer.

### # Accommodation

Housing with tin roof and water supply for all staff, excluding labourers.

#### *(d) Aidpost (Two Community-Health Workers)*

A two-person aidpost is an institution providing a basic level of health care for a defined population of between 2,000 and 7,000 (this may vary according to geography and means of communication).

This type of aidpost would be expected to have an annual workload of 12,000 to 14,000 outpatients, emergency inpatients, fewer than 2,000 child health attendances, fewer than 300 antenatal attendances,

and less than 200 family planning attendances. A limited number of deliveries would be supervised by CHWs in the villages.

*\*Functions*

(i) Outpatients Service.

- # Use the standard treatment manuals to determine treatment, and refer cases to the local health centre, with a letter in case the illness is serious or not responding to the basic curative measures.
- # Provide clinic attenders with information about their condition and the possible measures they can take to prevent the condition from recurring to themselves and their families.
- # Record outpatient attenders on a daily basis, follow-up defaulters, and record child illness episodes in their child clinic book.
- # Promote family planning and other good health practices by counselling at every occasion.
- # Provide family planning according to standard practices, and give advice about sterilization and IUD methods.
- # Use MCH and short assessment records to help in directing information and services to couples who could benefit from family planning services.
- # Promote and assist with village-life quality programmes, using basic human needs indicators.
- # Act as a resource to the community regarding community environmental health issues with regard to sanitation, water supply and nutrition.

- # Actively participate in the follow-up and maintenance of patients on TB and leprosy therapy.
- # Participate in MCH clinics - administered by nurses from the health centre or subcentre - for weighing, vaccinating and examining children and pregnant women.
- # Provide an outpatient service during each workday (8.00 to 13.00, 18.00-20.00); provide 24 hour coverage for advice and treatment in medical emergencies.
- # Staff Saturday and Sunday morning clinics with one CHW to cope with new illnesses and repeat attendances in the case of medication for parents (excluding dressing for sores).
- # Staff the centres at all times, even on pay week.
- # Provide limited inpatient care for those too sick to return home.
- # Make notes of people, seen at outpatient clinics, with chronic conditions that may require an HEO to review during supervisory visits.
- # Provide antenatal services for all pregnant mothers: see women as early in pregnancy as possible; take a full obstetric history; conduct a general physical and pelvic examination in privacy; advise mothers to deliver under health workers' supervision; treat anaemia; provide drugs as per standard management recommendation; and follow-up care of the women through the clinics.
- # Vaccinate children according to the standard manual. Treat sick children, and refer those needing further care. Maintain updated records of the under five year old living in the villages, using the daily log; and register all births and deaths.

# Attend to village deliveries at the request of mothers or fathers.

(ii) Facilities Required

- Outpatient treatment and inpatient area (2-4 beds);
- Area suitable for conducting children's clinic;
- Drug store;
- Patient examination space;
- Ablution facilities;
- Sterilizer;
- Office area for making, organising, filing and analysing clinic records;
- Refrigerators (these are not available in all aidposts);
- Basic delivery equipment.

(iii) Staff Duties

One of the two CHWs will be put in charge, with responsibilities clearly divided between the two workers and outlined on the level of service, although in practice they will share the workload.

(iv) Staff Housing

Tin roofed housing, with external water-tank and latrine.

(e) *Aidpost (Single Community-Health Worker)*

An aidpost is an institution providing basic level of care to a population ranging from 1000 to 4000. It is staffed by one aidpost orderly or community health worker.

*\*Functions*

## (i) Outpatients Services

- # Provide an outpatient services during each working day, 8.00 to 13.00; make staff available in the evenings from 18.00 to 20.00 for minor acute illness, staff calls for serious illnesses at any other time.
- # Use the standard treatment manuals to determine treatment, and refer cases to the local health centre, with a specific letter in case the illness is serious or not responding to basic curative measures.
- # Promote family planning and other good health practices at every opportunity.
- # Record outpatient attenders on a daily basis, with a follow-up of people that default before the treatment course is completed, and record child illness episodes in the child's clinic book.
- # Actively participate in the follow-up and maintenance of patients on TB and leprosy therapy, and those of other referred patients.
- # Act as a resource to the community regarding community environmental health issues, particularly in regard to sanitation, water supply and nutrition.
- # Promote and assist with village-life quality programmes, using basic human needs indicators.
- # Assist staff from the adjacent subcentres or health centres in conducting MCH mobile clinic-operations in villages covered by the aidpost or community health post.

- # Follow-up of couples after the MCH clinic-visit; and attendance to malnourished children where a home visit is necessary and help as well as advice to the parents is appropriate.
- # Liaise with the health committee or aidpost management committee concerning health and environmental issues, disease outbreaks, and aidpost maintenance.

(ii) Facilities Required

Outpatient treatment area, and a space suitable for conducting child clinics are stipulated. Also a patient examination place, a drug store, and ablution requirements. Most importantly is the possession of a sterilizer. It is interesting to note that most of their functions are similar to those of an aidpost with two Community-Health Workers. However, the one-community-health-worker is loaded with more responsibility.

***4.13 Simbu Primary Health Care Service Achievements and Failures***

*(a) Notable Objective-outlines and Partial Achievement*

The 1990 Simbu Provincial Health Plan and Policies outlined a series of objectives related to health care services. The objectives

are to date not fully achieved. However, there are some notable achievements as outlined below.

- (i) *The increase of access to 20 % of the population who still live beyond the five to six hour travelling time to the nearest health facility.*

The strategy proposed in the plan, to increase access to unserved areas, was to use community health volunteers. The plan proposed that national guidelines for the selection, training, supervision, possible registration of volunteers and the provision of medical supplies, be drawn up in a series of national workshops in 1988 and 1989. The national guidelines for community health volunteers have since been completed. While there have been several pilot projects in training of community health volunteers, details of the new population served are not available. It is, however, likely that these projects have not extended to cover the size of the population. To implement a single primary-health-care project requires significant resource input, both in staff time and travel expenditure. Most successful projects have been supported to some extent by technical assistance from overseas. Availability of trained staff and resources has limited the achievement of this objective. The purpose

of this strategy was to reach unserved population groups, but the application of the strategy has not achieved this purpose. The levels of training, support and supervision have led to the development of most primary health projects in areas with access by road, with water, and regular air services. Primary health care as a provincial strategy has proven to be expensive, time-consuming and difficult to sustain. One of the reasons for this is that the concept of primary care has often been imposed from outside.

Alternative ways need to be investigated of involving communities in their own health care. The principle of primary health care should be maintained, but alternative implementation strategies evaluated. The alternative means of involving communities in improving their own conditions are needed. The means of sustaining involvement with limited outside involvement need to be identified.

(ii) *The education and re-education of health workers about their role in primary health care, especially with respect to community involvement*

The strategy proposed in the policy was to establish a National Training Support Unit (NTSU) to assist provincial authorities to select, appoint and train provincial inservice training teams which

will be able to provide province-wide in-service training programmes. To date, the NTSU has been established and has been actively involved in training provincial in-service training teams, and promoting in-service training through the country. The establishment of a regular programme of in-service training in each province represents a commitment to annual resource allocation for travel, and to accommodation for participants. Some provinces have found this a limiting factor in the development of the programmes. The Simbu Province is such a province.

(iii) *The enhancement of morale of rural health workers, by improving supervision.*

The strategy proposed in the policy was that by the end of the year 2000 all the districts will have introduced written programmes and timetables for supervisory visits to health centres and aidposts.

This has not been achieved. Supervisory performance has been consistently poor throughout the Simbu Province. It was estimated that only one quarter of rural health facilities had received adequate supervision (of two visits per years), and that a similar weakness has been found in the health centre supervision at aidpost level.

To conduct an effective programme of supervision requires the availability of travel and transportation funding, and the suitability of trained staff to conduct the supervision. The unavailability of travel and transportation is frequently cited as reasons for the non-conduct of supervisory activities. Staff are not trained in effective supervision; and even when visits to facilities are conducted, many key functions are overlooked.

There are two levels of organisational constraint affecting the supervision programme. In the first place, the locus of responsibility for supervisory activities is not well-defined. There is no team approach to supervisory activities, and few districts have plans for supervision. The result is that a few centres are frequently visited by a number of staff; the distribution of visit-frequency is also uneven.

On the level of supervision of aidposts and health subcentres, the institution of aidpost orderly supervision has been discarded in a number of districts, and staff to perform supervisory activities are limited. The frequency of medical patrols has declined, so the HEO supervision of peripheral institutions has declined. The absence of

health centre supervision from the provincial office has also meant that the pressure on health centre staff to perform supervisory activities has decreased.

Efficient supervision is the key to maintaining the effectiveness of the health systems at all levels. The failure can be attributed to a lack of priority given to supervisory activities at all levels, and an insufficiency of staff training. Some means need to be sought to raise the priority of supervisory activities in health service. Efforts at training supervisory staff in their roles also need to be made.

*(iv) The alleviation of workload of officers in charge of district health centres in large or heavily populated districts*

The strategy proposed was the placement of a second HEO in busy health centres. The constraints of human resource power have made this strategy unattainable. In the current economic circumstances, this is not a feasible strategy. A proper review of the distribution of human resource power in each district may enable redistribution of staff to cover workload requirements.

(v) *The maintenance, extension and renovation of health facilities*

The maintenance of rural facilities has not been conducted at a satisfactory level, and in some centres not performed at all. The cost-study of rural health service indicated that only 7 % of the required maintenance expenditure for rural health services was spent in 1990. Extensions and renovations to health facilities in two districts have been undertaken but not completed, due to the 1997 general election chaos. The provincial government holds the responsibility of maintaining rural health facilities. Resource constraints and changing priorities have meant that this activity has been largely overlooked. Few districts have a preventive maintenance programme or a rational list of development required in rural health infrastructure. Training in ways to develop such programmes would be the initial step. Alternative means of financing maintenance and small improvements need to be sought. Alternatives such as user charges, community risk sharing scheme, and other means of raising finance at a local level should be investigated.

(b) *Policies Proposed*

In keeping with the general goals of providing primary services to

as large a part of the population as possible - through the health centres, health subcentres and aidposts - there are the following policy initiatives which would lead to better results.

- (1) Villages and rural communities will be motivated to place the improvement of life quality as a high priority.
- (2) The level of service provided by primary health services will conform to the establishment of minimum standards.
- (3) Standard treatment regimes are available for all the main disease problem to use at each level of the health system, and they must be followed by all health workers.
- (4) Administrative and technical supervision of health centres, health subcentres and aidposts should be performed every two months.
- (5) Health facilities should be staffed with nurses and community health workers according to the indicators of staffing needs standards.
- (6) Clinical supervision of health centres is the responsibility of hospital medical officers and should be conducted every three months.
- (7) The division of health-care will continue the partnership with church health services; and the use of renewable agreements will affirm the responsibility of each partner.

The above policies will be looked at in detail in the next Chapter which covers the Provincial Health Policies within the National Health Department Policies.

**Summary**

In summary, Simbu Province is overwhelmingly rural and has the highest population count compared with that of other provinces.

However, the facilities of Rural Hospitals, Health Centres, Health Subcentres and Aidposts are skeletal. The buildings are there, but quite frequently drug shortages and geographical barriers made it difficult for the patients to have access to those facilities.

The Simbu Provincial Government progressed to upgrade infrastructures and manpower at rural Hospitals, Health Centres, Health Subcentres and Aid Posts; and they have also tried their best to enforce some policy inputs on different stages of sickness, for each health institution and, as stated in the Case Studies in Chapter Six, it is still progressing with little improvement. However, the Simbu Provincial government has developed its own health policies which consolidate National Health Department policies to effectively exercise its mission statements on the people of the Simbu Province. Chapter Five offers a more detailed analysis of Simbu Provincial and National Health Policies.

## **Chapter Five**

### **Simbu Provincial Health Policies within The National Health Policy**

#### **Introduction**

This chapter analyses, explains and discusses the Simbu Provincial Health Policies which consolidate the National Health Policies.

However, 19 provinces each has its own policies to suit its own people; like-wise Simbu Provincial Health Policies suit only the Simbu people. Policies' aims at improving peoples' well-being through different programmes are also stressed. So are the manners that some policies have become duplications of National Health Policies and other departmental policies, which somehow work side by side to improve life quality of the Simbu people.

The second part of Chapter Five focuses on the financial resources available to conduct effective preventive and curative programmes and distribution of pharmaceutical supplies. Financial resources such as Government subsidy, foreign aid, and donations from non-governmental organisations are included. This sections covers a

wide area of financial expenditures portrayed in graphs, figures and percentage-forms, which is based on review of documents of governmental sector spendings on health-care alone in the Simbu Province in particular and Papua New Guinea as a whole.

### **Simbu Provincial Health Policies Review**

The mission of the Department of Simbu Provincial Health Services, as endorsed by the National Government, is to monitor the physical, social and mental well-being of the Simbu people in their communities, and to promote as well as to encourage the maintenance of community health at an acceptable level by planning and delivering preventive and curative medical and other health services.

Simbu Provincial Health Plan 1990-2000 states that

*[t]he objective of the health services over the next few years to the year 2000 will be to achieve demonstrable improvements in key indicators of health status. In particular, to increase life expectancy to 60 years, to reduce the infant mortality rate to 5 per 1000 and to reduce the maternal mortality rate to 5 per 1000. Improved family planning will contribute to the reduction of these indicators and it is the objectives of the Simbu Health Services to reduce the total fertility rate to 4.4 per woman and to reduce the crude birth rate to 30 per 1000 during the planned period.*

Simbu Health Policies outline the main strategies which will be undertaken to achieve the above mentioned objective for the next few years. The plan has been prepared in the light of existing economic, social and health constraints; thus, the emphases lie in

- (a) improving the quality and efficiency of existing services and infrastructure;
- (b) promoting equity in the distribution of scarce health resource among districts, between primary and secondary health services, and among rural communities;
- (c) increasing the emphasis on self reliance and community participation in health development and management activities, using the basic minimum needs approach; and
- (d) providing more effective health education and information to assist all members of the community to reduce the illness rate through a healthier lifestyle as part of a healthy society.

Features of the policies will include efforts to promote the involvement of the community, using a Basic Human Needs approach to decision-making, planning, providing and organising its own health care, as part of the overall improvement of their life-quality. This entails close cooperation with other agencies. In order to inform people and encourage rural communities to take responsibility for their own health, a wide range of health education and promotion initiatives will be instigated. To improve the quality

of health service, national standards will be established for all components of health services delivery, and will be used to monitor standards of health care provision. These policies will be implemented in both rural health services and hospitals throughout the country.

While endeavours will be made to strengthen the quality and efficiency of existing services, strategies will be introduced to utilise alternative means for improving health-system financing, initially by means of user-pays and by encouraging the development of a private health sector.

The decentralisation of health functions continues to be an evolutionary process. In order to further enhance the operation of a decentralised health system, during the few years towards the year 2000, the Simbu Department of Health will undertake an in-depth organisation review. The review will consider division of responsibilities, size of operational units, inter and intra agency coordination, and organisational linkages, paying particular attention to the link between 'delegated and transferred responsibilities' and

'the Provincial Department of Health'. Planning and information systems will also be reviewed, and a central point established for their coordination and development. Medical and health system research will be encouraged to provide information for the decision-making and planning process.

Notable features of programmes to control communicable diseases in the Plan include

- (1) the introduction of a provincial acute respiratory infection control programme;
- (2) the introduction of standard clinical definition of malaria which will improve case management;
- (3) the introduction of hepatitis B immunization for infants and high risk groups;
- (4) the initiation of a leprosy eradication programme;
- (5) the training of health workers and the community in methods of dehydration therapy to combat diarrhoea; and in extending water-safety and sanitation as the key to controlling diarrhoea and typhoid;
- (6) the introduction of a programme to eradicate poliomyelitis;
- (7) the proposal of major strategies to combat non-communicable diseases, through preventive measures.

In recognition of the increasing importance of trauma as a cause,

emphasis will be given to reducing the high numbers of mothers dying in childbirth. Although the available statistics are not comprehensive, they do portray a consistent picture in which preventable infectious diseases cause most of the ill health and death, particularly in early years of life. Despite improvements in health status indicators, disease patterns have changed little in the past decade.

Future prospects for improvement of the status of health, as well as efficiency in the delivery channel, depend on successful policy implementation in promotive and preventive health programmes which specifically address the reduction of premature deaths, the avoidance of ill health, and the improvement of the standard of health of the family. The importance of community involvement to achieve the best result in such programmes needs to be emphasised.

Efforts to strengthen the disease surveillance system should be given careful consideration, in order to ensure that the data collected is useful to the peripheral-level health-workers and the provincial health managers implementing the programmes, as well

as useful to the district health extension officers for monitoring and evaluating the programmes. At the same time, records and reports should not become unnecessary burdens to the front line health workers on whose actions the outcome of the whole health services depends.

Improvement in antenatal services where high-risk women can be detected and referred, in delivery and in birth spacing, will be the primary focus of attention. The achievement of these objectives will depend on the proper delivery of the services by health workers who are focussed on their own effectiveness and productivity.

Accordingly, both the elementary training of health workers and post development training of staff will be improved. The training curricula for health extension officers, nurses, inspectors and community workers will be reviewed and revised. Targeted in-service training will upgrade skills of health workers, and a programme for regular supportive supervision will be given priority. The capability of the Department of Simbu Health Division is to plan and monitor the utilisation of human resources.

Capital investment in the health sector will be limited to improving the existing facilities, with the exception of a small number of general hospitals to meet the demands of the rapidly increasing rural population. Investment in hospitals will be largely confined to the replacement or improvement of existing facilities, and these will be complemented by the strengthening of capabilities of the hospital management system. In essence, improvements in quality, efficiency and productivity can and will upgrade the delivery of health services within the period planned. However, only a change in community attitudes and practices can make the needed improvements in health status.

**(A) Core Policies**

These are the core policies for all 19 provinces to follow including the Simbu Province. As authorised by the National Executive Council, the Department of Health (and this is stated in the *National Executive Council Endorsed Papers, December 1990*) declared its mission

*[t]o monitor the physical, social and mental well-being of people in their communities, and to promote the maintenance of community health*

*to an acceptable level by planning and delivering preventive and curative and other services.*

The Health Department was to fulfil that mission within the confines of the National Health Legislation, and was to action the related functions gazetted on 29 January 1985 and on 31 December 1986.

In accordance with the decision of the Provincial Government, the Department of Health had the responsibility of being the Lead Agency for four National Government objectives which, in turn, became the sectoral goals for the Provincial Department of Health.

To date these sectoral goals are

- (a) to reduce general bad-health related behaviour, and the incidence of communicable and non-communicable diseases;
- (b) to improve and extend the provision of primary health services and to ensure that acceptable standards are maintained;
- (c) to improve hospital services and to ensure that acceptable standards are maintained;
- (d) to promote parental responsibility regarding family-size and the spacing-out of children's ages.

In addition to the Department of Health as a Lead Agency for the national government's listed objectives, the Department shown below will play a supporting role to the Lead Agency:

- (1) *The Prime Minister's Department's (1992:25) stated objective is*

*[t]o encourage and support the utilisation, design and monitoring of projects to meet basic human needs and improve the quality of life.*

- (2) *The Department of Home Affairs and Youth Policy Paper's (1992:18) stated objectives are*

- (a) to ensure that all children are wanted and cared for;*
- (b) to minimise the cause and consequences of social alienation and culture shock;*
- (c) to increase opportunities for women, youth, the elderly and the disabled to participate in and benefit from the development;*
- (d) to strengthen the family as the basic unit of our society.*

- (3) *The Department of Finance and Planning Policy Paper's (1992:24) stated objective is*

*[t]o reduce inequalities in accessing basic goods and services among provinces, districts and rural communities, and to respond effectively to population growth, and its economic and social consequences.*

- (4) *The Department of Agriculture and Livestock Policy Paper's (1992:20) stated objective is*

*[t]o reduce the incidence of malnutrition and other nutrition related disorders.*

In pursuit of the Provincial Health Policies to suit their own provinces, the Department of Health was to adopt the following

policies to accommodate all nineteen provinces.

- (a) People and communities should be involved in contributing to the management and control of their own health services.
- (b) Health care should be available to all as close to their homes as possible.
- (c) Health services should be of the highest possible quality within the resource limitations.
- (d) Maximum benefit should be achieved from the expenditure on scarce resources.
- (e) Health workers must work with government departments, other agencies and the community to achieve health improvements.
- (f) Health service delivery and communication between different levels of the system must be organised.
- (g) Good-health related behaviour and the prevention of diseases must be given priority promotion.
- (h) The importance of medical research findings to reduce disease rates and enhance health systems is to be acknowledged and encouraged.

To attain sectoral goals and to keep in step with the National Health Policy, the Simbu Provincial Health Department has implemented the following strategies of

- (a) promoting the involvement of the community, using a Basic Human Needs approach in decision-making, planning, providing and organising its own health care as part of the overall improvement in life quality.

- (b) providing primary health services to as large a part of the population as possible through health centres, subcentres, aidposts, and urban clinics. These services will include treatment of common illness; maternal and child health services; control of communicable diseases; and promotion of personal, community and environmental health.
- (c) providing provincial referral hospitals, with essential nursing, diagnostic and specialist services to support the primary service net-work.
- (d) establishing national standards for all components of health services delivery, which will be used to monitor standards of health care provision.
- (e) developing a system for the regular monitoring and review of standards of health service in the country.
- (f) identifying alternative means of improving the financing of health systems, including increasing the efficiency and equity of existing resource accessibility.
- (g) co-operating with other agencies on the formulation of national policies on environment, nutrition, population and other relevant issues.
- (h) introducing wide ranging health-education promotion initiatives, through both mass media and interpersonal communication to spread a range of health messages.
- (i) encouraging both medical and health system research activities in support of priority health programmes.

*(B) Financial Resources for Health Care*

This section comprises a look at the manner in which PNG Health Department secures financial support to conduct its activities in the rural parts of the country. Most of this financial assistance comes in the form of government subsidies and donations from foreign aid. This section also shows the latest figures of foreign aid and its operations in the Health Department.

Since 1990, the 'Department of Simbu' (Simbu Provincial Government) has commissioned a number of studies into financing the health sector. This thesis section will, therefore, also render the picture of finance and the outline of proposed health spending from 1991-1996.

*(1) Investment Financing*

Budgetary process for the health sector and its spending, which has been put in place but not implemented, should be based on provincial health plans. However, the decision-making process, since decentralisation and changes to the overall government investment programme, has meant that the levels and allocation of investment resources have not always mirrored sectoral health

plans. Heads of the Department of Health Division annually prepare project requests which are made into submissions by the Division of Policy and Planning for the consideration of the Department of Finance and Planning (DOFP). The Provincial Secretary for Health (see Table One) prepares requests for assistance from centrally managed investment programs for improvements of rural health services, but decisions regarding the allocation of these funds are made at the national level by the Department of Health and DOFP. In the case of rural facilities, investment funds are directly included in provincial budgets under the Rural Health Programme. Provinces can also seek funds for small projects, by means of requesting budgetary allocation, either under Item VII of the Provincial Health's Votes, or from the provincial budget investment funds. In 1990, the government introduced a rolling five year development plan called the Public Investment Programme (PIP). The PIP listed both projects which it fully financed, as well as those financed principally by donors for which the government provided counterpart funding .

One of the objectives of the PIP (1990:14) is

*to concentrate public resources on the improvement of health education...which the private sector cannot undertake adequately.*

The PIP, included in the 1990 budget, projected health sector investment for 1996 at NGK 37.0 million or 10.1 % of total government investment. Closure of the Bougainville Copper LTD. (BCL) mine, as well as its impact on Government revenue and fiscal balance, has led to cuts in the government's investment programme. Policies guiding these cuts included

- (a) preferences given to funding for the completion of on-going projects/capital works over those not yet initiated;
- (b) reducing the scope of internally funded projects; and
- (c) shifting activities of a current nature to the recurrent budget.

As indicated in Table 3 below, counterpart funds for donor projects were cut to relatively less than half the given amount, as delays in project implementation might interfere with donor agreements. Also, the PIP proposal in the 1993 budget indicated a level of NGK8.1 million for health, which was 3.1 % of the total government investment. Furthermore, the allocation of projected investment resources for health were evenly divided between rural or primary health services, and urban or secondary health services. In addition,

resources for health sector investment in 1993 were further adjusted downwards in March to NGK4.3 million, with disproportionately higher cuts from rural health service projects.

**Table 3**  
**Health Investment Under the Public Investment Programme (1990-1995)**

Name of Project	Year	1990	1991	1992	1993	1994	1995
Total Public Investment		365,400.0	204,882.0	264,314.0	280,647.0	253,285.0	219,314.0
Total Health Investment		37,008.1	8,119.3	10,218.8	5,891.9	6,522.2	4,422.5
Health as % Total		10.1%	3.9%	3.9%	2.1%	2.6%	2.0%

Source: PNG Government Public Investment Programme 1990-1995:16.

(2) *The Role of Foreign Assistance in Papua New Guinea*

As of April 1986, approximately US\$102.0 million in foreign assistance had been committed by one multilateral, four bilateral, and four non-governmental organisations to the health sector in Papua New Guinea for the period 1986-1996 (out of US\$102.0 million only US\$10 million was spent on health sector or on average, a minimum expenditure of US\$2 million per annum). The



Aids	EEC	1.6	*****
Malaria	JAPAN	10.5	*****
Malaria vaccine	USAID	8.0	*****
Sub Total		20.1	(19.7 overall %)
<b><i>System Support</i></b>			
Other / Various		3.9	(3.8 overall %) *****
TOTAL		102.1	100 %

Source: *National Department of Health 1990-1997:67*

*Note:* Donors included under 'Other Primary Rural' and 'System Support' are AIDAB, WHO, UNFPA, CHINA, and NGOs.

### (3) *Budgetary Process*

The Department of Simbu Health Division controls the recurrent budget for planning and policy formulation, training activities, pharmaceutical supply and distribution, and monitoring of standards for health service activities. The provincial division of health also has budgetary authority over Kerowagi and Mingende Rural Hospitals. Provincial Division (Provincial Government) is responsible for the recurrent facility replacement, environmental health, disease control, and family health programmes.

***(C) Provincial Health Expenditure***

*(1) Recurrent Budget Trends*

Policy and trends in government finance are significant determinants of health services delivery in PNG, as approximately 88 % of the total health expenditure is funded by the government. From 1990 to 1995, government expenditure for health averaged 8.4 to 9.1% of the total government expenditure, and 2.8 % of GDP. On average, real government expenditure for health during that period increased by 5.9 % per annum, about one percentage point higher than the rate of GDP growth. Government health expenditure per capita increased by about 3.5 % per annum in real terms. From 1990 to 1995 economic growth in PNG was negative, averaging 0.8 % per annum, while government expenditure also turned negative, and real health expenditure remained about constant in real terms. Real per capita health expenditure during that period averaged 2.0 % per annum.

In 1995 the government, as part of its economic stabilisation efforts, adopted a development strategy which emphasised investment and

spending in the income-producing sector at the cost of cuts of 5 % per annum in allocations to the social sectors. Real government expenditure for health in fact declined by 1.5 % per annum between 1990 and 1995.

(2) *Inter-Provincial Allocation*

In 1995, the government recurrent expenditure (from both National and Provincial sources) for health, per capita, ranged from NGK11.1 in the Western Highlands to NGK31.99 in the Manus Province. On average, provinces in the Islands and the Papuan region had higher per capita allocations than in the Highlands or the Mamose regions. Provinces which fall below the National average per capita expenditure generally had a population of over 184,000. Although by 1995 per capita expenditure had fallen in real terms in all the provinces, except in the North Solomons the ratio between the highest and the lowest expenditure was still about three-fold. (See Table 5 below).

**Table 5**  
***Per Capita Expenditure by Provinces (NGK 000)***

<i>Provinces</i>	Recurrent Expenditure per capita Nominal kina 1990	Recurrent Expenditure per capita Nominal kina 1995
Western	24.2	17.2
Central	12.7	8.9
Gulf	23.9	21.1
Oro	9.8	8.6
South Highland	13.4	12.6
Enga	13.1	9.9
Western	10	8.2
Simbu	11.3	9.8
Eastern Highland	13	11.5
Morobe	16.3	14.9
Madang	12.5	12.2
East Sepik	12.5	12.6
Sandaun	17.9	14.8
Manus	28.6	25.3
New Ireland	16.2	16.1
East New Britan	19.8	15.6
West New Britain	16.9	15.9
North Solomon	20	20.7

Source: 1990 and 1995 figures from J.Thomas and W.New-Brander (1995), *A Survey of Papua New Guinea's Health Sector Financing and Expenditure*.

(3) *Allocation among Programmes*

In 1986, primary health services claimed 47 % of the total public expenditure on health, with secondary services utilising 38 %, training 9 %, administration 5 %, and research 1 %. Within the

provincial health services 55 % was spent on operation of rural health facilities, 32 % on provincial hospitals, 5 % on malaria control, and 8 % on special development projects.

*(4) Department of Health Programmes*

In 1991 budget funding for Department of Health programmes (in terms of both 'current' and 'investment') has been cut by 8.6 % from the original appropriation, but remains in real terms at 92.8 % of appropriation for 1995. Cuts in budgets for service delivery institutions were generally less than 5 %, with the deepest cuts in budgets for investment projects funded primarily from domestic sources (for example improvement of hospitals, establishment of clinics and construction of staff houses).

*(5) Primary Health Services*

Overall, between 1990 and 1995 the central government budgetary support for non-hospital services increased in real terms by 15.7 %. Again there has been significant variations in the levels of change in budgetary support among the provinces. The support increased by 83.7 % in the North Solomons (due primarily to special

compensation from the Panguna mine) but declined by 41.5 % in the Western Highlands Province. The 1990 appropriation for non-hospital services was cut overall by 8.3 % from appropriations (in comparison to 1.7 % for hospital budgets). Cuts in most provinces were under 5 %, but were higher in the Western Highlands by 14.5 %, in Simbu by 9.7 %, and in Sandaun Provinces by 10.5 %. These figures show the overall change in rural health expenditure over the planned period in real terms. These figures were obtained from 'Estimates of Revenue and Expenditure', published in *Public Accounts, 1990-1995 Budget Section* (March 1991) of the Department of Finance and Planning (See Table 5 above).

(6) *Allocation by Input*

In 1990, salaries comprised approximately 71 % of the total recurrent expenditure from all government sources; supplies (including patients' rations) 9 %; pharmaceuticals 8 %; travel and transportation 7 %; and utilities and equipment 3 % each. Since the position of the Public Service is generally protected, and public sector wages are indexed to the rate of inflation, cuts in health expenditure have led personnel-related expenditure to claim an increasing proportion

of government expenditure for health, at the expense of budget for other operations.

A study by Rosenthal, (1990) of the cost of rural health services found that 60 to 65 % of recurrent expenditures was allocated to salaries. The PNG Health Sector study 1991 shows that 13 % to 16 % of health centre expenditures was spent on pharmaceuticals, and 7 % to 9 % for transportation. 23 % of the total expenditure of the health subcentres was allocated to pharmaceuticals, and 1 to 3 % to transportation. Only 2 % to 3 % was spent on travel and subsistence for safety-patrolling. The low level of funds spent on travel is reflective of the limited-item fund at the provincial level, and is doubtlessly a determinant of the existence and survival of 'low level' under-fives, antenatal, and family-planning services provided on an outreach basis. Only 33 % of the sampled facilities had any expenditure for maintenance of the health facility, and approximately 80 % of these were Church managed.

A similar study in 1992 of the cost of 13 hospitals found that wages and benefit payments for hospital personnel amounted to the

65.7 % of the total recurrent expenditures, drugs 8.9 %, utilities 7.9 %, and both ration and supplies 8.6 %. Expenditures for transport, repatriation, and maintenance were each about 2.0 % of recurrent expenditure. Further analyses indicate that redistribution of nursing staff figures among study facilities would provide an adequate level of nursing staff figure for roughly the same expenditure. It is also estimated that overall, expenditure for drugs at sample hospitals could be up to 30 % short to treat the volume and type of cases of patients in accordance with standard treatment protocols. Finally, expenditures for hospital maintenance were estimated to be only 23 % of the level required.

Cuts in recurrent health budgets in 1994 had all been taken into consideration. In addition, the devaluation of the *kina* had reduced the actual allocations for drugs, vehicles and fuel, and other imported health inputs. Thus, the current economic situation will further bias government budgetary expenditure towards salary support. Future increases in financial resources for health, either through higher government budgetary allocation, or through cost recovery, should be tied to expenditure for health care delivery.

(7) *Projection for Recurrent Expenditure: 1992-1997*

The Department of Finance and Planning does not develop projections of recurrent government expenditure. However, during the 1990s, the national government recurrent expenditure for health remains a relatively stable 3.5 % of GDP, and the Department of Finance and Planning does develop projections for GDP. However, uncertainty over future operations of the Bougainville Copper Mine and future production levels of other mining operations, contribute to uncertainty over the rate at which GDP will increase during the 1990s towards 2000. In addition, economic policies to reduce the share of government in overall GDP suggest that the share which the government health service claims of GDP may decline.

Given these uncertainties, two sets of projection have been developed in an effort to identify what may be the range of possible national health expenditures from 1992 to 1997. The more pessimistic scenario assumes that the economy will grow at about 3 % per annum, or roughly at the projected rate of growth for the agricultural sector. In addition, it is assumed that national health sector expenditures comprise only 2.8 % of the total GDP. A more

optimistic scenario adopts GDP growth at 3.0 % per annum through 1993, and at 6.8 % thereafter. These GDP projections are based on the assumption that the Bougainville mine returns to production (which it did not in 1994), and that the opening and operation of other mines continue on schedule. In addition, this scenario assumes that national health expenditure comprises 3 % of GDP.

While real economic growth should allow for expansion in health expenditures, requirements for health financing would be expected to increase as a function of population growth, and of increasing demands for services and delivery of higher quality. Estimates of financing requirements for the sector are generated by assumptions that the real level of per-capita health expenditure in 1991 should be maintained. When these estimate requirements were compared with estimated resources under the pessimistic scenario, the annual shortfall in resources ranged from NGK23.6 million in 1992 to NGK30.4 million in 1996, for cumulative shortfall of NGK156.7 million over the 5 year period. When estimated requirements were compared with the more optimistic figures for GDP growth and health sector share of GDP, the annual shortfall in recurrent

financing declined from NGK16.9 million in 1992 to NGK0.6 million in 1996. While the picture under this scenario is certainly better for the medium term, cumulative shortfall in recurrent financing over the 5 year period is NGK63.9 million. Thus, under any scenario, maintaining real 1995 per capita expenditure will require that additional financial resource be generated for the sector.

**Table 6****Projected Financing Requirements: 1992-1996***Kina (millions)*

160						159.5
140			127.7	137.5	148.1	<b>129.1</b>
120	110.1	118.5			<b>119.5</b>	
100	<b>87.9</b>	<b>94.9</b>	<b>102.5</b>	<b>110.7</b>		
80						
60						
40						
20						
0	1992	1993	1994	1995	1996	1997

## Health Financing Requirements

Source: 1992 PNG Health Sector Financing Study, Government of Papua New Guinea.

Note: **Bold Figures represent Projected Budgets**  
Light Figures represent Requirements

**(D) Financing The Plan**

In order to compensate for the anticipated shortfall in government

budgetary support for the health sector, the Department of Health has investigated several alternatives for financing the health sector. The main options considered include earmarked taxes, user-charges, insurances and privatisation. A summary of the deliberations on each alternative is outlined below. Potential revenue generation from various alternatives is also shown.

*(1) Earmarked Taxes*

In general the government has opposed earmarked taxes, holding that expenditures on all programmes should be weighed against one another through an appropriation process, and that all revenues should go into one pool to finance those programmes. It is estimated that approximately NGK8.0 million could potentially be generated from 5 toea (cents) excise on beer, cigarettes, and diesel fuel. Because there is an important question regarding the degree to which those revenues would substitute for revenues already allocated to the Department of Health, this Department will pursue the earmarked tax option for financing the overall health system only if the Department's execution of that revenue from earmarked taxes would grow faster than allocations from the regular budget, all of

which is at present unlikely. The Department is trying to establish a National Alcohol Council, and finance its operation through an earmarked levy of 1.0 % of the total revenue from the excise duty on alcoholic beverages.

(2) *User Charges*

(a) *Hospitals*

Hospital fee levels were set in 1991 in the Public Hospitals [Charges] Act, and have not been altered since that time. In real terms, hospital fees in 1992 came to less than half of their 1991 level. The level of fees has little relationship to the cost of providing services, and fees as revenue (NGK1 million in 1990) accounted for only 2.5 % of the operating costs of PNG hospitals.

The current policy exempts three groups from paying fees:

- (i) children under the age of 15,
- (ii) persons over the age of 50, and
- (iii) those judged to be indigent.

Children under 15 and the elderly do not work; thus, for the purpose of health fees they are treated as though they were indigent. Services provided free of charge include:

- (i) vaccinations and injections as part of disease

- control programmes;
- (ii) treatment for leprosy, TB, STD; and
- (iii) blood test for malaria or filariasis.

Provision for these exemptions is based on a concern that charging for these services might deter some people from obtaining care, and that lack of treatment could expose others to the illness. All fees collected by hospitals revert to the Revenue Consolidated Fund of the Treasury, and prior to 1991 offset an amount in each hospital's budget named the Appropriation In Aid (AIA). In theory, if the revenue collected by the facility fell short of the AIA, then the expenditure of the facility must be reduced by the amount of the shortfall. Collections in excess of the AIA could be applied to requests for additional funds, but were not automatically available to raise the hospital's expenditure limits. An analysis of hospital budget and AIA data for the period 1991 to 1996 did not reveal any consistent behaviour on the part of the government to set or maintain the reference budget or AIA to maximise collection of hospital revenue under the current hospital fee policy.

The revenue raised by hospitals could be increased through

improved management and supervision of hospital fee collections. An analysis of the 1991 data for 13 hospitals in PNG indicates that if the current fees had been collected for the utilisation which occurred, the revenue collected by each facility would have at least doubled. The Institution for Improved Collection and Accounting Procedures at the Port Moresby General Hospital (PMGH) increased the hospital's revenue by 60 % during the first year of its implementation, and by an additional 25 % in the second year.

(b) Fees for Rural Health

Provincial governments are responsible for developing policies regarding the collection and use of funds to supplement government financing for rural health facilities. As of August 1991, six provinces (Simbu, Eastern Highlands, New Ireland, North Solomons, East Britain, and West New Britain) had passed Provincial Health Administrative Acts which permitted the development of administrative structures for the setting and management of fees at Government health centres and subcentres. Five other provinces (Central, East Sepik, Milne Bay, West Sepik and Western) were in the process of passing such a legislation. In addition, most Church

managed health facilities collected fees or insurance premiums for the health services rendered. To date neither the Provincial Health Offices nor the Bureau of Management Services (BMS) routinely assemble information about the collection and management of fees by rural government health facilities, and there is no standard reporting form for this purpose. Information collected for a few facilities suggest that current fees per admission (bearing in mind that NGK1.00 equals NZ\$5.00) or 10 to 50 toea (10 to 50 cents) per adult visit generate revenue equal only to a small percentage of the recurrent expenditure of rural facilities. Family Planning, MCH, TB/leprosy and STD services are generally exempt from fees. Funds collected by Church run facilities are utilised either by the facility, or by the Church health-secretary, to supplement government and mission funds for operation of the facility. Funds collected by government facilities in some provinces are retained by the facility for purchase of capital goods (such as outboard motors) or expendables (such as kerosene or rations), and for the levy of local health board/ committee. In other provinces, revenue is collected by rural health facilities, sent to the provincial headquarters

to be included in the general provincial revenue. Fee simulations indicate that it might be feasible to charge fairly small fees on high volume services in health delivery.

*(E) Australian Aid to Papua New Guinea*

No other aid donor gives as large a proportion of its overseas aid to one country as Australia does to PNG. And no other country gives such a large proportion of untied cash grants, to be used by the recipient in whatever way it wants. This is a hang-over from colonial times when the cost of the administration of PNG was borne by Australia. After independence in 1975, it was agreed that Australia would continue to bear most of these costs, in the form of aid, until other sources of revenue came on stream. A decade ago, around a third of Australia's aid went to PNG. Currently a quarter goes to the same destination and of this, 85 % or A\$275 million is in the form of a cash grant for budgetary support. (See Table 7 below).

**Table 7**  
***Australian Government Aid to Papua New Guinea***

Year	A\$ million	% of total Australian Aid
1983-4	302.3	36.3
1984-5	321.7	31.8
1985-6	327.5	31.8
1986-7	333.4	34.2
1987-8	306.0	30.0
1988-9	314.1	26.3
1989-90	337.8	28.8
1990-1	333.1	26.4
1991-2	333.5	25.4

Source: *AIDAB Statistical Summary 1989-1990 and Budget Related Paper No.4. 1991-1992.*

PNG's dependence on aid in general and on Australian aid in particular has decreased markedly in recent years as other sources of revenue and aid become available. AIDAB special report (1992:28) states that as a percentage of the total PNG government revenue, foreign grants have decreased from 33 % in 1984 to 23 % in 1991, and the Australian budgetary support from 28 % to around 15 %. Both Australian and PNG governments are committed to further reducing that dependence. The sources of aid grants have become more diverse. Significant contributors to PNG now include the United Kingdom, Japan, the European Economic Community, and the Asian Development Bank. A consultative group of aid

donors to PNG, coordinated by the World Bank, now meets on a regular basis. Australian's role is still significant, but decreasing.

*(1) PNG-Australian Aid Relationship*

Australia and Papua New Guinea are close neighbours, enduring friends and partners. Their histories are inextricably linked. Currently the relationship is more important than ever. In many ways, it has changed and matured. It is no longer a relationship based on persistence of old ties with the colonial past. It is based, instead, on the principles of political and economic sovereignty and mutual respect, articulated in the 1987 Joint Declaration of Principles.

Since the signing of the Joint Declaration of Principles, Australia and PNG have reached other agreements on trade and commercial relations, security co-operation, and development assistance. All these agreements have a theme in common: the recognition of rights and the imperative for Papua New Guinea to take responsibility for its own future. The direction of the country's political, social and economic development is a matter for its government and its people alone to determine. Nevertheless, fundamental to Australia's

relationship with the nearest neighbour is a strong and sustained commitment to assisting in the development of a self-reliant PNG. In the twenty years since independence, PNG has made a remarkable progress in nation building. It has held fast to the principles of parliamentary democracy, social justice and freedom of speech established in its Constitution. Since independence, the relationship between Australia and Papua New Guinea has developed into a vital and dynamic partnership based on trade and investment, defence and security, education, academic research, and development assistance. It is a partnership among people at all levels and all walks of life through political leaders, church and community groups, teachers and students, scientists and businessmen. Over twelve thousand Australians live and work in PNG (*Department of National Planning 1990*), helping to contribute to the country's development.

(2) *Development Assistance*

Development assistance plays a major role in the relationship between Australia and PNG. Certainly from Australia's point of view, aid is a crucial part of their relationship. For some years, PNG's share of Australian aid has been about one quarter of the

total aid programme. No other donor has provided as large a share of its development assistance to a single country. In 1995, as in the previous three years, this share came to over A\$320 million.

The size of the aid programme to PNG directly reflects the significance of the relationship between the two countries. Most of PNG's assistance (almost NGK270 million in 1991-92) has been provided in the form of untied budget support. Since independence this has been important, because it helps bolster PNG's budget which, in turn, helps maintain, albeit at a low level, the physical and social infrastructure that is vital for achieving sustained economic development.

This untied budget support has also kept Australian involvement in PNG's internal affairs to a minimum. In the immediate post-colonial years, when a high Australian profile would have been less than welcome, this was the most appropriate strategy of assistance. It was, in a sense, a measure of respect for PNG's independence and a demonstration of their support for its self-determination. However, the situation has changed. The relationship between the two

countries has matured. To quote Senator Evans (the Australian Foreign Minister) in his definitive account of Australia's Foreign Relations programme of aid to PNG (*National Newspaper*, 16 Sept. 1995:27),

*[a]n investment is a mature relationship in the twenty-first century; PNG has such potential, and Australia's interests are so substantial, that getting the relationship right at this still early stage in its evolution must be one of our highest priorities.*

Getting the relationship right seems to be, among other things, working out how Australian's assistance can best meet PNG's real needs into the next century. It involves developing a more flexible aid programme, one that can adjust to changing priorities.

### *(3) The Role of Australian Aid*

Seen in the context of PNG's massive social and economic problems, the importance of Australia's programme of development assistance cannot be over-estimated. At the same time it is widely acknowledged that the prospects, for development by means of improving living standards for all Papua New Guineans, are not bright. In common with other Pacific countries, PNG suffers from a number of constraints on development, that is, severe shortages of

skills, poor infrastructure compounded by mountainous rugged terrain, and a rapidly growing and widely dispersed population, to name but a few factors.

But given its size, its rich natural resource endowment and its location within established trade routes, the chances for PNG to achieve self-reliance are excellent. Australia has to work out the best way to use the substantial development assistance that it is committed to provide under the terms of The Treaty of Development Co-operation. It has been recognised for a while now that assistance, as untied budget support, is no longer in anyone's interest. As Senator Evans states,

*[t]his approach served only to perpetuate a degree of unhealthy reliance on external support for day to day management of the country's affairs.*

Papua New Guinea has the increasing means to support its own budget. The current mineral resource development offers the high probability of a major resource boom later this decade. Given these prospects, it seems excellent sense for the level and form of Australian aid to PNG to be reviewed.

The five-year Treaty of Development Co-operation is now up for formal review. The decision reached at the review will set the direction of the aid programme to the turn of the century. A joint Australia and PNG working group has been looking at options for future aid programmes beyond the end of the current Treaty. The final decisions have yet to be produced.

Both the PNG and the Australian government have agreed that budget support will be progressively reduced over the next few years, with a complete phase-out by the year 2000. Australia has also agreed to increase the allocation of project aid in the current Treaty of Development Co-operation period. In the 1994 financial year, the allocation of project fund is A\$46 million, an increase of A\$8.7 million on that of 1991-92.

*(4) Programme Aid*

Programme Aid is not designed just around a specific project, but consists of support to a programme of activities within a particular sector such as health or education. Programme assistance calls for close dialogue on policy objectives that the PNG

government is aiming to achieve. It is particularly valuable in supporting policy reforms with a range of inputs designed to address specific problems.

The way Programme Aid is delivered will depend on the sector involved. The importance is that the donor will have the flexibility to direct assistance in the most appropriate and effective form to support activities in high priority areas. There will undoubtedly be the scope for non-government participation, and the means to make use of donors' skills in the programme. The PNG government has identified priority areas for Australia's support: health, education, agriculture, law and order, infrastructure. Over the next few years, the Australian Aid Development Assistance Bureau (AIDAB) will be working closely with the PNG government, and with individuals and organisations in Australia who have expertise in these priority areas, to develop the programme.

More than one quarter of aid programme funds have been directed to human resource development. With support of the aid programme, each year around 700 Papua New Guineans receive some form of

education or training in Australia. A number of new initiatives in the area of health have been in existence since 1993. These have included programmes aimed at preventing the spread of AIDS, at preventive awareness education, at malaria and TB control, and at projects to improve the management of the country's major hospital. Unfortunately, none of this programme assistance on health has targeted the Simbu Province.

In rural development, Australia is supporting two major projects in the Simbu Province and the West New Britain, two of the poorest areas in the country. These projects address problems relating to employment, infrastructure, and the role of women in the development process; and aim to improve health level, nutritional status, and population income in these areas.

(5) *Forms of Aid*

Since 1984 there has been a move from untied cash grants, as budgetary support towards programmed activities including bilateral projects, to enable better targeting of Australian aid to PNG's priority development needs. Progress, however, has been slow (from

1% in the 1984-85 period, increasing to 10 % in the 1993-95 period). Budget support has decreased from 85 % to 95 % in that period. It was maintained at A\$275 million per annum until 1994-95 when it decreased to A\$260 million. This will be phased out altogether by the year 2000.

Programmed activities include bilateral projects training, research, development of tertiary institutions, and support for the work of NGOs. From 1989 to 1991 Programme Aid also included A\$15 million for Balance of Payment Support given in response to the closure of Bougainville copper mines, in conjunction with a World Bank Structural Adjustment Loan.

(6) *Bilateral Projects*

Below are some of the co-operative projects currently being undertaken as part of Australia's official aid programme. These projects are wholly aimed at improving efficiencies. The *Community Aid Abroad Newsletter* (1995:14) states [figures in brackets represent the projects' total cost] the following indicators:

*[i]mprovement in the organisation of the Royal PNG Constabulary through the provision of over 40 long-term advisers, and improvement of police training. (18.3 million);*

*provision of 150 prefabricated houses in outlying areas for members of the Royal PNG Constabulary and their families, thereby facilitating the distribution of law and order services through the country. (6.6 million);*

*improvement to the Department of Civil Aviation's operational capacity in specialised areas, and the*

*upgrading of the air navigation system in PNG. (16 million);*

*improvement of the operation and institution capacity of the PNG taxation office. (11million);*

*enhancement of Revenue Collection by PNG Bureau of Customs and Exise. (4.2 million).*

Of the above bilateral projects, health is not included but it comes in other forms of programme aid, and the projects are shouldered by the NGOs to effectively perform the activities.

In the above mentioned and a range of other areas, Australia is committed to assisting PNG to tackle its developmental problems.

No one underestimates the difficulty of this process. The problems facing the country cannot be solved with 'quick fixes'. And they

cannot be solved by outsiders. PNG will have to develop its own strategies. This is not to say that Australia is in any way disengaging from PNG. In a number of ways, particularly in terms of the changing nature of their aid programme, it is likely to become more closely engaged over the next few years towards the year 2000.

However, the nature of the relationship seems to be changing. It appears that Australia will be jointly involved in policy dialogue, and in providing financial and technical support for sectors which PNG identifies as key priorities. It will be Papua New Guinea's responsibility for setting the agenda and leading with its own resources.

### **Summary**

Simbu Provincial Health Policies draw attention to the National Health Department Policies which implement policies side by side befitting the needs of the province. These policies are in place; however, the implementing agencies are empowered through financial backups from various financial institutions, as mentioned

above, to effectively implement policies for those in need. During the recent Bougainville Crisis, the government was placed in situations where it could not meet projected-health-budgets. As such, foreign aid was the only means to support funding for health sectors and other departments. Most financial help comes in the form of aid from the Australian Government. It also help other areas such as education, police, agricultural sectors. Only a portion goes to the Health Department.

Within the health department, some policies are set to upgrade the standards of training, and other infrastructural development. However, Chapter Six needs to focus on the policies of health departments targeting each disease such as STD, TB, Malaria, Cancer. It looks at three noteworthy diseases which health policies heavily target in various programmes. Aid monies that have been used in various programmes- such as Malraria Control, Tuberculosis and Water Supply Projects in the Simbu province and Papua New Guinea as a whole- are also elaborated in focus in the next chapter.

## Chapter Six

### Case Studies

#### **Introduction**

The case studies below explain, discuss and argue the relevance of Health Department policies targeted at each disease: at the strategy of eradication attempts, and at combating the disease. The internal policies of the Health Department are formulated not only at administrative levels, but there are some guidelines for managing each disease. These case studies also render a good picture of 'what is already in place' in the Simbu Province in particular, and in PNG as a whole. The Case Studies come in three parts. Case study One looks at Malaria diseases, with special reference to filariasis and dengue fever. Case Study Two looks at Tuberculosis (TB), and Case Study Three looks at the Water Supply System that affects almost 90% of the population. These case studies focus on the Simbu Province in particular and Papua New Guinea as a whole.

## 6.1 *Case Study One*

### (A) *Malaria-borne Disease Control*

This section describes the plans for control of mosquito-borne diseases in Simbu and Papua New Guinea - especially Malaria, Filaria, and endemic arboviral diseases with special reference to Dengue fever. The present policy direction emphasises efforts to integrate delivery of services, and to co-ordinate control of common vectors of these diseases of public health concerns.

Malaria is the most significant health problem in Simbu, and in Papua New Guinea as a whole. Malaria is endemic in coastal and island areas where annual parasite rates among children, under ten years of age, are over 30 %. The incidence of the disease tends to decrease with increasing altitude, and those living 1500-1800 meters above sea level are virtually free of malaria. However, because of the intense economic activity and development, considerable population movements occur constantly between the highly malarious coastal and island areas and the highlands, placing virtually all the population at risk at one time or another.

During the first half of the century, early malaria control was limited to larval control in towns, and to the distribution of quinine. During the second world war, prophylactic drugs such as mepacrine and, later, proguanil were introduced. In 1957, the first project for malaria control through indoor DDT spraying was conducted in Maprik (East Sepik Province) and on the D-Entrestcasteaux Islands (Milne Bay Province). Although malaria transmission at that time was not stopped completely, a satisfactory reduction in incidence was achieved. Encouraged by this initial result, a gradual expansion in DDT spraying operations was pursued over the following ten years, administered and directed as a vertical programme (a programme of compulsory DDT spraying to avoid malaria) by the Department of Health in Port Moresby. By 1971 about 51% of the population had been brought under insecticidal protection.

In 1971 a malaria assessment team noted that in view of technical, operational and administrative problems, the achievement of malaria eradication - mainly based on residual indoor spraying of DDT - was not feasible, and the team recommended a change to a strategy of malaria control. The programme was, therefore, reorganised in

1975, but indoor DDT spraying remained the major method of control along with distribution of antimalarial drugs by malaria staff and general health services.

By the mid 1970s more than 65% of the population was considered to be under the influence of DDT spraying. However, the incidences of malaria had increased again and, after assessment of the malaria control programme in 1980, it was recommended that spraying be limited to areas of economic importance, areas with severe outbreaks of malaria, and areas of easy access. Spraying operations were, therefore, reduced by almost half in 1989 and 1990. In 1990 a major review of the Malaria Control Programme took place again. The review team recommended that in view of high cost of operations and the limited results, spraying should be withdrawn completely from all areas except areas of economic importance, areas where outbreaks of malaria occurred, and specific areas of the Highland regions where malaria was unstable at an altitude up to 15000 meters. The recommendation was gradually implemented and, at present, less than 10% of the total population is under spraying operation.

Plasmodium Falciparum infections, which had decreased at the height of the DDT spraying operation from 1975-1990, continue to dominate, constituting over 75% of all malaria infections in most provinces, including the Simbu Province. According to available data, over 50% of Plasmodium Falciparum cases are resistant to 4-aminoquinolines, particularly chloroquine. The prevalence rates of chloroquine resistance cases (*in-vivo*) are as follows: RI 86 %, RII 6%, RIII 8% . In vitro resistance to chloroquine is present in 74% of successful tests conducted.

The malaria control report (1993:16) - on which data Chapter Six of this thesis relies heavily - states that

*[i]f drug supplies are taken into consideration during the period 1985 to 1992, the following figures can be extrapolated:*

- (a) more than 1,800,000 full courses (average) of infant camoquine (first line regimen) are supplied on a yearly basis among the worst affected provinces;*
- (b) more than 2,100.000 full courses (average) of camoquine (first line regimen) are supplied on a yearly basis among the adult population (Average number of full course per person per year).*

These figures do not take into consideration the distribution of

second line regimen drugs, and only provide an indirect indication of real drug consumption. However, on a yearly basis, they do point to a wide difference between the approximate number of malaria cases treated, that are laboratory confirmed, and the approximate number of those who possibly receive treatment as outpatients on the basis of clinical diagnosis/symptoms.

During the 1980-1991 period, malaria constituted an average of 10% of the admissions and 8% of the deaths reported by hospitals and health centres. The morbidity data from the admission and discharge records have to be interpreted as those generated by severe malaria cases. The overall morbidity and mortality data since 1989, as a percentage of total illnesses and deaths reported from all cases, are constant and mortality rate remains low. Two factors are responsible for this continuing low malaria-related mortality rate:

- (a) an effective drug distribution system across the country;  
and
- (b) an effective protection by means of acquired natural immunity due to its high endemic in coastal and island regions.

*Filariasis*

Filariasis is a severe form of malaria case, endemic in PNG and particularly in the coastal areas. However, little is known about the disease.

The vectors transmitting Malaria have been found to transmit Filariasis as well. In some areas around Simbu and Dreikir in the East Sepik province, the disease is highly endemic, and almost all individuals are infected. In the Ok-Tedi area of the Western province in 1990, pre-control data suggested a filaria prevalence mean rate of 43% (as stated in the 1991 *National Health Report*).

*Dengue Fever*

Patients with dengue-like manifestations have been reported in the past in different parts of the country. During the South Pacific dengue fever epidemic of 1981, the disease appeared in Rabaul, Wewak and several other places. The presence of Dengue stereotype 1 and 2 was confirmed in PNG in 1981.

Transmission of dengue is considered to occur in the country at a low level, and an epidemic outbreak may take place when

conditions are favourable. Dengue Haemorrhagic fever is endemic mainly in the South East Asian countries. During the 1990s South Pacific epidemic, Dengue stereotype 3 was identified in five countries (Vanuatu, New Caledonia, French Polynesia, Wallis and Futuna, and Tuvalu). In view of an increased volume of traffic to countries where Dengue stereotypes 3 and 4 are endemic and the presence in PNG of the aegypti mosquito vector, it is felt that the transmission potential is increasing, and therefore surveillance at major international points of entry has to be increased.

*(B) Major Achievements*

The major achievements include:

(a) Diagnosis and treatment of malaria cases: an effective and sound essential drug policy, based on an organised drug supply and distribution system, and standard diagnostic and treatment guidelines.

The provision of appropriate diagnosis and treatment of malaria cases have been the main control measure utilised in the whole country, in particular in coastal and island areas. In support of this activity, an effective referral system has been established at health centre and health subcentre levels, with capabilities for laboratory

confirmation of severe malaria cases and treatment of the cases through the multi-purpose Rural Laboratory Assistance (RLA) programme. One hundred and fifty five health centres and health subcentres have this service in place. However, these laboratories are under-utilised at present in many centres.

(b) Production and revision of malaria training materials for health workers have been maintained with an emphasis on task oriented modular format as follows:

- (i) The laboratory microscopy module utilised for malaria laboratory technicians has been adapted to meet RLA course requirements.
- (ii) A malaria video, with accompanying training module for treating mosquito nets through community participation, has been prepared.
- (iii) Four malaria job-aids/wall-charts, for all categories of health personnel, have been printed (7,000 copies) and distributed in support of the latest edition of the *Children and Adults Treatment* book.

The job-aids aim to improve the management of malaria cases, to improve laboratory facilities utilisation, and to promote a malaria clinical reporting system with special emphasis on the recognition of treatment-failure-malaria cases.

(c) Production of malaria health education materials has gained momentum, with emphasis on improving awareness and communication skills among health staff and community leaders.

Health education materials, produced, include:

- (i) a malaria poster with instructional booklet for health staff (7,000 copies);
- (ii) a general public video, on malaria and treated mosquito nets, in English, Pidgin English, and Hiri Motu (8,000 copies);
- (iii) a malaria flip chart for community leaders and APO/CHW (1,000 copies).

(d) Residual DDT Indoor Spraying: a major reduction in the extent of spraying operation has been achieved without a significant increase in malaria related morbidity and mortality or epidemic outbreaks in the Highlands. The gradual transition from a vertical programme to an integrated variety, based on the PHC approach, has coincided with a concomitant reduction of spraying operations. Limited DDT spraying is still maintained only in the Highlands. The malariogenic risk is stratified, and applicability of DDT spraying to each stratum has been defined.

(e) The introduction of mosquito nets treated with the synthetic

pyrethroid permethrin in the Simbu Province in 1992, and in other provinces, provided justification for the expansion of this strategy to all Highland provinces. Operational field trials, based on a primary health care approach to introduce permethrin impregnated bed-nets, were undertaken in 1992, with World Health Organisation (WHO) support, in the Simbu, Goroka, Western Highlands and the Morobe provinces. These studies were reviewed, and recommendations were made for the expansion of the programme to other areas. During the 1992-1996 period, the Department of Health provided more than 50,000 family size mosquito nets, and supplied more than 2000 litres of permethrin for treating mosquito nets.

(f) Distribution of mosquito-eating fish in suitable anopheline breeding sites gained momentum in the 1992-1996 period, and all provinces received colonies of the mosquito-eating fish *Gambusia Affinis*.

*(C) Constraints*

The management support activities and organisational aspects have yet to be strengthened (in particular at district and health centre levels). A basic change in the attitudes and practices of general

health staff at all levels is still required in order for them to accept wider responsibilities in relation to malaria control activities.

Health staff interactive capabilities with communities, as well as their health education and leadership skills in sustaining village based health developmental programmes, have to be improved.

Since the cessation of spraying operation in most parts of the country in the mid 1980s, the specialised malaria workforce of more than 400 (that is, spraymen, squad leaders, team leaders) has been only partially successfully reoriented and integrated in the general health services. Factors - such as basic education requirements, housing, uncertainties on major strategic and policy changes in malaria control, and manpower development - have all contributed to the present difficult situation.

The development of a malaria control programme, based on personal protection by means of treated mosquito nets is, at community level, faced with technical and management problems. The technology is considered to be appropriate (that is, acceptable to communities at large) and effective in providing personal protection against malaria;

however, the technology is labour intensive; it requires a reasonable level of community participation and, in the long term, still has to demonstrate its cost-effectiveness.

While renewed emphasis is now being placed on the management of malaria cases at all levels, the malaria information system still has to be successfully integrated into the General Health Information System; and new indicators, based on reported clinical cases, still have to prove their applicability, viability and reliability.

The above study of the major achievements and of the constraints of malaria-borne disease control suggests that future goals, policies, strategies, surveillance measures, and monitoring and evaluation can be identified.

*(D) Future Goals*

Future goals must aim

- (a) to reduce morbidity and mortality due to malaria and other vector-borne diseases;
- (b) to reduce and maintain the incidence/prevalence of mosquito-borne diseases, malaria, filariasis and arbovirus diseases (with specific reference to dengue) to an acceptable

level where they are no longer considered public health threats of significance;

- (c) to establish appropriate surveillance of mosquito-borne diseases.

*(E) Policies*

- (a) Vector-borne-disease control will emphasise control of mosquito-borne diseases (such as malaria, dengue fever and filariasis) through early diagnosis, treatment and reporting of affected cases, and through an appropriate surveillance/control programme established in all endemic areas of PNG - with active community participation.
- (b) The vector-borne-disease control programme is an integral function of primary health care services at national, provincial and district levels.

*(F) Strategies*

In order to strengthen both the preventive and the curative aspects of the malaria control programme, emphasis is placed on the development and strengthening of district health-centre based activities and capabilities. A district-based modular in-service training programme, to take place during the first two years of this plan, is expected to contribute significantly to the above mentioned measure.

The specific malaria control measures, included in the programme, are

- (1) Preventive:

- (a) Personal protection through treated mosquito nets, and the distribution of nets is to be organised through a reimbursable procurement scheme by the Department of Health, and the Pharmaceutical Service. The insecticide required for this activity is to be supplied free charge by the Department of Health, through the same channel.
  - (b) Vector control is performed through DDT Residual Indoor Spraying.
  - (c) Biological Control is conducted through the use of larvivorous fish.
- (2) Curative:
- (a) Prompt recognition and effective management are to be given to clinical Malaria cases. Clinical diagnosis, in contrast to definitive etiological diagnosis by means of microscopy, is and will continue to be the standard determinant of initial antimalaria therapy in PNG. The malaria control programme will therefore continue through its training component to strengthen, in particular at the periphery, the capacity of health staff for prompt clinical diagnosis and initial treatment and referral of uncomplicated-malaria and severe-malaria cases.
  - (b) Effective referral and management of severe-malaria and treatment-failure-malaria cases: the first-line capabilities at health centre and health subcentre levels will be strengthened, and support will be maintained to adequately deploy Rural Laboratory Assistance appropriate to this level to provide microscopic confirmation of clinically diagnosed severe-malaria and treatment-failure-malaria cases.

- (c) Regular review and update of the National Antimalaria Drug Policy. Efficacy of therapy of first and second-line regimens, as defined by clinical responses (number of treatment-failure-malaria cases), will be assessed regularly in order to maintain an effective antimalaria drug policy. Simplified in-vivo methods will be used to monitor and confirm clusters of treatment-failure-malaria cases at district level. Standard in-vivo tests will be conducted if appropriate and applicable, or confirmed and quantified.

*(G) Surveillance*

Surveillance aims to increase the accurate recording, retrieval and analysis of incidence and distribution of malaria illness and death in the different districts and provinces.

Standard clinical definitions of malaria have been established, that is, uncomplicated-malaria, serious-malaria and treatment-failure-malaria. These definitions can be used by all involved in the diagnosis and treatment of malaria. The EPINT (Epidemiologica Intelligence) reporting system will be modified to include the new malaria categories, so that this data can be obtained from all existing health centres, subcentres and hospitals. Forms for recording data will be adapted from those normally used in the provinces for the purpose of recording all EPINT diseases. If

required, during outbreaks in the areas of unstable malaria, specific fever or mass blood survey will be conducted. Blood slide data collection and analysis from serious-malaria and treatment-failure-malaria cases will continue.

*(H) Monitoring and Evaluation*

Both the established epidemiological and the operational indicators will be the basis for monitoring and evaluating mosquito-borne disease control programmes. The developing reporting system will provide the necessary information. The information is expected to be analysed, at provincial and district levels, with the Central Epidemiological Service and the Disease Control Section being responsible for collating data, permitting the analysis of long-term trends as well as planning and evaluating the operation at a national level. In the Simbu Province, a comprehensive evaluation of the malaria control programme is expected to take place in 1996 and, subsequently, on a regular 2 to 3 years basis.

## 6.2 Case Study Two

### *(A) Tuberculosis (TB) in Simbu Province and Papua New Guinea*

Tuberculosis is a seriously noteworthy disease in PNG. With rapid development and overcrowding in some areas, the epidemiology of tuberculosis will become a challenge to the health services in PNG. TB is an indicator disease for Aids, and this will be a particular problem which needs to be addressed in the national TB control programme. The direction of this plan is in line with the present state of tuberculosis in the country, which is given extra clarity in the following background information.

Tuberculosis has long been a problem in Papua New Guinea. By 1972 it represented 3.3% of hospital discharges, with 3,211 patients being discharged. (*National TB Report, 1976*). In the 1970s and early 1980s the numbers of new cases remained static at around 2,500 cases per year. In the mid 1980s the number of patients admitted annually appeared to decrease slightly, but in the 1990s it rose to its previous level. The increase in TB cases, based on the 1994 Disease Control Figure, was 10.7 per 10,000 head of population.

Tuberculosis has higher incidence figure in the coastal provinces. In 1984 the incidence of tuberculosis was estimated at 0.8 per 1,000 head of population nationally, with rates of 1.5 per 1,000 in coastal provinces (1,000 meters below sea level) to 0.04 per 1,000 in highlands areas (1,000 meters above sea level). New cases registered in the National Capital District in 1993 reached 4.2 per 1,000 head of population, while in the five Papuan provinces it was 2.1 per 1,000. However, in the five Highland provinces it was 0.25 per 1,000. (Figures taken from the *1995 TB Control Report*).

The seriousness of the Tuberculosis cases is also increasing, with a 20% increase of the cases in 1979, 30.5% in 1988, and 30% in 1993 being extrapulmonary. The seriousness of this disease can also be measured by the increase in the number of new cases found in virgin areas such as the Highland provinces.

Improved compliance, due to Short Course Chemotherapy (SCC), has indicated a decline in cases. Since the introduction of SCC, completed-treatment cases have improved from 23% in 1988 to 14% in 1993. With only 55% of the provinces reporting on data,

requested for assessment of the SCC implementation programme in 1994, to indicate completion of treatment, 84 % of all the reported cases of tuberculosis were on short course chemotherapy. The most significant progress in this regard has been that the provinces are almost completely covered by SCC.

Other drugs' resistance (including traditional herbal medicines) to anti-tuberculosis drugs is posing a real threat to the national tuberculosis programme. Prevention of this will require a well-planned approach to the implementation of SCC at the provincial and the district levels.

*(B) Achievements*

The current achievements of the above background of measures cover the following areas:

(a) Short Course Chemotherapy (SCC).

Short course chemotherapy was introduced to all provinces by November 1993, resulting in reduction of cases of patient compliance with SCC. In that regard Simbu province have since been encouraged to develop firm SCC extension

plans to introduce the new treatment to all health institutions in their respective districts.

(b) Training of Staff

The training of a Specialist Medical Officer in TB and Disease Control in Japan has resulted in improved co-ordination at national level.

(c) Integration

The integration of TB and Leprosy Programmes has enabled the simultaneous implementation of SCC and multidrug therapy for leprosy.

(C) Constraints

In spite of the above achievements, there are constraints,

(1) *organisational problems:*

(a) the decentralisation process has contributed problems, resulting in a lack of priority being placed on TB control programmes in some provinces, and a lack of trained manpower and resources to implement programmes as stated in the National Health Policy;

(b) the frequent turnover of staff who have been trained to conduct TB control activities.

*(2) operational problems:*

- (a) lack of transportation for follow-ups, contact examinations and indicator surveys;
- (b) incomplete data and lack of reporting, resulting in inaccuracy of guideline figures;
- (c) low priority given to case-finding activities;
- (d) inappropriate selection criteria for staff to attend national tuberculosis courses, which results in reliance on second hand information that, in turn, brings about a general lack of confidence to establish quality local training programmes;
- (e) lack of supervision and on-the-job training and guidance;
- (f) the inability of the system to sustain adequate and uninterrupted supplies of drugs;

*(3) technical problems:*

- (a) in general a large proportion of patients are being given trial TB treatment without microscopy confirmation;
- (b) the lack of monitoring capability of those resistant to TB bacillus treatment while still on SCC regimen;
- (c) the association of AIDS with TB could have a potential impact on the epidemiology of TB in PNG.

*(D) Future Goals/Objectives and Indicators*

The above second case study looks forward to the control of TB to a level of health priority in which the disease is insignificant as possible.

(1) *Objectives*

- (a) Using the 1992 data level as a calculation base, the number of newly detected TB cases should have been decreased by 20 % each year.
- (b) By 1998, 100 % of all health centres should be equipped with microscopes and trained staff in order to improve the treatment proportion of confirmed cases among new cases reported.
- (c) Using the 1992 data level as a calculation base, the number of cases with satisfactory treatment completion should have seen an increase of up to 25 % annually over the percentage of the previous years.
- (d) By 1997, short course chemotherapy should be expanded to all health centres and health subcentres in all districts in the country.

(2) *Indicators*

Whether or not, and to what extent, the goals/objectives have been reached is revealed by the following criteria/indicators:

- (a) the number of new cases registered in relation to the target set at the start of each year;
- (b) the number of health centres equipped for and actually conducting microscopic examinations, in proportion to the total number represented by the self-same activities of all the health centres in PNG;
- (c) the number of new cases actually placed on treatment in proportion to all cases already registered each year;

(d) the figures by which all health centres and subcentres implementation of short course chemotherapy is represented.

*(E) Policies*

In the light of the above mentioned achievements, all their problematic constraints, and future goals/objectives and indicators/criteria, the following policies are expedient to adopt.

- (a) Treatment must follow all the procedures for short course chemotherapy, as outlined in the protocol of SCC adopted by the National Health Department in 1992.
- (b) All SCC treatment should be free of charge and made available to all patients.
- (c) An index (severe) case must have the patient's family and close contacts screened.
- (d) Bacteriological confirmation must be sought whenever possible before SCC is given.
- (e) Monthly reports of all new cases and pending cases must be filed and delivered to the TB control unit, without delay.

*(F) Strategies*

To implement the above mentioned policies, there are a number of key strategies as described below.

- (1) Human Resource Development

(a) Manpower training is a continuous process. Training will be conducted in the form of in-service teaching, with seminars and workshops. Specific health-personnel training is to take place outside the trainee's area of residence.

(b) Selection for tuberculosis training will be conducted with more consideration for the employee's future role in the provincial TB control programme. The supervisory-skills component of any courses related to SCC implementation will be improved upon.

(2) Clinical Diagnosis Improvement

This type of improvement will be achieved through the development of training modules and programmes for all levels of health workers. Special training on SCC will be continued in all provinces for people entering the programme.

(3) Case Identification

Tuberculosis case identification will be by way of patient contact and family screening. Where possible sputum survey in high prevalence areas will be conducted.

(4) Screening of High Risk Groups

Any identified high risk groups will be screened.

(5) Laboratory Support

Training and equipping identified health institutions will be performed to enhance laboratory confirmation diagnosis and treatment. These services will be integrated with other rural laboratory activities.

(6) 'Those Still on Treatment' Cases Improvement

Alternative ways to improve cases of those still on treatment will be considered to further improve on the 75-90 % treatment completion rate.

(7) Health Education

Teaching aids and educational materials (including leaflets, posters, photographs, and audio-visual aids) will be prepared and distributed to health workers and communities for use in training programmes and health education.

(8) Research Activities

Research will be conducted for the purposes of evaluating, monitoring and giving feedback programmes.

(9) Community Participation

Primary health care activities in the villages must be encouraged and supported by district and provincial staff. Community organisation can be an effective ally of health workers in overcoming problems of drug non-compliance and in case-identification activities.

*(G) Monitoring and Evaluation*

Evaluation of continuous programmes must be planned and implemented on a regular basis. Improvement in managerial skills of disease control officers is to continue in accordance with the 1994-1999 National Health Plan already referred to above. The officers are to be assisted to develop plans of action and to establish measurable goals and targets for use in monitoring and evaluating their programmes. Supervisors of officers-in-charge of health centres are to devote more time to supervising activities at the aidpost level. In order to monitor the progress of the programme, the Department of Health will use the indicators as outlined above for evaluation and feedback to provinces and districts. The establishment of a National Tuberculosis and Leprosy Registration system will form the foundation of a disease monitoring and surveillance unit.

### 6.3 Case Study Three

#### *(A) Water Supply*

Poor sanitation conditions and lack of drinking water safety are important causes of communicable diseases in Papua New Guinea. Drinking water pollution and ablution water shortage contribute to a high incidence of gastro-enteritis, intestinal worms, hepatitis, typhoid and skin diseases. The provision of safe and adequate water supplies to the whole population should lead to a reduction in morbidity and mortality rates from these diseases.

This plan embraces the Primary Health Care approach for improvement, gives first priority to the promotion of good health, and emphasises the responsibility of the community in maintaining and improving its own health. The emphasis is to be shifted from promotion-specific projects and objectives to a process of empowering village people to make changes to their own lives by identifying their water supply needs and by mobilising their strengths and resources to meet these needs, with assistance from relevant government agencies. The responsibility for installing water supplies is distributed as follows:

- (a) Urban or municipal water supplies, installation and operation are the responsibilities of the National Water and Sewerage Board.
- (b) Rural areas and peri-urban settlements, not served by municipal system installations and operations, are responsibilities shared between the Provincial Government and the communities. In rural areas, the need for water is greater than that for sanitation, but in crowded urban areas water and sanitation are equally important.
- (c) Other agencies, involved in the construction of rural water supplies (untreated water straight from the mountains), include the Local Government Engineering Section of the Department of Works (DOW), the European Economic Community (EEC), Hans Seidel Foundation, Mission and Rotary International.
- (d) Water quality monitoring and surveillance of both urban and rural water supplies are the responsibilities of health inspectors employed by the Provincial Division of Health and Local Authorities. Water quality testing is conducted at the Central Public Health Laboratory, Port Moresby General Hospital, and in some provincial hospitals, by simple hydrogen sulphide (H<sub>2</sub>S) testing in the field.

A National Water Supply Policy was drawn up in 1990. A target was set for achieving the provision of safe water to 80% of the rural population by 1995. The activities, outlined to achieve the target, included provincial surveys and the preparation of provincial plans. These plans are to be based on the concept of self-help and community participation.

Approximately 80% of the rural population use unprotected water sources while about 20% are served with water from simple schemes such as wells, piped water and rain water catchments. In urban areas, with a population of above 1500 people, about 46-54% (*Malaria and TB control Report, 1993-1995*) use an alternative water source. It may be assumed that this group will make use of the available water supplies when their economic conditions allow.

It appears that many of these people use rain water collection. In 1990 the rural water supplies programme became the subject of a separately funded NPED project. In 1990, in six provinces, the funding of the NPED Rural Water Supply Sectoral programme was taken over by the first Rural Health Services project financed in part by the Asian Development Bank. In 1993 the rural water supply was included in the funding scheme for all other provinces, and the sanitation programme has increased significantly. For example, in 1990 NGK57,000 has been used for rural water supplies, which in 1993 rose to NGK1.2 million, and in 1995 this came down to NGK800,000 which is a drop due to financial problems.

*(B) Achievements*

The emphasis of the programme has been on community involvement in planning, construction, operation and maintenance of the water supplies. As a result of this, a number of training workshops have been conducted for training officers, community leaders, and the community at large.

- Nine provinces were surveyed to collect information for planning purposes.
- An information system was then developed.
- About 20% of the total population now had access to a supply of safe water.
- A trainer's manual, to conduct workshops for community leaders, was also developed.
- Educational posters were produced.
- "Kina for kina and community participation policies" had been defined in rural water supply programmes.
- Cycles for water supply projects were developed.
- Provincial and National Action plans were developed.
- Guidelines for monitoring the operation, utilisation and maintenance of water supplies were now developed.

(C) *Constraints*

The main constraints affecting the rural water supply programme include the following:

(a) *Institutional*

- (i) Inadequate skilled manpower at both National and provincial levels.
- (ii) Lack of management, planning, implementation, control, and evaluation of rural water supply and sanitation programmes in small towns, and in urban areas which are rural in character.
- (iii) Lack of basic information which needs to be collected, analysed, and fed back to the provinces.

(b) *Resources*

- (i) High cost of transportation to inaccessible remote areas.
- (ii) Funds are not released on time at the commencement of annual programmes.
- (iii) No separate funding for maintaining, monitoring, and evaluating.
- (iv) No funds from Headquarters.

(c) *Organisational*

- (i) No established water and sanitation committee to formulate policies and plans at the provincial level.

- (ii) Lack of co-ordination between agencies, involved in the programme, and the Department of Health.

(d) *Community Preparation*

- (i) Communities are not aware of government policy in planning, construction, operation and maintenance of water supplies.
- (ii) People do not use the services.
- (iii) People's attitude seems to be that 'if the government wants to do it, let them do it.'

(D) *Future Goals/Objectives and Indicators/Criteria*

- (a) To ensure that all households in the rural areas and on the ridges of urban areas in PNG have safe water in adequate quantities and quality for drinking, for personal and domestic hygiene, and to ensure its use and upkeep.
- (b) To increase communities' and private owners' self-reliance in, awareness of and responsibility for the construction, operation and maintenance of water supply and sanitation facilities.
- (c) To improve the health and life quality of the rural population through a combined programme of installation of water supplies, sanitation and health education.

The above mentioned general outline of goals can be detailed as follows:

- (a) To provide an adequate and safe water supply to 40%

of the rural population by 1998, through community participation.

- (b) To ensure that adequate and safe water supply are provided to 50% of the peri-urban population by 1998.
- (c) To monitor and maintain all installed systems.
- (d) To establish provincial water supply committees in each province by 1998.
- (e) To establish a central Information System by 1997.
- (f) By 1994 twenty Environmental Health Officers are trained in the water supply construction course at Oliguti Training Centre, Eastern Highlands Province.
- (g) By June 1994, the Department of Health produces inventories on supplies and equipment.
- (h) To encourage the private installation of water supplies, by individual families themselves.
- (i) To complete the water supply and sanitation surveys in the remaining provinces by 1998.
- (j) To train village operators in the operation and maintenance of their facilities for all projects.
- (k) To train and equip health inspectors in the use and the interpretation of readings from the germ resistant testing equipment.

Attainment of the above objectives/goals can be gauged by the following indicators/criteria:

- (a) The percentage of population who receive adequate and safe water supply.
- (b) The percentage of peri-urban population who receive safe and adequate water supply.
- (c) The number of installed systems maintained.
- (e) The number of provinces with committees.
- (f) The volume of Central Information Systems monitored.
- (g) The number of Environmental Health Officers trained.
- (h) The volume of inventory produced by the Department of Health.
- (i) The number of families with water supply.
- (j) The number of provinces surveyed.
- (k) The number of operators trained.
- (l) The number of health inspectors trained.

*(E) Policies*

- (a) All water supply schemes are to be initiated and constructed with community participation schemes involving government funding.
- (b) Priority will be given to simple schemes that can be constructed and maintained by people.
- (c) The capabilities of provincial and community government bodies will be strengthened for installation, management and maintenance of water supply and sanitation systems,

and for conducting health education programmes.

- (d) All rural water supply projects, estimated to cost more than NGK5,000, will be submitted to the Department of Health for review and approval.
- (e) Where villages identify it as a priority, the provision of excreta disposal should accompany the installation of water supplies.
- (f) All authorities, department and bodies involved in the provision, construction, funding and study of supplies are to report on their activities to the division of health.

*(F) Strategies*

Effective community preparation will be undertaken to inform the people about the policies and the people's responsibilities in this process, including financial responsibilities. This should be achieved through a long-term programme of public information, education and personal contacts in the area of strengthening of institutions:

- (a) The Department of Health and the Provincial Division of Health need to be supported to perform tasks of management, including planning, implementing, controlling and evaluating the effectiveness of rural water and sanitation programmes.
- (b) It must be stipulated that to have achieved greater

effectiveness of water and sanitation is a pre-condition for approval of a water supply scheme.

- (c) The Department of Health will assist the Provincial Governments to
  - bring to the required number the Health Inspectors who will prepare the community; and to keep these inspectors to their task;
  - conduct water and sanitation surveys in the remaining provinces;
  - provide necessary local support for the project, including financial support.
- (d) Accept and implement projects with proper accounting and reporting procedures.
- (e) Agree to participate in the national water supply and sanitation programme, utilising the 'from-the-bottom-up basic minimum needs' approach and the monitoring and reporting system to be operated by the Department of Health.

*(G) Organisation*

The present allocation of responsibilities in the water supply and sanitation programme is adequate except for small towns, and the fringes of larger urban areas which are rural in character and are the responsibility of the Water Board. These areas need to be identified and, if not supplied in the near future with piped water,

then the responsibility for these areas should be delegated to the Health Department.

*(H) Monitoring and Evaluation*

All water supplies, programmes and types of schemes are to be monitored and evaluated, using the following procedures:

- (a) Informal
  - (i) Each province is to be visited by staff from Headquarters to assess, assist, and make necessary recommendations.
  - (ii) Workshops are to be conducted necessarily to gauge views and problems, and to share ideas and experiences.
- (b) Formative
  - (i) All provinces are to report to Health Headquarters, on a quarterly basis.
  - (ii) Those agencies involved in the water supply programmes are to report to the Provincial Health Divisions on their progress, who in turn report to Headquarters.
  - (iii) All water supplies are to be monitored before installation, after installation and at regular intervals to determine safety and quality.
- (c) Summative
  - (i) All provinces are to report to Health Headquarters, on the progress and achievement of annual targets.

- (ii) Individual projects should be sustained even after completion.

(d) Instruments (Paper-work for Administration)

The following forms will be used:

- (i) Forms on annual progress report concerning water and sanitation adequacy.
- (ii) Forms for use in monitoring installed public systems to determine safe usage and maintenance.
- (iii) Provincial water and sanitation survey forms.
- (iv) General quarterly progress report forms.
- (vi) Forms to evaluate community participation in development projects.

### **Summary**

The above three case studies reveal the health department programmes to have addressed the issues of malaria, tuberculosis, and water supply distribution, which affects the citizens and identifies governments initiatives and policies to combat each diseases. The health department hereby encounters constraints and achievements.

Malaria diseases are common and endemic in all parts of the country. The Malaria Control Report 1995 states that malaria comprises diseases that carry high death-rates compared to other sicknesses, followed by Tuberculosis (TB) because of easy contagion. And the least of all death-rates are the water-related sicknesses. Most people are denied or deprived of their rights to clean drinking water. Chapter Six reviews and argues the significance of the three sicknesses and the policies; and it offers recommendations to improve its preventive programmes to effectively eradicate the diseases. Those recommendations target each disease and, more generally, the policies to upgrade frontline health workers; and these are given in conclusion in the next chapter.

Chapter Seven concludes identification of few constraints to health-care policies on diseases, the structure of the health systems and the well-being of frontline health workers to effectively perform their task. It also suggests recommendations for improvements within the health departments to see policy implemented effectively to enhance the health-workers' morale.

## **Chapter Seven**

### **Conclusion**

This thesis has proposed, researched, reasoned, argued and evidenced that the delivery (and implied distribution) of Papua New Guinea's (PNG's) health services is inadequate and must see appropriate policy changes, because this inadequacy is the nature of civil service which permeates key areas such as funding allocation, staffing volume, drug supply and distribution, geographical challenges, demographic fluctuations, mission-run health centres, and government structures; an inadequacy-generating provincial political-interference in bypassing national policy guidelines which demands reformulation of policies to benefit consumers rather than individual power players.

Summarizing the inefficiencies of health service delivery in Papua New Guinea in general and in the Simbu Province in particular, this Chapter covers the key-topics already reasoned and argued in the thesis, suggesting recommendations for policy planners in the Health Department to take heed of.

Health services delivery in PNG is responsible for the provision of comprehensive diagnostic, preventive and curative services to the needy. There are 19 hospitals with more than 300 health centres and health subcentres. In addition, there are aidposts that provide primary health services. All these institutions fall under the varying administrative controls of provincial governments, which each operate relatively autonomously, under one Provincial Medical Superintendent. Where misuse of funds and corruptions are greater, the health service delivery information systems are weak. Patients sometimes bypass admission clerks, so outpatient attendances and hospital admissions are under-recorded. Systems for the daily reconciliation of admissions, discharges and occupancies at both ward and hospital levels are scarce.

Financial management systems in hospitals are in need of improvement to promote health programmes in the community and consequently community support for health services is often thin, and communities, using the health services, regard them as 'Government or Mission' health services rather than 'their' health services.

The National Department of Health controls the allocation of budget for all health services, through the provincial governments. In most provinces, control over operating budget of health centres, health subcentres and aidposts is delegated to the provincial governments under Provincial Assistant Secretaries for Health. Maintaining personnel and budget for the health service as infrastructure is the financial responsibility of the provincial department of works.

Dental, sexually transmitted disease, ambulance and some of the malaria personnel are paid out of the provincial health extension allocations.

Under the terms of the User Charge Act, the State Minister of Health is empowered to declare and to determine the fees patients are to pay for treatment in all health institutions. Provincial governments have no power to vary fees, although most provincial governments are bypassing this Act. In the past all monies, collected from hospitals and health centres in terms of fees, had to be paid into the National Consolidation Resource Funds; currently, however, all monies collected are used by provincial funds or by the

concerned institution itself. Most important is that fees are collected in exceptional cases, as it was felt necessary. The systems and levels of health service fee collections are currently under review by the incoming Minister of Health.

Most health service facilities were built between 1960 and 1970. On the whole, they are well designed and more than comparable to similar institutions in other developing countries. However, maintenance is a country's responsibility and some buildings have been neglected. The National Health Department allocation for capital and maintenance expenditures (see Chapter Five) has been below average for government departments. Consequently, many major capital-works projects are now needed to renovate or replace existing facilities and equipment. The lack, in some areas, and the shortage of staff accommodation (see Chapter Four) have been major constraints to the efficient operation of all services. This thesis has found that emergency staff must be available for on-call duty; suitable housing is required for them on site or at least in the vicinity.

In addition, health service equipment needs to be regularly maintained and replaced. Maintenance of medical equipment has posed serious problems for many years. The Department of Works, whose responsibility is maintenance, is in the process of reorganising the system of maintenance to rectify the current situation. The contract of maintenance work with some private companies in the past has not worked effectively, but the services have greatly improved with a new contractor whose contract includes the training of national and provincial health staff.

Obsolete equipment as well as irreparable breakdowns require that items of equipment are regularly replaced. There needs to be annual provision for the replacement of minor items of capital equipment such as surgical instruments, laboratory apparatus and resuscitation machines.

In the area of health status of the population, the available statistics are not comprehensive, but in this thesis they do portray a consistent picture in which preventable infectious diseases cause most of the ill health and death, particularly in the early years of

life. Despite improvements in health status indicators, the disease patterns mentioned in Chapter Six Case Studies have changed little in the past decade.

Future prospects for the improvement of health in PNG depend on the successful implementation of promotive health programmes which specifically address the reduction of premature death, avoidable ill health, and the improvement of health standards within the family. The importance of community involvement, to achieve significant results in such a programme needs to be emphasised, foregrounded and actioned more fully.

Efforts to strengthen disease surveillance systems should be given more accurate consideration in order to ensure that the data collected is useful to the peripheral-level health-workers; to the provincial health managers implementing the programmes; as well as to the health workers (health officials) at regional and national levels who are monitoring and evaluating the programmes. At the same time, records and reports should not become unnecessary burdens to frontline health workers in whose actions the outcome of the

health service, in its entirety, depends.

To further stress the negativity - already raised, researched and evidenced, and necessarily reiterated in conclusion - there are some details of significant constraints, as outlined below:

- (a) severe shortage of health-trained management-experience;
- (b) an ill-defined relationship between the hospitals, health centres, health subcentres, provincial governments and the National Department of Health in most operational areas;
- (c) a severe shortage of management systems to assist hospitals, health centres and health subcentres;
- (d) the lack of incentives for efficient fee collection in all health services;
- (e) a lasting and cumbersome relationship between the hospitals, health centres, health subcentres and the major bureaucracies which heavily impinge on the efficient day to day operation of the health service, comprising the Department of Finance and Planning, the Department of Works, the Department of Personnel Management and the Department of Administrative Services;
- (f) a severe lack of support staff and expertise within the provincial governments with whom to initiate and implement improvements in health care delivery;
- (g) a lack of definition of roles of key health-service workers (frontline workers), and a lack of motivation to ease the burden of poor manpower planning;

- (h) a dearth of effective inservice training component for all health services; and
- (i) a lack of supervision at all levels of the health centres, health subcentres and aidposts.

In the face of the above constraints which have been highlighted, implementation of the findings of this thesis would help boost the morale and the efficiency of frontline health worker, managers, and other health officials within the Health Departments whose responsibility is to the needy.

Formulating recommendations for health care delivery in PNG must focus on the comprehensive network of all health care deliveries (and distributions implied) in all PNG provinces, and must aim to maximise the effectiveness and efficiency of these services within the constraints of resources allocated. Therefore,

- (1) there should be only one major hospital per province designated as the provincial general hospital; this is currently not in place;
- (2) the establishment of a periperal hospital (rural hospital) must be conducted in accordance with the national standard;
- (3) referral health centres, health subcentres and aidposts - with essential nursing, medical, diagnostic, paramedical and

specialist services to support the primary health care services network - must be provided.

- (4) all hospitals in the provinces must provide supervisory training and support to other health services (such as health centres, health subcentres and aidposts) in the rural districts of the province;
- (5) the level of staffing and expertise with the health service network to help support primary health care, ought to be enhanced;
- (6) there ought to be an improvement of management expertise and management information systems in all levels of health services;
- (7) it is necessary to establish an effective working relationship between all sections and the Department of Health, affecting the day-to-day management of health services, to eliminate many unnecessary obstacles to existing areas of efficiency;
- (8) it is important to increase public education and community involvement in hospitals, health centres, health subcentres and aidposts;
- (9) improved communication within the various components of the health service, and reduction of confusion and duplication of roles between cadres of health workers in the services, are equally urgent;
- (10) within the constraints of existing demands for available resources, it is recommended that working conditions of all cadres of health-service workers be improved;

- (11) a disease monitoring and surveillance unit in the provinces and even the districts needs to be established to assist the overall management capabilities, and to sharpen observation of disease outbreaks in the community;
- (12) a health service management board should be established between provincial governments and the national government, with the purposes of improving financial management, enhancing patient information systems, affecting workforce planning and management systems, upgrading equipment inventory and assets registry-control systems;
- (13) pharmaceutical distribution systems must be provided with adequate supply of essential drugs at all health-system facilities including aidposts and mobile clinics;
- (14) there should be standard accounting forms and receipts for hospital fee collection. These accounting forms will allow for auditing of accounts with information of inpatient from patients' utilisation statistics;
- (15) every quarter recommendations for clinical supervision of health staff in the remotest part of a province need to be conducted;
- (16) there needs to be a partnership strengthening between the Department of Health and the Church-run health services; and an agreement renewal needs to be used to define and affirm the responsibility of each party;
- (17) an investigation into the salary levels paid to Church health-workers needs to be adhered to, with a view to bringing them into accord with government pay-rates.

Although the available statistics and discussions in the thesis are not comprehensive, they do portray a consistent picture in which the

health policies are ill defined. Despite improvements in health status indicators, diseases patterns have changed and need to be pushed forward for more improvements. Maternal and Child Health, Malaria eradication programmes, TB programmes and Water Supply deserve a special mention for their contribution to the improvement of the health status.

Future prospects for the improvements of the status of health in Papua New Guinea and the Simbu Province depends on the successful implementation of policies of promotive and preventive health programmes within the communities, which specifically address reduction of premature deaths, avoidable ill health and improvement of the standard of health of the family. The importance of community involvement to achieve best result in such programmes needs to be emphasised.

### Bibliography

Allan, B. and Hinchliffe, K. (1982). *Planning Policy Analysis and Public Spending: Theory and Papua New Guinea Practice*. Sussex: Grower Publishing.

Australian Aid to Papua New Guinea (1992). Canberra: AIDAB Special Report.

Babbie, E. (1992). *The Practice of Social Research*. 6th ed. California: Wadsworth.

*Bank of Papua New Guinea Quaterly Bulletin* (September 1988).

Barrett, E. and M. J. Hill, (1981). *Report to SSRC Central-Local Government Relation Panel on the 'Core' or Theoretical Component of the Research on Implementation* (unpublished, 1981).

Bernard, L.A. and Walsh, M. (1981). *Leadership: The Key to the Professionalisation of Nursing*. New York: McGraw-Hill.

Bouten, M. (1990). Mission Health Services. In Heywood, P. and Hudson, B. (eds). *Rural Health Services in Papua New Guinea*. Port Moresby: Department of Health.

*Budget Related Paper No. 4 1991-1992*, (1992), pp. 28-36. Canberra: AIDAB Statistical Summary.

Bukenya, G. (1993). *Sanitation and Health in Urban Settlements of Papua New Guinea*. Port Moresby: Waigani Press.

Cardwell, J. (1984). Introductory Remarks on Interactions between Health, Mortality and Development. In *Mortality and Health Policy: International Conference on Population*. New York: United Nations Department of Economics and Social Affairs.

Cardwell, J.C. (1986). Routes to Low Mortality in Poor Countries. In *Population Development Review*, 12: 171-220.

Coale, A. (1973). The Demographic Transition in International Union for Scientific Study of Population. In *International Population Conference, Liege, Belgium* 1: 53-72.

Coldough, C. and Daniel, P. (1982). *Wages, Income and Wages Cost in Papua New Guinea: Challenges for Adjustment, Distribution and Growth*. Sussex: Centre for Development Studies.

*Community Aid Abroad [Port Moresby] Newsletter (1995)*, pp. 2-8.

Cumper, G. (1981). National Income and Health: implications of some recent addition to the data. In *Journal of Tropical Medicine and Hygiene*, 84: 49-61.

Dahanayake, P.A.S. (1982). IASER Economic Policy Workshop. In *[Boroko] September Bulletin No.7*.

Dahl, R.A. (1957). *The Concept of Power and Behaviour Science* 2. New Haven: Yale University Press.

Department of Agriculture and Livestock (1992). *Government Policy Papers*. Port Moresby: Waigani Press.

Department of Community Medicine (1992). *National Health Plan*. Port Moresby: University of Papua New Guinea Press.

Department of Finance and Planning (1992). *Government Policy Papers*. Port Moresby: Waigani Press.

Department of Health (1995). *Childrens and Adults Treatment Manual*, Port Moresby: Waigani Press.

Department of Home Affairs and Youth (1992). *Government Policy Papers*. Port Moresby: Waigani Press.

Department of National Planning and Development (1985). *Medium Term Development Strategy: A Summary Mimeograph*. Port Moresby: Waigani Press.

Department of National Planning (1990). *Government Aid Policy Papers*. Port Moresby: Waigani Press.

Dorney, S. (1993). *Papua New Guinea: People, Politics and History since 1975*. Sydney: Random House.

Easton, B. (1980). *Social Policy and the Welfare State in New Zealand*. Sydney: George Allen and Unwin.

Esping-Anderson, G. (1991). *Distribution Regimes in the Power Structure, from the Three Worlds of Capitalism*. Cambridge: Polity Press.

Government of Papua New Guinea. *Papua New Guinea Health Sector Financing Study, (1992)*. Port Moresby: Waigani Press.

Government of Papua New Guinea Public Accounts (1991). *Estimates of Revenue and Expenditure in Health Sector Financing*. Port Moresby: Waigani Press.

Gray, R. (1975). The Decline of Mortality in Ceylon and the Demographic Effects of Malaria Control. In *Population Studies* 28: 205-229.

Grosse, R. C. (1980). Inter-relation between Health and Population: Observations derived from Field Experience. In *Social Science Medical Journal* 14: 99-120

- Gunn, L. (1978). *Why is Implementation so Difficult? Management Services in Government*. University of York Publishing.
- Ham, C. and Hill, M. (1993). *The Policy Process in the Mordern Capitalist State*. London: Harvester Wheatsheaf.
- Hayes, G. (1993). *The Demographic Situation in Papua New Guinea and Its Policies Implication of Health and Education: An International Perspective*. Port Moresby: University of Papua New Guinea Press.
- Health and Education* (1984). New York: United Nations Department of Economic Affairs.
- Kolemainen-Aitken, R. and Thomason, J. (1991). Distribution and Performance of Rural Health Workers in Papua New Guinea. In *Social Science Medical Journal* 1991, 2. 32:159-165.
- Luluaki, J. and Jessep, O. (1995). *The Principles of Family Law in Papua New Guinea*. Port Moresby: University of Papua New Guinea Press.
- Mckeown, T. (1976). *The Modern Rise of Population*. London: Edward Arnold.
- Merton, R. K. (1957). *Social Theory and Social Structure* (Free Press, Glencoe Ill.
- National Department of Health. *Malaria and TB Control Report, 1993-1995 and 1976*. Port Moresby: Waigani Press.
- National Executive Council Endorsed Papers (1990)*. Port Moresby: Waigani Press.

*National Research Institute (1992)*. [Waigani] Port Moresby: IASER Publication.

National Statistics Office. *National Population Statistic 1991*. Port Moresby: Waigani Press.

Northouse, P.G. and Northouse, L.L. (1985). *Health Communication*. New Jersey: Prentice Hall.

[Papua New Guinea] Department of Health (1990). *National Health Plan 1990-1995*. Port Moresby: Waigani Press.

[Papua New Guinea] Department of Health (1991). *Simbu Provincial Health Plan 1991-1996*. Port Moresby: Waigani Press.

[Papua New Guinea] Department of Health. *National TB Control Report, (1996)*. Port Moresby: Waigani Press.

[Papua New Guinea] National Department of Health. *National Disease Control Report (1994)*. Port Moresby: Waigani Press.

[Papua New Guinea] National Department of Health. *Tuberculosis Control Report (1995)*. Port Moresby: Waigani Press.

Pendleton, B. and Yang, S. (1980). Socio-economic Development and Mortality Level in Less Developed Countries. In *Social Biology Journal* 27: 220-229.

Pierson, C. (1993). *Beyond The Welfare State*. Cambridge: Polity Press.

[Port Moresby] *National Newspaper*, September 1994, p.27.

Preston, S. (1980). The Changing Relation between Mortality and Levels of Economic Development. In *Population Studies Journal* 27: 220-239.

Prime Minister's Department (1992). *Policy Papers*. Port Moresby: Waigani Press.

*Public Investment Project Objectives* (1990). Port Moresby: Waigani Press.

Rosenthal, G. et al. (1990). Papua New Guinea Health Sector Financing Study Project. In *Final Report 1: Health Sector Issues and Options*. London: John Snow.

Sarantakos, S. (1995). *Social Research*. Sydney: Macmillan.

Sexton, W.P. (1970). Organisations Theory. In Charles, E. (ed.). *Merril*. Colombo.

Shannon, P. (1991). *Social Policy*. Auckland: Oxford University Press.

*Simbu Provincial Helth Nius* (February 1990), 7:7.

Stolnitz, G. (1955). A Century of International Mortality Trend. In *Population Studies* 10: 17-24.

Taufa, T. and Bass, C., eds. (1993). *Population, Health and Development*. vol. 1. Port Moresby: University of Papua New Guinea Press.

Taylor, R. and Lewis, N.D. (1989). Societies in Transition: Mortality Problems in Pacific Islands Population. In *International Journal of Epidemeology* 18: 64-78.

Taylor, R. and Thoma, K. (1985). Mortality Patterns in the Modern Pacific Island Nation of Nauru. In *American Journal of Public Health* 75: 149-155.

Temkin, L.S. (1993). *Inequality*. New York: Oxford University Press.

The World Bank Papua New Guinea (1990). *Policies and Prospects for Sustained and Broad-Based Growth*. Washington DC: The World Bank.

Thomason, J.A. and New-Brander, W.C. (1991). Health Financing and Budgeting. In Thomason J., New-Brander, W.C. and Kolemmainen R.L. (eds). *Decentralisation in a Developing Economy: the Experience of Papua New Guinea and its Health Services*. Australia National University Press.

Thomason, J.A. and New-Brander, W. C. (1995). *A Survey of Health Sector Financing and Expenditure*. Port Moresby: Waigani Press.

*United Nations Department of Social Affairs* (1984). New York, Washington DC: United Nations.

Walsh, J.A. (1988) Selective Primary Health Care. In *Social Science Journal*, 26. 9: 23-40.

Walsh, J.A. (1991). Selective Primary Health Care: An Interim Strategy for Disease Control in Developing Countries. In *New England Medical Journal* 1991: 301-318.

Worsley, P. (1982). *Marx and Marxism*. London: Tavistock.

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RE/: PNG Health-Care Policies

Dear Sir/Madam,

I am Mr. Teine Maine, from the Simbu Province currently doing Master of Arts Degree in Social Policy at Massey University at Albany Campus, in New Zealand. My thesis is looking at in-depth PNG Health-Care policies, Health-Care financing, and pharmaceutical distribution in PNG, with special reference to the Simbu Province.

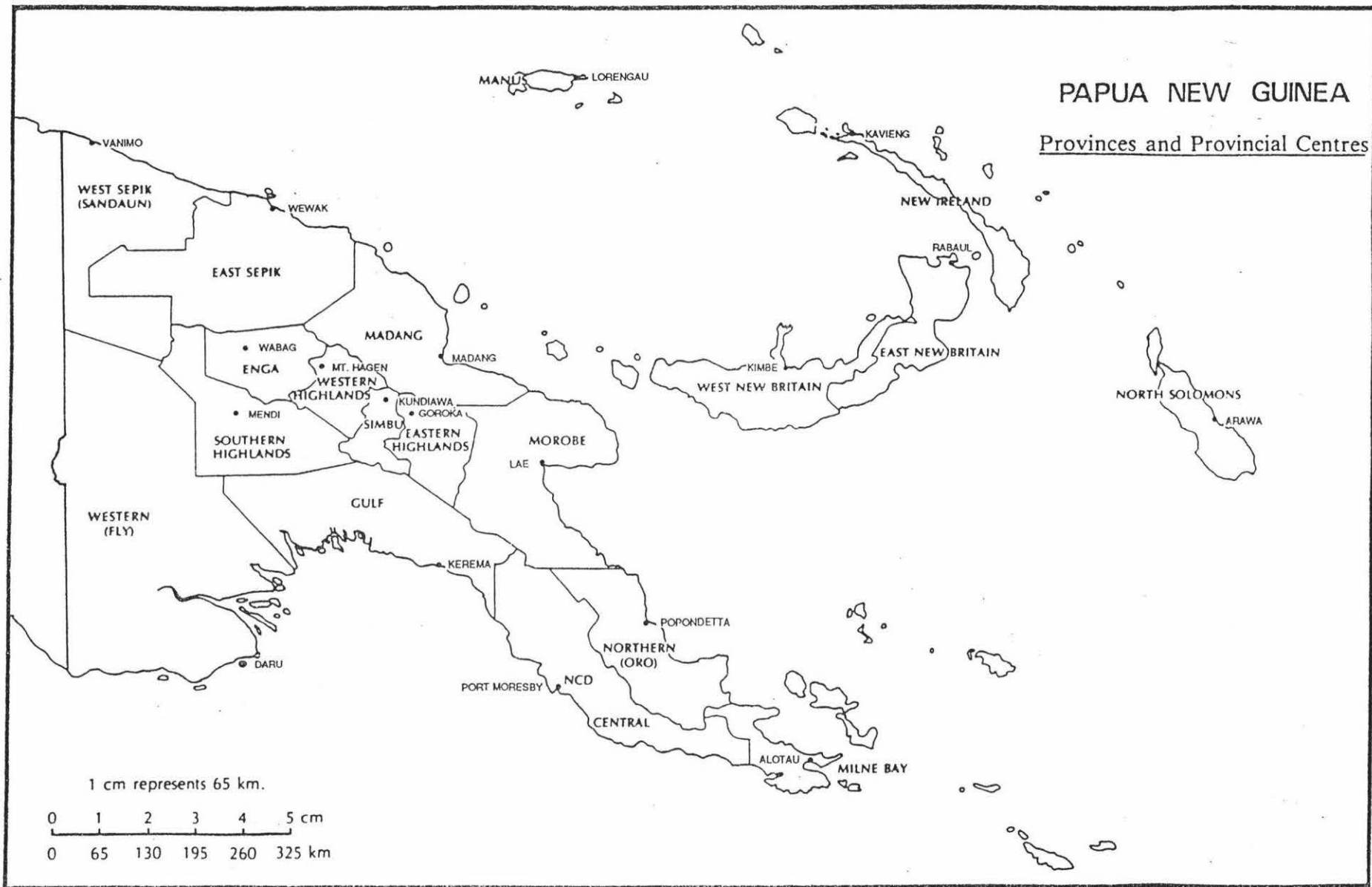
I would very much appreciate, if you and your department could help in providing some documents on:

- (a) your department policies,
- (b) financial spendings on health,
- (c) documents on the projected government budgets towards the social sectors departments like education, health and the like,
- (d) the government organisational structure and decentralisation procedures especially provincial governments.
- (e) and any documents of health matters.

This thesis would eventually benefit Papua New Guineans in their health needs in the years to come. Once again thank you for your help.

Yours Faithfully.

  
Mr. Teine Maine Iysa.



Map of Papua New Guinea

Source: PNG Yearbook Atlas 1997: 13